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# Supplement Reference Guide

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**dotFIT™**  
Your Fitness. Connected.

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## Introduction

### About dotFIT Worldwide

The group of individuals and organizations that make up dotFIT Worldwide created the first and most successful complete nutrition/weight control and exercise program used by fitness professionals around the world. dotFIT Worldwide offers

- **Science-based research and support**
  - See dotFIT Worldwide Faculty & Advisory Board below
- **Education and certification from The National Academy of Sports Medicine (NASM)**
  - The market leader in Fitness, Sports Medicine and Sports Performance credentials
  - NASM activates over 25,000 credentials annually with over 100,000 professionals worldwide
  - Works with over 6,000 health clubs and all professional sports organizations
- **Evidenced-based tools and applications**
  - R&D and support for nutrition/weight control and exercise programming for all ages and goals
  - Web-based, client- and trainer-centric programming: exercise, menu plans with supplement screening, continuous feedback to client and/or trainer based on measurement inputs and goal
- **Worldwide professional delivery network**
  - Live fitness professionals as well as phone and e-coaching platforms
- **Programs can connect to body sensing/tracking devices**
  - Calorie expenditure, steps, physical activity, etc.
- **Unlimited education:** For consumers and professionals via website, live webinars, certifications, and direct access to R&D team via the toll-free phone number (877.436.8348)
- **Complete, holistically integrated line of pharmaceutically manufactured dietary supplements and fitness foods** including home delivery platform

## dotFIT Worldwide Faculty and Advisory Board

<p><b>NUTRITION, DIETETICS AND WEIGHT CONTROL</b>            Jill Fairweather, MS, RD            Gay Riley, MS, RD, CCN            Alan Titchenal, PhD            Kathleen Barefield, MS, RD, PES, NASM- CPT</p> <p><b>EXERCISE SCIENCE, PHYSICAL THERAPY AND PERFORMANCE ENHANCEMENT</b>            Richard Stewart, MS, NASM-CPT, PES            National Academy of Sports Medicine</p> <p><b>NUTRITION AND EXERCISE INSTRUCTORS</b>            Scott Pullen MS, CES, PES            National Academy of Sports Medicine staff</p> <p><b>MEDICAL SCIENCE, PHARMACEUTICALS AND DIETARY SUPPLEMENTS</b>            Jim Starr-Kalafat            Timothy Ziegenfuss, PhD, CSCS, EPC            Michael Oviedo, MS, NASM-PES, CSCS</p> <p><b>OSTEOPATHY AND ANTI-AGING MEDICINE</b>            Bob Goldman, PhD, DO</p>	<p><b>INSTITUTIONAL RELATIONSHIPS AND ADVISORY RESOURCES</b>            University of North Carolina            Arizona School of Health Sciences            Nellson Nutraceuticals, Inc.            Texas Women's University            University of Hawaii</p> <p><b>NATIONAL ACADEMY OF SPORTS MEDICINE</b>            Dr. Micheal A. Clark, DPT, MS, PT, PES            Dr. Darin Padua, PhD, ATC            Dr. Kevin Guskiewicz, PhD, ATC            Dr. Steve Marshall, PhD</p> <p><b>BAKERY BARN, INC</b>  <a href="http://www.bakery-barn.com/">http://www.bakery-barn.com/</a></p> <p><b>COMMAND NUTRITIONALS</b>  <a href="http://www.commandnutrionals.com/">http://www.commandnutrionals.com/</a></p> <p><b>PHOENIX LABORATORIES</b>  <a href="http://phylabs.com/">http://phylabs.com/</a></p>
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## dotFIT Worldwide’s Position on Use, Recommendations & Manufacture of Dietary Supplements

The function of dietary supplement preparations is to provide a safe vehicle for delivering precise amounts of desired isolated nutrients and compounds in a low to no calorie form with the purpose of enhancing health, sport and fitness goals, i.e. dietary support.

Individual outcomes from the use of dietary supplements, as with drugs, are predicated on the physiological and psychological state of the recipient as well as dosages, regiment compliance, manufacturing processes including the use of proper delivery systems, and ingredient forms or origins.

### Position on overall dietary supplement use and recommendations

Dietary supplement products must be 100% defensible through scientific research, not used to treat medical conditions and only recommended in support of the following goals:

- Preserving health

- Objective: potentially stave off chronic or age-related disease by improving the daily nutrient intake achieved through diet alone
- Safely enhance sport and fitness outcomes
  - Objective: hasten and support fitness/weight control goals
  - Objective: improve training-induced performance results

## **Position on use of supplements for health**

**Multivitamin and mineral formula (MVM):** all persons of all ages should use a daily MVM to complement one's best efforts to define and consume a proper diet.<sup>1,2</sup>

At a minimum, MVM supplementation is insurance against common and unavoidable shortcomings driven by typical daily diets and local food supply or availability. At best, the daily increased level of all known vital nutrients supplied by the MVM may indeed allow optimal cellular performance. Levels of nutrition delivered by diet combined with a MVM (significantly higher but well within a safe range) has more potential than diet alone (especially within a range of acceptable calories) to supply all cellular entities/enzymes with enough materials to operate at full capacity thus avoiding a potential triage effect that may be at the root of many chronic and age-related diseases.<sup>3,4</sup> (see Appendix 1: dotFIT Worldwide's Position on Vitamin & Mineral Supplementation).

**Calcium & Vitamin D:** supplement if daily needs of calcium (1000-1200mgs/day) and vitamin D (400-800IUs/day) are not met by food, sunlight and multivitamin mineral formula.<sup>5,6</sup>

## **Position on use of supplements in support of weight control**

Dieting to lose weight is difficult for everyone and generally ends with most of the weight regained within the first year.<sup>7,8</sup>

The goal of incorporating a dietary supplement or drug into a weight loss program is to assist the participant in complying with the daily routine that leads to weight reduction. The supplement ingredients must have safely demonstrated the potential to act in one or more of the following ways:

- Help create and maintain a calorie deficit by increasing daily calorie expenditure when compared to a non-supplemented state
- Raise energy levels that may make one more active throughout the day
- Reduce the drive to consume food
- Decrease calorie absorption

The dieter would cease supplementation once the weight goal is reached or when they have their daily routines under control to continue making progress without supplements.

## **Position on use of supplements for enhancing performance**

Maximizing potential during high-level competition involves athletes exploiting all available resources – some good and some bad. In the 2008 Olympics, 90% of the 11,000 athletes reported regularly using dietary supplements. There was not a single supplement contamination case, giving a “thumbs up” to the dietary supplement industry for making safe, unadulterated substances.<sup>9</sup>

There is unequivocal evidence that a limited number of natural substances prepared and ingested properly can safely improve training-induced size or performance for many athletes.<sup>10,11</sup> Historically, however, athletes have had a tendency to not follow directions. Many subscribe to the old adage, “if a little works, more is better.” The practice of overconsumption of anything—such as foods, dietary compounds, and drugs—can lead to problems. On the other hand, proper supplementation for performance has often been shown to generate truly remarkable benefits, and this in itself can save many athletes from turning to illegal anabolic steroid use, which has well-known, harmful side effects.

Present rationale to avoid training plateaus or improve performance and size by using a nutritional strategy centers around findings that the extent of negative protein balance induced by exercise appears to remain constant throughout a prolonged training regimen.<sup>12</sup> Consequently, repeated exercise sessions continue to provide opportunity or “open the door” for positive muscle reorganization. Therefore, when the benefits of training and diet on muscle mass and performance have stabilized, specific nutrient supplement regimens may play a role in plateau avoidance and progressive development for some athletes.

## **Position on final individual recommendations**

All dotFIT programs prepared by dotFIT Worldwide are designed to screen individuals based on physical characteristics and goals in order to safely and properly integrate dietary supplements into their fitness programs to accomplish the above stated outcomes.

## **Position on manufacturing and facts regarding dotFIT™ products**

Before nutritional compounds become products or are recommended for consumer use, all ingredients must survive rigorous legal and scientific review and testing. The following conditions are met:

- Identify best, current clinical research supporting use (evidence-based)
- Identify data supporting safety and efficacy including long-term empirical data (see Table 1 below and Evaluation Guidelines)
- Identify proper ingredient dosage and forms
- As science progresses, all products must be updated immediately



Products are designed with customized “controlled-release delivery systems” established by each product’s ingredients, desired target tissues, and the amounts required in specific time periods to deliver on the product claims. In other words, validate that the right ingredients and amounts get to the right places at the right times.

- Finished products are tested in a simulated human digestive system to validate whether release patterns match their respective designed criteria in order to assure the desired results
- Dietary supplement products and powders are manufactured in a FDA-registered pharmaceutical facility, in compliance with Good Manufacturing Practices (GMP)
- Ingredient testing for purity, potency and delivery from raw materials to finished product
- Final product rigorous testing, both in-house and through third-party, FDA-approved laboratories, assures users that all nutritional claims meet or surpass FDA guidelines, USDA guidelines, and industry norms
- All formulas must be able to work in synergy with other dotFIT™ products in order to avoid nutrient overages, which are common with typical, indiscriminate supplement use

dotFIT programs consider diet, medications, and other dotFIT products before a personalized dietary supplement recommendation is generated. This assures the user remains in a safe and optimal nutrient range throughout the day.

dotFIT foods cannot be “spiked” with unnecessary nutrients. Most other products in this space (e.g. bars, shakes, ready-to-drinks, etc.) are heavily spiked with many nutrients that can lead to undesirable levels within the body when combining multiple manufacturers, products and normal food intake. When consuming only dotFIT products, as directed with one’s normal daily food intake, the recipient can be assured of keeping the body at a safe and optimal nutrient level.

dotFIT must provide complete customer product/program education and support, including full disclosure regarding product ingredients and manufacturing.

### **Product Testing Documentation**

- Tests that include disintegration, dissolution, stability, purity (no contaminants) and potency, which includes the finished product’s certificate of analysis

- In-house product validation and testing methods based on all available certified protocols including applicable USPs\* and other international compendia
- Appropriate peer-review research that supports the dosage and purpose of the compound
- Proof of equivalence or evidence that a given dose of a product must contain a certain amount of key ingredients in order to produce a known effect
- Proof that products will be absorbed and utilized by the body
- Disintegration and dissolution tests
- Assurance that the substance is nontoxic, along with list of any known potential side effects and drug interactions
- Qualified personnel and support documents available to all consumers via [www.dotFIT.com](http://www.dotFIT.com) or 877.436.8348 (877.4dotFIT)

## **Product Evaluation Guidelines and Scoring**

Only products/ingredients that score a four or five out of five possible points are potential dotFIT Worldwide-authorized products and may become integrated into holistic fitness planning (e.g. combined with diet and movement planning). See Table 1.

### **Review of Products**

- A. Criteria for evaluation: to establish product integrity
  1. History of safe use
    - i. Cultural or traditional medicine
    - ii. Anecdotal or empirical reports
  2. Product formulation
  3. Individual ingredients

### **Research documenting claims, performed on humans**

- A. Published in peer reviewed literature – citation(s)
  1. Product formulation
  2. Individual ingredients
- B. Books/brochures and company marketing brochures or sales sheets
  1. Product formulation
  2. Individual ingredients
- C. Privately sponsored, unpublished reports or studies
  1. Product formulation

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\* United States Pharmacopeia, an official compendia of standards

2. Individual ingredients
- D. Research supporting either a biochemical or physiological rationale

#### **Research documenting claims, performed on animals**

- All same as above

#### **Safety Studies**

- A. Animal toxicology studies
- B. In vitro toxicology studies
- C. Human clinical evaluations
  1. Dosage and route of administration
  2. Toxicity
- D. Human anecdotal/empirical reports
  1. Dosage and route of administration
  2. Toxicity

#### **Adverse Event Reports**

- A. Center for Disease Control (CDC)
- B. Food and Drug Administration (FDA)
- C. World Health Organization (WHO)
- D. State Health Departments
- E. Trial Lawyers Association: personal injury litigation groups

#### **Food and Drug Administration**

The regulatory agency for approved claims with medical – scientific evidence for documentation of educational marketing claims in advertising and ‘third party’ literature under DSHEA\*.

- A. Structure (anatomy) claims
- B. Function (physiology) claims
- C. ‘Life Event’ claims
- D. Fitness claims
- E. Anabolic/weight gain claims
- F. Androgenic/strength and endurance claims
- G. Fat loss (lipolysis) claims
- H. Metabolic rate (BMR) and lean body mass claims
- I. Cardiovascular tone/‘aerobic’ fitness claims
- J. Recovery time/‘muscle burn’ claims

\* DSHEA is the Dietary Supplement Health Education Act of 1994. The DSHEA established a formal definition of "dietary supplement" using several criteria. A dietary supplement

- is a product (other than tobacco) that is intended to supplement the diet that bears or contains one or more of the following dietary ingredients: a vitamin, a mineral, an herb or other botanical, an amino acid,

a dietary substance for use by man to supplement the diet by increasing the total daily intake, or a concentrate, metabolite, constituent, extract, or combinations of these ingredients

- is intended for ingestion in pill, capsule, tablet, or liquid form
- is not represented for use as a conventional food or as the sole item of a meal or diet
- is labeled as a "dietary supplement"
- includes products such as an approved new drug, certified antibiotic, or licensed biologic that was marketed as a dietary supplement or food before approval, certification, or license (unless the Secretary of Health and Human Services waives this provision)

**Table 1—Product Evaluation Score: Rating of Evidence**

Only products that score a four or five rating are potential dot authorized products.

SCORE	RATING	DOCUMENTATION/ EVIDENCE CRITERIA
5	Excellent (>90% Probability)	Product formulation claims documented by human studies
4	Very Good (>70%<90% Probability) (High Probability)	At least two (2) of the product's formulated ingredients claims documented by human studies
3	Good (<70%>30% Probability) (Medium Probability)	One of the product's formulated ingredients claims documented by human studies
2	Fair (>10%<30% Probability) (Low Probability)	No human studies. However, at least two (2) of the product's formulated ingredients have a biochemical- physiologic rationale
1	Poor <10% Probability) (Questionable Probability)	No human studies. However, at least one (1) of the product's formulated ingredients have a biochemical- physiologic rationale
0	Fails (Zero Probability – "Hype")	No documented human studies, and no biochemical – physiologic rationale for any ingredients

## The Products

Included in this guide are the following for each dotFIT™ product:

- Goal
- Rationale
- Typical Use
- Dosage
- Definitions
- Precautions
- Contraindications
- Adverse Reactions
- Upper Limits/Toxicity

## Definitions

### Goal

Describes the purpose of the formulation, including each product's intended outcome.

### Rationale

Lists the ingredient's basic mechanisms of action and their respective function in participating in the product's intended outcome or goal.

### Typical Use

Describes the known group of users that may experience the product's potential listed benefits and directions for use.

### Dosage

Lists the dosages used in studies and historically with the greatest potential for safety and efficacy.

### Precautions

The compounds in this *Supplement Reference Guide* (SRG) are considered safe for the general population at the proper dosage. Under this heading and the subheadings below, a summary of safety considerations will be called out for potential vulnerable subpopulations.

## Contraindications

Describes conditions in which the compound might be avoided or signal caution, including people with unique genetic predispositions, certain pre-existing disease states or persons taking specific prescription medications.

## Adverse Reactions

Lists possible side effects and/or explains commonly reported reactions that may not be clinically supported or causally related to the compound. Case reports may be used to explain theoretical risk when clinical trials or specific studies are not available. Case reports are not considered scientifically valid for proving efficacy or documenting risks, but may be used to highlight an unlikely but potential safety issue.

## Upper Limit/Toxicity

Gives the highest known dose that still maintains a large margin of safety and any known toxicity data. When available the Recommended Daily Allowance (RDA), **No Observed Adverse Effect Level (NOAEL)**, **Lowest Observed Adverse Effect Level (LOAEL)** and the **lethal dose 50 (LD<sub>50</sub>)** values will be given. The LD is the dose at which 50% of the test animals (rats or mice) died and is usually only used as a reference for the relative toxicity of a substance.

The **Tolerable Upper Intake Level** or **Upper Limit (UL)** is the maximum level of total chronic (long-term) daily intake judged unlikely to pose a risk of adverse health effects to most of the healthy population, including sensitive individuals, throughout their life stages. The UL is intended to provide a safety standard for dietary supplements such that no significant or unreasonable risk of illness or injury would arise at or below this intake level.

## Dietary Supplements for Health

### health dotFIT

The goal of dietary supplements in this category is to help establish and preserve health or potentially stave off chronic or age-related disease by delivering important nutrient compounds that may be unattainable from diet for any of the following reasons (also see Appendix 1: *dotFIT Worldwide's Position on Vitamin & Mineral Supplementation*):

- Insufficient food intake<sup>1,2</sup>
- Increased needs that are not met by diet alone<sup>3,4,5,6,7,8,9,10</sup>
- Special populations, age-related requirements or practicality of foods sources
- Lack of interest in or avoidance of essential food groups<sup>11,12,13,14,15,16</sup>
- Low body fat maintenance<sup>1,17,18,19</sup>
- Variables of actual nutrient content of food<sup>20,21,22,23</sup>
- Unable to move enough to eat enough<sup>24,25</sup>
  - In the modern world, where many people maintain a sedentary lifestyle, maintaining a healthy weight often requires eating too few calories to get proper nutrition through food alone<sup>24,25</sup>
- Low sun exposure<sup>26,27,28,29,30,31</sup>
- Inability to define the perfect diet<sup>32,33,34,35</sup>

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## dotFIT™ Multivitamin & Mineral Formulas

### Goal

The purpose of supplementing the diet with a properly designed multivitamin and mineral formula (MVM) should be to not only supply essential nutrients in an attempt to prevent nutrient deficiencies, but to also overcome marginal deficiencies from today's common limitations in obtaining sufficient and optimal nutrient intake. Therefore, using the latest research and recommendations from the industry's leading experts,<sup>1,2</sup> the goal of the dotFIT multivitamin and mineral formulas (MVM) is to deliver a combination of nutrients in a controlled release preparation that, when used properly, has the greatest chance helping stave off chronic disease, especially when compared to typical mass market formulas. (See Appendix 1: *dotFIT Worldwide's Position on Vitamin & Mineral Supplementation*)

### Rationale

Defining the perfect diet has been a laborious task for the nutritional sciences for decades.<sup>3</sup> Likewise, specifying the optimal intake of vitamins and minerals is difficult in the face of continuing nutrient research. This makes giving concrete nutrient recommendations challenging. For most nutrients, there is a large therapeutic range within which the average person will receive benefit and simultaneously remain below the threshold that can yield adverse events. It is one matter to define nutrient recommendations, but another entirely more frustrating endeavor to actually consume the recommended dosages through the course of a normal day with typical foods.<sup>2,4,5,6,7</sup> The notion that food alone will satisfy all physiological needs of the body for proper and ideal nutrient intake is outdated.<sup>8</sup> Obstacles to proper eating and ideal nutrient intake include

- Insufficient food intake<sup>9,10</sup>
- Increased needs that are not met by diet alone<sup>11,12,13,14,15,16,17,18</sup>
- Lack of interest in or avoidance of essential food groups<sup>19,20,21,22,23,24</sup>
- Low body fat maintenance<sup>1,25,26,27</sup>
- Variables of actual nutrient content of food<sup>28,29,30,31</sup>
- Can't/don't move enough to eat enough<sup>32,33</sup>
- In the modern world, where many people maintain a sedentary lifestyle, maintaining a healthy weight often requires eating too few calories to get proper nutrition through food alone<sup>24,25</sup>
- Low sun exposure<sup>34,35,36,37,38,39</sup>
- Inability to define the perfect diet<sup>1,3,40,41</sup>

It is in the context of all the above that dotFIT multivitamin and mineral formulas are made, including the nutrient values contained in today's typical diet and the different overall nutrient needs based on age, gender and activity, each for a specific user.<sup>2,4,6</sup> The dotFIT multivitamin and mineral formulas are used at the specified times throughout one's lifetime. In addition, they include the coverage of an active



person's basic antioxidant needs.

dotFIT formulas are engineered with ideal health and functioning as the goal, not the media driven need to see a lot of popular ingredients in a pill. An example is the decision to remove calcium from dotFIT MVM formulas. Due to the variety of nutrients in a MVM, a decision has to be made if something goes in because it is needed (in the proper dosage) or if it is just "window dressing" ( included but in an ineffective amount just so it can appear on the label). If one is failing at meeting their calcium needs through the diet, then a calcium supplement is warranted.<sup>16,42</sup> This required dose will far exceed that included in any effective MVM formula because it would make the MVM far too large to ingest. The dotFIT approach includes a specific calcium supplement to address that need. Also, calcium supplementation concurrent with iron supplementation can interfere with the absorption of iron.<sup>43</sup>

Another example of the dotFIT difference is that most experts believe the current recommendation for vitamin D is far too low, so dotFIT is taking the lead on ensuring optimal vitamin D intake. More and more research is emerging linking low vitamin D status with numerous chronic health issues,<sup>44,45</sup> not just its relationship with calcium absorption. Population studies show that those with the lowest vitamin D intakes have a higher rate of mortality from all factors, especially cardiovascular disease and cancer.<sup>46</sup> Typical dosing with dotFIT MVM formulas will give the user a full 1000 IU.

All dotFIT multivitamin and mineral formulas are prepared in a proprietary delivery system to accurately control the release of their contents to match the body's ability to properly utilize the nutrients and thus maintain the ideal tissue levels (see

Table 4).

The human digestive tract is a unique, amazing and dynamic environment. Due to varying pH levels and availability of receptors, certain vitamins and minerals are best absorbed over time throughout many areas of the digestive tract. A controlled-release delivery system not only ensures that nutrients make it through the harsh acid environment of the stomach (which is a digestive organ, not an absorptive one) but that they are released in the proper place/time, in the proper forms and at the proper doses. The goal is total tissue saturation with the nutrients needed to optimally perform all cellular activities, thus ensuring the cells have the potential to function at full capacity, 24 hours a day.

**Table 2:** dotFIT™ MVM Formulas & Ingredients (1 tablet)

Ingredient	Unit	Vegetarian/High Carbohydrate	Women's	Prenatal	Active	Over50	Kids
Vitamin A	IU	0	1000	0	500	1000	500
Vitamin D *	IU	1000	1000	600	600	1000	250
Beta Carotene	IU	10000	5000	5000	4000	5000	2000
Vitamin C	mg	200	300	250	450	400	50
Iron	mg	15	10	27	5	8	5
Vitamin E	IU	100	100	100	150	50	20
Vitamin B1	mg	6	6	4	5	6	1
Vitamin B2	mg	6	6	4	5	6	1
Niacinamide	mg	20	20	20	15	20	6
Vitamin B6	mg	6	9	8	6	10	1
Folic Acid	mcg	200	400	600	100	400	100
Vitamin B12	mcg	15	12	12	15	100	3
Biotin	mcg	50	100	50	150	100	10
Pantothenic Acid	mg	10	15	15	0	10	2
Iodine	mcg	50	100	150	25	75	50
Magnesium	mg	50	100	100	150	100	20
Zinc	mg	15	12	10	7.5	15	5
Selenium	mcg	50	50	100	50	70	20
Copper	mg	1	0	0.5	0.5	1	0
Chromium	mcg	100	50	50	50	100	0
Vitamin K	mcg	50	50	50	50	50	30

\*Source: Cholecalciferol (D3), except for the Vegetarian, which is ergocalciferol (D2).

**Table 3:** dotFIT multivitamin and mineral recommendations

Multivitamin/Mineral Formula	ActiveMV (1 tablet)	ActiveMV (2 tablets)	Women'sMV	PrenatalMV	Over50MV	KidsMV	VegetarianMV (High Carb Diet)
<b>Males/Females: 2-4 years of age</b>						1 chewable	
<b>Males/Females: 5-11 years of age</b>						2 chewables	
<b>Males: 12-17 years of age</b>	X						
<b>Males: 18-50 years of age</b>							
All except below	X						
Athlete/Intense exerciser		X					
<b>Males: 51-64 years of age</b>							
All except below					X		
Athlete/Intense exerciser		X					
<b>Males: 65+ years of age</b>					X		
<b>Females: 12-17 years of age</b>	X						
<b>Females: 18-50 years of age</b>							
All except below			X				
Athlete/Intense exerciser		X					
Pregnant/trying to conceive				X			
Lactating and/or breastfeeding			X				
<b>Females: 51-64 years of age</b>							
All except below					X		
Athlete/Intense exerciser (>150 lbs)		X					
<b>Females: 65+ years of age</b>					X		
<b>Male/Female Adult Vegetarians or those eating very high Carb diet</b>							X

## ActiveMV™ Formula

The ActiveMV formula is a multipurpose multivitamin and mineral formula. At one pill daily, it is the basic multivitamin for everyone over 12 years of age. At two pills daily, it is designed for athletes and all others with an active lifestyle aged 18 to 65 (general population over age 50, see the Over50MV formula and women 18 to 50 years of age, see the Women'sMV formula) who consume the general variety of today's typically available foods.

## Rationale

Studies suggest that athletes require additional vitamins due to increased energy demands.<sup>47,48,49,50,51</sup> Some, but not all, athletes consume more nutrients simply by eating more food. This assumes the athlete is on a relatively high-calorie, balanced diet thus able to consume enough nutritious food to match their energy expenditure. Athletes trying to lose weight/body fat or maintain low weight/fat represent a different category since they have increased requirements and a lower caloric intake.<sup>8,9</sup> As such, the B vitamins are higher in this formula. Additionally, the ActiveMV formula contains doses of antioxidants at the higher end of the optimal range. The ActiveMV dose for athletes is two pills daily, one in the morning with a meal and the other at night with a meal, to maintain the ideal nutrient levels in all tissues all day, every day.

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## Typical Use

- For all persons with an active lifestyle, 12-65 years of age, except those who are pregnant, trying to conceive, lactating or following a vegetarian/high carbohydrate diet
  - One tablet per day before or after main meal with a favorite beverage
- Active athletes and exercisers, two tablets per day before or after main meal with a favorite beverage

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 60
Amount Per Serving	% Daily Value	
Vitamin A (as Beta Carotene 4,000 IU and Acetate 500 IU)	4,500 IU	90%
Vitamin C (as Ascorbic acid)	450 mg	750%
Vitamin D (as Cholecalciferol)	600 IU	150%
Vitamin E (as D-Alpha Tocopheryl Succinate)	150 IU	500%
Vitamin K (as Phytonadione)	50 mcg	63%
Vitamin B1 (as Thiamine Mononitrate)	5 mg	333%
Vitamin B2 (as Riboflavin)	5 mg	294%
Niacin (as Niacinamide)	15 mg	75%
Vitamin B6 (as Pyridoxine HCl)	6 mg	300%
Folic Acid	100 mcg	25%
Vitamin B12 (as Cyanocobalamin)	15 mcg	250%
Biotin	150 mcg	50%
Iron (as Ferrous Fumarate)	5 mg	28%
Iodine (from Kelp)	25 mcg	17%
Magnesium (as Magnesium Oxide)	150 mg	38%
Zinc (as Zinc Citrate)	7.5 mg	50%
Selenium (as L-Selenomethionine)	50 mcg	71%
Copper (as Copper Gluconate)	500 mcg	25%
Chromium (as Chromium Picolinate)	50 mcg	42%

\*% Daily Value not established.  
**Other Ingredients:** Calcium phosphate, Sorbitol, Croscarmellose, Stearic acid (Vegetable source), Hydroxypropylmethylcellulose, Microcrystalline Cellulose, Magnesium stearate (Vegetable source), Povidone.

## Women'sMV™ Formula

The Women'sMV formula was created for women younger than 50 years of age who are not pregnant or trying to conceive.

### Rationale

This formula was designed with the specific needs of females<sup>52</sup> in mind by including slightly higher levels of magnesium, iron and folic acid and the proper extra nutrients for lactating women not needing the higher iron found in the PrenatalMV™ formula.

### Typical Use

- For use by women 13-50 years of age not using the ActiveMV Formula
- Non-pregnant females not trying to conceive
- One tablet per day before or after main meal with a favorite beverage

<b>Supplement Facts</b>	
Serving Size: 1 Tablet      Servings Per Container: 60	
Amount Per Serving	% Daily Value
Vitamin A (as Beta Carotene 5,000 IU and Acetate 1,000 IU)	6,000 IU 120%
Vitamin C (as Ascorbic acid)	300 mg 500%
Vitamin D (as Cholecalciferol)	1,000 IU 250%
Vitamin E (as D-Alpha Tocopheryl Succinate)	100 IU 333%
Vitamin K (as Phytonadione)	50 mcg 63%
Vitamin B1 (as Thiamine Mononitrate)	6 mg 400%
Vitamin B2 (as Riboflavin)	6 mg 353%
Niacin (as Niacinamide)	20 mg 100%
Vitamin B6 (as Pyridoxine HCl)	9 mg 450%
Folic Acid	400 mcg 100%
Vitamin B12 (as Cyanocobalmin)	12 mcg 200%
Biotin	100 mcg 33%
Pantothenic Acid (as Calcium Pantothenate)	15 mg 150%
Iron (as Ferrous Fumarate)	10 mg 56%
Iodine (from Kelp)	100 mcg 67%
Magnesium (as Magnesium Oxide)	100 mg 25%
Zinc (as Zinc Citrate)	12 mg 80%
Selenium (as L-Selenomethionine)	50 mcg 71%
Chromium (as Chromium Picollinate)	50 mcg 42%
* % Daily Value not established.	
<b>Other Ingredients:</b> Calcium phosphate, Croscarmellose, Stearic acid (vegetable source), Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source), Silica, Povidone.	

## Over50MV™ Formula

The Over50MV formula is for the general population over 50 years of age, and for athletes and intense exercisers over 65 years of age.

### Rationale

This formula considers the requirements of older individuals in helping to combat preventable diseases such as osteoporosis and heart disease.<sup>53,54</sup> It contains optimal doses of folate, B6 and B12 along with bone-building nutrients such as vitamin D, vitamin A (also beta carotene) and even vitamin K. This formula should be used with 1000 mg of calcium from food or supplements.

### Typical Use

- For the general population over 50 years of age
- Individuals using ActiveMV formula would switch to the Over50MV formula at age 65
- One tablet per day before or after main meal with a favorite beverage

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 60
Amount Per Serving		% Daily Value
Vitamin A	6,000 IU	120%
(as Beta Carotene 5,000 IU and Acetate 1,000 IU)		
Vitamin C (as Ascorbic acid)	400 mg	667%
Vitamin D (as Cholecalciferol)	1,000 IU	250%
Vitamin E (as D-Alpha Tocopheryl Succinate)	50 IU	167%
Vitamin K (as Phytonadione)	50 mcg	63%
Vitamin B1 (as Thiamine Mononitrate)	6 mg	400%
Vitamin B2 (as Riboflavin)	6 mg	353%
Niacin (as Niacinamide)	20 mg	100%
Vitamin B6 (as Pyridoxine HCl)	10 mg	500%
Folic Acid	400 mcg	100%
Vitamin B12 (as Cyanocobalmin)	100 mcg	1,667%
Biotin	100 mcg	33%
Pantothenic Acid (as Calcium Pantothenate)	10 mg	100%
Iron (as Ferrous Fumarate)	8 mg	44%
Iodine (from Kelp)	75 mcg	50%
Magnesium (as Magnesium Oxide)	100 mg	25%
Zinc (as Zinc Citrate)	15 mg	100%
Selenium (as L-Selenomethionine)	70 mcg	100%
Copper (as Copper Gluconate)	1 mg	50%
Chromium (as Chromium Picolinate)	100 mcg	83%
* % Daily Value not established.		
<b>Other Ingredients:</b> Croscarmellose, Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source), Silica, Povidone.		

## VegetarianMV™ Formula

The VegetarianMV formula is designed for those who avoid animal products or who eat a diet high in carbohydrates and/or who want nutrients not supplied from animal forms.

### Rationale

The nutrients typically lacking in vegetarian or high carbohydrate diets such as zinc, iron and B12 are boosted in this formula.<sup>55,56</sup> Folic acid is reduced in this formula because the fortification of folic acid in the food supply has resulted in a much greater intake in the US. Calcium is minimal in this formula to maximize the absorption of iron. The dotFIT SuperCalcium+™ formula is available and contains much larger amounts of calcium than could reasonably fit in a multivitamin pill for those who lack it in their diets.

### Typical Use

- For any male over 18 or non-pregnant female over 18 who is a vegetarian or who prefers a diet very high in carbohydrates
- One tablet per day before or after main meal with a favorite beverage

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 60
Amount Per Serving	% Daily Value*	
Vitamin A (as Beta Carotene)	10,000 IU	200%
Vitamin C (as Ascorbic acid)	200 mg	333%
Vitamin D (as Ergocalciferol)	1,000 IU	250%
Vitamin E (as D-Alpha Tocopheryl Succinate)	100 IU	333%
Vitamin K (as Phytonadione)	50 mcg	63%
Vitamin B1 (as Thiamine Mononitrate)	6 mg	400%
Vitamin B2 (as Riboflavin)	6 mg	353%
Niacin (as Niacinamide)	20 mg	100%
Vitamin B6 (as Pyridoxine HCl)	6 mg	300%
Folic Acid	200 mcg	50%
Vitamin B12 (as Cyanocobalamin)	15 mcg	250%
Biotin	50 mcg	17%
Pantothenic Acid (as Calcium Pantothenate)	10 mg	100%
Iron (as Iron Carbonyl)	15 mg	83%
Iodine (from Kelp)	50 mcg	33%
Magnesium (as Magnesium Oxide)	50 mg	13%
Zinc (as Zinc Citrate)	15 mg	100%
Selenium (as L-Selenomethionine)	50 mcg	71%
Copper (as Copper Gluconate)	1 mg	50%
Chromium (as Chromium Picolinate)	100 mcg	83%

\* % Daily Value not established.

**Other Ingredients:** Calcium phosphate, Croscarmellose, Microcrystalline Cellulose, Hydroxypropylmethylcellulose, Stearic acid (Vegetable source), Magnesium stearate (Vegetable source), Silica, Povidone.

## **Precautions**

dotFIT multivitamin and mineral formulas are considered safe for the general population at the proper dosage. Given the risk to benefit ratio, the long-term use of dotFIT multivitamin and mineral formulas is much safer than consuming the typical American diet without nutrient augmentation.<sup>2,4,5,6</sup>

## **Contraindications**

dotFIT multivitamin and mineral formulas are contraindicated in pregnancy and lactation. Pregnant women should use the dotFIT PrenatalMV™ formula. Lactating women should use the Women'sMV formula unless advised otherwise by a physician. The dotFIT multivitamin and mineral formulas are contraindicated for those with hemochromatosis (an inherited disease that leads to iron-overload, affecting 0.5 percent of the population) because of the iron content, and for anyone suffering adverse reactions to any of the supplement's ingredients. The vitamin E content in two tablets per day may be contraindicated for those individuals taking blood-thinning medication.<sup>57</sup> In all cases, consult with a physician. Smokers should stay below 66,000 IU of beta-carotene daily (the multivitamin formula contains less than 15,000 IU) until a dose can be established for them.

## **Adverse Reactions**

At the recommended doses adverse effects are highly unlikely.

## **Upper Limit/Toxicity**

See

Table 4 for a list of known ULs and LOAELs for nutrients in the dotFIT multivitamin and mineral formulas. No nutrient in these formulas is above the UL or LOAEL.



**Table 4:** Safe and Probable Optimal Range including Food Sources

Nutrient	Low – High	Upper Limit (UL)	LOAEL
Pre-formed Vitamin A <sup>1</sup>	0 IU - 10,000 IU	10,000 IU (3000 mcg)	21,645 IU
Beta Carotene <sup>2</sup>	10,000 IU - 25,000 IU	-	-
Vitamin D (D3)	400 IU – 1500 IU	2000 IU	3800 IU*
Vitamin E	100 IU – 800 IU	1,500 IU (1000 mg)	-
Vitamin K	60-120 mcg	-	-
Vitamin C	200 mg – 1000 mg	2,000 mg	3,000 mg
Vitamin B1	2 mg – 30 mg	-	-
Vitamin B2	5 mg – 30 mg	-	-
Vitamin B3 (niacinamide)	30 mg – 50 mg	35 mg	1000 mg
Vitamin B6	6 mg – 50 mg	100 mg	500 mg
Folic acid	400 mcg – 900 mcg	1,000 mcg	5,000 mcg
Vitamin B12	6 mcg – 50 mcg	-	-
Calcium <sup>5</sup>	1200 mg – 2000 mg	2,500 mg	5,000 mg
Magnesium <sup>5</sup>	420 mg – 600 mg	350 mg <sup>4</sup>	350 mg
Iodine	150 mcg - ?	1,100 mcg	1,700 mcg
Iron <sup>5</sup>	15 mg – 25 mg	45 mg	70 mg
Zinc <sup>3</sup>	15 mg – 30 mg	40 mg	60 mg
Copper	2 mg – 4 mg	10 mg	-
Manganese	2 mg – 5 mg	11 mg	15 mg

<sup>1</sup> Supplemental amount can be zero if daily intake of beta carotene is within the safe and optimal range.

<sup>2</sup> Smokers, those likely to develop, or those that already have lung cancer, should avoid beta carotene supplementation.

\* Currently being revisited.

<sup>3</sup> Upper range amount is from supplements only.

<sup>4</sup> From supplements only.

<sup>5</sup> Supplemental amounts should be close to the low numbers shown.

Potassium	2000 mg -?	-	-
Selenium <sup>3</sup>	200 mcg – 250 mcg	400 mcg	910 mcg
Chromium	200 mcg – 1000 mcg	-	-

## Summary

### Purpose

- dotFIT™ formulas can be used by EVERYONE unless instructed otherwise for medical reasons
- Based on the sophisticated controlled delivery systems and progressive formulations, dotFIT multivitamin and mineral formulas would be considered today’s ideal formulation, especially when compared to popular common multivitamin products that must compete on price rather than efficacy

### Unique Features

- All products are regularly updated with the most recent recommendations from the Institute of Medicine (IOM) and the industry’s leading experts i.e. progressive evidence-based formulations
- All formulas are part of the dotFIT program for safe and ideal compatibility with all products when following program supplement recommendations
- Different formulas to meet the unique needs of different populations
- Formula and use follow strict scientific research criteria
- The nutrients are in their proper forms, ratios and strengths to help maintain a safe and optimal range 24 hours/day
- Uses the most sophisticated controlled-release delivery systems to ensure ideal nutrient levels and prevent tissue over-saturation and losses
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

# PrenatalMV™

## Goal

The PrenatalMV formula is designed for women who are pregnant or trying to conceive. It has been updated to include the latest recommendations of the National Academy of Sciences for pregnant women. After childbirth, many women no longer need the high iron of a prenatal formula and can switch back to the dotFIT Women'sMV™ formula or ActiveMV™ formula.

Proper nutrition is vital to a healthy pregnancy and often poor diet is the main cause of multiple micronutrient deficiencies. Not only does it affect the status of the fetus, but the mother as well. Inadequate nutrient intake can cause complications, deformities in the child, and even death.<sup>1,2</sup> The nutritional status of the mother must be sufficient to fulfill the needs of her baby and to maintain her own health. Iron, folic acid and calcium are three of the key nutrients often deficient in women's diets.<sup>3,4,5,6,7,8</sup> This formula is specially designed to meet the increased needs of a woman who plans to conceive and give birth.

## Rationale

Iron is needed during pregnancy because of the significant increase in the mother's blood supply. Women of childbearing age are at great risk for iron deficiency even before conception, due to an inadequate diet and menstruation. Several studies show that low iron stores at conception are a strong predictor of maternal iron status and risk of anemia later in pregnancy.<sup>9,10,11</sup> Once pregnancy is in progress, it is difficult to replenish depleted iron stores, making prenatal micronutrient supplementation critical before conception. Low maternal iron stores are directly correlated with pre-term delivery, low birth weight, maternal infection and anemia in the child later on in life.<sup>9,12</sup>

During the last trimester of pregnancy, iron demand from mother and fetus is the greatest.<sup>13</sup> The fetus draws iron from the mother to create its own stores for times when milk, a low-iron food, will be its sole form of nourishment.<sup>12</sup> Furthermore, adequate iron stores are crucial due to the loss of blood during delivery. The RDA recommendation for iron during pregnancy increases from 18 mg to 27 mg per day, which normally cannot be obtained from food alone.

Folic acid (folate) is a B vitamin required for the manufacture of blood cells, the genetic material DNA and RNA, and proper cell division.<sup>14,15</sup> This nutrient is especially important during the first trimester as a deficiency in this vitamin is associated with an increase in neural tube defects and other malformations, which form early in the fetus.<sup>15</sup> Extensive research has found that adequate intake of folic acid leads to fewer malformations, especially neural tube defects (approximately an 80% reduction<sup>16</sup>).<sup>15,17,18</sup> According to the CDC, folate and folic acid supplementation among women of reproductive age is still lacking, especially in specific ethnic groups.<sup>19,20</sup>

The RDA for folate increases from 400 to 600 mcg per day during pregnancy. Note that this recommendation is based on folic acid from supplements and fortified foods and assumes that a female is consuming at least 400 mcg per day prior to confirmation of pregnancy.

Calcium is a mineral that is crucial for all women, but especially for pregnant and lactating women. During pregnancy, calcium stores are greatly mobilized and the fetus uses calcium for skeletal bone mineralization.<sup>15</sup> Low calcium consumption during this time may lead to osteoporosis later in life. Adequate calcium intake has been related to a reduced risk for pre-term delivery, low birth weight, and hypertensive disorders during pregnancy.<sup>21,22,23,24</sup> Women who are not meeting their calcium needs through diet should use the dotFIT SuperCalcium+™ in conjunction with the PrenatalIMV™.

The RDA for calcium is 1000 mg per day, which does not increase during pregnancy because absorption increases during this time. However, most individuals consume less than the RDA.<sup>22,23</sup>

Vitamin A is a nutrient that is of much concern during pregnancy.<sup>24,25</sup> Too much has been linked to malformations in the fetus.<sup>26</sup> Beta-carotene supplements have not been reported to increase the risk of birth defects<sup>27</sup> and therefore this formula uses a safe amount in the beta-carotene form. Beta-carotene is converted to Vitamin A only as needed by the body, ensuring that toxicity is not a factor.

The RDA for Vitamin A is 700 mcg (2310 IU) per day and increases to 770 (2541 IU) and 1,300 mcg (4250 IU) per day during pregnancy and lactation respectively.

Other nutrients are provided for adequate nutrition, taking into consideration a woman's increased needs. Women may need more vitamin D to better absorb calcium. B vitamins are also important for their role in energy production and controlling homocysteine levels which are associated with adverse pregnancy outcomes.<sup>27</sup>

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 30
<b>Amount Per Serving</b>	<b>% Daily Value</b>	
Vitamin A (as Beta Carotene)	5,000 IU	100%
Vitamin C (as Ascorbic Acid)	250 mg	417%
Vitamin D (as Cholecalciferol)	600 IU	150%
Vitamin E (as d-Alpha Tocopheryl Succinate)	100 IU	333%
Vitamin K (as Phytonadione)	50 mcg	63%
Vitamin B1 (as Thiamine Mononitrate)	4 mg	267%
Vitamin B2 (as Riboflavin)	4 mg	235%
Niacin (as Niacinamide)	20 mg	100%
Vitamin B6 (as Pyridoxine HCl)	8 mg	400%
Folic Acid	600 mcg	150%
Vitamin B12 (as Cyanocobalamin)	12 mcg	200%
Biotin	50 mcg	17%
Pantothenic Acid (as Calcium Pantothenate)	15 mg	150%
Iron (as Ferrous Fumarate)	27 mg	150%
Iodine (as Potassium Iodide)	150 mcg	100%
Magnesium (as Magnesium Oxide)	100 mg	25%
Zinc (as Zinc Citrate)	10 mg	67%
Selenium (as L-Selenomethionine)	100 mcg	143%
Copper (as Copper Gluconate)	0.5 mg	25%
Chromium (as Chromium Picolinate)	50 mcg	42%

\* %Daily Value not established.  
 Other Ingredients: Sorbitol, calcium phosphate, microcrystalline cellulose, xanthan gum, titanium dioxide, hydroxypropylmethylcellulose, stearic acid (vegetable source), magnesium stearate (vegetable source), silica.

## Typical Use

- Females preparing for pregnancy and who are pregnant
- Lactating females can use Women'sMV™ or ActiveMV™ formulas (due to iron intake) unless advised otherwise by a physician
- Use in lieu of a multivitamin and mineral and SuperiorAntioxidant™ supplement
- Continue with calcium supplementation as needed
- Take one tablet with breakfast as a nutritional supplement

## Precautions

The dotFIT PrenatalMV™ is considered safe for the healthy pregnant woman at the proper dosage. Given the risk to benefit, the long-term use of this formula is much safer for the baby and mother than consuming the typical American diet without nutrient augmentation especially during pregnancy (see Appendix 1 for further discussion).<sup>28,29,30</sup>

## Contraindications

Pregnant or females trying to conceive should use the dotFIT PrenatalMV formula. dotFIT multivitamin and mineral formulas are contraindicated in those with hemochromatosis, iron-loading anemias, thalassemia and sideroblastic anemia due to the iron content and for anyone suffering adverse reactions to any of the ingredients. The NOAEL for iron is 65 mg per day, which is considered safe for most individuals. (UL is 45 mg during pregnancy.)

## Adverse Reactions

There should be few side effects in healthy users at the recommended doses.

## Upper Limit/Toxicity

No nutrient in this formula is above the UL or LOAEL.

## Summary

### Purpose

- Women preparing for pregnancy or who are pregnant

- Lactating females can use Women'sMV™ or ActiveMV™ formulas (due to iron intake) unless advised otherwise by a physician
- Use in lieu of a multivitamin and mineral and antioxidant supplement

## Unique Features

- The dotFIT PrenatalMV™ follows strict scientific research criteria
- The nutrients are in their proper forms, ratios and strengths to maintain a safe and optimal range 24 hours/day
- Uses the most sophisticated controlled-release delivery systems to ensure ideal nutrient levels and prevent tissue over-saturation and losses
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

## KidsMV™

### Goal

The goal of the KidsMV formula is to provide the nutrients a growing child needs and often does not get in sufficient amounts due to myriad factors such as poor food choices, lack of interest in certain foods or food groups and picky eating behavior. There are windows of opportunity for intellectual and physical growth from infancy through adolescence. A child whose diet is not nutritionally complete during these critical periods will not be able to compensate for the loss at another time.

### Rationale

Children generally need more nutrient-dense foods in their diets due to smaller amounts of food consumed at meals.<sup>1,2</sup> A child's diet may lack essential nutrients for a number of reasons. For example there are very few dietary sources of Vitamin D other than fatty fish and liver, which are uncommon in a young child's diet.<sup>3</sup> Not surprisingly, children tend to avoid nutritious foods.<sup>4,5,6,7,8,9,10,11</sup> They commonly gravitate towards empty-calorie foods, such as cookies, crackers and candies.<sup>12,13</sup> Eating this type of food generally depresses a child's appetite for healthier foods. Pediatricians may advise parents of poor eaters that their children will eat when they're hungry. This advice may alleviate a parent's concern, but it could result in an undernourished child. Children who do not receive proper levels of all nutrients do not have the potential to develop and function optimally. Although vitamin deficiency is uncommon in the United States, insufficiency or marginal deficiency is widespread<sup>14</sup> which could have profound health consequences later in life.<sup>15</sup>

Children with substandard daily diets find it difficult to produce academic performance equal to their counterparts who consume diets that come closer to the suggested RDA's. In a well-designed study by Schoenthaler et al., children using a multivitamin and mineral supplement (MVM) who raised their nutrient intake to the equivalent of a well-balanced diet increased their I.Q. compared to the placebo group by an average of two-point-five points. In one-fifth of the participants, the MVM raised their I.Q. 16 points, presumably because this group of children ate a poorer diet.<sup>16</sup> More recently, research suggests that MVM supplementation improves brain function (spatial working memory) in children.<sup>3,17,18</sup>

A daily multivitamin and mineral formula helps children receive the nutrients their diet may lack. Giving a child a multivitamin does not decrease the importance of eating healthy foods and establishing good eating patterns, nor can a multivitamin and mineral formula replace the nutritional value of food, but it can supplement a diet lacking essential nutrients.

The American Academy of Pediatrics now recommends that infants, children and adolescents obtain 400 international units (IU) of vitamin D every day, which is double the previous recommendation.<sup>15</sup> This guideline is based on recent evidence that children and adolescents may not be getting enough of this vitamin, and the occurrence of extreme vitamin D deficiency (rickets) among infants and adolescents in the United States is of particular concern. The safety of giving infants and children 400 IU of vitamin D per day has also been established, and research indicates that getting enough calcium and vitamin D throughout childhood reduces the risk of osteoporosis and other diseases later in life.

DRAFT

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 30
<b>Amount Per Serving</b>	<b>% Daily Value</b>	
Vitamin A	2,500 IU	50%
<i>(as Beta Carotene 2,000 IU and Palmitate 500 IU)</i>		
Vitamin C (as Ascorbic Acid)	50 mg	83%
Vitamin D (as Cholecalciferol)	250 IU	63%
Vitamin E (as d-Alpha Tocopheryl Succinate)	20 IU	67%
Vitamin K (as Phytonadione)	30 mcg	38%
Vitamin B1 (as Thiamine Mononitrate)	1 mg	67%
Vitamin B2 (as Riboflavin)	1 mg	59%
Niacin (as Niacinamide)	6 mg	30%
Vitamin B6 (as Pyridoxine HCl)	1 mg	50%
Folic Acid	100 mcg	25%
Vitamin B12 (as Cyanocobalamin)	3 mcg	50%
Biotin	10 mcg	3%
Pantothenic Acid (as Calcium Pantothenate)	2 mg	20%
Iron (as Ferrous Fumarate)	5 mg	28%
Iodine (as Potassium Iodide)	50 mcg	33%
Magnesium (as Magnesium Oxide)	20 mg	5%
Zinc (as Zinc Oxide)	5 mg	33%
Selenium (as L-Selenomethionine)	20 mcg	29%

\* %Daily Value not established.

Other Ingredients: Sucrose, fructose, natural flavor, stearic acid (vegetable source), beet juice concentrate (natural red color), magnesium stearate (vegetable source), PureLo® natural sweetener (Luo Han Guo fruit).

## Typical Use

- All children ages two to 11 unless a specific medical condition prohibits the proper intake of any nutrient contained in the formula
- Ages two to four take one daily
- Ages five to 11 take two daily
- Ages 12 to 17 use one adult ActiveMV™ multivitamin and mineral tablet

## Precautions

The dotFIT KidsMV™ is considered safe for healthy users at the proper dosage. Given the ratio of risk to benefit, the long-term use of this formula is much safer than consuming the typical American diet without nutrient augmentation.<sup>19,20</sup>

## Contraindications

The dotFIT KidsMV is contraindicated for those with hemochromatosis because of the iron content. The KidsMV is also contraindicated for anyone suffering adverse reactions to any of its ingredients. Consult with a physician for drug/nutrient interactions.

## Adverse Reactions

At the recommended dosages side effects would be highly unlikely.

## Upper Limit/Toxicity

No nutrient in these formulas is above the UL or LOAEL for children.

## Summary

### Purpose

- Replaces all multivitamin and mineral formulas
- Specific formulas to complement an individual's food intake in an attempt to satisfy nutritional requirements and increase cellular efficiency without adding calories
- Maintain a safe, optimal nutrient intake 24 hours per day
- Nutritional insurance from normal dietary shortcomings due to food preferences, nutrient availability and inability to define the perfect diet



## Unique Features

- Formula and use follow strict and updated scientific research criteria for all youth ages
- Uniquely formulated to maintain a safe and optimal range of nutrients when combined with other dotFIT™ products
- The nutrients are in their proper forms, ratios and strengths to complement food intake and help maintain a safe and optimal range for 24 hours per day
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

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## dotFIT™ SuperCalcium+™

### Goal

According to the National Center for Health Statistics (NCHS), most Americans do not meet the Adequate Intake Values of calcium<sup>1</sup> or the current higher recommendation of vitamin D.<sup>2</sup> Female adolescents have the lowest intake overall.<sup>2</sup> Natural food sources of Vitamin D are scarce, and dependence on the sun's rays present several problems e.g. skin color, fears of skin cancer, sunburns, etc.<sup>3,4,5,6,7,8</sup> Less than adequate intake of these essential micronutrients may lead to osteoporosis,<sup>9,10</sup> hip fractures, falls in the elderly<sup>11</sup> and specific cancers.<sup>12,13</sup> Supplementation of calcium in combination with vitamin D can supply the proper amounts of these essential nutrients to help prevent and/or slow the progression of these conditions.<sup>14,15</sup> The objective of Super Calcium+ is to supply the body with specific amounts of calcium in various salt forms for maximum absorption along with vitamin D and magnesium for improved utilization in order to meet the body's established needs that are generally not met through diet alone.

### Rationale

**Calcium:** The skeletal system accounts for 20 percent of the adult human body's weight and serves as a major reservoir for calcium. As we age, the calcium content of bone begins to decline, increasing the likelihood of fractures. When this critical "breaking point" is reached, the condition is known as osteoporosis. This disease affects millions of Americans each year, causing approximately one-point-five million bone fractures (over 250,000 involve the hip) at a cost of \$12-18 billion.<sup>10</sup> Fall-related injuries are a leading cause of morbidity and mortality in older adults.<sup>9</sup> Supplying adequate amounts of calcium as we age may minimize the loss of this important mineral and prevent loss of bone mass.<sup>9,10,15</sup> Besides its function in bone, calcium is required for such essential functions as nerve conduction, muscle contraction and blood clotting.<sup>16</sup>

**Vitamin D:** Recently there has been a steady stream of research on the benefits of vitamin D. Solid evidence shows that it is just as important as calcium in building and maintaining strong bones by increasing the absorption of calcium.<sup>6,17</sup> Many other tissues in the body have receptor sites for vitamin D, providing proof that it confers other important health benefits.<sup>6</sup> It plays a role in building muscle strength which may protect elderly people from falling and bone fractures.<sup>18,19,20,21,22,23</sup> In 2005, it was concluded in the *American Journal of Public Health* that vitamin D substantially reduced the risk of for breast, colon, prostate, and ovarian cancer.<sup>24</sup>

**Calcium and Vitamin D:** Scientific research has found an inverse relationship between calcium and vitamin D intake and breast cancer in women.<sup>25,26,27,28</sup> Calcium by itself may have a protective effect against colon cancer.<sup>29,30</sup> Although the exact mechanism behind calcium and vitamin D's cancer-fighting

properties has yet to be discovered, it would be beneficial to maintain adequate levels of these two micronutrients.

The significant departure in adulthood from the use of dairy products (especially milk) and the warnings on sun exposure to all have significantly reduced the ability of the U.S. population to acquire adequate levels of calcium and vitamin D without supplementation.

Magnesium is necessary for the secretion of parathyroid hormone (PTH).<sup>31</sup> This hormone aids in calcium utilization.<sup>31</sup> The average American diet lacks magnesium; magnesium is therefore included in this formula.<sup>32</sup>

Given the overall positive findings, including the dramatically increased recommendations of vitamin D, maintaining adequate intakes of calcium and vitamin D throughout life may be a useful strategy for the prevention and management of osteoporosis, bone fractures, falls in the elderly and specific cancers.

<b>Supplement Facts</b>		
Serving Size: 2 Tablets		Servings Per Container: 60
<b>Amount Per Serving</b>	<b>% Daily Value</b>	
Vitamin D (as Cholecalciferol)	400 IU	100%
Calcium (as Carbonate, Citrate, Fumarate, Succinate, Gluconate, Aspartate, Ascorbate, Amino Acid Chelate, Ketoglutarate)	1,000 mg	100%
Magnesium (as Oxide, Citrate, Fumarate, Succinate, Gluconate, Aspartate, Ascorbate, Amino Acid Chelate, Ketoglutarate)	500 mg	125%
* % Daily Value not established.		
<b>Other Ingredients:</b> Croscarmellose, Stearic acid (Vegetable source), Titanium Dioxide, Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).		

### Typical Use

- Anyone not meeting the recommended intakes of calcium and vitamin D through diet or adequate sun exposure
- As a dietary supplement, take one or two tablets daily with meals to meet calcium and vitamin D requirements as previously stated

## Precautions

Chronic calcium supplementation is considered safe at doses up to 2500 mg/day.<sup>33</sup> Currently the upper limit for vitamin D is 2000IU due to toxicities that can occur when taken in higher doses. Large doses of calcium and iron can compete for absorption, resulting in a slightly lower absorption of iron.<sup>34</sup>

## Contraindications

The use of calcium supplements by those with a history of kidney stones has varied results. Some individuals with a history of stones will benefit from the supplementation of calcium with food as it aids in the removal of oxalates. However, those with absorptive hypercalciuria may have an increased risk of stone formation.<sup>35,36</sup> Consult with a physician when a history of kidney stones exists, or when taking these drugs: biphosphonates,<sup>37</sup> hydrogen blockers, levothyroxine,<sup>37</sup> proton pump inhibitors, quinolones<sup>38</sup> and tetracyclines.<sup>39</sup>

## Adverse Reactions

Side effects from calcium supplementation are rare, mild, and usually limited to gas, bloating and constipation.<sup>39</sup>

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## Upper Limit/Toxicity

The National Academy of Sciences (NAS) Food and Nutrition Board (FNB) has set the upper limit for chronic calcium ingestion at 2500 mg/day and vitamin D at 2000 IU/day. The Lowest Observed Adverse Effect Level (LOAEL) is 5000 mg/day for calcium and 3800 IU/day for vitamin D.

## Summary

### Purpose

- Based on the current scientific data and the use of various salt forms of calcium found in the formula, dotFIT™ Super Calcium+™ would be considered an ideal choice, especially when compared to other common calcium products that must compete on price rather than efficacy
- Super Calcium+ is one component in the dotFIT longevity program, which is made available to all program users and will appear on the website

## Unique Features

- Contains calcium, magnesium and vitamin D, which have been shown to be crucial for proper calcium utilization
- Calcium and magnesium are prepared in mineral transporters including various salt forms designed to optimize delivery and utilization
- This formula considers use of other dotFIT products in order to allow the user to maintain a safe and optimal range of total nutrient intake
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

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## dotFIT™ SuperiorAntioxidant™

### Goal

Excess free radicals are caused by normal biological processes, exercise, and the environment and have been linked to the aging process. This formula is used to increase the intake of nutrients that have been shown to help contain free radical production. The goal of reducing free radicals is to stave off the cellular damage they cause and potentially reduce the risk of chronic or age-related diseases. This includes improving the maintenance of eye health, protecting against heart disease, cognitive decline and certain cancers.

### Rationale

**Carotenes:** Four of the antioxidants in this formula belong to a class of compounds called carotenes. Carotenes are plant pigments that result in the yellow, orange and red colors of fruits and vegetables. Only 34 of the 600 known carotenoids have been found in human serum. Several carotenoids can be converted by the body to vitamin A. These carotenoids;  $\beta$ -carotene,  $\alpha$ -carotene and  $\beta$ -cryptoxanthin are called provitamin A carotenoids. Carotenoids that do not convert to vitamin A, such as lutein, lycopene and zeaxanthin, are called non-provitamin A carotenoids. These six carotenoids are the most abundant in the American diet. Carotenoid absorption requires the presence of fat in a meal. As little as three to five grams of fat in a meal appears sufficient to ensure carotenoid absorption.<sup>1</sup> Because they do not need to be released from the plant matrix, carotenoids supplements are more efficiently absorbed than carotenoids in foods. Carotenoids facilitate intercellular communication by increasing the expression of the gene encoding a connexin protein.<sup>2</sup> This type of intercellular communication is important for maintaining cells in a differentiated state and is often lost in cancer cells.

**Alpha ( $\alpha$ ) Carotene:**  $\alpha$ -carotene is a fat-soluble compound present in cell membranes. It has the ability to quench singlet oxygen and other free radicals. Recently, the intake of  $\alpha$ -carotene has been associated with a lower risk for lung cancer<sup>3</sup> and may offer protection against colorectal and prostate cancers<sup>4,5</sup> coronary artery disease<sup>6,7,8</sup> and ischemic stroke. Alpha carotene can also inhibit the oxidation of fats (lipid peroxidation) under certain conditions.<sup>9</sup>

**Lutein/Zeaxanthin:** Lutein and Zeaxanthin are similar structures. The difference lies in the orientation of a single bond, making them geometric isomers. They are the only carotenoids found in the human eye, predominately in the macula of the retina.<sup>10</sup> The macula is responsible for central vision and acuity. Both compounds serve as blue light and near-ultraviolet radiation filters, protecting underlying ocular tissues from damage. Both lutein and zeaxanthin effectively quench free radicals.<sup>11,12</sup>

Clinical trials clearly show that supplementation with lutein and/or zeaxanthin increases macular pigmentation.<sup>10,13,14,15,16,17</sup> Lutein and zeaxanthin may protect against eye diseases such as cataract formation and age-related macular degeneration (AMD),<sup>13,17,18,19,20</sup> the leading cause of vision loss in the United States.<sup>20</sup>

**Lycopene:** Lycopene is the most effective carotenoid at quenching the free radical singlet oxygen. Lycopene gives tomatoes their red color. Lycopene is more bioavailable from processed tomato products such as ketchup, tomato juice and pizza sauce than the fresh, whole food. The intake of lycopene is associated with a significantly lower risk for prostate cancer, a leading cause of cancer death in the United States.<sup>21,22</sup> Lycopene may also protect against heart disease<sup>23,24,25,26,27</sup> and other cancers.<sup>28,29</sup> The intake of lycopene from supplements increases the level of lycopene in humans.<sup>30</sup> Conclusions from a growing collection of placebo-controlled trials suggest that consumption of lycopene (either as a dietary supplement or in the form of processed tomatoes) can reduce DNA damage and may have beneficial effects on prostate cancer.<sup>31,32</sup>

**Coenzyme Q-10:** Coenzyme Q-10 (CoQ-10) is part of the ubiquinone family and is involved in energy production in the electron transport chain. It is a fat-soluble substance, providing protection for cell membranes against oxidation. CoQ-10 also prevents the oxidation of LDL cholesterol,<sup>33,34,35,36</sup> which is thought to contribute to the formation of atherosclerosis.<sup>37</sup> Therefore, CoQ-10 may support cardiovascular health.<sup>38,39</sup> In humans, CoQ-10 levels decrease with age. Recent research shows that CoQ-10 has the ability to reduce fatigue in endurance activity as well as reduce markers of muscle damage from intense exercise.

**$\alpha$ -Lipoic acid:**  $\alpha$ -Lipoic acid is a part of energy producing cycles (enzyme systems) in the body and is a “universal antioxidant.” It scavenges the major free radicals: hydrogen peroxide, singlet oxygen, hydroxyl radical, nitric oxide radical, hypochlorous acid, and peroxynitrite. It can also regenerate other antioxidants (vitamins C and E) in the body. It is therefore protective against oxidative damage<sup>40,41</sup> and may play a role in disease prevention.<sup>42</sup>  $\alpha$ -lipoic acid is being extensively researched for several disease states including diabetic peripheral neuropathy, heart disease and memory loss reduction.

**Optiberry® Mix:** OptiBerry is a standardized, multiple berry anthocyanin extract formulated and tested for optimum safety, bioavailability, antioxidant and anti-angiogenic (the ability to reduce unwanted growth of blood vessels, which may lead to varicose veins and tumor formation) activity. OptiBerry® contains a unique, proprietary blend of wild blueberry, strawberry, cranberry, wild bilberry, elderberry and raspberry extracts (patent-pending), which are known for their health-promoting properties due to their high content of anthocyanins.<sup>43</sup> Anthocyanins also help maintain DNA integrity, serve as anti-inflammatory and antimutagenic agents,<sup>44</sup> and provide cardioprotection by maintaining vascular permeability.<sup>45</sup> OptiBerry® is the result of extensive scientific research, which methodically evaluated key functional parameters, including ORAC (antioxidant activity), VEGF (anti-angiogenic activity), bioavailability and safety of numerous individual berry extracts.

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 30
<b>Amount Per Serving</b>	<b>% Daily Value*</b>	
D. Salina natural mixed carotenoids	1.5 mg	*
Lutein	6 mg	*
Lycopene	10 mg	*
Zeaxanthin (from Marigold flowers)	4 mg	*
Coenzyme Q10 (CoQ-10)	100 mg	*
Alpha Lipoic Acid	200 mg	*
OptiBerry® (from Wild blueberry, Strawberry Cranberry, Wild bilberry, Elderberry, Raspberry)	30 mg	*

\* % Daily Value not established.

**Other Ingredients:** Dicalcium phosphate, Microcrystalline Cellulose, Croscarmellose, Stearic acid (Vegetable source), Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).

### Typical Use

- Everyone, exercisers and non-exercisers, interested in reducing the ravages of free radical damage and optimal health and functioning and reducing the risk of chronic disease such as cancers and heart disease
- Intense exercisers to reduce the increased free radical production and damage associated with intense and prolonged training bouts
- One tablet per day before or after main meal with a favorite beverage
- Can be combined with a dotFIT™ multivitamin

### Precautions

The dotFIT SuperiorAntioxidant™ is considered safe for the general population at the proper dosage in healthy users. Given the ratio of risk to benefit, the long-term use of a dotFIT multivitamin with the SuperiorAntioxidant is much safer than consuming the typical American diet without nutrient augmentation.<sup>46,47,48,49,50</sup>

**CoQ10:** Consult a physician if taking warfarin and/or other blood thinning medications. Individuals with cancer should consult their physician before taking the dotFIT antioxidant formula as high dosages of CoQ-10 decrease the effectiveness of radiation therapy in mice.<sup>51</sup> CoQ-10 has been thought to alter glycemic control and insulin requirements in diabetic individuals; however, CoQ-10 supplementation



does not appear to alter glycemic control or insulin requirements.<sup>52,53</sup> In either case, diabetics should consult their physician before using the SuperiorAntioxidant.

**α-lipoic acid:** Has been well-tolerated in clinical studies lasting from four months to two years at the suggested dose of one to three tablets per day (200 to 600 mg/day).<sup>54,55,56</sup> Studies of lipoic acid supplementation in people with conditions like Type II diabetes and peripheral arterial disease have reported potential minor side effects such as tingling in legs and feet and mild stomach queasiness. However, it was difficult to know if this was caused by the supplement or the condition.<sup>57</sup>

### **Contraindications**

The dotFIT SuperiorAntioxidant™ formula is contraindicated in pregnancy and lactation and for anyone suffering adverse reactions to any of the ingredients. Pregnant or lactating females should use only the dotFIT PrenatalMV.

### **Adverse Reactions**

There should be no serious side effects in healthy users at the recommended doses.

**α-lipoic acid:** Side effects are usually not seen unless dosage exceeds 600 mg/day. Reported reactions include headache, skin rash and stomach upset.<sup>58,59</sup>

**Lutein/zeaxanthin :** None reported.

**Lycopene:** None reported.

**CoQ-10:** Symptoms of gastrointestinal distress have been reported with dosages of 200 mg or more, which is unlikely to occur at the present dose of 30 mg/day.

### **Upper Limit/Toxicity**

The National Academy of Sciences has not set an upper limit (UL) for any of the ingredients contained in the dotFIT SuperiorAntioxidant formula.

**α-lipoic acid:** No upper limit has been established for human use. A two-year study of laboratory rats reported a no-observed-adverse-effect level (NOAEL) of 60 mg per kilogram body weight.<sup>60</sup> The dose in the dotFIT SuperiorAntioxidant is less than one-tenth of this dose.

**Lutein/zeaxanthin :** UL data is not available at this time. Human clinical trials have used doses up to 40 mg/day without any adverse or toxicological effects.<sup>50</sup> An upper limit has yet to be established.

**Lycopene:** There have been no reports of adverse or toxicological effects with doses as high as 150 mg/day.<sup>50</sup> An upper limit has yet to be established.

**CoQ-10:** Evidence from randomized human clinical trials indicates that the UL for CoQ-10 is 1200 mg. There have been no reports of toxicity in studies lasting up to 30 months.<sup>61</sup>

**OptiBerry®:** Acute oral LD (50) of OptiBerry® was greater than 5 g/kg in rats. No human data is available at this time.<sup>44</sup>

## Summary

### Purpose

- Intense, prolonged exercise, normal biological processes, etc., can increase free radical production and damage. The goal of the dotFIT™ SuperiorAntioxidant™ is to reduce free radical damage and optimize health and functioning while reducing the risk of chronic disease such as cancers and heart disease
- A complement to the dotFIT multivitamin and mineral formulas
- The dotFIT SuperiorAntioxidant is one component of the dotFIT longevity program which is made available to all program users and appears on the website

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### Unique Features

- Contains only the most effective researched antioxidants in their proper amounts
- Accurately complements the dotFIT multivitamin formulas
- Ingredients are prepared in a controlled-release delivery system
- Uses the OptiBerry® blend which is clinically proven to have superior antioxidant activity
- This formula considers use of other dotFIT products to help maintain a safe and optimal range of total nutrient intake
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

# dotFIT™ JointFlexibilityPlus™

## Goal

Cartilage in joints is slowly lost with age (most noticeably in our 50s and 60s) or injury. Because cartilage is used as a cushion between bone joints, its loss causes friction, pain and stiffness. Glucosamine and chondroitin are natural substrates found in and around the cells of cartilage that provide lubrication, retain water around the joint and delay structural degeneration of joint tissue. JointFlexibilityPlus (JFP) is designed to supply glucosamine and chondroitin sulfate in the forms and amounts used in published research to support healthy joint tissue and function.<sup>1,2,3,4,5,6,7,8,9</sup>

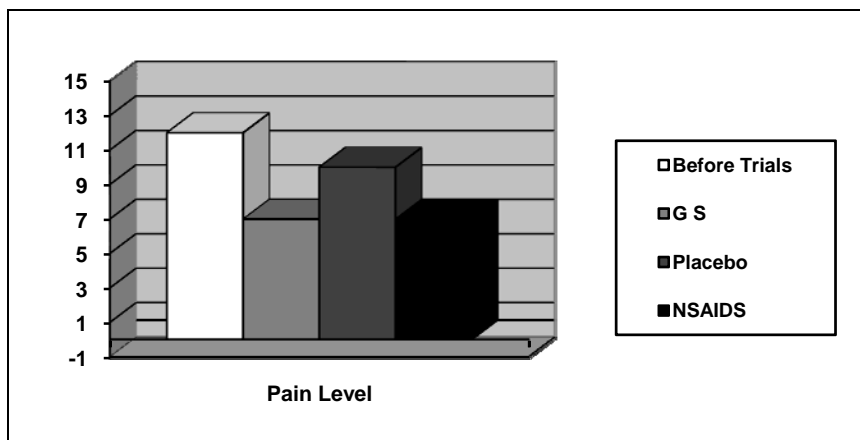
## Rationale

Recently, the Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT) study has shown that a subgroup of patients with moderate to severe osteoarthritis (OA) found significant pain relief with the combined compounds.<sup>10</sup>

**Glucosamine** is a necessary substance in the maintenance of healthy joints. Glucosamine is required for the synthesis of glycoproteins, glycolipids, and glycosaminoglycans (also known as mucopolysaccharides). These carbohydrate-containing compounds are found in tendons, ligaments, cartilage, and synovial fluid. Glucosamine stimulates metabolism of chondrocytes in the articular cartilage and synovial cells in the synovial tissues. Glucosamine is also used in the synthesis of proteoglycans in the joints. Proteoglycans attract water to the joint and provide essential lubrication.<sup>11</sup>

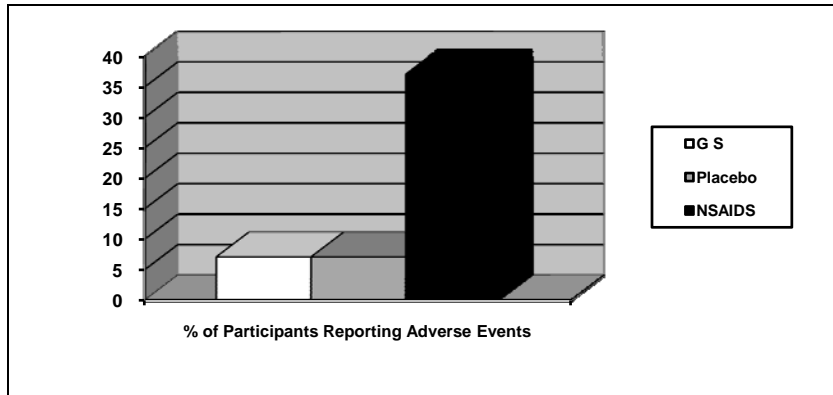
Several studies have shown that glucosamine lessens symptoms of joint pain with no side effects (Figure 1).

**Figure 1:** The basic results from several clinical trials comparing NSAIDs, placebo and glucosamine sulfate for pain control.<sup>9</sup>



Many studies compare glucosamine to ibuprofen, a non-steroidal anti-inflammatory (NSAID) which is commonly used to treat pain.<sup>5,9,12,13</sup> It was found that subjects' symptoms were alleviated by both treatments equally, but that the glucosamine group had fewer complaints of gastrointestinal distress (see Figure 2). In addition, glucosamine sulfate will not hasten the degradation of cartilage like NSAIDs and may delay its degradation. The exact mechanism of how it delays the breakdown of cartilage tissue is unknown at this time.

**Figure 2:** Adverse event data from three clinical trials comparing NSAIDs to glucosamine sulfate.<sup>9</sup>



**Chondroitin sulfate** is a necessary substrate for cartilage metabolism and assists in maintaining joint viscosity. In vitro studies show that chondroitin also inhibits enzymes (leukocyte elastase) that degrade cartilage.<sup>14</sup>

<b>Supplement Facts</b>	
Serving Size: 1 Tablet	Servings Per Container: 90
<b>Amount Per Serving</b>	<b>% Daily Value**</b>
Glucosamine Sulfate (as 2KCl)	500 mg *
Chondroitin Sulfate	400 mg *

\*% Daily Value not established.

\*\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

**Other Ingredients:** Calcium carbonate, Croscarmellose, Stearic acid (Vegetable source), Silicon dioxide, Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).

## Typical Use

- Individuals concerned with joint and cartilage health
- For overuse or age-related joint discomfort
- Take three tablets daily, one with each of three meals and 8 oz. of a favorite beverage. Be sure to take the recommended daily multivitamin when using JointFlexibilityPlus™

## Precautions

Glucosamine and chondroitin are generally considered safe at the recommended doses.<sup>15,16</sup>

## Contraindications

The use of any glucosamine/chondroitin sulfate formula is contraindicated during pregnancy and lactation because of a lack of data for this population. Supraphysiological amounts of glucosamine have been shown to reduce the insulin response to glucose in rat studies. This has raised concern regarding glucosamine use with diabetics. Such concern may be minimized if one considers the recommended dose is only 1500 mg daily while the dose used in the rat studies would be equivalent to a 154 lb person taking 132,000 mg in a 3.5 hour period.<sup>17</sup> A recent study of oral glucosamine showed no major alteration in glucose metabolism in patients with Type II diabetes mellitus.<sup>7,18,19</sup> Diabetics may wish to discuss glucosamine use with their physician.

## Adverse Reactions

There are few reported side effects from studies on glucosamine or chondroitin. Side effects in clinical studies have generally been comparable to placebo.<sup>20</sup>

## Upper Limit/Toxicity

There are no known overdoses from glucosamine or chondroitin even in rodent studies at doses up to 5000 mg/kg. Evidence strongly supports safety at intakes of 2000 mg/day for glucosamine and 1200 mg/day for chondroitin sulfate. These values represent the highest levels tested in humans.<sup>21</sup>

## Summary

### Purpose

JointFlexibilityPlus™ is a safe alternative to the more dangerous NSAIDs for the treatment of mild osteoarthritis and should be a strong consideration for OA sufferers. JFP would be targeted to those older adults who experience mild to severe joint pain due to the loss of cartilage that leads to osteoarthritis.

- JointFlexibilityPlus is one component of the dotFIT™ longevity program which is made available to all program users and appears on the dotFIT website
- Studies have shown glucosamine supplementation to work as well as NSAIDs for relief of mild joint discomfort with far fewer side effects

### Unique Features

- JointFlexibilityPlus has no other added ingredients, allowing users to take other supplements (multivitamin and mineral formula, antioxidant, etc.) without worrying about reaching excessive levels that may become detrimental over time – a common occurrence with other brands
- The dotFIT multivitamin acts as a cofactor for this product
- This formula considers use of other dotFIT products to help the user maintain a safe and optimal range of total nutrient intake
- The dosage and components are in the precise amounts consistently used in research that has shown improved mobility, joint comfort, and knee-joint strength
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

## dotFIT™ SuperOmega-3

### Goal

Fish oils are fats found in fish (e.g. mackerel, lake trout, herring, sardines, albacore tuna and salmon), which are a rich source of long-chain polyunsaturated fatty acids (LCPUFA), better known as omega-3 (n-3 or  $\omega$ -3) fatty acids (FA). The two most studied n-3 fatty acids are the 20-carbon eicosapentaenoic acid (EPA) and the 22-carbon docosahexaenoic acid (DHA).

Due to current dietary habits, the median intake of n-3 fatty acids EPA and DHA for Americans is approximately 128 mg/day, well below any level of benefit.<sup>1,2</sup> National Health and Nutrition Examination Survey (NHANES) data from 1999-2000 reveals that fish intake is approximately three ounces per week and, moreover, from seafood not high in n-3 fatty acids.<sup>3</sup> The goal of this product is to provide a source of these important fatty acids in a mercury-free, easy-to-ingest form. The formula will also supply the appropriate amounts that have demonstrated myriad health benefits related to heart and brain function for those who do not or cannot consume diets containing these heart healthy nutrients e.g. specific oily fishes and certain plant foods.

### Rationale

**Heart Disease** (high blood pressure, hyperlipidemia and cardiac arrhythmias)

These fatty acids have been shown in numerous studies to lower elevated triglyceride levels<sup>4,5,6,7,8</sup> The triglyceride-lowering effect of EPA and DHA appears to result from the combined effects<sup>9</sup> of inhibition of lipogenesis,<sup>10</sup> faster clearance of chylomicrons<sup>11</sup> and stimulation of fatty acid oxidation in liver.<sup>12,13</sup> Eicosanoids are bioactive molecules that have various roles in inflammation, regulation of blood pressure, blood clotting, and immune system modulation. They are derived mostly from the  $\omega$ -6 fatty acids, arachidonic acid.

A diet high in n-6 fatty acids leads to an increase in prothrombotic and proinflammatory prostaglandins thus increasing the risk of hyperlipidemia, cardiovascular disease and Type II diabetes.<sup>14,15,16,17,18,19</sup> Ingestion of DHA and EPA partially replace the n-6 fatty in the cell membranes (i.e. red blood cells, liver cells and specific leukocytes), thus reducing prostaglandin E2, thromboxane A2 (potent platelet aggregator and vasoconstrictor), and formation of leukotriene B4, an inducer of inflammation and a powerful inducer of leukocyte chemotaxis and adherence. Concurrently there is an increased concentration of prostacyclin PGI3 without decreasing PGI2. Both PGI2 and PGI3 are active vasodilators and inhibitors of platelet aggregation.<sup>14,15,16</sup> This may explain EPA and DHA's positive effects on hyperlipidemia, coronary artery disease progression and blood pressure.<sup>20</sup>

Although scientific studies have produced mixed results regarding higher intakes of n-3 FA and reductions in non-fatal myocardial infarction, the anti-arrhythmic effect is well-established.<sup>21,22,23,24,25,26</sup> Based on animal models and in vitro studies, EPA and DHA exert their effects on heart cells by inhibiting

fast, voltage-dependent sodium and calcium currents. This is especially promising in possibly reducing arrhythmias and fibrillation (e.g. sudden cardiac death) in those who have suffered a myocardial infarction (such as a heart attack).<sup>23,25</sup>

## **Inflammation**

As stated earlier, inflammatory and immune cells are sensitive to change according to the ratio of n-3 and n-6 fatty acids in one's diet.<sup>17</sup> Several other anti-inflammatory effects of DHA and EPA might be explained by competitively inhibiting cyclooxygenase-2 (COX-2), lipoxygenase-5 (LOX-5), interleukin (IL)-1 $\alpha$  and tumor necrosis factor-alpha (TNF- $\alpha$ ), enzymes involved in inflammation and cartilage degradation.<sup>27,28,29</sup> Therefore, the n-3 fatty acids, EPA and DHA, may possess anti-inflammatory activity, reducing rheumatoid arthritis<sup>17</sup> and other arthritic conditions. Unlike non-steroidal anti-inflammatory drugs (NSAIDs) which can reduce inflammation on-demand, fish oil supplementation is not associated with gastrointestinal distress and does not increase cardiovascular risk.<sup>28</sup>

## **Age-related Macular Degeneration (AMD)**

AMD is the leading cause of blindness.<sup>30</sup> DHA is a key essential fatty acid found in the retina<sup>31,32,33</sup> and is involved in visual development.<sup>34</sup> Photoreceptor outer segments in the eyes are constantly being renewed which may require a steady supply of DHA to maintain proper functioning.<sup>33</sup> Blockage of the blood vessels that supply the retina contributes to AMD. The beneficial effects of n-3 fatty acids on the retina may be due to DHA and EPA's antithrombotic and hypolipidemic effects.<sup>33,35</sup> Epidemiological studies have suggested that the n-3 fatty acids, DHA and EPA, may be protective against AMD.<sup>33,35,36</sup>

## **Cognitive Function**

Finally, because DHA is integral to the maintenance of the cell membranes in the brain and important to the overall central nervous system function, regular consumption of n-3 FA is believed to dramatically reduce the risk of dementia, thus preserving cognitive function in the aging population and contributing to mood improvement.<sup>37,38,39,40,41</sup>

When diet lacks the DHA and EPA content that has demonstrated the above protective qualities, an n-3 FA supplement would be prudent in order to help preserve overall health.



<b>Supplement Facts</b>		
Serving Size: 1 Softgel		
Servings Per Container: 30		
<b>Calories</b> 13		
Calories from Fat 11		
<b>Amount Per Serving</b>	<b>% Daily Value</b>	
<b>Total Fat</b>	1.2 g	<b>2%</b>
Saturated Fat	0.1 g	<1%
Trans Fat	0 g	<b>0%</b>
Polyunsaturated Fat	1.1 g	*
Monounsaturated Fat	0.2 g	*
<b>Cholesterol</b>	1 mg	<1%
Vitamin E (D-Alpha Tocopheryl)	2 IU	<b>7%</b>
Total Omega-3 Polyunsaturates	600 mg	*
EPA (Eicosapentaenoic acid)	360 mg	*
DHA (Docosahexaenoic acid)	240 mg	*
*% Daily Value not established.		
<b>Other Ingredients:</b> Glycerin, Water (Purified), Methacrylic acid, Copolymer, Triacetin FCC.		

### Typical Use

To maintain cardiac and brain health, take one or two softgels with any meal.

### Precautions

Fish oil supplements should be used by children, pregnant women and nursing mothers only if recommended and monitored by a physician. Because of the possible anti-thrombotic effect of fish oil supplements, hemophiliacs and those taking warfarin (Coumadin) should exercise caution in their use.<sup>42,43</sup> Fish oil supplements should be stopped before any surgical procedure. Conflicting results have been reported regarding the effects of fish oil supplements on glycemic control in those with glucose intolerance including Type II diabetics.<sup>20,44</sup> Some early studies indicated that fish oil supplements might have detrimental effects in those groups. Recently, better designed studies have not reported these adverse effects. There is no evidence that fish oil supplements have detrimental effects on glucose tolerance, insulin secretion or insulin resistance in non-diabetic subjects. Diabetics should discuss the use of these supplements with their physicians and note if the supplements affect their glycemic control. Diabetics who take fish oil supplements should be monitored by their physicians.

## Contraindications

- Anyone taking greater than three grams per day should do so only under the care of their physician due to risk of excessive bleeding at higher doses<sup>20</sup>
- Should not be used if user is on anticoagulants or has uncontrolled hypertension<sup>42,43</sup>
- May raise blood sugar and LDL in people with diabetes<sup>20</sup>

## Adverse Reactions

Fish oil supplementation is usually well-tolerated at three to four grams per day. Those side effects that have been reported include mild gastrointestinal upsets such as nausea and diarrhea, halitosis, eructation (belching) and "fishy" smelling breath, skin and even urine.<sup>20</sup> Taking greater than three grams per day of n-3 fatty acids can cause excessive bleeding.<sup>20</sup>

## Upper Limit/Toxicity

The US Food and Drug Administration has set the "Generally Regarded as Safe (GRAS)" level for n-3 fatty acids at three grams per day.<sup>45</sup>

## Summary

### Purpose

Omega-3 FAs are uncommon in the American diet yet are shown to have greater potential than most other nutrients in maintaining good health. Additionally, it is well known that there is an increasing shortage of the fish that are the best sources of these omega-3 FA, making supplements an important consideration.

- Cardiovascular (CV) disease is the number one killer in the US and regular consumption of omega-3 FAs has the ability to reduce negative CV incidences
- Omega-3 FA supplementation would be targeted to all adults (over 18) who do not receive one to two grams per day of the omega-3 FAs EPA & DHA (equivalent to two to four servings of fatty fish/weekly) as a potential natural preventative aid in age-related cognitive decline and prevention of CV disease
- Recommended as part of the dotFIT longevity program

- It has been demonstrated that supplemental fish oil can deliver the same benefits as the oil in fish<sup>46,47,48</sup>

### **Unique Features**

- dotFIT's SuperOmega-3 fish oil complex provides maximum potencies of two key essential fatty acids, EPA and DHA
- Each dotFIT Omega- 3 softgel delivers 60 percent EPA and 40% DHA—double the potency of typical fish oil products
- To maximize the body's absorption of Omega-3 essential fatty acids, each softgel is uniquely enteric-coated to withstand stomach acid and dissolve in the small intestine. The result is maximum absorption and no "fishy repeat" or "fish burps"
- dotFIT's SuperOmega-3 fish oil complex is mercury-free and contains no PCBs
- This formula considers use of other dotFIT products to help the user maintain a safe and optimal range of total nutrient intake
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

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## dotFIT™ Advanced Brain Health™ Formula

### Goal

Until late in the 20th century, the basic theory was that we enter adult life with a set number of brain cells that deteriorate gradually until brain function falls apart. During the past 10 years, neuroscientists have proved that this does not need to be the case. The brain does continue to form new connections and to make changes in response to new demands. Like most every other part of the body, the brain is a “use it or lose it” organ.<sup>1</sup> Despite this new knowledge, it is common for people to experience overall decline in brain function with age. This tendency may be influenced by reduced use of the brain and by limitations in brain nutrition.

Several substances are showing the potential to support brain function and to slow (and possibly stop or reverse) age-related decline in mental function. Among these substances, phosphatidylserine (PS), acetyl-L-carnitine (ALC), alpha-lipoic acid (ALA), and vitamin B-12 have been found to offer support to the maintenance of aging brain function. Following the middle-age years, supplementation with these compounds may balance a decline in the body’s production or absorption of these substances that are essential for normal brain and neurological function.<sup>2,3</sup>

### Rationale

**Phosphatidylserine (PS):** PS is a natural compound produced in the body and obtained in small amounts in some foods. PS is a special fat-like molecule that is called a phospholipid. It functions as a major component of cell and mitochondrial membranes. PS is thought to be especially important for the normal function of nerve and brain cells.<sup>4,5</sup> PS is the major type of phospholipid in the brain and is known to contribute to several essential components of brain cell function.<sup>6,7</sup> Many animal studies have demonstrated enhanced mental function from providing supplemental PS to older animals. Similarly, several human studies have found that PS supplementation benefited mental functions in older people suffering from various degrees and types of dementia.<sup>4</sup> Since PS is present in virtually all cells in the body, it is not surprising that PS supplementation is being studied for its likely benefits to many functions of the body.<sup>8</sup>

**Acetyl-L-Carnitine (ALC):** ALC is a specific form of carnitine that is used for a variety of functions in many types of cells, including brain cells.<sup>9</sup> ALC is synthesized naturally in the body; however, ALC levels may decline in older adults.<sup>10</sup> Common foods such as red meats and milk products contain natural L-carnitine in modest amounts, but these amounts may not make up for the decline observed with aging. One theory of brain aging is based on observations that the energy generating components (mitochondria) in brain cells suffer increased amounts of oxidative damage with age.<sup>11</sup> The acetyl form of L-carnitine has been found to enhance mitochondrial function and to prevent brain mitochondrial decay and decline in mental function in aging animals.<sup>12,13</sup> Several human studies have demonstrated a wide variety of

potential benefits to brain and nerve function.<sup>14,15,16,17</sup> Clinical trials have tested ALC supplementation in older people, showing benefits in the treatment of a variety of mental problems.<sup>16,18,19,20</sup> Several studies have combined supplementation of ALC with alpha lipoic acid, resulting in a potentially enhanced beneficial effect on aging brain mitochondrial function (see next section).

**Alpha Lipoic Acid (ALA):** Due to its essential functions, lipoic acid was initially thought to be a B-vitamin. It was soon realized that it is not a vitamin since the body can synthesize it. Despite its non-vitamin status, lipoic acid continues to be the subject of extensive research more than 50 years after its discovery.<sup>16,21,22,23,24</sup> Much of the interest focuses on lipoic acid’s central role in energy metabolism and in its ability to function as an antioxidant and free radical scavenger in mitochondria.<sup>25</sup> Although ALA is produced naturally in the cells of humans and animals, there is evidence that boosting ALA levels through supplementation can benefit nerve and brain function in older animals.<sup>26,27,28,29,30,31</sup> Human studies of supplementation with ALA have focused primarily on its possible role in the treatment of those with age-related problems in brain function.<sup>22</sup> Studies are needed to confirm that similar supplementation can slow age-related cognitive decline, but animal studies show that benefits are promising.<sup>13,32,33</sup> Lipoic acid supplementation also is being studied for its potential role in the treatment or prevention of a variety of nerve diseases, Type II diabetes, age-related eye conditions, liver disease, cancer, cardiovascular disease, etc.<sup>13</sup>

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**Vitamin B-12:** Among other functions, vitamin B-12 provides essential support for the maintenance of neural tissues, including neural tissues of the brain. Some studies have reported that as many as one out of seven people over the age of 65 develop B12 deficiency due to a declining capacity to absorb the vitamin from foods.<sup>34,35</sup> A deficiency may take years to develop, but a long-standing deficiency can result in permanent damage to neural tissues if diagnosis and treatment are delayed.<sup>36,37</sup> Consequently, prophylactic supplementation with vitamin B12 has been suggested as a reasonable precaution to protect vitamin B12 status in older adults with a suggested dose ranging from six to 300 mcg/day.<sup>34</sup>

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 30
Amount Per Serving	% Daily Value	
Acetyl-L Carnitine	500 mg	*
Phosphatidylserine	100 mg	*
Alpha Lipoic Acid	100 mg	*
Vitamin B12 (as Cyanocobalamin)	100 mcg	1,667%

\* % Daily Value not established.  
**Other Ingredients:** Dicalcium Phosphate, Microcrystalline Cellulose, Sorbitol, Stearic acid (Vegetable source), Hydroxypropyl Methylcellulose, Magnesium stearate (Vegetable source), Silica.

## Typical Use

Suitable for adults age 45 and older interested in supporting brain and nerve function during aging.

- One to 3 tablets per day with food
- Typical dosage based on age:
  - 45-55 years – one per day
  - 56-65 years – two per day
  - Over 65 years – three per day

## Precautions

The dotFIT™ Advanced Brain Health is considered safe for the general population at the proper dosage in healthy users. Advanced Brain Health is designed to be safe to use along with any other dotFIT supplements taken in their suggested dosages. The Advanced Brain Health is designed to provide additional brain support elements that complement those already present in the dotFIT multivitamin formulas as well as the SuperiorAntioxidant™ and SuperOmega-3 formulas.

Like any dietary supplement, users should consult with their physician and/or pharmacist before taking this supplement, especially if they are also taking any drugs for medical purposes.

**Phosphatidylserine** is generally well-tolerated<sup>38</sup> when taken at the suggested levels of one to three tablets per day (100 to 300 mg/day). Phosphatidylserine in dotFIT Advanced Brain Health comes from soybean sources, removing concerns about any risk associated with bovine sources that were commonly used in the early research on the substance. Uncommon side effects of phosphatidylserine include gastrointestinal upset and insomnia.<sup>39,40</sup>

**Acetyl-L-carnitine** is typically well-tolerated<sup>38</sup> when taken at the suggested dose of one to three tablets per day (350 to 1050 mg/day). Rare side effects have included nausea, gastrointestinal upset, and restlessness.<sup>41,42</sup>

**Alpha lipoic acid** has been well-tolerated in clinical studies lasting from four months to two years at the suggested dose of one to three tablets per day (200 to 600 mg/day).<sup>43,44,45</sup> Studies of lipoic acid supplementation in people with conditions like Type II diabetes and peripheral arterial disease have reported potential minor side effects such as tingling in legs and feet and mild stomach queasiness. However, it was difficult to know if this was caused by the supplement or the condition.<sup>46</sup>

**Vitamin B-12** is very safe when taken at the dosage in this formula. Since toxicity from vitamin B12 is virtually unknown, no tolerable upper intake level has been established for vitamin B12 by the Institute of Medicine.<sup>47</sup>

## Contraindications

The dotFIT™ Advanced Brain Health formula is contraindicated in pregnancy and lactation and for anyone suffering adverse reactions to any of the ingredients. Pregnant or lactating females should use only the dotFIT PrenatalMV™ supplement.

## Adverse Reactions

There should be no serious side effects in healthy users at the recommended doses.

**Phosphatidylserine:** Uncommon side effects include gastrointestinal upset (300 mg/day or more) and insomnia (600 mg/day or more)<sup>39,40</sup>

**Acetyl-L-carnitine:** Side effects uncommon; those reported include gastrointestinal upset and agitation<sup>41,42,48</sup>

**Alpha-lipoic acid:** Side effects are usually not seen unless dosage exceeds 600 mg/day Reported reactions include headache, skin rash and stomach upset.<sup>46,49</sup>

**Vitamin B12:** Side effects unknown.

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## Upper Limit/Toxicity

The Institute of Medicine has not set an upper limit (UL) for any of the ingredients contained in the dotFIT Advanced Brain Health formula.

**Phosphatidylserine:** No upper limit has been established for human use. A 12-week study of people over 57 years of age concluded that PS is a safe supplement for elderly individuals at doses up to 600 mg per day (taken in doses of 200 mg three times daily).<sup>50</sup>

**Acetyl-L-Carnitine:** A recent risk assessment for L-carnitine established an “Upper Level for Supplements” (ULS) for L-carnitine at 2000 mg per day which is equivalent to about 3000 mg of acetyl-L-carnitine.<sup>51</sup>

**Alpha-lipoic acid:** No upper limit has been established for human use. A two-year study of laboratory rats reported a no-observed-adverse-effect level (NOAEL) of 60 mg per kilogram body weight.<sup>52</sup> The dose in the dotFIT Advanced Brain Health formula is less than 1/10 of this dose.

**Vitamin B12:** No specific levels of intake are known to be toxic. Some theoretical concern has been expressed for excessively high intakes for extended periods of time.<sup>53</sup>

## Summary

### Purpose

- The goal of the dotFIT™ Advanced Brain Health formula is to provide substances that help to support brain function and slow age-related decline in mental functions
- Complement to the dotFIT multivitamin and mineral, SuperiorAntioxidant™, and SuperOmega-3 formulas
- The Advanced Brain Health formula rounds out the dotFIT longevity program by providing brain support compounds that add to and extend upon the important brain nutrients and protective components already present in the dotFIT multivitamin, antioxidant, and Omega-3 supplements

### Unique Features

- Contains only well-researched brain support substances in their proper amounts
- Accurately complements the dotFIT multivitamin, antioxidant, and Omega-3 formulas
- Ingredients are prepared in a controlled-release delivery system
- This formula considers use of other dotFIT products to help the user maintain a safe and optimal range of total nutrient intake
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC



## **Fitness & Performance Enhancing Dietary Supplements**

For complete position statements see page 3 and nutrition dotFIT for other goal enhancing formulas.

### **weight loss dotFIT**

The goal of supplements in this category is to assist the user in complying with the daily routine that leads to weight reduction by acting in one or more of the following ways:

- Help create and maintain a calorie deficit by increasing daily calorie expenditure when compared to a non-supplemented state
- Raise energy levels that may make one more active throughout the day
- Reduce the drive to consume food
- Decrease calorie absorption

The dieter would cease supplementation once the weight goal is reached or when they have their daily routines under control to continue making progress without supplements.

See Appendix 2: *Three proven strategies for weight reduction, maintenance of weight loss and prevention of weight gain.*

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## **dotFIT™ FatReleaser™**

*Soon to be known as FatRelease™*

FatReleaser contains the necessary compounds to support the health and proper functioning of the liver while supplying ingredients designed to decrease dietary fat absorption, support appetite and deliver the many potential benefits of green tea (EGCG). As the body gains fat weight so does the liver, leading to sluggish performance and oxidative stress. Both conditions can have a negative effect on the liver's health<sup>1,2</sup> and ability to burn fat.<sup>3,4</sup>

### **Rationale**

**Choline** is a lipotropic agent that has been shown to hasten the removal of fat from the liver.<sup>5</sup>

**Milk Thistle** has been used safely for centuries in treatment of liver problems including improving circulation, maintaining the integrity of liver cell membranes while increasing liver's regenerative ability and formation of new cells.<sup>6,7,8</sup>

**N - Acetyl cysteine (NAC)** is added because it acts as an antioxidant and hepatoprotectant in order to help combat oxidative stress brought on by accumulating fat in the liver.<sup>9,10</sup>

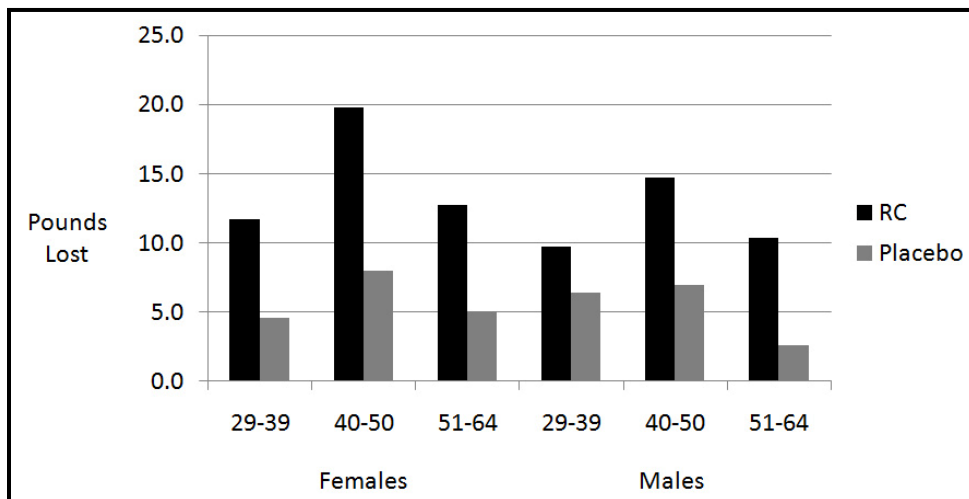
**Epigallocatechin gallate (EGCG)** from Green tea also works as an antioxidant and has the potential to destroy fat cells<sup>11</sup>, increase overall energy expenditure<sup>12</sup> and has demonstrated positive effects on fat oxidation.<sup>13,14,15,16,17,18</sup>

**Rhododendron caucasicum (RC)** has been shown to decrease the body's absorption of dietary fat by inhibiting gastrointestinal lipase (enzyme that prepares dietary fat for absorption) thus reducing absorbed calories.<sup>19</sup> During three months of clinical trials, patients who received Rhododendron caucasicum spring leaves extract, in conjunction with a low calorie diet, reduced their original weight from 10 to 20 pounds, losing two to three times more weight than the placebo subjects (see

**Figure 3).**<sup>19</sup>

**Engelhardtia chrysolepis** has demonstrated superior antioxidant activity in suppressing lipid peroxidation and has also been shown to inhibit a key enzyme involved in the making of cholesterol.<sup>20</sup>

**Figure 3:** As demonstrated in the graph, during three months of dieting, the Rhododendron group lost two to three hundred percent more weight than the placebo subjects.



<b>Supplement Facts</b>	
Serving Size: 1 Tablet	Servings Per Container: 90
Amount Per Serving	% Daily Value
<b>Green Tea Extract (Leaf)</b>	200 mg **
<small>Standardized for 98% Polyphenols (196mg), 75% Catechins (150mg), 45% EGCG (90 mg), 7% Caffeine (naturally occurring - 14 mg)</small>	
<b>Choline (as Choline Bitartrate)</b>	133 mg **
<b>N-Acetyl Cysteine (NAC)</b>	50 mg **
<b>Milk Thistle Seed Extract (80% Silymarin)</b>	166 mg **
<b>dotFIT™ Proprietary Herbal Complex</b>	133 mg **
<small>(<i>Rhododendron caucasicum</i> and <i>Engelhardtia chrysolepis</i>)</small>	
<b>** % Daily Value not established.</b>	
<b>Other Ingredients:</b> Calcium Phosphate, Croscarmellose, Stearic acid (Vegetable source), Magnesium Stearate (Vegetable source), Silica, Hydroxypropylmethylcellulose and Titanium Dioxide.	

**Typical Use**

- Non-stimulant fat-loss aid
- Recommended for people who struggle with controlling fat intake
- Can be used alone or as part of the dotFIT 90 Day Weight Loss Solution (aka LeanPak90)
- Take one tablet three times daily, 30 minutes before meals and with at least 8 oz. of water
- Discontinue after reaching fat loss goal

## Precautions

FatReleaser™ is generally considered a safe fat-loss aid.

## Contraindications

FatReleaser is contraindicated in pregnancy and lactation because of a lack of data for this population.

## Adverse Reactions

**EGCG:** Typical doses range from one to 10 cups of green tea per day without any adverse events.<sup>21</sup>

**Choline** is not likely to cause side effects at doses up to 3000 mg/day.<sup>22</sup>

**Rhododendron caucasicum** is well-tolerated in the recommended dosage.<sup>19</sup>

## Upper Limit/Toxicity

**Choline:** The UL for choline is 3500 mg/day and the LOAEL is 7500 mg/day.

**NAC:** The LD50 for NAC in mice is 7888 mg/kg and in rats is 6000 mg/kg. An AMES test performed on NAC was negative for mutagenicity.<sup>8</sup>

**Milk Thistle:** Is considered relatively safe for long-term use.<sup>23</sup>

**EGCG:** High doses of green tea or green tea extract, equivalent to 21-25 cups of tea per day can cause gastrointestinal distress.<sup>24,25</sup>

**Rhododendron caucasicum and Engelhardtia chrysolepis:** no data available at this time.

## Summary

### Purpose

- Supplies many of the nutrients involved in fat metabolism
- For people who struggle with controlling fat intake
- Non-stimulant body fat/weight reduction aid
- For very overweight or obese people (females >32% BF & males >22) to support liver health

### Unique Features

- The product works at many different levels within the body (appetite, metabolism, fat absorption, etc.) to support the loss of body fat
- Blend is proprietary to dotFIT™
- Can be used alone or as part of the dotFIT 90 Day Weight Loss Solution (aka LeanPak90)
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

## dotFIT™ CarbKiller™

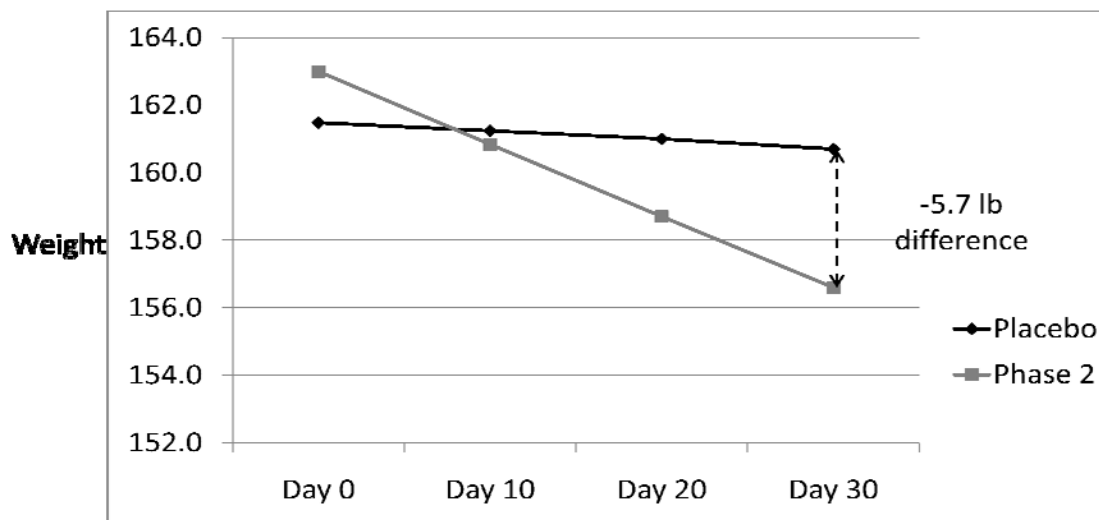
Soon to be known as CarbRepel™

CarbKiller contains a fibrous blend with citrus pectin to support appetite control while also containing a unique extract that has been shown to significantly reduce the body's absorption of starches from carbohydrates. The combined goal of this product is to reduce voluntary caloric intake and absorption of unneeded calories in order to ease and accelerate a user's body fat reduction when compared to a non-supplemented state. CarbKiller works through different and complimentary body-weight regulation pathways than FatReleaser™ and ThermoShock™, making it ideal for cycling or use by itself, especially for people who tend to overeat carbohydrates/sugars.

### Rationale

**Phase 2®**, a proprietary extract of the bean *Phaseolus vulgaris*, contains phaseolamin, which can block the action of alpha amylase, the enzyme that breaks down carbohydrates and allows them to be absorbed into your body. Five-hundred to 1000 mgs of this natural extract has been shown to dramatically reduce the absorption of starches (thus calories), resulting in significantly greater weight loss in numerous studies when compared to placebo.<sup>1,2,3,4,5,6,7</sup> (See Figure 4.)

**Figure 4:** Subjects consumed a 2000-2200 calorie carbohydrate rich diet. The Phase 2 group experienced ~700% greater weight loss compared to the placebo.



**Citrus pectin** is a fiber found in many fruits and has been demonstrated to slow gastric emptying<sup>8</sup> – in other words, it helps keep food in the stomach longer. Proper use of pectin may make a significant contribution to controlling appetite by allowing the user to feel fuller sooner and longer thus potentially delaying or reducing the next meal.<sup>9,10</sup>

**Pomegranate leaf extract** in proper amounts may help support a person’s lipid profile (total cholesterol, triglycerides, etc) especially when consuming foods high in fat.<sup>11</sup>

<b>Supplement Facts</b>	
Serving Size: 2 Tablets      Servings Per Container: 60	
<b>Amount Per Serving</b>	<b>% Daily Value</b>
<b>Phase 2 Starch Neutralizer</b> <sup>®††</sup>	750 mg **
White Kidney Bean Extract ( <i>Phaseolus vulgaris</i> )	
<b>Citrus Pectin</b>	375 mg **
<b>Pomegranate Fruit Extract</b>	137.5 mg **
(Total Polyphenols 110 mg, Ellagic Acid 55 mg)	
** % Daily Value not established.	
<b>Other Ingredients:</b> Calcium Phosphate, Sorbitol, Stearic acid (Vegetable source), Xanthan gum, Silica, Povidone, Magnesium Stearate (Vegetable source), Inulin and Hydroxypropylmethylcellulose.	

### Typical Use

- A non-stimulant fat loss and appetite aid for those who tend to overeat carbohydrates
- Anyone seeking to enhance body fat reduction without affecting the central nervous system (CNS)
- Discontinue after reaching body fat goal
- Can be used alone or as part of the dotFIT 90 Day Weight Loss Solution (aka LeanPak90)
- Take 2 tablets twice daily, 30 minutes before your largest carbohydrate containing meals or snacks with at least 8oz of water

### Precautions

CarbKiller™ is generally considered a safe fat-loss aid when used appropriately.

### Contraindications

The compounds in CarbKiller are contraindicated in pregnancy and lactation because of a lack of data for these populations.

## Adverse Reactions

**Phaseolus vulgaris** when used appropriately seems to be safe when used for two to three months<sup>12,13,14</sup>

**Citrus pectin** in large doses (20 g) can cause gastrointestinal side effects.<sup>15</sup> Pectin has Generally Recognized as Safe (GRAS) status in the United States.<sup>16</sup>

**Pomegranate** is generally well-tolerated.

## Upper Limit/Toxicity

There are no established upper limits for the compounds found in CarbKiller™.

## Summary

### Purpose

- The purpose of this product is to reduce caloric intake and absorption in order to accelerate body fat reduction
- A non-stimulant fat loss and appetite aid for those who tend to overeat carbohydrates

### Unique Features

- The all natural ingredient Phase 2® is the first nutritional ingredient that has been clinically and scientifically proven to neutralize starch
- The FDA has accepted the following claims based on 14 clinical investigations:
  - “May assist in weight control when used in conjunction with a sensible diet and exercise program”
  - “May reduce the enzymatic digestion of dietary starches”
- Formula and recommendations are proprietary to dotFIT™
- Can be used alone or as part of the dotFIT 90 Day Weight Loss Solution (aka LeanPak90)
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC



## **dotFIT™ ThermoShock™**

*Soon to be known as ThermAccel™*

ThermoShock is formulated to deliver a “better stimulant effect” when compared to competitors and increase thermogenesis (wasting calories as heat) by combining a new energy complex with caffeine and caffeine-containing herbs. ThermoShock also addresses appetite control by incorporating two powerful natural ingredients, Caralluma fimbriata and LeptiCore™, that work through unique body fat regulation pathways. ThermoShock works through different and complimentary weight regulation mechanisms than FatReleaser™ and CarbKiller™, making it ideal for cycling or use by itself, especially for people needing appetite control who do well with a stimulant approach to a body fat/weight reduction program.

### **Rationale**

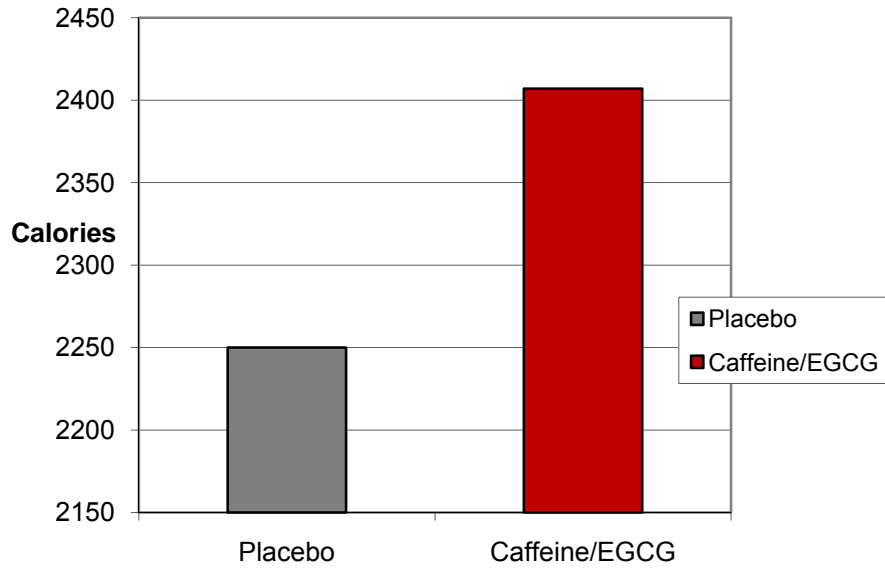
**Caffeine** has been shown to increase energy expenditure (EE) approximately 3-5% in the first 2.5 hours after ingestion.<sup>1</sup> Comparable increases in EE have been shown with Epigallocatechin gallate (EGCG) in human subjects.<sup>2</sup> Combining caffeine and EGCG together may have a synergistic effect on 24 hour EE.<sup>3</sup>

Respiratory quotient is lower in subjects who consume EGCG which indicates greater fat oxidation. According to Dulloo et al, fat oxidation accounted for approximately 42% of the total calories burned over the course of 24 hours in the EGCG group compared to the placebo (32 percent) and caffeine (34%) groups.<sup>2</sup>

**New thermogenic complex** (Caffeine, Yerba Mate, Guarana seeds, Green tea leaf extract and Cayenne fruit) are uniquely combined to increase the user’s total daily calorie burn by increasing thermogenesis (increasing metabolism through wasting calories/fat as heat) and by stimulating a desire to increase physical activity through enhanced alertness and stimulation of the central nervous system. Caffeine and caffeine-containing herbs have also demonstrated a positive effect on appetite suppression and fat oxidation.<sup>1,4,5,6</sup>

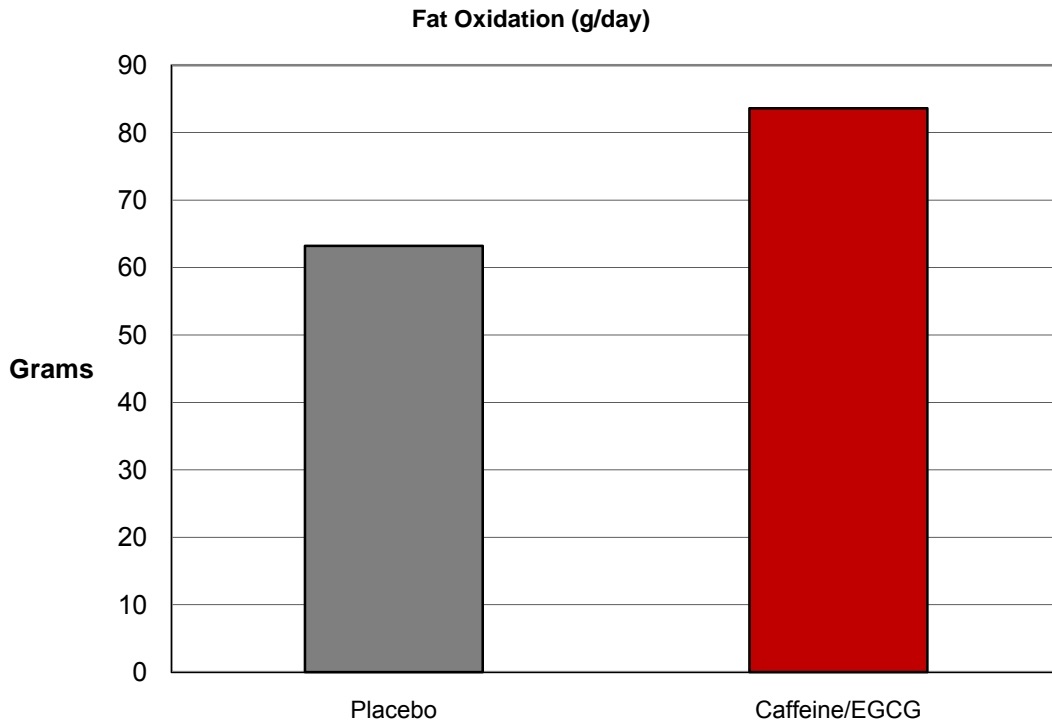
**Epigallocatechin gallate (EGCG)** from Green tea has demonstrated antioxidant properties, a potential to destroy fat cells<sup>7</sup>, increase overall energy expenditure<sup>8</sup> (especially in the presence of caffeine) and has shown positive effects on fat oxidation.<sup>5, 9,10,11,12,13</sup>

**Figure 5:** Studies show at least a 10% increase in 24 hour EE or equivalent to 157 more calories burned in the caffeine/EGCG group (Average subject's weight 173 lbs).



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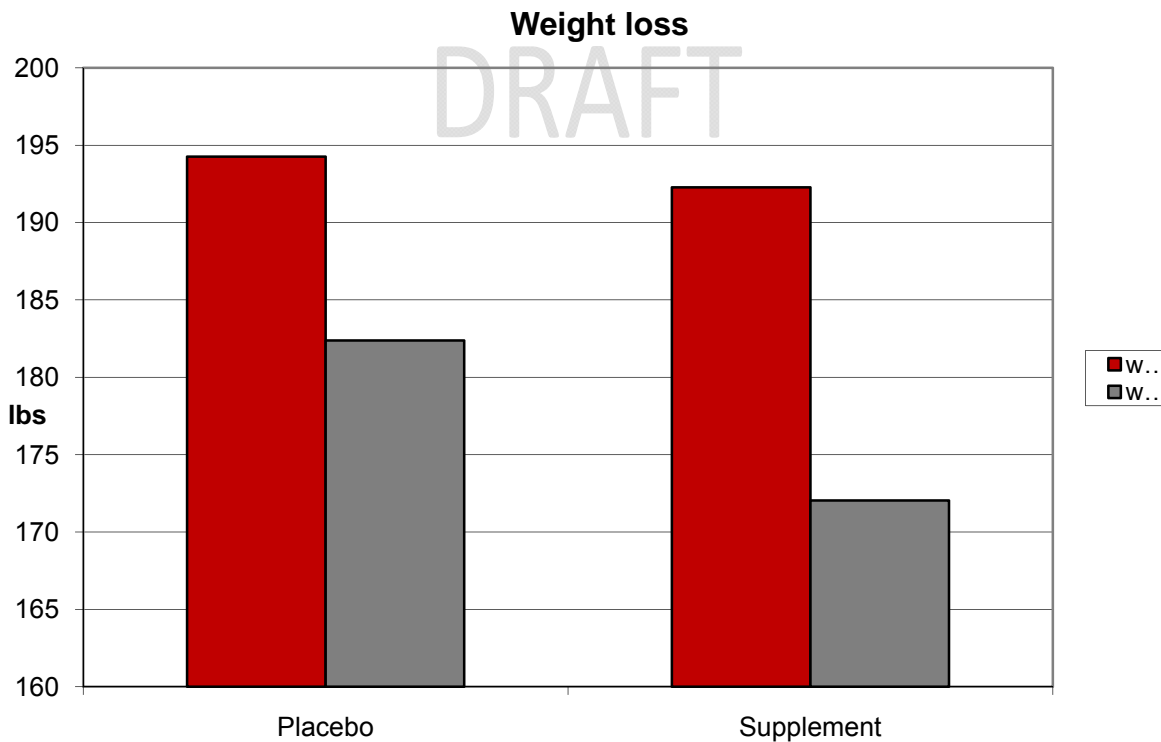
**Figure 6:** In the same study approximately 20 more grams of fat was oxidized by the supplemented group daily.



**Capsaicin from Cayenne fruit** can stimulate sympathetic nervous system (SNS) activity, promote the secretion of catecholamine (epinephrine and norepinephrine, which increases metabolic rate<sup>14</sup> and temperature<sup>15</sup>), and has been shown to increase the expression of the uncoupling protein<sup>16</sup> (UCP) in many tissues leading to an increase in wasting calories as heat.

dotFIT™ proprietary complex includes \* LeptiCore™, which is a new, safe and natural complex of plant-based polysaccharides and esterified fatty acids that has demonstrated ability to reduce stored body fat<sup>17,18,19,20,21,22,23,24,25,26</sup> and enhance weight loss in recent scientific findings.<sup>27,28,29,30</sup> Proposed mechanisms are the complex’s ability to interact with the signaling between the brain, adipose tissue and liver to help control leptin, a hormone that regulates body fat storage. Additionally, the swelling-soluble properties of the complex may have a prolonged satiating effect thus reducing caloric intake. In the study conducted at the University of Connecticut, the supplemented group lost 92% more weight than the placebo.<sup>31</sup>

**Figure 7:** In an eight week period with all things equal, the Loleptin group lost ~8.5 lbs more than the placebo group or 92% more weight.



**Caralluma fimbriata (CF)** is a natural extract from an edible succulent cactus that has a long and safe history of use as an appetite suppressant<sup>32</sup> much like the supplement Hoodia gordonii.<sup>33,34, 35,36,37</sup> Unlike Hoodia, CF has been researched for safety and efficacy, producing positive results. Potential

mechanisms of action include the fact that CF contains pregnane glycosides that may suppress appetite by amplifying the signaling of energy sensing functions in the brain (hypothalamus).<sup>38</sup> Additionally, CF may act much like another common appetite suppressant, hydroxycitrate (HCA), by blocking citrate lyase. This prevents fat accumulation and redirects extra energy/calories to glycogen stores, which would also improve signals of satiety.

**L-Theanine:** Theanine is the major amino acid found in green tea.<sup>39</sup> Green tea contains one to three percent theanine.<sup>40,41</sup> It has historically been used for its relaxing and anti-anxiety effects.<sup>41</sup> It may lessen the jitteriness effect common with caffeine-containing supplements.<sup>42,43</sup>

<b>Supplement Facts</b>	
Serving Size: 2 Tablets	Servings Per Container: 60
<b>Amount Per Serving</b>	<b>% Daily Value</b>
<b>LumaThin™ Caralluma Powder</b>	520 mg **
<b>dotFIT™ *Proprietary LeptiCore™ Complex</b> (Acacia Polysaccharides, Esterified Fatty Acids, Pomegranate Extract, Aphyanizomenon Flos-Aquae Extract and Beta-Carotene)	310 mg **
<b>L-Theanine</b>	100 mg **
<b>ThermoShock™ Thermogenic Complex</b> Green Tea Extract (providing 270 mg EGCG), Caffeine (providing 350 mg of caffeine), Yerba Mate Powder, Guarana Seed Powder and Cayenne Fruit)	1000 mg **
** % Daily Value not established.	
<b>Other Ingredients:</b> Calcium Phosphate, Povidone, Sorbitol, Croscarmellose, Stearic acid (Vegetable source), Magnesium Stearate (Vegetable source), Silica and Hydroxypropylmethylcellulose.	

### Typical Use

- For anyone seeking a stimulant with extra appetite control
- For people who need a serious multiple pronged approach to weight control including a strong stimulatory effect to help increase metabolism
- Do not use if taking heart medications
- Do not mix with other stimulants
- Discontinue after reaching body fat reduction goal
- Take 4 tablets daily, 2 at breakfast and 2 with lunch with at least 8-oz of water

## Precautions

ThermoShock™ contains moderate doses of stimulants and should not be used by those seeking to avoid stimulants.

## Contraindications

ThermoShock is contraindicated for pregnant and lactating women and those under the age of 18.

**Caffeine** is contraindicated in hypertension, anxiety and thyroid disease. Caffeine can interfere with some medications such as lithium and MAO inhibitors. Caffeine is also contraindicated in those with cardiac arrhythmias, other forms of heart disease and peptic ulcers.

## Adverse Reactions

**Caffeine** use may result in diuresis (increased water loss, usually in non-users) and insomnia when taken late in the day. Numerous studies on the safety of caffeine exist. Caffeine abuse can cause tension, anxiety, excitability and restlessness at doses over 400 mg at one time. Doses over 1000 mg at one time can elicit toxicity symptoms.<sup>44</sup> Because ThermoShock has 130 mg/serving, adverse effects may occur in sensitive individuals. Taking ThermoShock with other stimulants is not advised. **Caralluma fimbriata** is safe at the amounts found in ThermoShock.<sup>32</sup>

## Upper Limit/Toxicity

None of the compounds in ThermoShock approach toxic levels. Doses of caffeine should not exceed 1000 mg/day.

## Summary

### Purpose

- ThermoShock is probably the most powerful of the weight loss products based on its stimulatory effect combined with two relatively well-researched new additions that target appetite control and potentially enhance fat cell signaling
- The combination of ingredients in ThermoShock is unique to dotFIT™ and delivers a multi-tiered attack on body fat

## Unique Features

- The proprietary thermogenic blend delivers an enhanced and superior stimulatory effect when compared to other products
- Formula and recommendations are proprietary to dotFIT™
- Can be used alone or as part of the dotFIT 90 Day Weight Loss Solution (aka LeanPak90)
- The tiered approach is designed to aggressively attack the final desired outcomes
- ThermoShock™ contains LeptiCore™, which has been awarded the patent and claims listed below\*
- ThermoShock will deliver all the ingredients by means of a two-stage technology involving microspheres and macrospheres, providing immediate and prolonged activity for the entire day
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

\*Products containing LeptiCore™ from Pipeline Nutraceuticals, Inc. have the attached rights of employing the patent number on labels and brochures. At efficacious levels, suggested structure-function or marketing statements may include the following:

- Assists in promoting fat loss (supported by US Patent 6,899,892)
- Assists in promoting a lower percentage of body fat (supported by US Patent 6,899,892)
- Promotes the reduction of stored fat by increasing fatty acid utilization in the fat cell
- Promotes the reduction of fat and an enhanced muscle-to-fat ratio
- Promotes the regulation of energy balance allowing for improved mental energy

## LeanMR™ Drink Mix

### Goal

The purpose of the LeanMR drink mix formula is to support body fat/weight reduction by delivering better, satisfying nutrition in fewer calories.

The LeanMR drink mix was designed to provide maximum support for lean body mass (LBM), a steady supply of energy, and optimal fullness (satiety) within the least amount of calories in order to improve the dieting experience and accelerate results.

With only 195 calories per serving, LeanMR provides

- 21 grams of the highest-quality protein, whey protein isolate to support the preservation or increase of LBM while decreasing body fat
- The perfect dose and blend of necessary fats including Conjugated Linoleic Acid (Tonalin®) to support the special needs and appetites of active individuals during dieting
- 19.5 grams of a Sustained Release Patented Carbohydrate Blend with 8 grams of fiber (Fibersol-2® and Glucomannan) and only 2 grams of sugar to deliver immediate and long-lasting energy and fullness

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### Rationale

#### LeanMR Drink Mix for Weight Control

In all studies meal replacements (MR) have been shown to be an extremely effective aid to weight reduction<sup>1</sup> and in almost all cases more effective than conventional methods of dietary restrictions.<sup>2,3,4,5</sup> Additionally MR have been shown to be just as effective as dietary restriction combined with pharmacological therapy.<sup>6</sup>

And most importantly, continuous use of MR may be the most effective means of all treatments when it comes to maintaining weight loss<sup>1,7, 8,9</sup> (see figure 2).

MRs are generally used to replace one or two meals a day and allow freedom of choice for the remaining allotted foods/calories.

Meal replacements allow

- Portion control: people generally attempt to consume meals to completion,<sup>10,11</sup> therefore meal portion size significantly impacts a person's total calorie intake.<sup>10,12</sup> Overwhelming evidence validates that the smaller the portions, the fewer daily calories consumed<sup>12</sup> and vice-versa. In

other words, people tend to “eat with their eyes not their stomachs”. Use of portion-controlled meals has proven to yield greater weight loss than conventional diet therapy alone<sup>13,14,15,16</sup>

- Accurate calorie counts of total daily food intake when compared to having to estimate the calories of self-prepared or unmarked meals<sup>17</sup>
- Satiety (fullness): use of a properly formulated MR such as the LeanMR™ mix allows the user to increase the frequency of daily meals while managing calories. This in turn satisfies appetite and maintains greater daily energy levels i.e. more nutrition and fullness with fewer calories, and often a significant savings in groceries. Proper use throughout the day can deliver good nutrition while helping to save calories, allowing the user to partake in larger meals or favorite foods at desired times (e.g. higher calorie lunches and/or dinners)

### **Sustained-Release Carbohydrate with Fibersol® Blend**

The combination of Rice Oligodextrins (low glycemic carbohydrate source), Palatinose™ (generic name Isomaltulose), Glucomannan (a soluble fiber) and Fibersol-2™ (functional soluble fiber) allow for users of the LeanMR mix to experience even and prolonged energy levels and greater satiety.

Palatinose™ is a low glycemic functional carbohydrate that delivers prolonged energy due to its unique structure and low insulinemic response. With its slow but complete absorption, Palatinose™ provides constant and extended streams of energy for muscles and brain. This new energy source lasts over a longer period of time when compared to quickly absorbed carbohydrates.<sup>18</sup>

Fibersol-2™ is a soluble fiber and is included in this formula to deliver dietary fiber’s well known positive impact on health and weight control/appetite.<sup>19</sup> Fiber is extremely important in a weight control program because it produces the feeling of fullness sooner and longer when added to a meal.<sup>20</sup> Fibersol-2™, a digestive resistant maltodextrin, is a soluble fiber that doesn’t act like one. Fibersol-2™ doesn’t affect taste or interfere with mineral or calcium absorption, traits that are common among other fibers. Because Fibersol-2™ is fermented slowly, it produces less acid and gas than most soluble fibers. All these traits make Fibersol-2™ the perfect fiber to add to the diet and therefore is included in the LeanMR mix. The user receives the benefits of a “better fiber” in a convenient delivery system without fiber’s sometimes less desirable effects (taste, gas, bloating, etc.). Studies have shown Fibersol-2™ to improve bowel regularity,<sup>21</sup> exert a positive effect on blood glucose<sup>22</sup>, lower cholesterol and serum triglycerides<sup>22</sup>, increase probiotic levels (feed good bacteria) and help keep the digestive tract clean and healthy.<sup>23</sup> Additionally Fibersol-2™ has been approved as GRAS (generally regarded as safe) status by the Food and Drug Administration (FDA).

Glucomannan is a soluble fiber added to Lean Mix because it has been clinically shown to beneficially affect total cholesterol, LDL cholesterol, body weight and fasting blood glucose.<sup>24</sup>

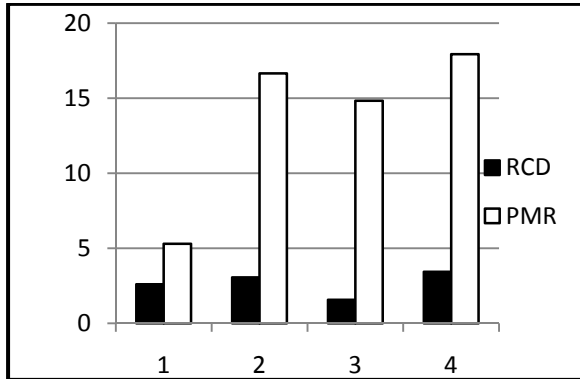
### **Healthy Dietary Fat Blend**

The LeanMR mix includes a combination of important fats for added satiety and health maintenance including Conjugated Linoleic Acid (CLA) supplied by Tonalin®.<sup>25</sup> CLA has demonstrated numerous

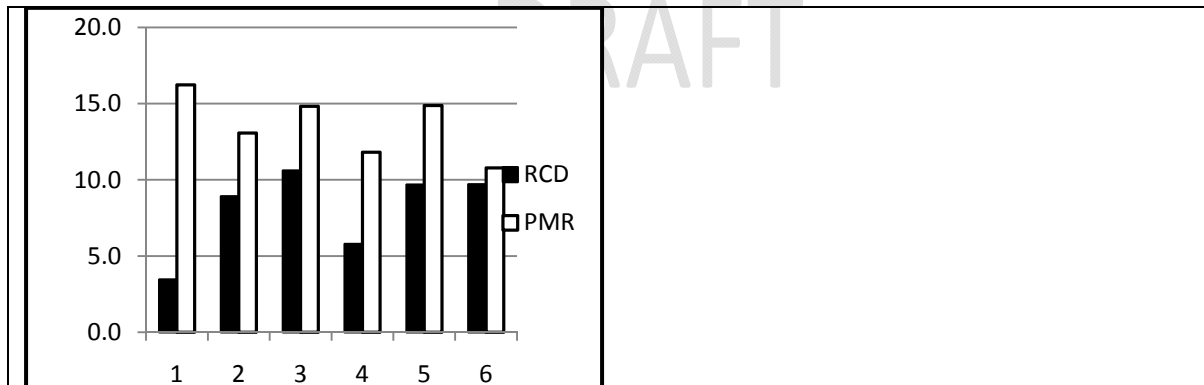


potential health benefits and regular dosages have been shown to exert modest but positive effects on body composition.<sup>26</sup>

**Figure 8:** In a 1-year follow-up in the groups that were tracked, the subjects still using meal replacements maintained significantly more weight loss than the RCD group.<sup>1</sup>



**Figure 9:** In all six studies the groups that were using meal replacements (PMR) as part of their overall calorie intake lost significantly more weight than the reduced calorie diet (RCD) group.<sup>1</sup>



## Supplement Facts

Serving Size: 51 g  
 Servings Per Container: ??

### Amount Per Serving

Calories 195 Calories from Fat 18

% Daily Value

<b>Total Fat</b>	2 g	3%
Saturated Fat	1 g	5%
<b>Cholesterol</b>	0 mg	0%
<b>Sodium</b>	115 mg	5%
<b>Total Carbohydrate</b>	19g	6%
Dietary Fiber	8 g	31%
Sugars	2 g	
<b>Protein</b>	21 g	42%
Vitamin A (as Beta Carotene)	500 IU	10%
Vitamin C (as Ascorbic Acid)	6 mg	10%
Vitamin D (as Cholecalciferol)	40 IU	10%
Vitamin E (as d-Alpha Tocopheryl Succinate)	3 IU	10%
Vitamin B1 (as Thiamine Mononitrate)	.15 mg	10%
Vitamin B2 (as Riboflavin)	.17 mg	10%
Niacin (as Niacinamide)	2 mg	10%
Vitamin B6 (as Pyridoxine HCl)	.2 mg	10%
Vitamin B12 (as Cyanocobalamin)	1 mcg	10%
Biotin	30 mcg	10%
Pantothenic Acid (as Calcium Pantothenate)	1 mg	10%
Calcium (from Milk Protein and Carbonate)	200 mg	20%
Iron (as Ferrous Fumarate)	1.8 mg	10%
Iodine (as Potassium Iodide)	15 mcg	10%
Magnesium (as Magnesium Oxide)	40 mg	10%
Zinc (as Zinc Citrate)	1.5 mg	10%
Copper (as Copper Gluconate)	200 mcg	10%
Sustained Release Carbohydrates Blend	19.5 g	**
Rice Oligodextrins, Starch Resistant		
Maltodextrin (Fibersol 2®), Isomaltulose (Palatinose™), Glucomannan		
Lean Fats Blend	2 g	**
Flaxseed Powder, High Oleic Sunflower Oil, Conjugated Linoleic Acid (Tonalin®)		

\*Percent Daily Values are based on a diet of other people's secrets. Your daily values may be higher or lower depending on your calorie needs.

\*\*Daily Values not established.

	Calories: 2,000	2,500
Total Fat	Less than 65 g	80 g
Saturated Fat	Less than 20 g	25 g
Cholesterol	Less than 300 mg	300 mg
Sodium	Less than 2,400 mg	2,400 mg
Total Carbohydrate	300 g	375 g
Dietary Fiber	25 g	30 g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

Ingredients: Whey Protein Isolate, Dutch Processed Cocoa Powder, Natural and Artificial Flavors, Gums (Carboxymethyl Cellulose, Xanthan Gum), Vitamin and Mineral Blend, Sweeteners (Sucralose, Acesulfame Potassium), Salt.

Contains Ingredients Derived from Milk and Soy.

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## Summary

### Purpose

The LeanMR™ mix is to be used primarily as a satisfying and healthy meal replacement that supports body fat/weight loss goals to a better extent than competitive products. It delivers high satiety and nutrition in fewer calories:

- A healthy, convenient food replacement designed to be integrated into daily meal planning in order to assist the user in reaching and maintaining weight control and health goals
- Supply nutrient-rich, convenient snacks between meals to boost energy, curb hunger and assist in weight control by controlling calories
- Also can be used for “snacking”, which may decrease the amount of food consumed in the subsequent meal or keep one from making an inappropriate food choice (e.g. high-calorie meal driven by an uncontrolled craving) as often happens when extra hungry and especially during weight loss

### Unique Features

- Contains the highest quality whey protein – high protein product
- Proprietary blend of carbohydrates, including functional fibers, deliver a “better lasting” energy and satiety to support aggressive weight loss goals
- Contains NO ASPARTAME, LOW sugar and relatively LOW sodium
- Eight grams of fiber (31% of daily needs) for satiety and health (including helping to maintain the integrity of the digestive track and bowel regularity)
- Healthy blend of essential fats including CLA
- Designed in a synergistic relationship with all dotFIT products and a person’s traditional food intake. It is NOT spiked with unnecessary nutrients. Most other products in this space (e.g. bars, shakes, etc.) are heavily spiked with many nutrients, leading to undesirable levels within the body when combining multiple manufacturers, products and normal food intake
- When consuming only dotFIT products as directed with one’s normal daily food intake, the recipient is assured of keeping the body at a safe and optimal nutrient level
- Formulated and manufactured for great taste and pleasing texture in a FDA-registered facility in compliance with Good Manufacturing Practices (GMPs) and maintains rigorous product testing , exclusively for dotFIT, LLC

## **performance dotFIT™**

The goal of products in this category is to deliver safe, known, performance-enhancing substances not practically available from food or sources that can improve training-induced size or performance outcomes.

For complete position statement see page 3, and nutrition dotFIT for other goal enhancing formulas. Also see Appendix 3: *Xtreme Muscle Stack: Creating the Perfect Anabolic Storm*.

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## dotFIT™ CreatineMonohydrate

### Goal

Creatine, a natural substance found in the muscle, is now a proven, safe and powerful size and performance-enhancing dietary supplement. The goal of supplementing creatine is to increase the muscle levels of creatine and speed the regeneration of creatine phosphate beyond what can practically be accomplished by diet alone. Maximizing muscle stores of creatine through supplementation has been shown in hundreds of clinical trials to improve anaerobic performance,<sup>1,2,3,4,5,6,7,8,9,10,11,12,13,14,15</sup> power, strength,<sup>4,11,13,14,15,16</sup> and enhance muscle size and/or body composition<sup>4,7,13,16,17,18,19,20,21,22,23</sup> when compared to placebo.

dotFIT CreatineMonohydrate is designed to match the exact compound and dosage used in successful clinical trials that have demonstrated size and performance enhancement. The dotFIT tablet form of creatine allows the user the freedom to conveniently and accurately control delivery and dosage throughout the day. Additionally, because of its single ingredient, tablet form and size, dotFIT CreatineMonohydrate is ideal for increasing total creatine intake to desired levels when using other creatine products that contain mixed ingredients with limited dosage recommendations.

### Rationale

Creatine (Cr) is a substance found in skeletal, cardiac, and smooth muscle. Creatine synthesis occurs in the liver, kidneys, and pancreas from the amino acids methionine, glycine, and arginine.<sup>24</sup> Most of the total body creatine resides in skeletal muscle where about one-third exists as creatine (Cr) and two-thirds as phosphocreatine (PCr). Typically, the human body manufactures about one gram of creatine, obtains one gram from food, and loses about two grams per day. Therefore, under normal circumstances, creatine levels are fairly constant.<sup>25</sup> The average concentration of total Cr in skeletal muscle varies between 100 and 150 mmol/kg dry weight in normal humans. Cr and PCr are degraded to creatinine in a non-enzymatic, irreversible reaction. Creatinine is then filtered by the kidneys into the urine, the primary route of loss. The primary food sources of Cr are animal muscle meats.

Creatine enters a number of cell types by a sodium-dependent neurotransmitter transporter in the family, which is related to the taurine transporter and the members of the subfamily of GABA/betaine transporters.<sup>26,27,28</sup> Creatine uptake appears to be enhanced by insulin<sup>29,30</sup> and triiodothyronine.<sup>31</sup> Harris found that five grams of CrM, ingested five to six times daily, increased total creatine (TCr) from a mean level of 126 mM/kg dry muscle to 148.6mM/kg, with phosphocreatine representing from 20 to 40% of the increase.<sup>32</sup> Hultman et al later found a more gradual increase in TCr by ingesting three grams per day for 28 days. In both methods, TCr levels increased by approximately 20%.<sup>33</sup>

### Role of Creatine in muscle

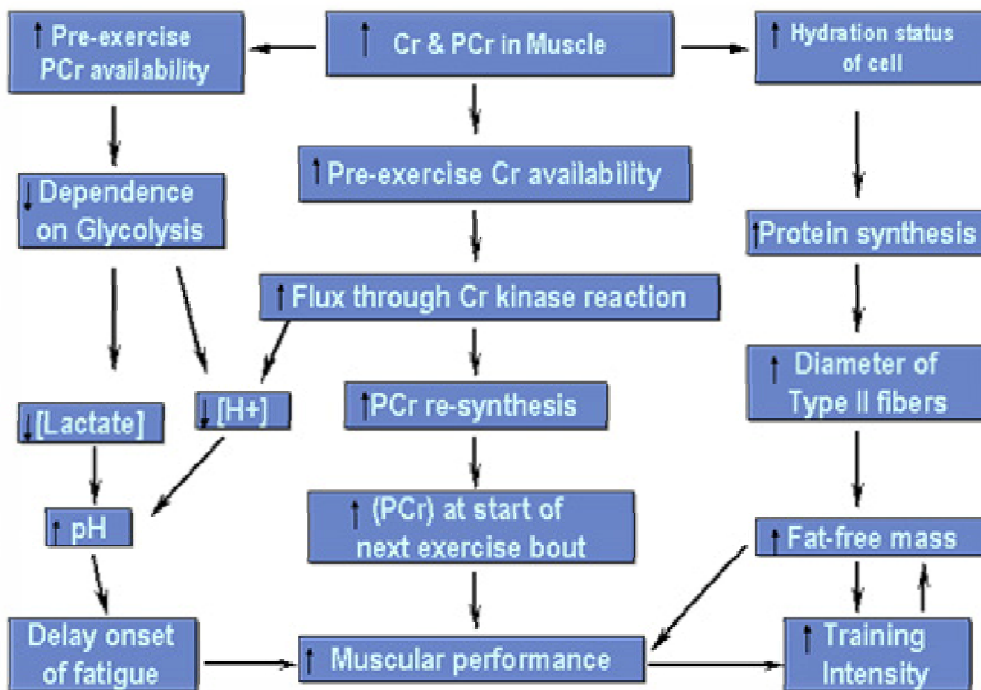
Creatine plays a pivotal role in muscle ergogenics by acting as part of an energy-buffering system.<sup>34</sup> When phosphorylated by the enzyme creatine phosphokinase (CK), the resulting product, PCr, can donate the inorganic phosphate to adenosine diphosphate (ADP), making adenosine triphosphate (ATP) and thus supporting muscle contraction.

During periods of muscle contraction when ATP breakdown exceeds synthesis, PCr rapidly replenishes ATP. PCr supplies the required energy to fuel 10 to 15 high-intensity contractions such as in weight lifting. The availability of PCr in skeletal muscle has often been cited as limiting to the continuation of maximal physical effort. To be sure, the depletion of muscle PCr stores during intense exercise is associated with the onset of muscle fatigue.<sup>35</sup> Utilization of PCr will also contribute to the buffering of lactic acid, assisting in continuation of maximal exercise.

### Creatine Supplementation and performance

The onset of fatigue during high-intensity exercise may be linked to PCr depletion, pH alterations, or lactate accumulation. Supplemental creatine may play a role in ameliorating all of these factors as shown in Figure 10 below.

Figure 10: Impact of creatine on high-intensity exercise (adapted from Volek and Kraemer<sup>36</sup> with permission).



Cr phosphate, with its high-energy phosphoryl transfer potential, serves to maintain intracellular ATP levels.<sup>37</sup> At rest, concentrations of ATP, PCr, and Cr in skeletal muscle are 4, 25, and 13 mM, respectively.<sup>37</sup> During exercise, levels of ATP decline very little until the stores of PCr are used.<sup>38</sup> Since creatine supplementation has been shown to increase intracellular levels of PCr, intracellular levels of ATP may be maintained at higher levels for a longer period of time.<sup>39,40</sup> Creatine ingestion has shown a reduction in plasma concentrations of hypoxanthine and lactate following exercise, suggesting lower levels of anaerobic glycolysis and another possible contribution to delaying muscular fatigue by maintaining a normal pH.<sup>41</sup>

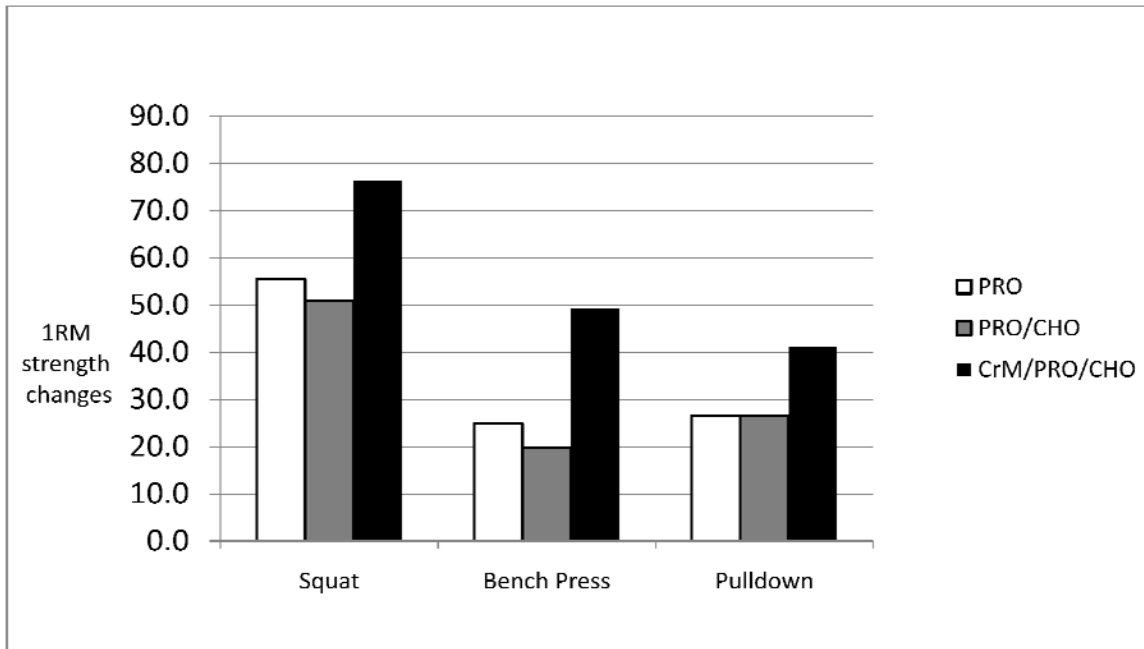
The goal of creatine loading is much like the goal of carbohydrate loading by endurance athletes, but instead of increasing glycogen storage, and thus delaying glycogen depletion, loading Cr would enhance PCr levels and delay its depletion. This practice would benefit activities that are dependent on PCr as an energy source such as sprinting and weightlifting.

### **Creatine supplementation and hypertrophy**

Creatine (Cr) supplementation is thought to contribute to hypertrophy (1) by its ability to increase high intensity muscle work capacity,<sup>3,13,16,41,42,43,44,45,46,47,48,49,50,51,52</sup> and (2) the resultant stimulation of protein synthesis. If creatine use in healthy athletes enables them to train at a higher level for extended periods (10 to 12 weeks), this should increase protein synthesis.<sup>53</sup> Thus, strength and bodybuilding athletes would have better workouts and greater muscle gain (see.

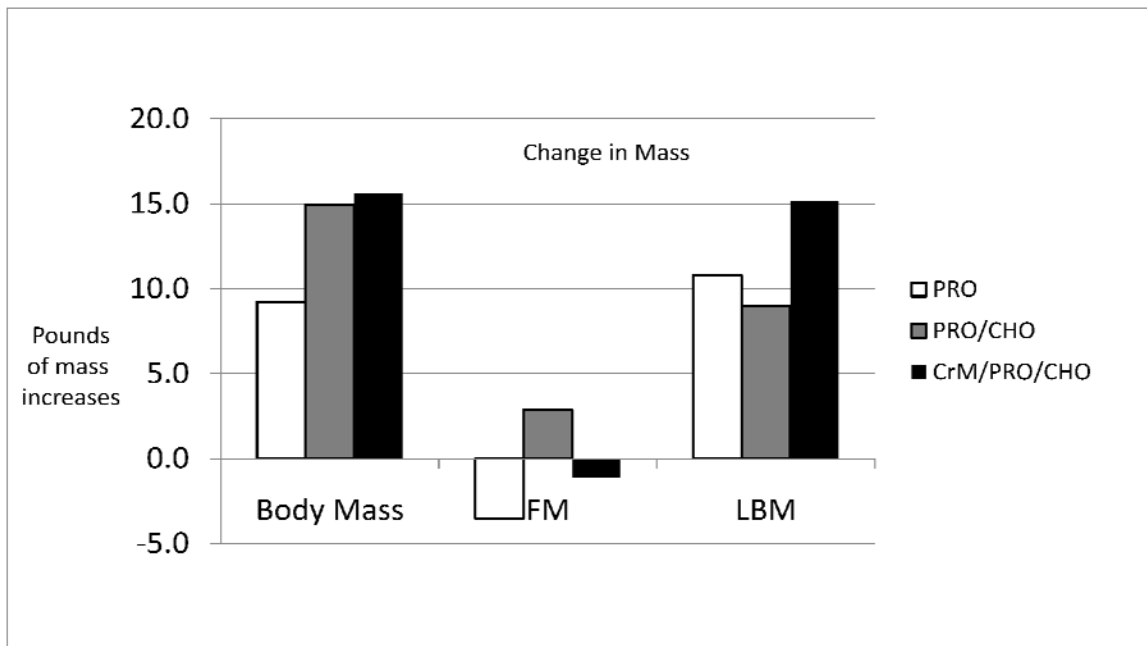
**Figure 11,**  
**Figure 12,** and **Figure 13).**

**Figure 11:** Clearly shows the creatine group out-performing the other groups.<sup>63</sup>



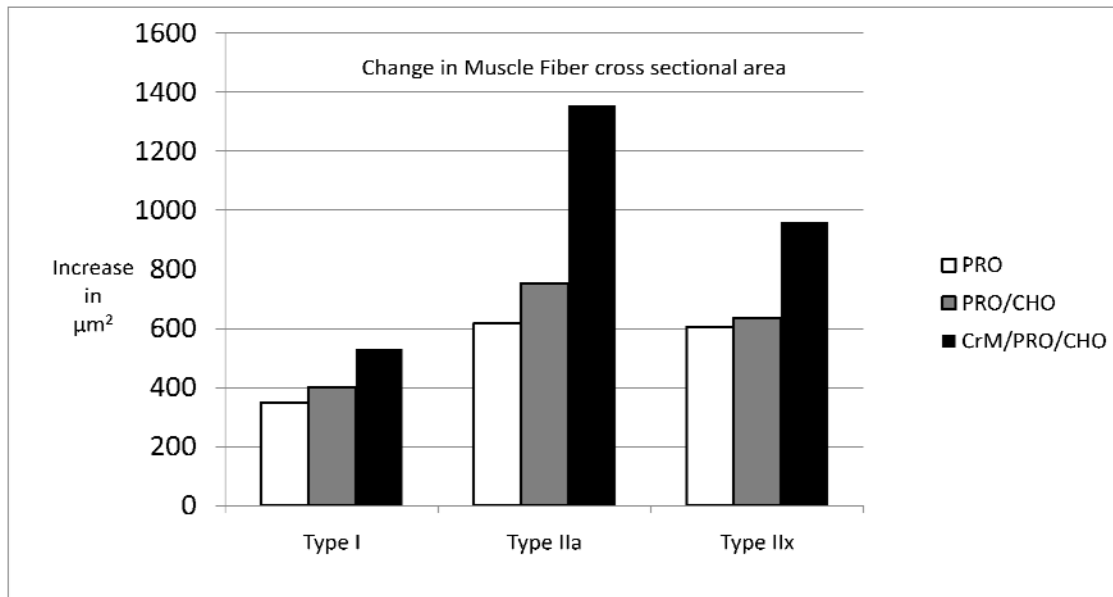
An increase in the synthesis of contractile protein may be responsible for this increase in diameter. As Figure 9 demonstrates, a significantly greater muscle hypertrophy response from the addition of CrM was evident at three different levels of physiology. That is, the CrM-treated group demonstrated a greater gain in LBM, hypertrophy of the type IIa and IIx fibers, and increase in contractile protein. Cr is theorized to be the chemical signal, coupling increased muscular activity to increased protein synthesis in hypertrophy.<sup>54,55,56,57</sup> As mentioned above, the onset of fatigue during high-intensity exercise may be linked to PCr depletion, pH alterations, or lactate accumulation, of which supplemental creatine may play a role in ameliorating, as shown in the flowchart.

**Figure 12:** Shows significantly greater increases in lean body mass (LBM) in the CrM group.<sup>63</sup>





**Figure 13:** Demonstrates CrM significantly increased muscle hypertrophy in all three muscle fiber types when compared to the other two groups without CrM<sup>63</sup>



Therefore, increasing creatine levels may not only increase work capacity, but also the signal to remodel the affected tissue. It has been suggested that Cr acts as a transcriptional or translational factor, or alters the levels of charged tRNAs or amino acid pools specific for muscle protein synthesis.<sup>54,58</sup>

In addition, creatine may act indirectly by increasing the hydration status of the cell. Evidence linking cellular volume and protein synthesis has been emerging.<sup>59,60,61,62</sup> Alterations in cell volume may affect many hormone and amino acid functions by affecting the cell membrane potential or Na<sup>+</sup> driven substrate transport.<sup>59,60,61</sup> Thus, there is an inverse relationship between muscle cell fluid content and whole body nitrogen balance. Therefore, an increase in intracellular Cr from Cr supplementation may induce cell volumizing. Volumizing over a long period, a greater amount of fat-free mass (FFM) may be yielded from resistance training in healthy athletes.<sup>22,55,56,57,58,59,60,63</sup>

<b>Supplement Facts</b>	
Serving Size: 2 Tablets	Servings Per Container: 90
Amount Per Serving	% Daily Value
Creatine (as Creatine Monohydrate)	2,500 mg *
* % Daily Value not established.	
<b>Other Ingredients:</b> Croscarmellose, Sorbitol, Stearic acid (Vegetable source), Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source), Titanium dioxide.	

## Typical Use

- Performance enhancement for experienced anaerobic athletes unconcerned with weight gain
- Experienced exercisers for improving muscle hypertrophy outcomes from resistance training
- Enhancing daily functions in the elderly (confirmed by physician)<sup>9,18,19</sup>
- Two tablets with carbohydrate for every 30-60 pounds of body weight, taken before and after workout and any time on non-training days throughout training cycle
- People with renal complications should consult a physician before use

Studies involving creatine supplementation beyond ten weeks have shown decreases in muscle creatine stores toward baseline values.<sup>16,22,64</sup> This may be due to an inadequate amount of creatine during the training cycle (most studies used a maintenance dose of five grams a day) and/or the result of creatine transporters down-regulating. One short-term (eight to nine days) human study indicates creatine transporters do not down regulate while one long-term animal study (12 weeks) utilizing extremely high dosages compared to human studies had opposing results.<sup>65</sup>

To ensure muscle creatine stores remain elevated throughout intense training cycles and to prevent the possibility of transport down-regulation, it is recommended that five to ten grams be utilized for up to ten weeks, followed by a two to four week period without supplementation. Body stores of creatine return to baseline within four weeks after supplementation is discontinued.<sup>16,33</sup> Users can repeat the cycle if appropriate. The loading strategy utilized may depend on training status and need.

## Rapid Creatine Loading Strategy

- The supplementation protocol most often described in the scientific literature is referred to as the "loading" protocol. This protocol is described as ingesting approximately 5 grams of CrM four times per day for five to seven days and three to five grams per day thereafter.<sup>66,67</sup> This protocol is most often used in scientific literature to increase muscle creatine stores
- Studies utilizing loading protocols of 20 to 30 grams per day for five to seven days resulted in approximately 50% absorption<sup>64,68,69</sup>
- Performance benefits may occur more rapidly
- May be more beneficial for athletes in a time crunch, and need a boost in performance or strength
- Approximately 25 to 45 grams of carbohydrate (depending on size) should be ingested with each dosage to maximize creatine storage<sup>70,71,72</sup>

## Gradual Creatine Loading Strategy

- It has been demonstrated that lower dosages (three grams per day) have shown to gradually (over 28 days) increase creatine stores to the same extent.<sup>64</sup> Long-term studies using low dosages (five to six grams for ten to 12 weeks, no loading phase) resulted in significant increases in strength and muscle size when combined with resistance training<sup>21,73</sup>
- The effect is more gradual; therefore performance benefits do not occur as quickly
- Athletes following a specific training cycle (e.g. muscle hypertrophy) and not in a time crunch can utilize this protocol
- Users can start slowly to maximize absorption and to let their connective tissue and muscle repair keep up with strength increases to avoid injury
- Approximately 25 to 45 grams of carbohydrate (depending on size) should be ingested with each dosage to maximize creatine storage<sup>74,75,76</sup>

Ultimately a user's terminal/maintenance dose will depend on their goal and personal preference. Creatine loading is personal and varies based on a user's physiological state. A minimum of five grams daily may maintain desired levels for many users, and up to 15 grams daily is not uncommon for larger individuals. During non-training days, the amounts should continue to be split throughout the day.

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## Precautions

### Creatine Supplementation in Children and Teens

Pediatricians have stated that creatine supplementation is not safe for children and adolescents.<sup>77</sup> While there is a shortage of investigations that have been conducted using young subjects, no study has shown creatine monohydrate to have adverse effects in children. In fact, long-term CrM supplementation (e.g., four to eight grams per day for up to three years) has been used as an adjunctive therapy for a number of creatine synthesis deficiencies and neuromuscular disorders in children.<sup>78,79</sup> Considering the lack of available data on youth sports performance and CrM supplementation dotFIT™ does not recommend that children under the age of 18 use creatine monohydrate. Young athletes must learn that creatine is not a magic potion or short cut to athletic success and that proper training and dietary strategies to optimize performance must be accomplished first.<sup>80</sup>

## Contraindications

Due to one study performed on rats and two human case reports, creatine supplementation is contraindicated for those with kidney problems or at risk for kidney disease because of possible increased kidney stress.<sup>81</sup> However, clinical trials involving creatine supplementation in healthy adults

have found serum creatine and creatinine levels (indicators of renal dysfunction) within normal ranges.<sup>81</sup> Creatine supplementation should be avoided by pregnant or lactating women because of the lack of studies done with this population. Athletes not desiring weight gain should avoid creatine supplementation or attempt to lose body fat simultaneously in order to offset muscle weight increases thus still receiving creatine's potential performance benefits.

## **Adverse Reactions**

Despite the amount of creatine ingested (i.e. up to 30 grams per day for five years) in clinical research, no adverse reactions (e.g. cramping or increases in core body temperature) have been documented.<sup>6,8,40,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100</sup>

## **Upper Limit/Toxicity**

The upper limit for creatine monohydrate has not been established.<sup>81</sup>

## **Summary**

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### **Purpose**

- Performance enhancement for experienced anaerobic athletes unconcerned with potential weight gain
- Especially those with a poor intake (low or no meat intake) or low biosynthesis
- Experienced exercisers for improving muscle hypertrophy outcomes from resistance training
- Especially those with a poor intake (low or no meat intake) or low biosynthesis
- Enhancing daily functions in the elderly (as confirmed by physician)
- When using other multi-ingredient formulas that contain creatine, it can be a convenient way to increase total daily creatine without increasing intake of the other ingredients

### **Unique Features**

- Contains pure creatine monohydrate, the form shown in over 500 studies to yield results
- Convenient tablet delivery (consistent dose, no mess, no stomach upset)
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

## dotFIT™ CreatineXXL™

### Goal

This product is designed to increase the well-known strength- and size-enhancing effects of creatine monohydrate supplementation by supplying an additional compound that work synergistically with creatine to optimize muscle cell volume and buffer lactate. Therefore, the goal of this product is to maximize and maintain muscle cell volume and cellular anabolic signaling during intense training regimes. This is while delaying the onset of fatigue at each exercise bout, leading to increased size and performance gains when compared to supplementing creatine alone. See Appendix 3: *Xtreme Muscle Stack: Creating the Perfect Anabolic Storm*.

### Rationale

Cellular hydration is critical to regulating protein metabolism within muscle cells.<sup>1,2</sup> Cell swelling stimulates muscle protein synthesis (MPS)<sup>3,4</sup> and shrinkage increases protein degradation. Therefore, high cell volume can mimic the positive effects of the body's anabolic hormones on protein metabolism. When the nutrients involved in cell swelling can be delivered throughout the day in the proper amounts, exercise-induced muscle protein synthesis could be amplified.<sup>5,6,7,8</sup> This formula contains scientifically validated compounds that can increase and maintain cell swelling, leading to increased gains in size, strength and performance.

**Creatine monohydrate (CrM):** Myriad published, scientific articles have consistently reported that supplemental creatine monohydrate can dramatically improve training-induced strength,<sup>9,10,11,12,13</sup> performance<sup>4,11,13,14,15,14,15,16,17,18,19,20,21,22,23,24</sup> and size gains.<sup>4,7,25,26,27,28,29,30,31,32</sup> Creatine monohydrate supplementation has been shown to induce cell volume,<sup>8</sup> increase the diameter of fast twitch muscle fibers,<sup>33</sup> delay fatigue and increase force production when compared to a non-supplemented state.<sup>34</sup> All conditions can contribute to maximizing each training bout, leading to creatine supplementation's ability to increase long-term muscle and strength gains.

**β-alanine:** Exercise can raise H<sup>+</sup> production via ATP/CP and glycolytic energy pathways.<sup>35</sup> This increased H<sup>+</sup> concentration lowers blood and muscle pH and eventually leads to fatigue and decreased muscular work capacity. Studies show that supplemental β-alanine can increase muscular content of carnosine (an intramuscular buffer of H<sup>+</sup>) by 42-80% (dependent upon dose and length of use), delaying fatigue during prolonged, intense workouts.<sup>36,37</sup>

Although creatine supplementation, by itself, has been shown numerous times to increase time to fatigue and training intensity, β-alanine may enhance these effects when added to creatine. Hoffman et al<sup>35</sup> demonstrated that creatine monohydrate plus β-alanine reduced fatigue rates, providing a greater training stimulus and a higher volume of exercise performed when compared to creatine alone or a placebo. Additionally, the creatine plus β-alanine group had greater increases in lean body mass (LBM)

and larger decreases in body fat compared to the other subjects. The increase in training intensity and volume by the CrM and  $\beta$ -alanine subjects may have led to their positive body composition outcomes.

**Glutamine** plays an important role in regulating protein synthesis. It acts as an anti-catabolic agent and may add to glycogen storage following exercise, thus serving as an important contributor to cell volume and muscle recovery.<sup>2</sup> During cell swelling, there is an increase in muscle cell glutamine transporters, allowing more glutamine uptake.<sup>38,39</sup> This formula uses glutamine peptide, which may allow greater absorption of glutamine than other forms.

**Glycine** is included in this formula because it is also involved in cell swelling and maintenance of cell volume.<sup>2,40</sup> Given in combination with the other cell swelling agents listed above, glycine may enhance the overall volumizing effect.

<b>Supplement Facts</b>	
Serving Size: 5 Tablets	Servings Per Container: 60
Amount Per Serving	% Daily Value
Creatine (as Creatine Monohydrate)	3,000 mg *
Beta-Alanine	1,600 mg *
dotFIT™ Proprietary Cell Hydration Complex (L-Glutamine, L-Glycine)	2,100 mg *
* % Daily Value not established.	
<b>Other Ingredients:</b> Calcium phosphate, Stearic acid (Vegetable source), Sorbitol, Povidone, Croscarmellose, Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).	

## Typical Use

### Dosage

- Gradually increase the number of tablets as shown below to keep the cell transporters from down-regulating and allow connective tissue and muscle recovery keep up with strength increases to help avoid injury
- For maximum benefit and results, CreatineXXL™ should only be used during intense training cycles
- Approximately 25-45 grams of carbohydrate should be ingested with each dose
- Incorporate with NO7Rage™ and AminoBoostXXL™ as part of the dotFIT™ "Xtreme Muscle Stack" to provide maximum muscle pump and continuous training results for serious exercisers and athletes

**Table 5:** CreatineXXL Intake Recommendations\*

<b>Week No.</b>	<b>Tablets Per Day</b>	<b>Time</b>	<b>Training Intensity</b>
1	5	30 min before Workout (WO)*	High
2	8	4 tabs 30 min before WO* (4 tabs immediately after)	High
3	10	5 tabs 30 min before WO* (5 tabs immediately after)	High
4	10	5 tabs 30 min before WO* (5 tabs immediately after)	High
5	10	5 tabs 30 min before WO* (5 tabs immediately after)	High
6	10	5 tabs 30 min before WO* (5 tabs immediately after)	High
7	10	5 tabs 30 min before WO* (5 tabs immediately after)	High
8	10	5 tabs 30 min before WO* (5 tabs immediately after)	High
9	10	5 tabs 30 min before WO* (5 tabs immediately after)	High
10	10	5 tabs 30 min before WO* (5 tabs immediately after)	Peak of training program or the week of comp.
11	8	4 tabs 30 min before WO* (4 tabs immediately after)	Low/med
12	5	split throughout the day	Off
13	0	0	Low/med
14	0	0	Med/high

\* For the maximum effect of creatine supplementation and increases in cell volume, all dosages should be taken with 25-45g of carbohydrate.

### **Precautions**

See Creatine for precautions.  $\beta$ -alanine, glutamine and glycine appear to be well-tolerated at the suggested doses.

### **Contraindications**

See CreatineMonohydrate for contraindications. Athletes who wish to prevent weight gain should avoid CreatineXXL. Women who are pregnant or lactating are contraindicated because of a lack of data for these populations.

## Adverse Reactions

See CreatineMonohydrate for adverse reactions.  $\beta$ -alanine supplementation at 6.4 grams, twice the amount found in CreatineXXL™ has not reported any adverse events.<sup>35,36</sup> Glutamine and glycine are well-tolerated at the doses found in CreatineXXL.

## Upper Limit/Toxicity

See CreatineMonohydrate for upper limit and toxicity information. Six point four grams of  $\beta$ -alanine<sup>35,36</sup> and 40 grams of alanine<sup>41</sup> have been safely used in clinical trials. Glutamine supplementation in a clinical setting often exceeds doses over 20 grams daily with no serious side effects.<sup>42</sup> Point eight g/kg per day of glycine has been used for up to six weeks without any severe side effects.<sup>43</sup>

## Summary

### Purpose

The supplement is the first of its kind and only available through dotFIT™. The combination of ingredients (i.e. creatine and  $\beta$ -alanine) have been shown to increase training intensity, training volume and lean muscle mass to a greater extent than creatine alone, making it the perfect choice for many size, strength and performance athletes.

- CreatineXXL by itself can be a weight (muscle) gain product for intermediate/advance exercisers and athletes seeking an advantage during high intensity, high-volume training regimes
- CreatineXXL can be used in combination with other performance products in order to amplify their effects, especially to overcome training and muscle size plateaus CreatineXXL will be incorporated into the dotFIT software dietary supplement recommendations as part of the muscle gain/performance recommendation for all intermediate/advanced athletes/exercisers that choose anaerobic performance/ muscle gain as the primary goal
- Those concerned with weight/muscle gain as a possible hindrance to performance may prefer not to use CreatineXXL and may seek other performance recommendations suggested by dotFIT

### Unique Features

- The product works to not only increase muscle mass but also prolong time to fatigue during intense, high-volume training regimes
- No other performance/weight gain product on the market contains the above ingredients in amounts that have been shown to work synergistically to create a better stimulus for muscle/strength gain in convenient tablet form



- Can be used alone or with NO7Rage™ and AminoBoostXXL™ as part of the dotFIT™ "Xtreme Muscle Stack" providing maximum muscle pump and continuous training results for serious exercisers and athletes
- dotFIT™ CreatineXXL tablets are engineered with a proprietary "Swell and Release" delivery system that offers tremendous advantages for increasing the speed in which nutrients are available for uptake before exercise
- Scientifically proven system works by temporarily attracting fluid into the tablet upon ingestion which "pressurizes" or "swells" the contents for immediate release
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

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## dotFIT™ NO7Rage™

### Goal

The goal of this product is to provide specific compounds that have the ability to enhance blood and nutrient flow to exercising muscles in order to amplify the training response. NO7Rage includes ingredients shown to improve reaction time, endurance and force production. In order to improve training desire and focus, NO7Rage contains compounds that in clinical trials have demonstrated positive cognitive effects. All together this product has the ability, through multiple pathways, to significantly enhance strength, performance and size training outcomes when compared to similar products or a non-supplemented state. See Appendix 3: *Xtreme Muscle Stack: Creating the Perfect Anabolic Storm*.

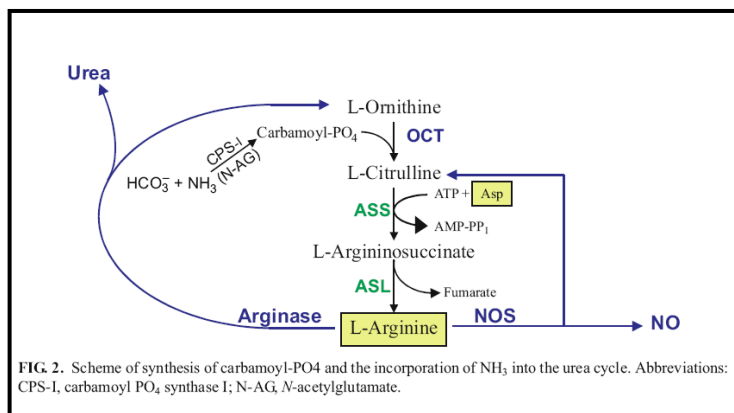
### Rationale

NO7Rage contains a proprietary blend of compounds that work synergistically to increase blood flow (vasodilatation), cell volumization, and mental focus. Greater blood flow to skeletal muscle would increase the delivery of oxygen, energy and rebuilding nutrients while speeding up the removal of waste products. This leads to a potential strength improvement, less muscle breakdown and greater net protein synthesis, especially if combined with an appropriate “dose and timed” delivery of specific amino acids (AminoBoostXXL™).

**L-Citrulline:** Arginine is the primary amino acid found in most nitric oxide-producing (NO) supplements.<sup>1</sup> It has been shown to be involved in the production of NO<sup>2,3,4,5,6</sup> and creatine biosynthesis<sup>7</sup>, yet when used orally, arginine is subjected to substantial intestinal and liver metabolism by arginase.<sup>8,9,10,11</sup> This makes L-arginine virtually ineffective at increasing NO production. L-citrulline, a ubiquitous non-protein amino acid, is not metabolized in the intestines or liver and does not promote arginase activity.<sup>9</sup> The body readily converts L-citrulline to L-arginine, raising plasma and tissue levels of L-arginine thus leading to enhanced NO production (see

Figure 14).<sup>9</sup>

**Figure 14:** Metabolic Pathway for NO production



**Creatine monohydrate:** See CreatineMonohydrate.

**Betaine** functions as an intracellular osmolyte to regulate cell volume by countering changes in extracellular tonicity and to stabilize cells (i.e. muscle) against a variety of physiologic perturbations.<sup>12,13,14,15</sup>

**Glucuronolactone, caffeine, and taurine** in combination have been shown to have numerous positive effects including increased mental focus, reaction time and physical endurance.<sup>16,17,18</sup> This is accomplished through various mechanisms including stimulation of the central nervous system<sup>19</sup>,

regulation of neurotransmitters in the brain, and alterations in calcium levels within muscle thus increasing activation.<sup>20,21</sup>

**Glycerol** may enhance fluid retention within the body, which leads to greater volumization and pump within the exercising muscles.<sup>22,23,24</sup>

<b>Supplement Facts</b>			
Serving Size: 25 g (1 Scoop)			
Servings Per Container: 40			
<b>Calories 44</b>			
Calories from Fat 0			
Amount Per Serving	% Daily Value**	Amount Per Serving	% Daily Value**
Total Fat	0 g 0%	Magnesium (Gluconate)	5 mg 1%
Saturated Fat	0 g 0%	Sodium (Chloride)	118 mg 5%
Trans Fat	0 g 0%	Potassium (Citrate)	100 mg 3%
Cholesterol	0 mg 0%	NO7Rage™ Proprietary Blend	6800 mg *
Total Carbohydrate	11 g 4%	Taurine	*
Dietary Fiber	0 g 0%	Glycerol	*
Sugars	0 g 0%	L-Citrulline L-Malate	*
Protein	0 g 0%	Betaine Anhydrous	*
Vitamin C	250 mg 416%	Creatine Monohydrate	2500 mg *
Vitamin E	50 IU 166%	Glucuronolactone	400 mg *
(D-alpha Tocopheryl succinate)		Caffeine	175 mg *
Vitamin B6 (Pyridoxine HCL)	25 mg 1250%		
Vitamin B12 (Methylcobalamin)	120 mcg 2000%		

\*% Daily Value not established.  
 \*\*Percent Daily Values are based on a 2,000 calorie diet

**Other Ingredients:** Maltodextrin, Silica, Waxy maize, Beet powder, Citric acid, Malic acid, Tricalcium Phosphate, Natural and Artificial flavor, Sucralose.

### Typical Use

- As an aid for intermediate and advanced anaerobic athletes to enhance size and strength gains from exercise
- Performance athletes not affected by weight gain (must self-determine)
- All experienced, aspiring and competitive bodybuilders and other anaerobic athletes attempting to increase muscle size and strength
- Incorporate with AminoBoostXXL™ and CreatineXXL™ as part of the dotFIT™ “Xtreme Muscle Stack” to provide maximum muscle pump and continuous training results for serious exercisers and athletes

### Dosage

- Thirty to 40 minutes before workout
- Under 150 lbs. take 1.5 scoop
- 150-200 lbs. take 2 scoops

- 200 lbs. plus take 2.5 scoops
- Not necessary on non-workout days if using other products containing creatine; otherwise use half of recommended dose on non-training days
- Do not exceed 3 scoops (primarily due to caffeine content)

## **Precautions**

NO7Rage™ contains caffeine, which is a CNS stimulant and should be avoided by those sensitive to its effects. NO7Rage is otherwise a well-tolerated, ephedrine-free ergogenic aid.

## **Contraindications**

NO7Rage supplementation is contraindicated in pregnancy and lactation because of the CNS stimulant (caffeine). Caffeine can interfere with some medications such as lithium and MAO inhibitors. Caffeine is contraindicated in those with cardiac arrhythmias, other forms of heart disease, hyperthyroidism and peptic ulcers. Creatine is contraindicated for those with kidney problems because of potentially greater kidney stress.

## **Do not use if**

- Using other products containing high doses of caffeine or are caffeine sensitive
- Using erectile dysfunction drugs
- Individual has a heart condition or is using related medications
- Taking medication for hypothyroidism

## **Adverse Reactions**

Large doses of caffeine may result in diuresis (usually in non-users) and insomnia when taken late in the day. Numerous studies on the safety of caffeine exist. Caffeine misuse can cause tension, anxiety, excitability and restlessness at doses over 400 mg at once. Doses over 1000 mg at once can induce toxicity symptoms. Adverse effects due to high amounts of caffeine are not likely to be seen at the recommended dose of NO7Rage. Individuals sensitive to caffeine may wish to start with a low dose and work up to the recommended dose.

**Glycerol:** Even at doses up to 1 g/kg, glycerol is considered well tolerated, with a few incidences in

clinical trials of gastrointestinal upset, nausea, vomiting, dizziness and bloating.<sup>25</sup> The dose of glycerol in NO7Rage is much lower, making such adverse events improbable.

**Citrulline:** No adverse reactions have been reported in doses up to 6 grams of citrulline malate.<sup>26</sup>

**Creatine:** See dotFIT™ CreatineMonohydrate.

**Glucuronolactone:** Glucuronolactone is a substance found in many caffeine and taurine containing energy drinks at doses of 500 mg or more per drink. It is considered safe and well-tolerated in these beverages.<sup>16,27</sup>

**Taurine:** Taurine is an amino acid naturally present in many foods, especially meats and fish. It has been combined with caffeine in several beverage studies with no adverse events reported except in one study where a mild increase in mean arterial blood pressure (2.8 mm Hg average) and an eight-beat-per-minute reduction in heart rate were shown.<sup>28,29,30</sup> Taurine is used for congestive heart failure at higher doses from two to six grams daily to help increase stroke volume with few side effects such as mild diarrhea.<sup>31</sup> It is also used for other disease states such as hepatitis and cardiac arrhythmias where doses from 12 to 20 grams daily were used.<sup>31</sup> Mild diarrhea was reported in a few subjects in the heart failure studies.

**Magnesium:** High doses of magnesium from supplements greater than 350 mg daily have been associated with diarrhea. This is unlikely with NO7Rage™, especially at a dose smaller than two-and-a-half scoops.

### Upper Limit/Toxicity

Doses of caffeine should not exceed 1000 mg/day, leaving the dose in NO7Rage at a safe level.

**Taurine:** Taurine has an LD50 in rats of greater than 64g/kg<sup>580</sup> and is present in the human, which suggests it is quite safe in this product.

**Citrulline:** The LD50 is not available at this time.

**Glycerol:** The LD50 for Glycerol is 12.6 g/kg.<sup>582</sup>

**Magnesium:** The UL for magnesium was set at 350 mg from supplements because of a few studies that showed diarrhea as a side effect. Most studies with doses as high as 1200 mg/day showed no adverse effects. In the unlikely event that diarrhea occurs while using the NO7Rage at the 2.5-scoop dose, reduce the dose until the symptoms disappear.

**Vitamin B6:** B6 has a UL of 100 mg. Even when this product is combined with a dotFIT™ multivitamin and a typical diet, the total daily dose is well below the UL.

**Vitamin B12:** B12 has no UL, NOAEL or LOAEL; therefore, when this product is combined with a dotFIT™ multivitamin and a typical diet, the total daily dose is regarded as safe.

**The upper limit (UL) for Vitamin E** is 1500 IU; even when this product is combined with a dotFIT multivitamin and a typical diet, the total daily dose is well below the UL.

**The upper limit (UL) for Vitamin C** is 2000 mg, even when this product is combined with a dotFIT multivitamin and a typical diet, the total daily dose is well below the UL.

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## Summary

### Purpose

- NO7Rage™ by itself can be a weight (muscle) gain product for intermediate/advance exercisers and athletes seeking an advantage during high intensity, high-volume training regimes
- NO7Rage can be used in combination with other performance products in order to amplify their effects, especially to overcome training and muscle size plateaus
- Based on NO7Rage's stimulatory and positive cognitive effects (mood enhancement), NO7Rage can stimulate your training desire while increasing workout intensity
- NO7Rage will be incorporated into the dotFIT software dietary supplement recommendations as part of the muscle gain/performance recommendation for all intermediate/advanced athletes and exercisers who choose anaerobic performance/muscle gain as the primary goal
- Those concerned with weight/muscle gain as a possible hindrance to performance may prefer not to use NO7Rage and may seek other performance recommendations suggested by dotFIT

### Unique Features

- Contains L-citrulline which has been shown to be a more effective substrate for inducing NO production

- Contains a unique, proprietary blend of taurine, glycerol and betaine to enhance the pump during resistance training workouts
- Includes a blend of glycerol powder that is exclusive to dotFIT's manufacturer and may be the most important active ingredient related to the desired "pump" outcome
- The flavor supplied by the manufacturer will be proprietary and hopefully appeal to a greater portion of users than existing products
- Can be used alone or with AminoBoostXXL™ and CreatineXXL™ as part of the dotFIT™ "Xtreme Muscle Stack" providing maximum muscle pump and continuous training results for serious exercisers and athletes
- Dosage instructions will be far more accurate per individual

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## **dotFIT™ WorkoutExtreme™**

### **Goal**

This product is designed to increase exercise focus, performance, and intensity without weight gain (as occurs with Creatine). The unique formula quickly supplies a group of compounds that have clinically demonstrated positive results in increasing energy levels and delaying the onset of fatigue. Users have the potential to improve training sessions and outcomes when properly consuming WorkoutExtreme (WE). Additionally, WorkoutExtreme can be used by anyone not bothered by stimulants, as a pre-workout or daily “pick-me-up”.

### **Rationale**

The unique formulation contains several ingredients that have been shown to enhance the user’s focus and work capacity. WE special synergistic formulation contains the following:

#### **Caffeine**

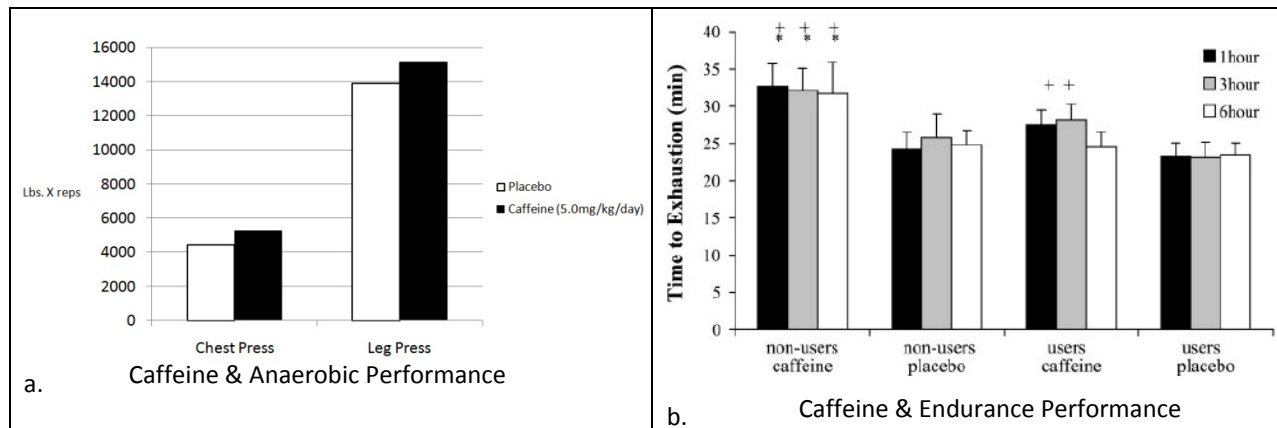
Caffeine is commonly ingested by people who exercise or participate in sports, due to its well-established ergogenic and stimulant effects. It belongs to a group of compounds called the methylxanthines.<sup>1</sup> Caffeine has Generally Recognized As Safe (GRAS) status in the United States.<sup>2</sup>

Various studies have reported caffeine ingestion to cause an increase in mobilization of free fatty acids (FFA),<sup>3,4,5,6</sup> spare glycogen, stimulate the release of epinephrine, block the effects of adenosine<sup>7</sup>, alter the calcium level in muscle, possibly increase blood pressure in nonhabitual users<sup>8</sup>, and stimulate the central nervous system.<sup>9,10,11,12,13</sup>

All of these physiological effects may explain caffeine’s ability to reduce fatigue<sup>14</sup>, improve concentration<sup>15</sup>, and enhance mental alertness.<sup>8,16,17,18</sup>

Caffeine also may stimulate specific tissues directly, such as adipose and peripheral blood vessels. Additionally, caffeine may stimulate neurons, cardiac muscles, relaxation of smooth muscle, and gastric acid secretions.<sup>8,10</sup> Lastly, numerous studies have demonstrated caffeine’s ability to increase exercise performance time to exhaustion (see Figure 15).<sup>8,19,20,21</sup>

**Figure 15 a & b:** Figure 1a shows a significant increase in exercise volume and performance.<sup>8</sup> Figure 1b also shows caffeine's effects based on time of administration before exercise.<sup>20</sup>



### Glucuronolactone

Glucuronolactone is a naturally occurring chemical compound produced by the metabolism of glucose in the liver. This metabolite acts by transferring an amino group during protein metabolism and is one of the major components of energy drinks worldwide. No studies yet have examined the effect of glucuronolactone ingestion alone on exercise performance. However, when ingested with taurine and caffeine, it has been shown to improve cognitive function, alertness, and physical performance due to its ability to fight fatigue and provide a sense of well-being.<sup>22,23</sup>

### Taurine

Taurine is a conditionally essential, sulfur-containing amino acid that is the most abundant free amino acid in many tissues. Unlike other amino acids, Taurine is not incorporated into proteins, but it plays many roles in the body, including cell volume (osmoregulation),<sup>24</sup> bile acid conjugation, detoxification, membrane stabilization, and modulation of excitatory neurotransmitters and intracellular calcium levels.<sup>25,26,27,28</sup> More simply, taurine helps regulate heartbeat and muscle contractions, water balance, energy levels, and levels of neurotransmitters in the brain.<sup>29</sup>

Taurine is included in this formula to increase physical endurance<sup>30,31</sup> and reaction speed, increase concentration and mental alertness, improve overall feeling of well-being, enhance water balance and nutrient uptake in muscle cells, and aid in maintaining optimal hydration during exercise.

### Panax Ginseng (American)

The Ginseng in the dotFIT formula is standardized to yield the ideal concentration of ginsenosides (the active ingredients of ginseng), giving it the potential to improve performance by sparing glycogen,

increasing fat oxidation, and decreasing lactate accumulation.<sup>32,33,34,35,36</sup> Ginseng often acts as an adaptogen to build resistance to physical and mental stress.<sup>37,38,39,40,41,42,43</sup> High doses of Panax ginseng have been used in studies to support the claim that ginseng has ergogenic properties in aiding recovery from exhaustive exercise by attenuating oxidative stress.<sup>44</sup>

<b>Supplement Facts</b>	
Serving Size: 4 Capsules	Servings Per Container: 30
Amount Per Serving	% Daily Value**
Taurine	1000 mg *
Glucuronolactone	600 mg *
Panax Ginseng (8% Ginsenosides)	300 mg *
Caffeine Anhydrous	300 mg *

\* % Daily Value not established.  
 \*\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.  
**Other Ingredients:** Talc U.S.P, Magnesium Stearate (Vegetable source), Silicon Dioxide, Gelatin.

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### Typical Use

- Experienced athletes (aerobic and anaerobic) seeking to improve performance without water retention
- Do not use if individual experiences adverse effects from stimulants
- Do not mix with other stimulants
- Take four tablets approximately one hour before exercise with 8 oz of water. If this dose is too intense, use two tablets
- To use this product effectively, cycle for three weeks on and three weeks off during intense training cycles

### Precautions

WorkoutExtreme™ contains central nervous system (CNS) stimulants and should be avoided by individuals sensitive to caffeine or who are contraindicated for caffeine-containing supplements. It is a common belief that caffeine ingestion causes dehydration leading to poor sports performance in athletes. However, recent scientific investigations have shown that acute caffeine ingestion does not alter hydration status in exercising adults.<sup>45,46</sup> Likewise, caffeine ingestion does not appear to cause

ventricular or atrial arrhythmias except in extremely high doses (the equivalent of 8 cups of coffee per day).<sup>1,47,48</sup>

## **Contraindications**

WorkoutExtreme™ supplementation is contraindicated in pregnancy and lactation because of the CNS stimulants caffeine and ginseng. Caffeine can interfere with some medications such as lithium and MAO inhibitors. Although evidence that caffeine ingestion causes cardiac arrhythmias is inconclusive, individuals should consult with their physician first before using WorkoutExtreme. Caffeine is contraindicated in heart disease, hyperthyroidism and peptic ulcers.

American ginseng (Panax) is contraindicated for those taking cholinesterase and MAO inhibitors, anticoagulants, antiplatelet drugs and hypoglycemic medicines because of potential interactions.

## **Adverse Reactions**

**Caffeine** may cause insomnia when taken late in the day. Numerous studies on the safety of caffeine exist.<sup>8</sup> Caffeine abuse can cause tension, anxiety, excitability and restlessness at doses over 400 mg at once. Doses over 1000 mg at once can elicit toxicity symptoms. Adverse events of such high doses of caffeine are not likely to be seen at the recommended dose of WorkoutExtreme. Sensitive individuals may wish to start with a low dose and work up to the recommended dose. Clinical trials have not shown any adverse reactions with taurine.<sup>49</sup> Adverse reactions with Panax Ginseng are similar to those found in placebo controls.<sup>50</sup>

**Glucuronolactone** is a substance found in many caffeine- and taurine-containing energy drinks at doses of 500 mg or more per drink. It is considered safe and well-tolerated in these beverages.<sup>22,51</sup>

**Taurine** is an amino acid naturally present in many foods, especially meats and fish. It has been combined with caffeine in several beverage studies with no adverse events reported except in one study where a mild increase in mean arterial blood pressure (2.8 mm Hg average) and an eight-beat-per-minute reduction in heart rate were shown.<sup>52,53,54</sup> Taurine is used for congestive heart failure at higher doses from two to six grams daily to help increase stroke volume with few side effects such as mild diarrhea.<sup>55</sup> It is also used for other disease states such as hepatitis and cardiac arrhythmias doses from 12 to 20 grams daily were used.<sup>31</sup> Mild diarrhea was reported in a few subjects in the heart failure studies.

## Upper Limit/Toxicity

**Caffeine:** doses of caffeine should not exceed 1000 mg/day leaving the dose in WorkoutExtreme™ at a safe level.

**Taurine:** Taurine has an LD50 in rats of greater than 64g/kg<sup>580</sup> and is present in the human suggesting it is quite safe in this product.

**Panax ginseng:** no data available.

**Glucuronolactone:** no data available.

## Summary

### Purpose

- Athletes (aerobic and anaerobic) seeking an energy boost and/or to improve performance without water retention
- Ideal for endurance athletes not wishing to gain weight while improving performance
- Appropriate for use by anyone not bothered by stimulants as an energy enhancer
- Not for use by those who experience adverse effects from stimulants

### Unique Features

- Increases workout energy and intensity without weight gain in an easy-to-use-and-carry pill form
- Ginseng is standardized and certified for proper ginsenosides that have shown positive metabolic effects
- Uses a rapid release capsule delivery system to maximize the formula's potential and provides an immediate impact on training intensity
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

## dotFIT™ Recover&Build™

### Goal

This product provides the branched-chain amino acids (BCAA), leucine, isoleucine and valine in an ideal ratio with the goal of reducing exercise-induced muscle damage while enhancing recovery. BCAAs supplementation accomplishes this goal by

- Contributing substrate for energy demands
- Enhancing muscle protein synthesis (MPS)<sup>1,2</sup>
- Attenuating muscle protein breakdown.

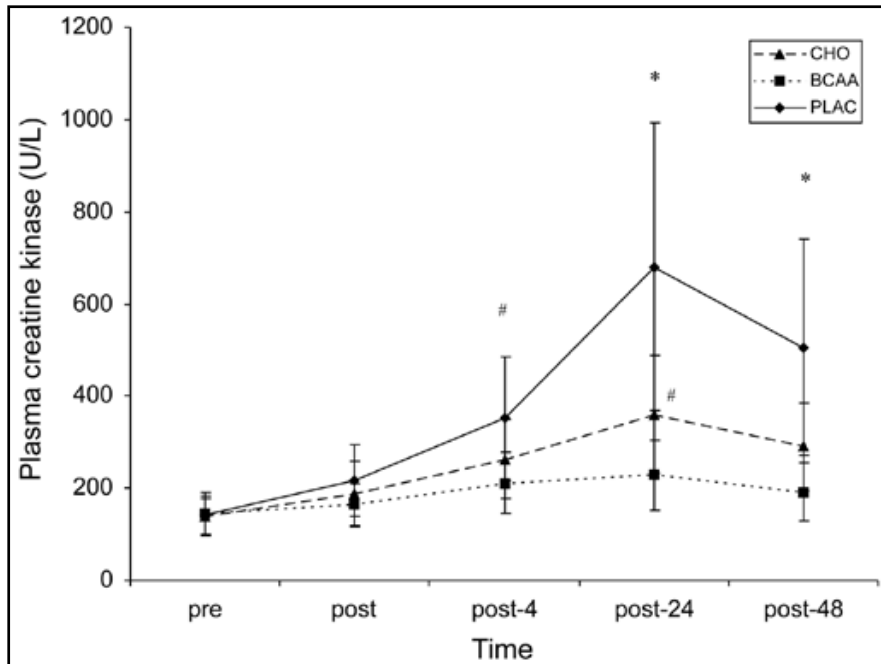
Faster recovery from exercise offers the participant the potential to enhance each subsequent training bout leading to a greater, long-term training outcome.

### Rationale

**Leucine, isoleucine and valine** are the three branched-chain amino acids (BCAA) so named because of their molecular structure.<sup>3</sup> BCAAs compose approximately 35-40 percent of the amino acids found in body proteins (14-18% in skeletal muscle) and are oxidized in significant amounts in skeletal muscle.<sup>4,5,6</sup> The oxidation of BCAAs in muscle for energy may increase fivefold during strenuous exercise.<sup>7,8</sup> This occurs when BCAAs contribute their nitrogen group to pyruvate, an end product of glucose metabolism, to form alanine. Alanine is then transported back to the liver to reform glucose which can be shuttled back to the working muscles. This is known as the glucose-alanine cycle.<sup>9</sup> Supplying BCAAs prior to exercise may reduce the amount utilized from muscle pools, thus increasing muscular endurance, decreasing protein degradation and muscle soreness.<sup>10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25</sup>

Greer et al demonstrated a greater reduction in creatine kinase (a marker of muscle damage) and muscle soreness with BCAA supplementation compared to a carbohydrate solution and placebo.<sup>26</sup> Recent studies have found BCAAs (specifically leucine) to have an anabolic effect on skeletal muscle via mTOR (mammalian target of rapamycin), an enzyme that regulates protein synthesis.<sup>27,28,29,30</sup> Additionally, it may amplify insulin's anabolic properties, eliciting greater gains in lean muscle tissue and potentiating recovery from exercise. These findings suggest that not only are BCAAs building blocks for muscle protein synthesis but also that leucine is a modulator of protein metabolism.<sup>29</sup>

**Figure 16:** Plasma creatine kinase (CK) is shown to be accurate indicator of muscle damage, as shown here, BCAA supplementation decreases Cr kinase over 2 days.



It is hypothesized that the transport of tryptophan across the blood-brain-barrier (BBB) increases levels of 5-hydroxytryptamin (5-HT), leading to fatigue during long-duration exercise (e.g. endurance events).<sup>31,32</sup> An increase in serum BCAAs may reduce uptake of tryptophan during endurance exercise, hence decreasing 5-HT and central fatigue. When BCAA supplementation is supplied to endurance athletes, rates of perceived exertion and mental fatigue have been shown to be reduced during exercise.<sup>31,32</sup>

**Leucine** is the most potent regulator of protein synthesis, and is therefore provided in the largest amount in this unique formula.<sup>33,34,35,36,37,38</sup>

**Isoleucine and valine** are supplied in a ratio that has been used in the most current research.<sup>26</sup>

In summary, BCAAs supplementation is designed to allow the body to spend more time, materials and energy building new muscle rather than simply repairing exercise-induced muscle damage. In addition, BCAA supplementation may reduce exercise fatigue during endurance-type training and competition.

<b>Supplement Facts</b>		
Serving Size: 3 Tablets		Servings Per Container: 30
<b>Amount Per Serving</b>		<b>% Daily Value</b>
L-Leucine	1,800 mg	*
L-Isoleucine	360 mg	*
L-Valine	360 mg	*
* % Daily Value not established.		
<b>Other Ingredients:</b> Calcium phosphate, Sorbitol, Povidone, Stearic acid (Vegetable source), Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).		

### Typical Use

- Athletes and exercisers of any fitness level during intense or excessive training bouts
- Weight-conscious athletes or in-season bodybuilders
- Anyone beginning a new intense exercise program
- Minimum dose: take five tablets before exercise
- Optimal dose and for those over 200 lbs, take eight tablets before exercise

### Precautions

The supplementation of BCAA is generally considered safe. Those needing to avoid protein supplementation should also avoid BCAA supplementation.

### Contraindications

BCAA supplementation is contraindicated in pregnancy and lactation because of the lack of studies done with this population. BCAA supplementation is contraindicated for those with the hereditary disorder maple syrup urine disease or who have kidney disorders.

### Adverse Reactions

There are no known adverse reactions in healthy users at the recommended doses. Up to 50 grams per day have been used in hepatic encephalopathy patients for six months without any reported adverse reactions.<sup>39</sup>



## **Upper Limit/Toxicity**

There are no reports concerning BCAA toxicity in relation to exercise and sports.<sup>8,39</sup>

## **Summary**

### **Purpose**

The anti-catabolic and anabolic effects of BCAA supplementation support the use of Recover&Build™ as a viable candidate for any athletic/fitness goal, when training is intense, to enhance recovery, minimize soreness and increase or maintain lean muscle.

Recover&Build can be used by

- Athletes and exercisers of any fitness level during intense or excessive training bouts
- Weight-conscious athletes or in-season bodybuilders
- Anyone beginning a new intense exercise program
- In combination with other performance products in order to amplify their effects, especially to enhance recovery

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### **Unique Features**

- Contains the ideal ratio of leucine, isoleucine and valine in a convenient tablet form
- dotFIT™ Recover&Build tablets are engineered with a proprietary "Swell and Release" delivery system that offers tremendous advantages for increasing the speed in which nutrients are available for uptake into muscles
- This scientifically proven system works by temporarily attracting fluid into the tablet upon ingestion which "pressurizes" or "swells" the contents for immediate release
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

## dotFIT™ AminoBoostXXL™

### Goal

The objective of AminoBoostXXL™ is to supply the proper combination of amino acids that have been shown to increase exercise-induced protein synthesis (when compared to normal feeding alone) and deliver them at ideal times in order to maximize “intense training-induced specific windows” of opportunities for anabolism that take place throughout the day. Proper ingestion would maximize the unique muscle protein synthesis mechanism that is activated through the feeding of amino acids (AA) and potentially lead to greater strength and size gains, especially when exercise-induced results have stabilized (i.e. the training plateau). See Appendix 3: *Xtreme Muscle Stack: Creating the Perfect Anabolic Storm*.

### Rationale

It has been well demonstrated that AA feeding stimulate protein synthesis independently of all other mechanisms.<sup>1,2,3</sup> Resistance training stimulates an increase in the synthetic rate of muscle proteins, but following exercise protein balance is negative until amino acids (AA) are provided.<sup>4</sup> The immediate post-training feeding-induced stimulation of protein synthesis (PS) has been shown to be independent of all other factors (e.g. insulin, exercise, normal meal consumption, etc.)<sup>4,5</sup>. This is probably due to the increased delivery of AA, especially leucine<sup>6</sup>, to muscle. Because the effects of feeding and exercise stimulation on muscle protein synthesis (MPS) are independent and additive (meaning they induce MPS by different mechanisms), then delivered closely in an ideal combination (e.g. before and after training), MPS at that point in time can be maximized. Information about the individual amino acids in AminoBoostXXL is found below.

**BCAA** (Leucine, Isoleucine, Valine): See dotFIT Recover&Build™

**Phenylalanine:** Phenylalanine (P) is an essential amino acid that participates in protein synthesis. It is converted to tyrosine via hydroxylation. Phenylalanine is both glucogenic and ketogenic.<sup>7</sup> Sports drinks that contain a mixture of carbohydrate and free-form amino acids, including phenylalanine, can result in a greater insulin response than carbohydrate by itself.<sup>8,9</sup>

**Lysine:** L-lysine is an indispensable dibasic amino acid (L-2,6-diaminohexanoic acid) required for human growth and for maintaining nitrogen balance in adults. Lysine cannot be synthesized by the body, and therefore must be supplied through diet.<sup>10</sup> Lysine, like most other amino acids, is a building block of body proteins. Among the indispensable AA, lysine is present in the greatest amounts, at 93.0 mmol/dl and 38 mmol/dl in tissues and serum respectively. Lysine is also required for collagen synthesis, and may be central to bone health.<sup>11,12</sup>

**Threonine:** Threonine is an essential amino acid often low in vegetarian diets. Aminotransferases exist for all amino acids except threonine and lysine. Its main routes of catabolism lead to both ketogenic and glucogenic metabolites.<sup>13</sup> The human requirement for threonine set by FAO/WHO/UNU at 7mg/kg/day<sup>14</sup> has been challenged by more recent data suggesting a level more than twice this amount to maintain AA homeostasis<sup>15,16</sup> in healthy adults. The Institute of Medicine recently established a threonine RDA for adults at 27 mg/kg/day.<sup>17</sup>

**Histidine:** The end product of histidine catabolism is glutamate, making histidine one of the glucogenic amino acids. Kriengsinyos, et al. investigated histidine's essentiality in healthy adult humans consuming a histidine-free diet for 48 days. They discovered a gradual decrease in protein turnover and a substantial decrease in plasma protein concentrations, including albumin, hemoglobin, and transferrin. So, although histidine deficiency may not affect nitrogen equilibrium, it can impact other important health parameters.<sup>18</sup> Histidine, like cysteine also may have antioxidant properties.<sup>19</sup> In regard to sports/fitness applications, histidine alone has not been studied as a supplement for improving athletic outcomes. Carnosine is related metabolically to histidine and histamine. It is a naturally occurring histidine-containing dipeptide present in muscle tissue. Being immuno-protective, carnosine has been shown to detoxify free-radical species, protect cell membranes, and act as a buffer against lactic acid and hydrogen ions.<sup>20</sup> This is especially important in athletic events where lactic acid buildup (metabolic acidosis) can affect performance by causing fatigue.<sup>21</sup> Intracellular buffering agents such as phosphates and histidine-containing peptides may help delay fatigue by buffering hydrogen ions, reducing oxidative damage, and maintaining cell membrane integrity.<sup>22,23,24</sup>

**Methionine:** Methionine is a major source of sulfur in human diets, and is an essential amino acid for normal growth and development. It is considered glucogenic, due to its conversion to pyruvic acid via succinyl CoA. It is a major methyl-donor, and important in the metabolism of phospholipids. It is also prominent in methylation reactions, and as a precursor for cysteine, which is the rate-limiting AA for glutathione synthesis. High levels of methionine are associated with hyperhomocysteinemia and endothelial dysfunction, which are risk factors for cardiovascular disease.<sup>25</sup> Deficiency of methionine produces hepatic steatosis similar to that seen with ethanol,<sup>26</sup> and supplementation with this lipotrope can prevent ethanol-induced fatty liver.<sup>27</sup> Besides methionine's role in methyl-group metabolism, and in serving as a substrate for protein synthesis, its other functions include participation in the synthesis of polyamines, catecholamines, nucleic acids, carnitine, and creatine.<sup>28,29,30</sup> Because of its many functions, methionine has a high intracellular turnover.<sup>31,32</sup> It may be the amino acid that is most rate-limiting for the building of body proteins, including maintaining nitrogen balance and the effective reutilization of the other amino acids.<sup>33,34</sup> Therefore, the requirement for methionine increases significantly during times of high protein turnover, such as is seen in burn and trauma patients.<sup>35,36</sup>

The majority of these essential amino acids with the exception of leucine have not been studied or tested as an ergogenic substance by itself.

<b>Supplement Facts</b>		
Serving Size: 16 g (1 Scoop)		
Servings Per Container: 33		
<b>Calories 50</b>		
Calories from Fat 0		
<b>Amount Per Serving</b>	<b>% Daily Value**</b>	
Total Fat	0 g	0%
Saturated Fat	0 g	0%
Trans Fat	0 g	0%
Cholesterol	0 mg	0%
Total Carbohydrate	0 g	0%
Dietary Fiber	0 g	0%
Sugars	0 g	0%
Protein	12 g	24%
Amino Boost XXL Proprietary Blend	12 g	*
L-Leucine		*
L-Phenylalanine		*
L-Lysine		*
L-Valine		*
L-Threonine		*
L-Isoleucine		*
L-Histidine		*
L-Methionine		*
* % Daily Value not established.		
**Percent Daily Values are based on a 2,000 calorie diet		
<b>Other Ingredients:</b> Citric Acid, Malic Acid, Beet Powder, Lecithin, Natural and Artificial Flavor, Sucralose, Silica, Pectin, Sodium Chloride.		

### Typical Use

- All intermediate to advanced exercisers/athletes during intense training cycles
- Especially important aid for all experienced older hard training exercisers/athletes
- This product can be used by itself (e.g., without creatine products) especially for intensely-training athletes not desiring quick weight gain but who need rapid muscle tissue recovery (all track, basketball, most baseball, wrestlers, boxers, runners, cyclists, etc.) based on frequent events and/or training sessions
- All experienced, aspiring and competitive bodybuilders and other anaerobic athletes attempting to increase muscle size and strength, especially during prolonged negative energy balance (dieting)
- Can be used alone or with NO7Rage™ and CreatineXXL™ as part of the dotFIT™ "Xtreme Muscle Stack" providing maximum muscle pump and continuous training results for serious exercisers and athletes

## Dosage

Considering all data to date, including managing the delicate interplay between insulin and its ability to maximize muscle protein synthesis, we can establish a potential dosage recommendation range including timing and amounts that may “cover most bases” (i.e., compensate for individuality) to create a better, more constant exercise-induced anabolic environment as opposed to a chronic non-supplemented state.

Maintaining adequate protein and energy intake at ~1.5-2 g/kg of body weight/day (not including the grams of the AminoBoostXXL™) and no more than a 10-20% calorie deficit, a safe and potentially effective recommendation for most healthy athletes during intense training cycles is listed below.

Ranges based on size (<150 lbs. use 8 g dose; >150 lbs. use 16 g dose; those in between adjust accordingly) or greater stresses such as prolonged dieting, extreme training conditions in which users may increase the dose within the published range (no need for anyone to exceed a 16 g dose).

Each training day\* (ranges based on size or greater stresses, e.g., prolonged dieting, extreme training conditions, etc.):

- Ten to 30 minutes pre-workout: Drink 20-40 g of CHO with 8 to 16 g of AminoBoostXXL
- Use dotFIT Pre/PostWorkoutFormula&MealReplacement™ for carbohydrate and added protein source
- Immediately following training: ingest 8 to 16 g of AminoBoostXXL
- Twenty to 40 minutes after post workout AminoBoostXXL ingestion, consume a mixed meal drink of ~30-50 g of CHO with 15-30gms of protein and low fat (2-4 g)
- Use dotFIT Pre/PostWorkoutFormula&MealReplacement for carbohydrate and added protein source
- Consume normal post-workout whole food meal at ~ two hours post-training

\* Optional for potentially maximizing results: repeat the 8 to 16 g AminoBoostXXL ~one hour before next meal or before bedtime.

## Precautions

Presently, insufficient data exist to use the risk assessment model for determining an upper limit (UL) for any of the amino acids. Furthermore, chronic excessive use of individual amino acids is likely to be highly unusual in athletes (no perceived value at levels that may lead to danger) and potentially uncomfortable (e.g., stomach distress). Consequently, collecting data on amino acid toxicity is difficult and possibly unnecessary.

Reported adverse events from acute and chronic high-level intake of amino acids are extremely rare.<sup>37</sup>

Amino acid supplementation safety appears to have survived the “test of time” as it relates to use by athletes. Despite the lack of adverse events reported by athletes who use amino acid products and the lack of UL values for amino acids, the safety of chronic high intakes of amino acids is unknown. However, the risk/benefit ratio appears to be extremely low. And the amounts present in the AminoBoostXXL™ do not approach any level of amino acid intake that may lead adverse events. Phenylketonuria (PKU) is a rare disease (generally diagnosed at birth) caused by an inborn error in the ability to metabolize phenylalanine (lacking the enzyme phenylalanine hydroxylase).<sup>38</sup> In affected people, if the diet is not controlled by severe restriction of phenylalanine intake, PKU can lead to serious irreversible neurological disorders, such as mental retardation. Because homocysteinemia is linked with cardiovascular disease, long-term use of methionine supplements may be of concern.<sup>39</sup>

### **Contraindications**

This product, as with any protein or creatine-containing supplement, is contraindicated for users with kidney or liver disease. This product is contraindicated for phenylketonurics because it contains phenylalanine. This product is also contraindicated for pregnant or lactating females because it has not been tested in these groups and because protein can be adequately supplied by the diet for fetal growth or lactation needs.

### **Adverse Reactions**

**BCAA** have been used in studies in doses of at least 12 g/day with no side effects, making the dose in AminoBoostXXL quite safe for healthy users.<sup>40</sup>

**Lysine** is often used for herpes simplex at an oral dose of 1 to 3 g/day. It has been used in doses from 400 mg to 6 g/day without adverse events. Above 8 g/day, however, can cause profuse watery diarrhea in those with lysinuric protein intolerance.<sup>41,42</sup> These studies suggest the lysine in AminoBoostXXL should be well tolerated in healthy users.

**Methionine:** The average American consumes at least 2 grams (2000 mg) of methionine each day.<sup>43</sup> Two point five grams every four hours for 16 hours has been used for acetaminophen poisoning and for liver disorders.<sup>44</sup> Methionine is frequently used in doses of 100 mg/kg to test individuals with various diseases and levels of homocysteine in their blood.<sup>43,45</sup>

The 100 mg/kg dose is generally considered a safe dose during short-term use for medical testing with mild side effects reported.<sup>46</sup> One hundred mg/kg is a much larger dose than users will receive in

AminoBoostXXL™. Coincidentally, both methionine deficiency and an excessive acute intake (>100 mg/kg) are associated with liver diseases and other adverse events.<sup>47,48</sup> These studies suggest the methionine in AminoBoostXXL should be well tolerated in healthy users.

**Histidine** supplementation in doses of 4 g/day has shown no side effects,<sup>49</sup> whereas doses of 24 to 64 g have caused anorexia and increased urinary zinc excretion.<sup>50</sup> These studies suggest the histidine in AminoBoostXXL should be well tolerated in healthy users.

**Threonine** has been used for spinal spasticity and amyotrophic lateral sclerosis (Lou Gehrig's disease) in doses from 2 to 7.5 g/day.<sup>48,51</sup> Threonine in doses up to 4 g/day is associated with mild adverse events ranging from nothing to slight GI discomfort. One study of spasticity at 7.5 g/day showed no adverse events.<sup>51</sup> These studies suggest the threonine in AminoBoostXXL should be well tolerated in healthy users.

**Phenylalanine** has been used for a depigmentation disorder called vitiligo in doses of up to 100 mg/kg with minimal to no side effects.<sup>52</sup> A typical 154 pound athlete would be consuming 7 g/day at that dose, making the amount in AminoBoostXXL safe for users without PKU.

Overall, essential amino acid supplementation in combined doses from 6 to 40 g/day and as described here is well tolerated in individuals without PKU, kidney or liver disease.<sup>53,54</sup>

### **Upper Limit/Toxicity**

- Amino acid blends and protein supplements have been studied for use in numerous disease states and to improve sports performance for decades with a large margin of safety between the typical doses and those needed for toxic effects in healthy users<sup>53,54,55</sup>
- In addition, the amino acids in AminoBoostXXL all appear on the Generally Regarded As Safe (GRAS) list and are in forms which may be safely used when added to foods<sup>56</sup>

**Table 6:** Toxicity in animals\*

AA	NOAEL/LOAEL <sup>†</sup>	LD <sub>50</sub> Mouse	LD <sub>50</sub> Rat
Histidine	>4.5 g/d	15,000 mg/kg orally	15,000 mg/kg orally
Isoleucine	14.4 g BCAA/d	-	6822 mg/kg*
Leucine	>6 g/d	-	5379 mg/kg*
Lysine	3 – 40 g/d	-	10,000 mg/kg^
Methionine	5 g/d	9500 mg/kg*	36,000 mg/kg orally
Phenylalanine	>4 g/d	1322 mg/kg*	5287 mg/kg*
Threonine	>6 g/d	-	3098 mg/kg*
Valine	14.4 g BCAA/d	-	5390 mg/kg*

\* Intraperitoneal

\*\*Data from TOXNET; ChemIDplus Lite.

^ Data from MSDS sheets.

†Derived from Garlick et al.<sup>39</sup> Doses given are levels used in studies that showed mild to no adverse events and are clearly below toxic levels.

## Summary

### Purpose

- The product is a new discovery and thus has no competitor as it relates to formula and concept and is 100% defensible and safe
- The product can stand alone, especially for hard training athletes not wanting quick weight gain but needing rapid muscle tissue recovery (all track, basketball, most baseball, wrestlers, boxers, runners, cyclists, etc.) based on frequent events/training sessions
- All older, hard training exercisers/athletes
- Physique competitors, especially during prolonged negative energy balance (dieting)
- An essential component in a unique sequence for experienced adult strength and size exercisers/athletes
- Ideal for use in those at a plateau trying to add muscle

### Unique Features

- The formula uses an EAA blend that was shown to significantly increase muscle protein synthesis in clinical trials with both adult athletes and non-athletes
- The AminoBoostXXL supplement contains a proprietary EAA composition that is designed to increase the availability of the EAA in proportion to their requirement for muscle protein synthesis (MPS) – many studies have confirmed that under normal diet conditions, the EAA are primarily responsible for the AA-induced stimulation of muscle protein synthesis



- Can be used alone or with NO7Rage™ and CreatineXXL™ as part of the dotFIT™ "Xtreme Muscle Stack" providing maximum muscle pump and continuous training results for serious exercisers and athletes
- The unique EAA formulation provides for significantly greater muscle gains than traditional protein/CHO post-workout feedings with considerably fewer calories and nitrogen load on the kidneys, providing the greatest “bang for your buck” of any post-workout supplement currently available

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## dotFIT™ MuscleDefender™

### Goal

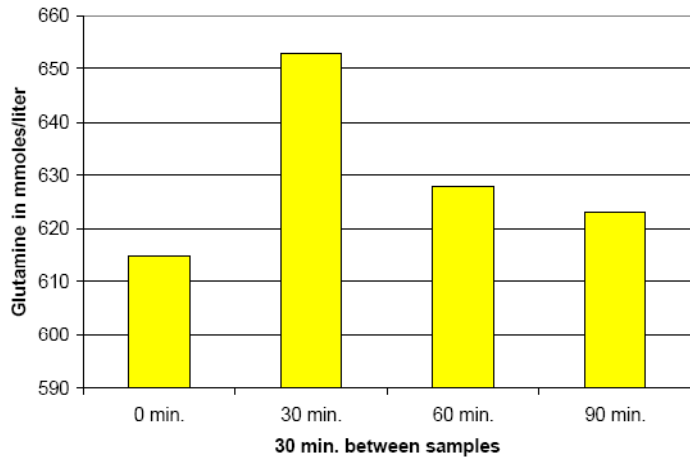
This product is designed to aid in recovery from prolonged, exhaustive exercise by 1) increasing muscle protein synthesis (MPS); 2) promoting glycogen synthesis; and 3) supporting the immune system. The goal of MuscleDefender is to supply L-Glutamine peptides in a new, patented, stable form to increase blood and muscle glutamine levels that are depleted due to prolonged exercise bouts and/or over-training, thus allowing the exerciser or athlete to maintain their frequency and intensity of training cycles.

### Rationale

**Glutamine** is one of the most abundant and versatile amino acids (AA) found in the human body, comprising roughly 50% of the free AA pool in the blood and skeletal muscle.<sup>1,2,3</sup> It is involved in several regulatory processes such as acid-base homeostasis, synthesis of body proteins, and serves as an energy-yielding substrate (gluconeogenesis).<sup>4,5</sup> Skeletal muscle is the most active tissue for glutamine metabolism, which can be depleted during times of exhaustive or prolonged exercise bouts (e.g. endurance, triathlon events, etc).<sup>3</sup> Research has shown that decreased muscle glutamine pools can result in greater catabolism of muscle protein.<sup>6</sup> Supplemental glutamine has been found to increase MPS immediately after exhaustive exercise.<sup>7,8</sup> Glutamine is considered a gluconeogenic amino acid, donating its carbon skeleton for glucose synthesis. This could decrease amino acid release from muscle pools leading to faster recovery following exercise. Additionally, from endurance exercise studies, over-training can lower plasma and muscle glutamine levels<sup>9</sup>, leading to suppression of the immune system.<sup>4,10</sup> This could result in an increase in upper-respiratory tract infections and a decrease in training volume and intensity. Published research has shown glutamine supplementation to boost the response time of immune cells, thus allowing the athlete to sustain greater frequency and intensity of training.<sup>7,11,12,13</sup>

MuscleDefender utilizes a patented stabilized form of L-Glutamine that has been demonstrated to elevate plasma and muscle glutamine levels after ingesting; levels then remain elevated above baseline for at least 90 minutes (see Figure 17).

**Figure 17:** Plasma glutamine levels



<b>Supplement Facts</b>		
Serving Size: One Level Scoop (8g)		
Servings Per Container: 50		
Amount Per Serving		% Daily Value
L-Glutamine	7.6 g	*
Magnesium (from 400 mg Magnesium Glycyl Glutamine <sup>1</sup> )	34 mg	8.5%
Chromium (from 8 mg Chromium Nicotinate Glycinate Chelate <sup>2</sup> )	200 mcg	167%
* % Daily Value not established.		
<b>Other Ingredients:</b> None.		

**Typical Use**

- Highly stressed, calorie-restricted athletes, such as in-season bodybuilders
- Endurance athletes with frequent and heavy training loads
- Athletes and exercisers with a large calorie deficit for fat loss
- Any athlete susceptible to over-training due to excessive workloads and/or suboptimal recovery status
- The dose most likely to suggest benefit is five to 20 g/day in five gram doses throughout the day
- MuscleDefender should be taken several hours before or after a meal to prevent interaction with other amino acids in the regular diet

## **Precautions**

Individuals with kidney or liver disease are contraindicated for MuscleDefender given the central role these organs play in glutamine metabolism.<sup>1</sup>

## **Contraindications**

Glutamine supplementation is contraindicated in those with kidney problems or at risk for kidney disease because of possible increased kidney stress. Glutamine supplementation should be avoided by pregnant or lactating women because of the lack of studies done with this population. Glutamine supplementation should not be employed by children and adolescents due to limited data.

## **Adverse Reactions**

Doses up to 40 grams/day of glutamine supplementation have not shown any significant adverse effects.<sup>14</sup>

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## **Upper Limit/Toxicity**

Currently, glutamine does not have an established upper limit and has not been shown to elicit any toxic effects in high amounts.<sup>15</sup>

## **Summary**

### **Purpose**

MuscleDefender by itself can be a recovery and performance enhancement product for the following:

- Highly stressed, calorie-restricted athletes, such as in-season bodybuilders
- Endurance athletes with frequent and heavy training loads
- Athletes and exercisers with a large calorie deficit for fat loss
- Any athlete susceptible to over-training due to excessive workloads and/or suboptimal recovery status

### **Unique Features**

- Produced in an easy-to-mix powder
- Contains L-Glutamine peptide and a patented, stable form of L-Glutamine from Albion

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## **nutrition dotFIT™: Sport and Fitness Foods**

### **Overview**

The purpose of the nutrition dotFIT line (including shake mixes) is to accomplish two important health, sport and fitness goals: 1) satisfy and compliment the evolving change in society's eating patterns by supplying great tasting meals and snacks – i.e. deliver better, satisfying nutrition with fewer calories; 2) these same foods/mixes, because of the unique formulations, will also be able to deliver the perfect ingredients to serve as the pre- and post-exercise/activity supplement that has been proven necessary to enhance training induced results.

The multiple uses/goals of the nutrition dotFIT assortment are the following:

- Weight control<sup>1,2,3,4,5,6,7</sup>
- Daily menu incorporation as a meal substitute to reduce or increase daily caloric intake<sup>8,9,10,11</sup>
- Snack between meals as an energy boost or hunger killer<sup>12</sup>
- Pre- and post-exercise/activity energy and recovery supplement
- Guiltless dessert

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### **Rationale**

#### **Weight control**

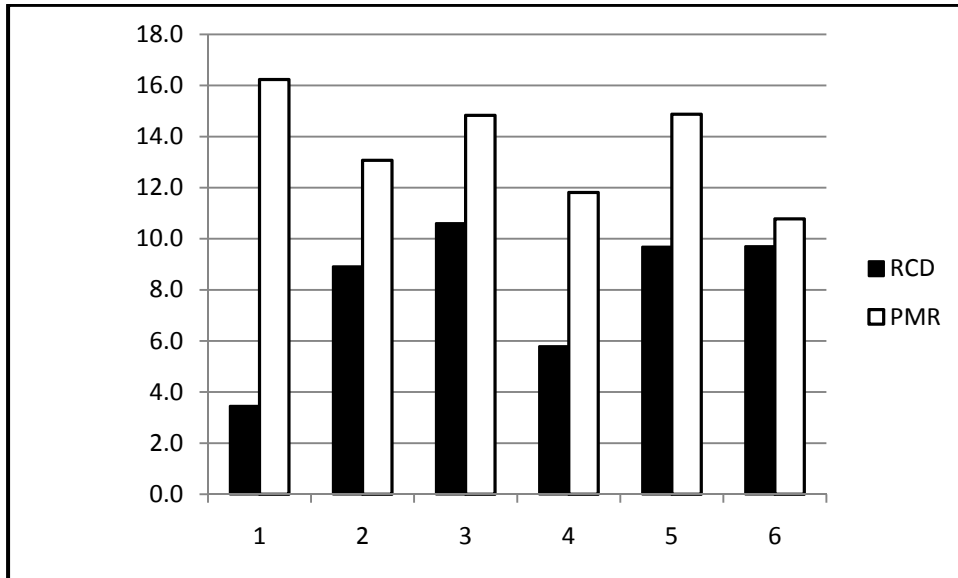
It has been well established that successful dieters, weight loss maintainers, athletes and others able to control a healthy weight regularly incorporate meal replacement/substitute type foods<sup>1,2,10,11,13,14</sup> (see figures 18 & 19), including energy bars or snacks, meal replacements or "protein shakes", etc. into their daily meal plans for the following reasons:

- More for less: using nutrition dotFIT products allows you to increase the frequency of daily meals while managing calories in order to satisfy appetite and maintain greater daily energy levels – i.e. more nutrition<sup>15</sup> and fullness with fewer calories and often a significant savings in groceries. Proper use throughout the day can deliver sound nutrition while helping to save calories allowing you to partake in larger meals/favorite foods for desired times (e.g. higher calorie lunches and/or dinners)
- Proper use allows more accurate calorie counts of total daily food intake when compared to having to estimate the calories of self-prepared or unmarked meals<sup>16</sup>
- Products in the nutrition dotFIT category offer helpful portion control: people generally attempt to consume meals to completion, therefore meal portion size significantly impacts a person's total calorie intake. Overwhelming evidence validates that the smaller the portions, the fewer

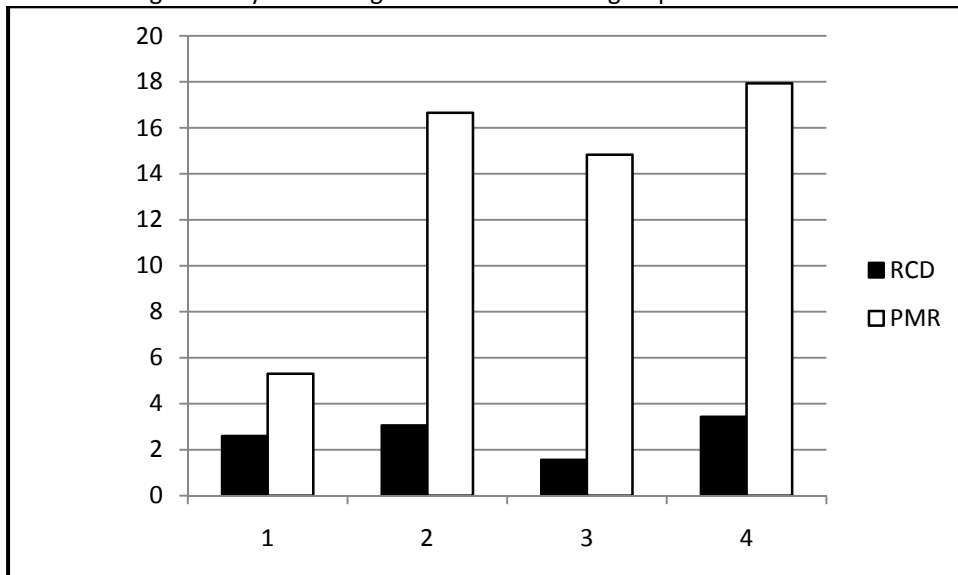
daily calories consumed<sup>17,18,19</sup> and vice-versa i.e. people tend to “eat with their eyes not their stomachs”<sup>9,10,11,20</sup>

- A healthy, lower calorie alternative to traditional fast foods
- Convenient storage anywhere and faster than stopping and picking up generally less healthy, higher calorie traditional fast foods

**Figure 18:** In all six studies the groups using meal replacements (PMR) as part of their overall calorie intake lost significantly more weight than the reduced calorie diet (RCD) group.<sup>1</sup>



**Figure 19:** In a 1-year follow-up in the groups that were tracked, the subjects still using meal replacements maintained significantly more weight loss than the RCD group.<sup>1</sup>



## **Daily menu incorporation as a meal substitute to reduce or increase daily caloric intake**

Products in the nutrition dotFIT™ category can satisfy the criteria for smaller meals or be a balanced addition to increase meal size:

- Reduced meal size: busy people often need quick nutrition that can satisfy nutritional needs and deliver energy while keeping calories within a range that allows a healthy weight. Multiple, large, daily meals are not needed for most people today because of low activity in the workplace and during leisure time (sedentary entertainment).<sup>21</sup> And because of the continuous need to sit so we can be transported by vehicles in order to sit somewhere else. Therefore, nutrition dotFIT products can supply an adequate caloric meal as a part of one's overall daily meal planning
- Increase meal size or calorie intake: when weight/muscle gain is the goal and it becomes difficult to increase the consumption of traditional foods in order to continue to add lean body mass (LBM), nutrition dotFIT products offer the ideal solution. Easy/convenient to consume preparations can be added to any meal or daily menu plan to deliver exactly what's needed so surplus nutrients/calories are incorporated into muscle tissues rather than body fat when appropriate resistance exercise is included<sup>23,27,29</sup>

## **Snack between meals as an energy boost or hunger killer**

Convenient for snacking to deliver quick energy or to take the edge off hunger without running up the calories.

When hunger “nags”, nutrition dotFIT products can satisfy the desire to snack on less healthy or poorly satiating foods. Using these products for snacking may also decrease the amount of food consumed in the subsequent meal or keep you from making an inappropriate food choice (e.g. decadent high calorie meal driven by an uncontrolled craving) as often happens when extra hungry and especially during weight loss.

## **Pre- and post-exercise/activity energy and recovery supplement**

Because of the length of time it takes to digest and absorb the nutrients from traditional meals, whole/traditional food meals cannot deliver the required nutrients within a timeframe that allows maximum results induced by exercise when compared to the proper use of quick digesting specialized formulas.<sup>23, 29</sup>

All proteins sticks, bars, cookies, and shakes meet the necessary “quick digestion”, carbohydrate and protein content criteria that have been shown to deliver an increase in energy, maximize recovery and increase muscular development when consumed before<sup>22</sup> and after exercise.<sup>23</sup> Although dotFIT liquid pre- and post-feedings (mixes or ready-to-drinks) have the fastest absorption time, when they are not an option based on venue or preference, all other nutrition dotFIT products make a convenient and effective alternative when attempting to maximize the training induced “windows of growth”.



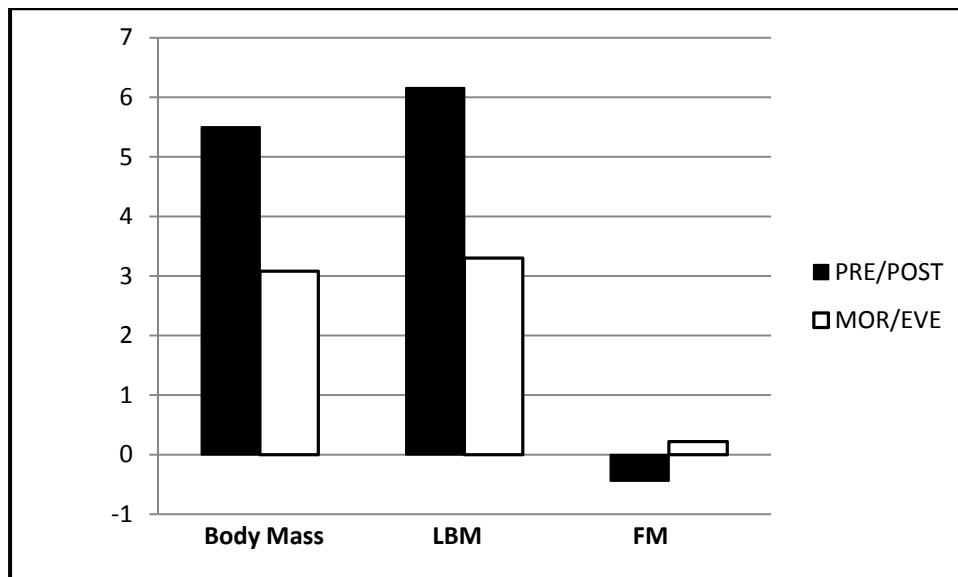
## Metabolic windows of growth

Immediately following exercise, muscle cell nutrient uptake is at its highest point of the day and therefore this “window of opportunity” requires a well designed, fast-acting formula.<sup>22</sup>

Virtually all studies have demonstrated that the inclusion of “immediate” pre- & post-training fast-acting carbohydrate/sugars and protein feedings can stimulate muscle protein synthesis (MPS)<sup>24,25</sup> and reduce muscle damage to a far greater extent than normal meals/feeding patterns.<sup>26,27</sup> In other words, no matter how well you eat throughout the day, you recover faster and build more muscle and strength by including these quickly absorbed pre- and post-exercise formulas (see figure 20).<sup>28,29</sup> Simply put, the post exercise feeding activates the muscle building that takes place during this period – and without it there is little to no protein synthesis during this timeframe.

We also recently discovered that although the post training metabolic window is active for as much as 60-90 minutes, its maximum activity (greatest nutrient uptake and protein synthesis capabilities) takes place immediately at the end of the training session.<sup>29</sup> From that point on, the longer you wait to supply the proper nutrients or the more time they take to get to the affected tissues, the less muscle building or recovery takes place during this period and can’t be made up for at any other point in time.

**Figure 20:** Training results from 23 experienced recreational bodybuilders resistance training for 10 weeks with all things (diet, supplements, training, etc.) equal except the addition of pre/post feedings yielded significantly greater gains in body mass, LBM, strength and reduction in fat mass for the pre/post feeding subjects.<sup>29</sup>



## The proper pre/post formula

There is no longer a debate whether pre- and post-workout feedings enhance exercise-induced results. Volumes of peer review literature and studies continue to not only validate this now established fact, but also document the proper formulas.<sup>30,31,32</sup>

The formulas used in scientific studies are all relatively the same: within the range of 1.5-4 parts carbohydrate (CHO) to 1 part protein and low to no fat. The CHO range is based on the activity being studied – the longer the workout the higher the carbohydrate/sugar content. This formula produces the desired results i.e. quick, lasting energy, faster recovery and more muscle and strength gains from the workout.

The carbohydrate mixture must contain the proper amounts of simple, fast-acting sugars because the sugars/energy must enter the body quickly or the product loses effectiveness.<sup>33,34</sup> All formulas include complexes that contain glucose polymers in order to deliver immediate and consistent energy.<sup>23,27,34,35</sup> The formulas need to contain the right amount of amino and fatty acids, which besides their role in muscle building, are also instrumental in managing the speed at which the carbohydrates continue to enter the body<sup>36</sup>, allowing the recipient higher but consistent energy levels throughout the desired period.

By consuming the same ingredients (as the post-workout formula) before the workout, we not only improve the user's training energy levels, we can also enhance the recovery and muscle building process to a greater extent than solely ingesting the post-workout formula.

Although recovery primarily takes place after the workout, you can help speed and enhance the process before you start exercise by ingesting the formula 10-40 minutes before the workout (always make sure your pre-training, full food meal is eaten 2-3 hours before exercise unless you train first thing in the morning and time does not permit). Proper carbohydrate/sugar content is important because it stimulates insulin production and insulin is our body's most anabolic hormone thus "king" when it comes to building muscle.<sup>37,38</sup> Not only does this hormone start and continue the entire muscle-building process, but insulin also helps minimize the damage caused by exercise.<sup>37,38,39</sup> Insulin blunts the exercise induced production of the catabolic hormone cortisol, which "tears down" muscle tissue. Increasing insulin levels at proper times allows the body to spend more incoming nutrients and time building muscles rather than using everything to simply repair muscle.<sup>38,39</sup> By ingesting the right drink pre-exercise, carbohydrates (CHO) not only supply workout energy but also kick-off the necessary insulin release that will work to mitigate the exercise-induced damage. When you repeat the process immediately post-workout, you quickly restore energy (glycogen) while stimulating a renewed insulin release, which initiates and enhances the muscle-building hormone process/cascade thus recovery and results.

## **Guiltless dessert**

All nutrition dotFIT can serve as great tasting, healthy low calorie desserts and can satisfy any “sweet-tooth”. Products in the nutrition dotFIT category have wonderful flavors and textures with the macronutrient blend (protein, fat and carbohydrate ratios) designed to satisfy the appetite for far fewer calories than it would normally take using traditional desserts.

## **Typical Use**

Use as needed to satisfy any of the stated goals:

- Weight control for portion control and accurate calorie counts
- Daily menu incorporation as a meal substitute to reduce or increase daily caloric intake
- Snack between meal as an energy boost or hunger killer
- Pre- and post-exercise/activity energy and recovery supplement
- Guiltless dessert

## **Summary**

### **Purpose**

- Products in the nutrition dotFIT category supply nutrient-rich, convenient between-meal snacks to boost energy, curb hunger and assist in weight control
- Can also be used to increase daily caloric intake when unable to do so by consuming whole food
- Pre- and post-workout snack to enhance energy and recovery
- Can be used during training
- Can be used as a guiltless dessert
- A healthy, convenient food assortment designed to be integrated into your daily meal planning in order to assist you in reaching and maintaining your sport and fitness goals. All products in the nutrition dotFIT line can be selected based on taste, preference, venue, size and shape or calorie requirements for any of the above goals

### **Unique Features**

- Products in the nutrition dotFIT category are designed in a synergistic relationship with all dotFIT products and a person’s traditional food intake. These products are NOT spiked with unnecessary nutrients. Most other products in this space (e.g. bars, shakes, ready to drinks, etc.) are heavily spiked with nutrients that can lead to undesirable levels within the body when combining multiple manufacturers, products and normal food intake. When consuming only

dotFIT products as directed with one's normal daily food intake, the recipient is assured of keeping the body at a safe and optimal nutrient level

- A good source of calcium and fiber
- An excellent source of protein
- Formulated and manufactured for great taste and pleasing texture, all nutrition dotFIT™ products meet or exceed the FDA's guideline for "High Protein" and foods are microwaveable
- Bars, protein sticks, cookies, etc., are handmade and baked with high quality ingredients
- Third-party testing: Commitment to producing world-class products is our #1 priority. Rigorous testing, both in-house and through third-party FDA approved laboratories, assures that at all nutritional claims meet or surpass FDA guidelines, USDA guidelines, and industry norms

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## Ready-to-Eat Bars and Baked Goods

### Positioning

A healthy convenient food assortment designed to be integrated into your daily meal planning in order to assist you in reaching and maintaining your sport and fitness goals. All products in the nutrition dotFIT™ line can be selected based on taste, preference, venue, size and shape or calorie requirements for any of the typical uses listed below.

### Unique features

- Contains multiple high quality protein sources
- Products in the nutrition dotFIT category are designed in a synergistic relationship with all dotFIT products and a person's traditional food intake. These products are NOT spiked with unnecessary nutrients. Most other products in this space (e.g. bars, shakes, ready to drinks, etc.) are heavily spiked with many nutrients that can lead to undesirable levels within the body when combining multiple manufactures, products and normal food intake. Because of our product synergy, use of our complete product line promotes safe and optimal daily nutrient intake
- Formulated and manufactured for great taste and pleasing texture, all products in the nutrition dotFIT category meet or exceed the FDA's guideline for "High Protein" and foods are microwaveable
- Bars, protein sticks, cookies, etc., are handmade and baked with high quality ingredients
- Third-party testing: Commitment to producing world-class products is our #1 priority. Rigorous testing, both in-house and through third-party, FDA-approved laboratories, assures our clients that all nutritional claims meet or surpass FDA guidelines, USDA guidelines, and industry norms

### Typical use

Use as needed to satisfy any of the stated goals:

- Weight control for portion control and accurate calorie counts
- Daily menu incorporation as a meal substitute to reduce or increase daily caloric intake
- Between meal snack as an energy boost or hunger killer
- Pre- and post-exercise/activity energy and recovery supplement
- Guiltless dessert

## dotFIT Protein Stick: Iced Lemon Vanilla

Soon to be known as “dotSTICK™”.

### Uses

- Weight control for portion control and accurate calorie counts
- Daily menu incorporation as a meal substitute to reduce or increase daily caloric intake
- Between meal snack as an energy boost or hunger killer
- Pre- and post-exercise/activity energy and recovery supplement
- Guiltless dessert

### Description and Unique Features

- Provides ALA Omega-3
- High protein with low cholesterol and good source of calcium and fiber
- Helps promote/support/maintain a healthy digestive/immune system
- On-the-go portability in a unique convenient shape – easy to carry anywhere
- Handmade and baked with high quality ingredients
- Contains multiple high quality protein sources
- Formulated and manufactured for great taste and pleasing texture, the Protein Stick also meets or exceeds the FDA’s guideline for “High Protein” and is a microwaveable product
- Third-party testing: Commitment to producing world-class products is our #1 priority. Rigorous testing, both in-house and through third-party, FDA-approved laboratories, assures our clients that all nutritional claims meet or surpass FDA guidelines, USDA guidelines, and industry norms

### Nutrition Facts (1 stick)

Serving Size: 1 stick (50 g)		
Calories:	190	
Calories from Fat:	54	% Daily Value
<b>Total Fat</b>	<b>6g</b>	<b>9%</b>
Saturated Fat	2g	10%
Trans Fat	0g	*
<b>Cholesterol</b>	<b>10mg</b>	<b>3%</b>
<b>Sodium</b>	<b>170mg</b>	<b>7%</b>
<b>Total Carbohydrates</b>	<b>26g</b>	<b>9%</b>
Dietary Fiber	3g	12%
Sugar	8g	*
Sugar Alcohols	8g	*
<b>Protein</b>	<b>12g</b>	<b>24%</b>
<b>Vitamin A</b>		<b>3%</b>
<b>Vitamin C</b>		<b>1%</b>
<b>Calcium</b>		<b>10%</b>
<b>Iron</b>		<b>5%</b>

**Ingredients:** Protein blend (soy isolate, wheat isolate, whey concentrate, whey isolate), wheat flour, sugar, white chocolate icing (sugar, palm kernel and palm oil) non-fat dry milk, whole milk, soy lecithin [an emulsifier] and vanilla), corn syrup, vegetable glycerin, sorbitol, maltitol, palm oil, margarine, lemon flavored flakes (sugar, vegetable oil [palm oil, palm kernel], wheat flour, corn syrup solids, lemon juice with lemon oil, natural flavors, citric acid, yellow 5 lake, mixed tocopherols), polydextrose, ground flax powder, egg, natural & artificial flavors, baking soda, salt, potassium sorbate, calcium propionate and guar gum. Contains soy, milk, wheat and egg products. Manufactured in a plant that processes peanut, tree nut, soy, milk, wheat and egg products.

\*Daily Value has not been established

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## dotFIT Protein Stick: Iced Peanut Butter Delight

Soon to be known as “dotSTICK™”.

### Uses

- Weight control for portion control and accurate calorie counts
- Daily menu incorporation as a meal substitute to reduce or increase daily caloric intake
- Between meal snack as an energy boost or hunger killer
- Pre- and post-exercise/activity energy and recovery supplement
- Guiltless dessert

### Description and Unique Features

- Provides ALA Omega-3
- High protein with low cholesterol and good source of calcium and fiber
- Helps promote/support/maintain a healthy digestive/immune system
- On-the-go portability in a unique convenient shape – easy to carry anywhere
- Handmade and baked with high quality ingredients
- Contains multiple high quality protein sources
- Formulated and manufactured for great taste and pleasing texture, the Protein Stick also meets or exceeds the FDA’s guideline for “High Protein” and is a microwaveable product
- Third-Party testing: Commitment to producing world-class products is our #1 priority. Rigorous testing, both in-house and through third-party FDA approved laboratories, assures our clients that all nutritional claims meet or surpass FDA guidelines, USDA guidelines, and industry norms

### Nutrition Facts (1 stick)

Serving Size: 1 stick (50 g)		
Calories:	190	
Calories from Fat:	54	% Daily Value
<b>Total Fat</b>	<b>6g</b>	<b>9%</b>
Saturated Fat	<b>2g</b>	<b>10%</b>
Trans Fat	<b>0g</b>	*
<b>Cholesterol</b>	<b>10mg</b>	<b>3%</b>
<b>Sodium</b>	<b>170mg</b>	<b>7%</b>
<b>Total Carbohydrates</b>	<b>26g</b>	<b>9%</b>
Dietary Fiber	<b>3g</b>	<b>12%</b>
Sugar	<b>8g</b>	*
Sugar Alcohols	<b>8g</b>	*
<b>Protein</b>	<b>12g</b>	<b>24%</b>
<b>Vitamin A</b>		<b>3%</b>
<b>Vitamin C</b>		<b>1%</b>



Calcium	10%
Iron	5%

**Ingredients:** Protein blend (soy isolate, wheat isolate, whey concentrate, whey isolate), sugar, wheat flour, peanut butter icing (sugar, palm kernel oil, partially defatted peanut flour, non-fat dry milk solids, peanut oil, salt and soy lecithin [an emulsifier]), corn syrup, vegetable glycerin, sorbitol, maltitol, peanut butter chips (sugar, palm kernel and palm oil, partially defatted peanut flour, non-fat milk, dextrose, salt and soy lecithin [an emulsifier]), palm oil, margarine, peanut butter, polydextrose, ground flax powder, egg, natural & artificial flavors, baking soda, salt, potassium sorbate, calcium propionate and guar gum. Contains soy, milk, wheat, peanut and egg products. Manufactured in a plant that processes peanut, tree nut, soy, milk, wheat and egg products.

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## **dotFIT Breakfast Bar: Iced Oatmeal Blueberry**

*Soon to be known as "dotBAR™"*

### **Uses**

- An ideal, quick breakfast
- Weight control – precise portion control and accurate calorie counts
- Daily menu incorporation as a meal substitute to reduce or increase daily caloric intake
- Between meal snack as an energy boost or hunger killer
- Pre- and post-exercise/activity energy and recovery supplement
- Guiltless dessert

### **Description and Unique Features**

- Provides ALA Omega-3s
- Contains whole grains and made with real fruit
- High protein with low cholesterol and good source of calcium and fiber
- Helps promote/support/maintain a healthy digestive/immune system
- On-the-go portability in a unique convenient shape – easy to carry anywhere
- Handmade and baked with high quality ingredients
- Contains multiple high quality protein sources
- Formulated and manufactured for great taste and pleasing texture, the Breakfast Bar also meets or exceeds the FDA's guideline for "High Protein" and is a microwaveable product
- Third-Party testing: Commitment to producing world-class products is our #1 priority. Rigorous testing, both in-house and through third-party, FDA-approved laboratories, assures our clients that all nutritional claims meet or surpass FDA guidelines, USDA guidelines, and industry norms

**Nutrition Facts (1 bar)**

<b>Serving Size: 1 bar (55 g)</b>		
<b>Calories:</b>	<b>220</b>	
<b>Calories from Fat:</b>	<b>45</b>	<b>% Daily Value</b>
<b>Total Fat</b>	<b>5g</b>	<b>8%</b>
Saturated Fat	<b>2g</b>	<b>10%</b>
Trans Fat	<b>0g</b>	<b>*</b>
<b>Cholesterol</b>	<b>10mg</b>	<b>3%</b>
<b>Sodium</b>	<b>170mg</b>	<b>7%</b>
<b>Total Carbohydrates</b>	<b>29g</b>	<b>10%</b>
Dietary Fiber	<b>3g</b>	<b>12%</b>
Sugar	<b>9g</b>	<b>*</b>
Sugar Alcohols	<b>11g</b>	<b>*</b>
<b>Protein</b>	<b>15g</b>	<b>30%</b>
<b>Vitamin A</b>		<b>2%</b>
<b>Vitamin C</b>		<b>0%</b>
<b>Calcium</b>		<b>10%</b>
<b>Iron</b>		<b>6%</b>

**Ingredients:** Proprietary protein blend (soy isolate, whey isolate, whey concentrate, wheat isolate), vegetable glycerin, sorbitol, maltitol, corn syrup, rolled oats, icing (sugar, water, vegetable oil, palm kernel oil, corn syrup, soy lecithin, mono and diglycerides, pectin, potassium sorbate, agar, citric acid, calcium chloride, xanthan gum and salt), blueberry flakes (sugar, vegetable [palm, palm kernel], wheat flour, corn syrup solids, malic acid, blueberry juice concentrate and puree, natural and artificial flavors, soy lecithin, sodium citrate, blue 2 lake, yellow 6 lake, red 40 lake), sugar, polydextrose, margarine (palm oil, water, salt, whey, vegetable monoglycerides, soy lecithin, natural butter flavor, citric acid [acidulant], beta carotene [color], vitamin A palmitate added), palm oil, flax seed, N&A flavors, blueberry powder, baking soda, salt, potassium sorbate, calcium propionate and guar gum. Contains soy, milk, wheat and egg products. Manufactured in a plant that processes peanut, tree nut, soy, milk wheat and egg products.

## **dotFIT Breakfast Bar: Iced Oatmeal Strawberry**

*Soon to be known as "dotBAR™"*

### **Uses**

- An ideal, quick breakfast
- Weight control for portion control and accurate calorie counts
- Daily menu incorporation as a meal substitute to reduce or increase daily caloric intake
- Between meal snack as an energy boost or hunger killer
- Pre- and post-exercise/activity energy and recovery supplement
- Guiltless dessert

### **Description and Unique Features**

- Provides ALA Omega-3s
- Contains whole grains and made with real fruit
- High protein with low cholesterol and good source of calcium and fiber
- Helps promote/support/maintain a healthy digestive/immune system
- On-the-go portability in a unique convenient shape – easy to carry anywhere
- Handmade and baked with high quality ingredients
- Contains multiple high quality protein sources
- Formulated and manufactured for great taste and pleasing texture, the Breakfast Bar also meets or exceeds the FDA's guideline for "High Protein" and is a microwaveable product
- Third-Party testing: Commitment to producing world-class products is our #1 priority. Rigorous testing, both in-house and through third-party FDA approved laboratories, assures our clients that all nutritional claims meet or surpass FDA guidelines, USDA guidelines, and industry norms

**Nutrition Facts (1 bar)**

<b>Serving Size: 1 bar (55 g)</b>		
<b>Calories:</b>	<b>220</b>	
<b>Calories from Fat:</b>	<b>45</b>	<b>% Daily Value</b>
<b>Total Fat</b>	<b>5g</b>	<b>8%</b>
Saturated Fat	<b>2g</b>	<b>10%</b>
Trans Fat	<b>0g</b>	<b>*</b>
<b>Cholesterol</b>	<b>10mg</b>	<b>3%</b>
<b>Sodium</b>	<b>170mg</b>	<b>7%</b>
<b>Total Carbohydrates</b>	<b>29g</b>	<b>10%</b>
Dietary Fiber	<b>3g</b>	<b>12%</b>
Sugar	<b>9g</b>	<b>*</b>
Sugar Alcohols	<b>11g</b>	<b>*</b>
<b>Protein</b>	<b>15g</b>	<b>30%</b>
<b>Vitamin A</b>		<b>2%</b>
<b>Vitamin C</b>		<b>0%</b>
<b>Calcium</b>		<b>10%</b>
<b>Iron</b>		<b>6%</b>

**Ingredients:** Proprietary protein blend (soy isolate, whey isolate, whey concentrate, wheat isolate), vegetable glycerin, sorbitol, maltitol, corn syrup, rolled oats, icing (sugar, water, vegetable oil, palm kernel oil, corn syrup, soy lecithin, mono and diglycerides, pectin, potassium sorbate, agar, citric acid, calcium chloride, xanthan gum and salt), strawberry flakes (sugar, vegetable oil [palm, palm kernel]), corn syrup solids, malic acid, strawberry, natural and artificial flavors, soy lecithin, tricalcium phosphate, sodium citrate, strawberry juice, red 40 lake, acetic acid, blue 1 lake), sugar, polydextrose, margarine (palm oil, water, salt, whey, vegetable monoglycerides, soy lecithin, natural butter flavor, citric acid [acidulant], beta carotene [color], vitamin A palmitate added), palm oil, flax seed, N&A flavors, blueberry powder, baking soda, salt, potassium sorbate, calcium propionate and guar gum. Contains soy, milk, wheat and egg products. Manufactured in a plant that processes peanut, tree nut, soy, milk, wheat and egg products.

## dotFIT™ Powdered Mixes

All products can be used to significantly improve

- 1) any weight loss program
- 2) exercise-induced muscle and performance gains
- 3) recovery from exercise and training bouts
- 4) energy levels
- 5) the nutritional content of diet

### Positioning

A healthy, convenient assortment of mixes designed to be integrated into your daily meal planning in order to assist you in reaching and maintaining your sport and fitness goals. All products in the dotFIT powdered mix line can be selected based on taste, preference, venue, or calorie requirements for any of reasons listed in the **Typical Use** section shown below.

### Advantages of mixes

- Have it your way: powdered mixes are simply the starting materials you **use to create whatever formula is needed**
  - By adding other ingredients into the mix, you can create any level or ratio of calories, protein, fats, carbohydrates (CHO) and other nutrients
- Can be used as a tasty and **convenient way to deliver important but often neglected nutrients**
  - Many nutritionally important fruits containing fiber, phytochemicals, etc., can be mixed with the powders to help anyone regularly consume a healthy diet
- **Allows near immediate nutrient absorption** that continues throughout the necessary time period that allows the exerciser to maximize the muscle building/recovery potential of the post exercise “metabolic windows” of muscle growth & repair (see nutrition dotFIT overview section on “metabolic windows”). All formulas used in studies demonstrating performance and size enhancements using pre- & post-exercise feedings were in liquid form
- **Can deliver immediate energy lasting throughout the training period** as well as the necessary nutrition to maximize the exercise bout whenever time is an issue

### Overall unique features

- See individual dotFIT powdered mix products for their specific unique features
- All use only the highest quality/grade proteins with enhancing cofactors (e.g. Aminogen®, PeptoPrO®, lactase, etc.) to aid digestion, absorption and utilization

- No aspartame, low sugar and relatively low sodium
- nutrition dotFIT products are designed in a synergistic relationship with all dotFIT products and a person's traditional food intake. nutrition dotFIT products are NOT spiked with unnecessary nutrients. Most other products in this space (e.g. bars, shakes, ready to drinks, etc.) are heavily spiked with many nutrients that can lead to undesirable levels within the body when combining multiple manufactures, products and normal food intake. Because of our product synergy, use of our complete product line promotes safe and optimal daily nutrient intake
- Formulated and manufactured for great taste and pleasing texture in an FDA-registered facility in compliance with Good Manufacturing Practices (GMPs) and maintains rigorous product testing

## Typical Use

Use as needed to satisfy any of the stated goals:

- Weight control for portion control and accurate calorie counts
- Daily menu incorporation as a meal substitute to reduce or increase daily caloric intake
- Vehicle to deliver often ignored but healthy nutrients (add desired ingredients to the mix)
- Between meal snack as an energy boost or hunger killer
- Pre and post exercise/activity energy and recovery supplement
- Guiltless dessert

## dotFIT™ Pre/Post Workout Formula & Meal Replacement™

### Goal

The purpose of the Pre/Post Workout Formula is to accomplish two important health, sport and fitness goals: 1) satisfy and compliment the evolving change in society's eating patterns by supplying great tasting meals and snacks – i.e. deliver better, satisfying nutrition in fewer calories; 2) because of the unique formulations, all dotFIT™ mixes, including the Pre/Post Workout Formula, will also be able to deliver the perfect ingredients to serve as the pre- and post-exercise/activity supplement that has been proven necessary to enhance training induced results.

Anchored by a blend of high-quality proteins (whey protein isolate, whey protein concentrate, calcium caseinate, and micellar casein), medium chain triglycerides and essential fatty acids to support the special needs of active individuals, the Pre/Post Workout Formula was designed to provide critical support for muscle growth and repair while simultaneously providing a steady supply of energy.

### Rationale

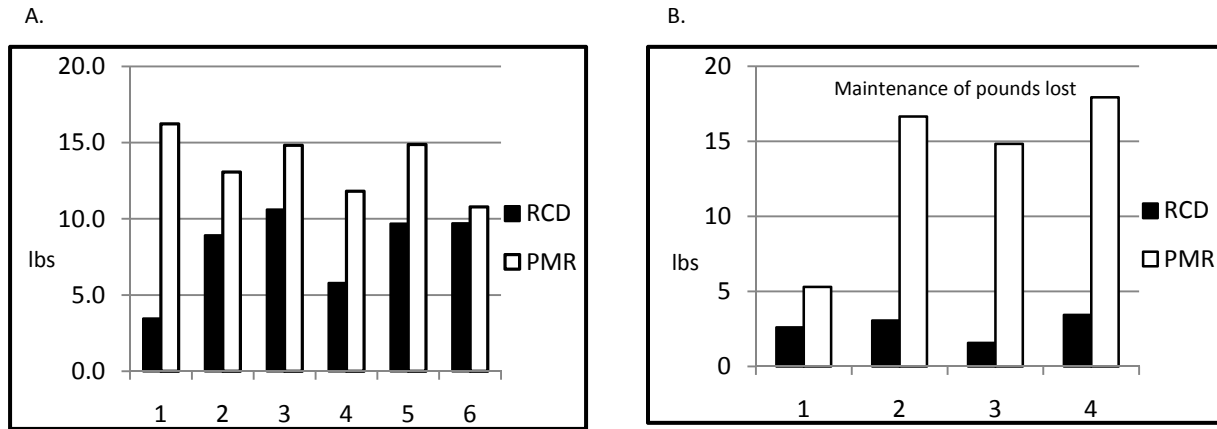
#### Weight control

It has been well established that successful dieters, weight loss maintainers, athletes and others able to control a healthy weight regularly incorporate meal replacement/substitute type foods<sup>1,2,3,4,5,6,7</sup> (see figure 21 A & B), such as meal replacements, "protein shakes", etc. into their daily meal plans for the following reasons: <sup>8,9,10,11,12,13</sup>

- More for less--allows you to increase the frequency of daily meals while managing calories in order to satisfy appetite<sup>14</sup> and maintain greater daily energy levels i.e. more nutrition<sup>15</sup> and fullness with fewer calories and often significant savings in groceries. Proper use throughout the day can deliver good nutrition while helping to save calories, allowing you to partake in larger meals/favorite foods at desired times (e.g. higher calorie lunches and/or dinners)
- Accurate calorie counts of total daily food intake when compared to having to estimate the calories of self-prepared or unmarked meals<sup>16</sup>
- Portion control--people generally attempt to consume meals to completion; therefore meal portion size significantly impacts a person's total calorie intake. Overwhelming evidence validates that the smaller the portions, the fewer daily calories consumed<sup>17,18,19</sup>
- A healthy, lower calorie alternative to traditional fast foods
- Convenient storage anywhere and faster than stopping and picking up generally less healthy, higher calorie, traditional fast foods



**Figure 21: A.** In all six studies the groups that were using meal replacements (PMR) as part of their overall calorie intake lost significantly more weight than the reduced calorie diet (RCD) group. **B.** In a 1-year follow-up in the groups that were tracked, the subjects still using meal replacements maintained significantly more weight loss than the RCD group.<sup>1</sup>



### Daily menu incorporation

Pre/Post Workout Formula satisfies the criteria for smaller meals or can be a balanced addition to increase meal size.

**Reduced meal size:** busy people often need quick nutrition that can satisfy nutritional needs and deliver energy while keeping calories within a range that allows a healthy weight. Multiple large daily meals are not needed for most people today because of low activity in the workplace and during leisure time (sedentary entertainment).<sup>20</sup>

**Increase meal size or calorie intake:** when weight/muscle gain is the goal and it becomes difficult to increase the consumption of traditional foods in order to continue to add lean body mass (LBM), liquid meals offer the ideal solution. Easy/convenient to consume preparations can be added to any meal or daily menu plan to deliver exactly what's needed so the surplus nutrients/calories are incorporated into muscle tissues rather than body fat when appropriate resistance exercise is included.<sup>21,22,23</sup>

**Snack between meals:** The dotFIT™ Pre/Post Workout Formula is convenient for snacking to deliver quick energy or to take the edge off hunger without running up the calories. Using the meal replacement shake for snacking may also decrease the amount of food consumed in the subsequent meal or keep you from making an inappropriate food choice (e.g. decadent high calorie meal driven by an uncontrolled craving) as often happens when extra hungry and especially during weight loss.

### **Pre- and post-exercise/activity energy and recovery supplement**

Because of the length of time it takes to digest and absorb the nutrients from traditional meals, whole/traditional food meals cannot deliver the required nutrients within a timeframe that allows maximum results induced by exercise when compared to the proper use of quick-digesting specialized formulas.<sup>21,23</sup>

All dotFIT™ mixes including Pre/Post Workout Formula meet the necessary “quick digestion”, carbohydrate and protein content criteria that have been shown to deliver an increase in energy, maximize recovery and increase muscular development when consumed before<sup>24</sup> and after exercise.<sup>21</sup> dotFIT liquid pre- and post- feedings (shakes/mixes or ready to drinks) have the fastest absorption time. Requiring little time spent on digestion and absorption and maximizing the rate of recovery and building.

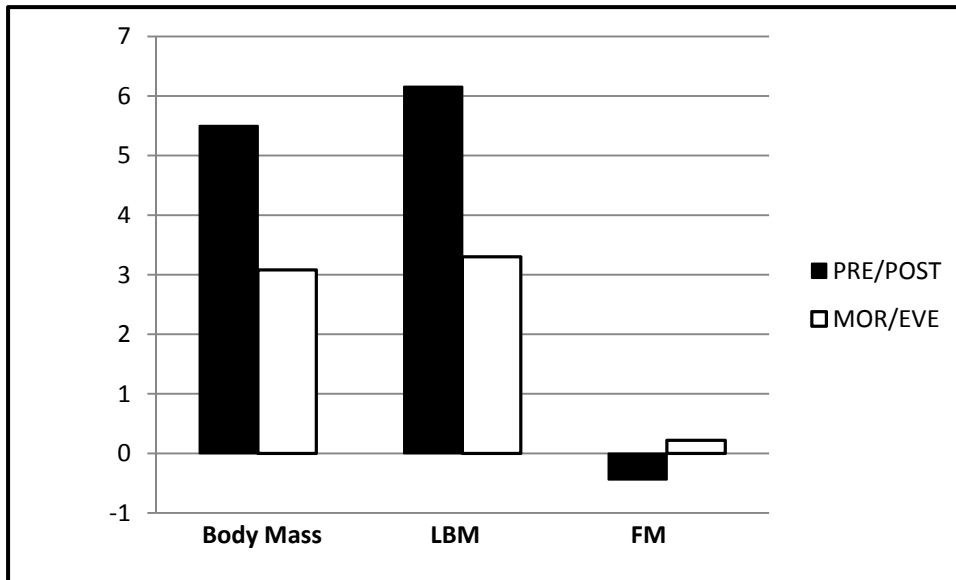
### **Metabolic windows of growth**

Immediately following exercise, muscle cell nutrient uptake is at its highest point of the day and therefore this “window of opportunity” requires a well designed fast-acting formula.<sup>22</sup>

Virtually all studies have demonstrated that the inclusion of “immediate” pre- & post-training fast-acting carbohydrate/sugars and protein feedings can stimulate muscle protein synthesis (MPS)<sup>25,26</sup> and reduce muscle damage to a far greater extent than normal meals/feeding patterns.<sup>27,28</sup> In other words, no matter how well you eat throughout the day, you recover faster and build more muscle and strength by including these quickly absorbed pre- and post-exercise formulas (see Figure 22).<sup>23,29</sup>

We also recently discovered that although the post-training metabolic window is active for as much as 60-90 minutes, its maximum activity (greatest nutrient uptake and protein synthesis capabilities) takes place immediately at the end of the training session.<sup>23</sup> From that point on, the longer you wait to supply the proper nutrients or the more time they take to get to the affected tissues, the less muscle building or recovery takes place during this period and can't be made up for at any other point in time.

**Figure 22:** Training results from 23 experienced recreational bodybuilders resistance training for 10 weeks with all things (diet, supplements, training, etc.) equal except the addition of pre/post feedings yielded significantly greater gains in body mass, LBM, and reduction in fat mass for the pre/post feeding subjects.



### The proper pre/post formula

DRAFT

There is no longer a debate whether pre- and post-workout feedings enhance exercise-induced results. Volumes of peer review literature and studies continue to not only validate this now established fact, but also document the proper formulas.<sup>30,31,32</sup>

The formulas used in scientific studies are all relatively the same: within the range of one point five to four parts carbohydrate (CHO) to one part protein and low to no fat. The CHO range is based on the activity being studied – the longer the workout the higher the carbohydrate/sugar content. The Pre/Post Workout Formula formula produces the desired results i.e. quick lasting energy, faster recovery and more muscle and strength gains from your workout.

The carbohydrate mixture must contain the proper amounts of simple, fast-acting sugars because the sugars/energy must enter the body quickly or the product loses effectiveness.<sup>33,34</sup> The Pre/Post Workout Formula contains a sophisticated carbohydrate complex that can release almost immediately and continuously throughout the timeframe necessary to maximize protein synthesis during “metabolic windows” of growth. The formula also contains the right of amount of amino and fatty acids, which besides their role in muscle building,<sup>35</sup> are also instrumental in managing the speed in which the carbohydrates continue to enter the body, allowing the recipient higher but consistent energy levels throughout the desired period.

By consuming the same ingredients as the post-workout formula before the workout, we not only improve the user's training energy levels, we can also enhance the recovery and muscle building process to a greater extent than solely ingesting the post-workout formula.

Although recovery primarily takes place after the workout, you can help speed and enhance the process before you start exercise by ingesting the Pre/Post Workout Formula formula ten to 40 minutes before the workout (always make sure your pre-training full food meal is eaten two to three hours before exercise unless you train first thing in the morning and time does not permit). Proper carbohydrate/sugar content is important because it stimulates insulin production and insulin is our body's most anabolic hormone thus "king" when it comes to building muscle.<sup>36,37</sup> When you repeat the process immediately post-workout, you quickly restore energy (glycogen) while stimulating a renewed insulin release, which initiates and enhances the muscle-building hormone process/cascade thus recovery and results.

## Chocolate Flavor

<b>Nutrition Facts</b>		
Serving Size: 2 Scoops (64g)		
Serving Per Container: About 25		
<b>Calories 240</b>	<b>Calories from Fat 25</b>	
<b>Amount Per Serving</b>	<b>% Daily Value*</b>	
<b>Total Fat</b>	3g	5%
Saturated Fat	1g	5%
Trans Fat	0g	**
<b>Cholesterol</b>	35mg	12%
<b>Sodium</b>	125mg	5%
<b>Total Carbohydrate</b>	35g	12%
Dietary Fiber	3g	12%
Sugars	3g	**
<b>Protein</b>	20g	40%
Vitamin A (as Beta Carotene)	600IU	12%
Vitamin C (as Ascorbic acid)	6mg	10%
Vitamin D (as Cholecalciferol)	40IU	10%
Vitamin E (as d-Alpha Tocopheryl Succinate)	3IU	10%
Vitamin B1 (Thiamine Mononitrate)	.15mg	10%
Vitamin B2 (as Riboflavin)	.17mg	10%
Niacin (as Niacinamide)	2mg	10%
Vitamin B6 (as Pyridoxine HCl)	.2mg	10%
Vitamin B12 (as Cyanocobalamin)	1mcg	17%
Biotin	30mcg	10%
Pantothenic acid (as Calcium Pantothenate)	1mg	10%
Calcium (from Milk Protein and Carbonate)	300mg	30%
Iron (as Ferrous Fumarate)	3.2mg	18%
Iodine (as Potassium Iodide)	15mcg	10%
Magnesium (as Magnesium Oxide)	40mg	10%
Zinc (as Zinc Citrate)	1.5mg	10%
Copper (as Copper Gluconate)	200mcg	10%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.		
**Daily Value not established.		
	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Potassium	3,500mg	3,500mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Calories per gram:		
Fat	9	Protein 4
Carbohydrate	4	

**INGREDIENTS:** Maltodextrin, Protein Blend (Whey Protein Concentrate, Calcium Caseinate, Micellar Casein, Whey Protein Isolate), Cocoa powder, Fat Blend (Sunflower oil, Medium Chain Triglycerides and Safflower oil), Gums (Carboxymethyl Cellulose, Xanthan gum), Natural and Artificial Flavors, Vitamin and Mineral Blend, Sodium Chloride, Sweeteners (Sucralose, Acesulfame Potassium).

Contains Ingredients: Derived from Milk and Soy.

## Typical Use

- A healthy, convenient food replacement designed to be integrated into your daily meal planning in order to assist you in reaching and maintaining your sport and fitness goals
- Pre- and post-workout feeding to maximize energy, muscle building and recovery. And can be made to any specifications (i.e. may add ingredients to achieve the desired level of calories protein, fats & CHO)
- Supply nutrient-rich, convenient snacks between meals to boost energy, curb hunger and assist in weight control by controlling calories
- Increase daily caloric intake when unable to do so by consuming whole food

## Summary

### Purpose

The dotFIT™ Pre/Post Workout Formula is a healthy, convenient food replacement designed to be integrated into your daily meal planning in order to assist you in reaching and maintaining your sport and fitness goals, provide pre- and post-workout nutrients to maximize energy, muscle building and recovery, and can be made to any specifications (i.e. may add ingredients to achieve the desired level of calories protein, fats & CHO). Additionally the Pre/Post Workout Formula can supply a nutrient-rich, convenient snack between meals to boost energy, curb hunger and assist in weight control by controlling calories. dotFIT Pre/Post Workout Formula can be used to meet daily caloric needs when unable to do so by consuming whole food.

### Unique Features

- Perfect blend of the highest quality proteins (whey protein isolate, whey protein concentrate, calcium caseinate, and micellar casein)
- Ideal blend of fast- and continuous-acting carbohydrates for quick and steady energy and recovery with only three grams of sugar per serving and NO ASPARTAME
- Healthy blend of essential fats
- Designed in a synergistic relationship with all dotFIT products and a person's traditional food intake. It is NOT spiked with unnecessary nutrients. Most other products in this space (e.g. bars, shakes, ready to drinks, etc.) are heavily spiked with many nutrients, leading to undesirable levels within the body when combining multiple manufacturers, products and normal food intake
- Because of our product synergy, use of our complete product line promotes safe and optimal daily nutrient intake
- Formulated and manufactured for great taste and pleasing texture in an FDA-registered facility, in compliance with Good Manufacturing Practices and maintains rigorous product testing

## dotFIT™ FirstString™

### Goal

The goal of FirstString is to provide the ideal formula containing a mix of protein (P), carbohydrates (CHO) and fats (F) that meet the NCAA guidelines (**NCAA Bylaw 16.5.2.2**) for college athletes. This is while satisfying the established criteria of a pre- and post- exercise/activity meal needed to maximize training response, thereby leading to greater gains in strength, size and/or performance and competition outcomes. See the nutrition dotFIT overview.

### Rationale

Proper diet manipulations with specialized formulas create and take advantage of “metabolic windows” throughout the day where muscle cells become highly receptive to the nutrients necessary to maximize recovery<sup>1,2,3,4</sup> and those used to increase protein synthesis,<sup>5,6,7,8,9,10</sup> specifically before and after training.<sup>3,7,11,12,13,14</sup>

Proper timing and composition of nutrients can trigger a hormonal state that can reduce muscle damage while increasing muscle building, leading to a greater net increase in protein synthesis when compared to normal feeding patterns with equal diet components (total calories, protein, fats and carbohydrates).<sup>15,16,17</sup> Accomplishing the ideal hormonal environment for muscle building is a function of carbohydrates (CHO), proteins and fats being supplied in proper ratios, forms and at specific times in relation to training periods.<sup>18</sup> FirstString delivers these macronutrients in the proper form and amounts that have been demonstrated by numerous clinical trials to enhance training results when compared to a non-supplemented state.

An approximate 2:1 ratio of CHO to protein, as in FirstString, has been shown to enhance protein synthesis when used post-training compared to placebo.<sup>4,19,20,21,22</sup>

## Chocolate Flavor

		2 Scoops (75g)		4 Scoops (149g)	
		About 32		About 16	
		Calories 285	Calories from Fat 30	Calories 570	Calories from Fat 60
Amount Per Serving		Amount Per Serving	% Daily Value*	Amount Per Serving	% Daily Value*
<b>Total Fat</b>	3g	6g	9%	6g	9%
Saturated Fat	1.25g	2.5g	6%	2.5g	13%
Trans Fat	0g	0g	**	0g	**
<b>Cholesterol</b>	50mg	100mg	17%	100mg	33%
<b>Sodium</b>	30mg	160mg	4%	160mg	7%
<b>Total Carbohydrate</b>	45g	89g	15%	89g	30%
Dietary Fiber	1.5g	3g	6%	3g	12%
Sugars	4g	8g	**	8g	**
<b>Protein</b>	21g	42g	42%	42g	84%
Vitamin A (as Beta Carotene)	350IU	700IU	7%	700IU	14%
Vitamin C (as Ascorbic acid)	3mg	6mg	5%	6mg	10%
Vitamin D (as Cholecalciferol)	20IU	40IU	5%	40IU	10%
Vitamin E (as d-Alpha Tocopheryl Succinate)	1.5IU	3IU	5%	3IU	10%
Vitamin B1 (Thiamine Mononitrate)	.8mg	1.5mg	5%	1.5mg	10%
Vitamin B2 (as Riboflavin)	.9mg	1.7mg	5%	1.7mg	10%
Niacin (as Niacinamide)	1mg	2mg	5%	2mg	10%
Vitamin B6 (as Pyridoxine HCl)	.1mg	.2mg	5%	.2mg	10%
Vitamin B12 (as Cyanocobalamin)	5mcg	10mcg	5%	10mcg	10%
Biotin	15mcg	30mcg	8%	30mcg	17%
Pantothenic acid (as Calcium Pantothenate)	5mg	10mg	5%	10mg	10%
Calcium (from Milk Protein and Carbonate)	200mg	400mg	20%	400mg	40%
Iron (as Ferrous Fumarate)	1.25mg	2.5mg	7%	2.5mg	14%
Iodine (as Potassium Iodide)	7.5mcg	15mcg	5%	15mcg	10%
Magnesium (as Magnesium Oxide)	20mg	40mg	5%	40mg	10%
Zinc (as Zinc Citrate)	8mg	16mg	5%	16mg	10%
Copper (as Copper Gluconate)	100mcg	200mcg	5%	200mcg	10%
Aminogen® (13 Units)	125mg	250mg	**	250mg	**

**INGREDIENTS:** Maltodextrin, Protein Blend (Whey Protein Concentrate, Calcium Caseinate, Micellar Casein, Whey Protein Isolate), Fat Blend (Sunflower Oil, Medium Chain Triglycerides and Safflower Oil), Natural and Artificial Flavors, Gums (Carboxymethyl Cellulose, Xanthan Gum), Vitamin and Mineral Blend, Aminogen®, Sweeteners (Sucralose, Acesulfame Potassium).

Contains Ingredients: Derived from Milk and Soy.

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

\*\*Daily Value not established.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Potassium	3500g	3500g
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4

**WARNING:** Consult your physician if you are taking any over-the-counter or prescription medications. Use this product as a food supplement only. Do not use for weight reduction. Do not use if safety seal under cap is broken or missing. Store in a cool dry place.

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## Typical Use

As a pre- and post-workout supplement, each training day (dose ranges based on size),

10-40 minutes pre-workout:

- Under 200 lbs, consume two scoops; over 200 lbs, consume four scoops
- Immediately following training, repeat the same dose
- As a meal replacement or weight gain supplement use as needed throughout the day to meet individual calorie and nutrient goals

## Summary

### Purpose

- The base product is a higher calorie and CHO to protein ratio per serving than other dotFIT™ powders, allowing the product to serve multiple roles: pre/post-training supplement, weight gainer and meal replacement
- Targeted to all athletes but primarily towards the youth through collegiate athlete. As a supplement can help maximize a child's athletic development including overall growth potential. A natural and safe product for the youth population

- The 42 grams of the best quality proteins (see WheySmooth™ for info on proteins) and 86 grams of CHO packed into 570 calories (vanilla flavor) make FirstString™ the perfect muscle gain formula
- Can deliver exactly what's needed so surplus nutrients/calories are incorporated into muscle tissues rather than body fat when appropriate resistance exercise is included and total daily calories are appropriate

## Unique Features

- Contains Aminogen®, which has been shown to increase the body's uptake of amino acids/protein, making greater amounts available to the working muscles and decreasing incidences of bloating/gas common with competitive products
- CHO content satisfies the necessary profile for maximizing protein synthesis while fitting into a "low sugar" claim, which will appeal to prevailing perceptions
- 42 grams of protein, 86 grams of CHO and only eight grams of sugar (vanilla flavor)
- No aspartame and relatively low sodium
- Sophisticated ideal blend of the highest quality fast and slow acting proteins
- dotFIT meal replacements (nutrition dotFIT) are designed in a synergistic relationship with all dotFIT products and a person's traditional food intake. These products are NOT spiked with unnecessary nutrients. Most other products in this space (e.g. bars, shakes, ready-to-drinks, etc.) are heavily spiked with many nutrients that can lead to undesirable levels within the body when combining multiple manufacturers, products and normal food intake
- When consuming only dotFIT products as directed with one's normal daily food intake, the recipient is assured of keeping the body at a safe and optimal nutrient level
- Formulated and manufactured for great taste and pleasing texture in an FDA
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC



## dotFIT™ WheySmooth™

### Goal

WheySmooth is designed to deliver a high quality protein (PRO) source, rich in essential amino acids, which allows a high protein intake even during a low calorie diet. WheySmooth comes in a powdered form allowing the user to mix and adjust the total protein and other nutrient content as needed/desired. Whey proteins can be useful for improving training outcomes by 1) increasing protein intake when whole food sources are insufficient or not an option (i.e. early morning workouts or low calorie diets); 2) maximizing lean muscle mass in exercising or dieting adults; 3) hastening and improving recovery from exercise bouts; and 4) supporting immune function during high volume training.

### Rationale

Timed ingestion of whey protein both pre- and post-workout<sup>1,2,3</sup> facilitates a more rapid absorption of amino acids into the bloodstream and their subsequent delivery to the target tissues when compared to other sources of proteins.<sup>4,5,6</sup> Whey protein hydrolysates have the highest content of essential and branched chain amino acids of any protein and yield small peptides that are absorbed quickly into the blood stream.<sup>7,8</sup> For bodybuilders, wrestlers, or other weight-conscious athletes preparing for competition (these athletes are often underfed and overtrained at this point), these formulas offer a viable way to meet protein and amino acid requirements for maintaining and increasing lean mass while calorie intake remains low enough to accomplish the body composition or weight goals.<sup>9</sup>

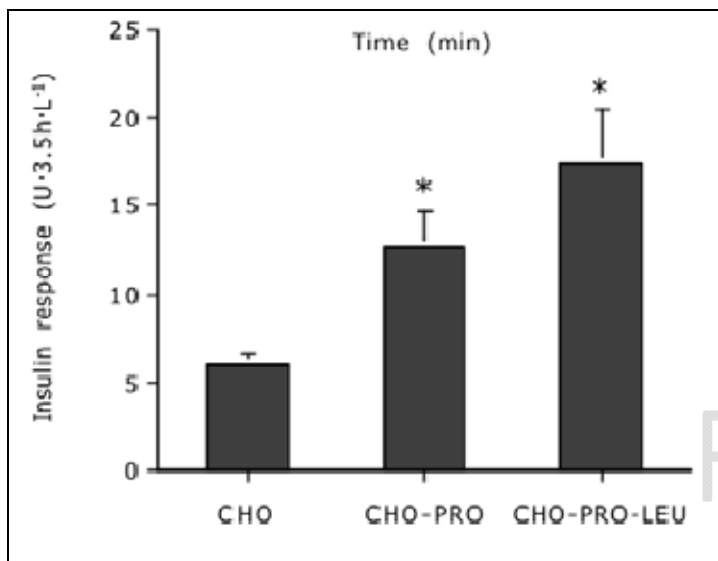
As exercise intensity and volume increase, muscle amino acid and glycogen stores are depleted.<sup>9,10,11,12,13</sup> This can induce a catabolic state in the athlete and impair recovery if adequate post-exercise nutrition is not available.<sup>7</sup> Zawadzki et al showed that the addition of whey protein to a carbohydrate (CHO) drink, post-workout, accelerated muscle glycogen synthesis compared to CHO alone.<sup>14</sup> The result may be attributed to a greater insulin response to the CHO/PRO combination than with CHO alone (see Figure 23). Both protein/CHO solutions used whey as the protein source and as you can see, the addition of leucine further increased the insulin response. Insulin is a powerful anabolic hormone necessary for stimulating muscle protein synthesis (MPS).<sup>15,16,17,18,19,20,21,22</sup> It is widely accepted in the scientific community that resistance training (RT) increases muscle protein synthesis (MPS).<sup>11,23,24,25</sup> Research has firmly established that the combination of RT and whey protein ingestion produces a synergistic effect on muscle hypertrophy by supplying a unique grouping of essential amino acids (specifically leucine) post-RT to initiate and enhance MPS.<sup>26,27,28,29</sup> The combination of whey protein's ability to accelerate glycogen resynthesis and stimulate MPS may significantly improve exercise recovery leading to greater training outcomes (e.g. muscle hypertrophy, sports performance, strength).

Whey protein may help sustain the immune system during high-volume training cycles.<sup>30,31</sup> A high concentration of cysteine is found in whey protein, which is needed for glutathione production, a

natural antioxidant found in the body.<sup>32,33,34</sup> Glutathione may assist in repairing damaged cells including cells of the immune system due to stressors, such as exercise and keep them running smoothly.<sup>35,36,37</sup>

Proper use of whey proteins for certain athletes during intense training may significantly enhance the desired outcomes, especially if total calorie intake is being limited to allow the pursuit or maintenance of low body fat.

**Figure 23:** Insulin response to three different post-workout drinks.



Precision formulated to improve body composition and enhance performance, dotFIT's WheySmooth is packed with a stunning 40 grams of medical-grade protein from five different very high biological value sources (whey protein isolate, whey protein concentrate, egg albumin, calcium caseinate, micellar casein). WheySmooth's matrix of "slow" and "fast" releasing proteins and essential fatty acids help ensure WheySmooth provides the best of both worlds; keeping you and your muscles in an anabolic state all day long.

### **PeptoPro®**

PeptoPro is comprised of small pieces of protein, mainly di- and tripeptides (one or two amino acids), giving it two key advantages. First, PeptoPro amino acids are quickly taken up by the body and delivered to the muscles. This is ideal for pre- or post-activity feeding. Second, compared to intact protein and other hydrolysates, PeptoPro has better taste and texture properties, ensuring that ours is the best tasting, most effective protein supplement on the market.

## Aminogen®

Aminogen is clinically proven to increase amino acid levels and boost nitrogen retention.<sup>38</sup> Developed by Triarco Industries, Aminogen is a patented, natural, plant-derived designer enzyme which breaks down protein and improves amino acid absorption. Aminogen also supports protein digestion while reducing or eliminating the gas, bloating and constipation some users experience with protein supplements.

## Co-factors

**Pyridoxal 5' Phosphate** (the active form of vitamin B6) is involved with a myriad of functions in the body, but of interest here is its role in protein metabolism (catabolism/anabolism) and immune function.<sup>39</sup>

**Lactase** is the enzyme that breaks down lactose (milk sugar). Isolated protein sources derived from milk contain miniscule amounts of lactose and should pose no problem to those that may be lactose intolerant (unable to make the enzyme lactase). But, to be on the safe side and insure that we have the most easily digested and utilized formula, it is included.

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## Chocolate Flavor

# Supplement Facts

Serving Size: 2 scoops (65g)

Servings Per Container: 25

Amount Per Serving	% Daily Value*	
Calories 240	Calories from Fat 40	
Total Fat	4.5g	7%
Saturated Fat	2g	10%
Trans Fat	0g	**
Cholesterol	85mg	29%
Sodium	85mg	4%
Total Carbohydrate	12g	4%
Dietary Fiber	3g	11%
Sugars	2g	**
Protein	40g	80%
Vitamin A	200IU	4%
Vitamin B6 (as Pyridoxal 5'-Phosphate)	10mg	500%
Calcium (from Milk Proteins)	300mg	30%
Iron	1.8mg	10%
Proprietary Enzyme Blend Lactase	8,000ALU	**
Aminogen®	250mg	**

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

\*\*Daily Value not established.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Potassium	3,500mg	3,500mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

**INGREDIENTS:** Protein Blend (Whey Protein Concentrate, Calcium Caseinate, PeptoPro - Casein Hydrolysate, Micellar Casein, Egg whites, Whey Protein Isolate), Cocoa Powder, Maltodextrin, Sunflower oil, Gums (Carboxymethyl Cellulose, Xanthan gum), Enzyme Blend (Lactase, Aminogen), Natural and Artificial flavors, Pyridoxal 5'-Phosphate, Sweeteners (Sucralose, Acesulfame Potassium).

**Contains** Ingredients Derived from Milk and Soy.

## Typical Use

WheySmooth™ is ideal for athletes or exercisers seeking to acquire the highest amount of protein with the least amount of calories in order to maximize training induced size, performance and strength outcomes.

- Adults who do not meet protein requirements from food intake, especially physique and other athletes (strength, endurance and active recreational) during an adaptation period
- Weight and body-fat conscious athletes during the final weeks of competition dieting, in order to meet protein requirements with fewer calories
- Underfed and over-trained athletes
- Anyone wanting a great tasting, convenient protein source
- Those concerned with proper timing of protein intake and want the quick digestibility that cannot be accomplished by traditional food sources

## Precautions

Some studies have shown an increase in calcium loss with high protein intakes which may predispose the individual to an increased risk of osteoporosis.<sup>40</sup> However several, recent studies have found the link between protein intake and bone health to be positive.<sup>41,42</sup> The Institute of Medicine's and other related studies have concluded that levels of dietary protein are not associated with a decrease in renal function with age.<sup>43,44,45,46</sup>

## Contraindications

WheySmooth is contraindicated in pregnancy and lactation unless protein needs cannot be met by food alone. WheySmooth is contraindicated in people who cannot consume milk proteins.

## Adverse Reactions

There should be no adverse effects in healthy users at the recommended doses.

## Upper Limit/Toxicity

Currently there is no UL established for protein.

## Summary

### Purpose

Because of whey protein's structure, high essential amino acid content and bioavailability, this product is ideal for athletes or exercisers seeking to acquire the highest amount of protein with the least amount of calories in order to maximize training induced size, performance and strength outcomes.

### Unique Features

- Forty grams of protein from the highest BV sources, giving WheySmooth its unique "fast and slow" release pattern
- PeptoPro® peptide complex for rapid absorption and utilization and superior taste and mixing properties
- Aminogen® for more complete protein digestion, amino acid absorption and nitrogen retention
- Co-factors available to ensure greater amino acid and protein utilization
- Great taste, easy mixing
- No gas or bloating as is common with other protein powders
- Contains only 2 grams of sugar per serving and NO ASPARTAME
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

# Quick Reference Guide

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## ActiveMV™

### What is it?

The ActiveMV formula is a multipurpose multivitamin and mineral formula. The ActiveMV is used at the specified times throughout one's lifetime. This formula contains doses of antioxidants at the higher end of the optimal range.

### How does it work?

The ActiveMV delivers a combination of nutrients in a controlled-release preparation that, when used properly, has the greatest chance to

- Help stave off chronic disease
- Supply essential nutrients in an attempt to prevent nutrient deficiencies
- Overcome marginal deficiencies from today's common limitations in obtaining sufficient and optimal nutrient intake

### Who should take this product?

At one pill daily, it is the basic multivitamin for everyone over 12 years of age. At two pills daily, it is designed for athletes and all others with an active lifestyle aged 18 to 65 (general population over age 50, see the Over50MV formula and women 18 to 50 years of age, see the Women'sMV formula).

### Suggested Use

As a dietary supplement, athletes or individuals involved in intense physical activity should take 1 tablet, twice daily, with or after main meals. Consume with 8 oz of your favorite beverage.

Individuals between the ages of 12-17 years of age and those who do not follow a regular exercise program should use 1 tablet daily with a main meal. For optimal results, use daily with dotFIT™ SuperCalcium+ (if calcium intake from food is less than 1000 mgs per day).

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 60
Amount Per Serving	% Daily Value	
Vitamin A (as Beta Carotene 4,000 IU and Acetate 500 IU)	4,500 IU	90%
Vitamin C (as Ascorbic acid)	450 mg	750%
Vitamin D (as Cholecalciferol)	600 IU	150%
Vitamin E (as D-Alpha Tocopheryl Succinate)	150 IU	500%
Vitamin K (as Phytonadione)	50 mcg	63%
Vitamin B1 (as Thiamine Mononitrate)	5 mg	333%
Vitamin B2 (as Riboflavin)	5 mg	294%
Niacin (as Niacinamide)	15 mg	75%
Vitamin B6 (as Pyridoxine HCl)	6 mg	300%
Folic Acid	100 mcg	25%
Vitamin B12 (as Cyanocobalamin)	15 mcg	250%
Biotin	150 mcg	50%
Iron (as Ferrous Fumarate)	5 mg	28%
Iodine (from Kelp)	25 mcg	17%
Magnesium (as Magnesium Oxide)	150 mg	38%
Zinc (as Zinc Citrate)	7.5 mg	50%
Selenium (as L-Selenomethionine)	50 mcg	71%
Copper (as Copper Gluconate)	500 mcg	25%
Chromium (as Chromium Picolinate)	50 mcg	42%

\* % Daily Value not established.  
**Other Ingredients:** Calcium phosphate, Sorbitol, Croscarmellose, Stearic acid (Vegetable source), Hydroxypropylmethylcellulose, Microcrystalline Cellulose, Magnesium stearate (Vegetable source), Povidone.

### Unique Features

- Formula and use follow strict scientific research criteria
- Serves as the foundation of all other supplement recommendations
- Because all dotFIT products are formulated to work synergistically, when consuming other dotFIT products and products exclusively you never need to worry about excessive nutrient intake, which is common with other product lines
- The nutrients are in their proper forms, ratios and strengths to help maintain a safe and optimal range 24 hours a day
- Uses the most sophisticated controlled-release delivery systems to ensure ideal

nutrient levels and prevent tissue over-saturation and losses

- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMP) exclusively for dotFIT, LLC

### **Contraindications**

- The dotFIT multivitamin and mineral formulas are contraindicated in pregnancy and lactation.
- The dotFIT multivitamin and mineral formulas are contraindicated for those with hemochromatosis (an inherited disease that leads to iron-overload, affecting 0.5 percent of the population) because of the iron content.



## Women'sMV™

### What is it?

A health aid designed with the specific needs of females in mind by including slightly higher levels of magnesium, iron and folic acid. Also included are the appropriate extra nutrients for breastfeeding women who do not need the higher iron content in most prenatal formulas.

### How does it work?

Women'sMV delivers a combination of nutrients in a controlled release preparation that, when used properly, has the greatest chance to

- Help stave off chronic disease
- Supply essential nutrients in an attempt to prevent nutrient deficiencies
- Overcome marginal deficiencies from today's common limitations in obtaining sufficient and optimal nutrient intake

### Who should take this product?

The Women'sMV formula is specifically for

- Non-exercising women between ages 18 and 50 who are not pregnant or trying to become pregnant
- Breastfeeding women

### Suggested Use

As a dietary supplement, take 1 tablet daily with a meal and 8 oz. of water. For optimal results, use daily with dotFIT™ SuperCalcium+ (if calcium intake from food is less than 1000 mgs per day).

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 60
Amount Per Serving	% Daily Value	
Vitamin A (as Beta Carotene 5,000 IU and Acetate 1,000 IU)	6,000 IU	120%
Vitamin C (as Ascorbic acid)	300 mg	500%
Vitamin D (as Cholecalciferol)	1,000 IU	250%
Vitamin E (as D-Alpha Tocopheryl Succinate)	100 IU	333%
Vitamin K (as Phytonadione)	50 mcg	63%
Vitamin B1 (as Thiamine Mononitrate)	6 mg	400%
Vitamin B2 (as Riboflavin)	6 mg	353%
Niacin (as Niacinamide)	20 mg	100%
Vitamin B6 (as Pyridoxine HCl)	9 mg	450%
Folic Acid	400 mcg	100%
Vitamin B12 (as Cyanocobalmin)	12 mcg	200%
Biotin	100 mcg	33%
Pantothenic Acid (as Calcium Pantothenate)	15 mg	150%
Iron (as Ferrous Fumarate)	10 mg	56%
Iodine (from Kelp)	100 mcg	67%
Magnesium (as Magnesium Oxide)	100 mg	25%
Zinc (as Zinc Citrate)	12 mg	80%
Selenium (as L-Selenomethionine)	50 mcg	71%
Chromium (as Chromium Picolinate)	50 mcg	42%

\* % Daily Value not established.  
**Other Ingredients:** Calcium phosphate, Croscarmellose, Stearic acid (vegetable source), Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source), Silica, Povidone.

### Unique Features

- Formula and use follow strict scientific research criteria
- Serves as the foundation of all other dotFIT supplement recommendations
- Because all dotFIT products are formulated to work synergistically, when consuming other dotFIT products and supplements exclusively, you never need to worry about consuming excess nutrients, which is common with other product lines
- The nutrients are in their proper forms, ratios and strengths to help maintain a safe and optimal range 24 hours a day
- Uses the most sophisticated controlled-release delivery systems to ensure ideal nutrient levels and prevent tissue over-saturation and losses
- Manufactured in a FDA-registered facility, in compliance with Good

Manufacturing Practices (GMP)  
exclusively for dotFIT, LLC

### **Contraindications**

- The dotFIT multivitamin-and-mineral formulas are contraindicated in pregnancy and lactation.
- The dotFIT multivitamin-and-mineral formulas are contraindicated for those with hemochromatosis (an inherited disease that leads to iron overload, affecting 0.5 percent of the population) because of the iron content.

## Over50MV™

### What is it?

A health aid designed with the older individual in mind. It contains optimal doses of folic acid, vitamin B6 and vitamin B12. Also included are bone-building nutrients such as vitamin D, vitamin A (beta carotene) and even vitamin K.

### How does it work?

The Over50MV delivers a combination of nutrients in a controlled-release preparation that, when used properly, has the greatest chance to

- Help combat preventable diseases such as osteoporosis and heart disease
- Supply essential nutrients in an attempt to prevent nutrient deficiencies
- Overcome marginal deficiencies from today's common limitations in obtaining sufficient and optimal nutrient intake

### Who should take this product?

The Over50MV multivitamin formula is for

- Non-athletes over 50 years of age
- Athletes and intense exercisers over 65 years of age

### Suggested Use

As a dietary supplement, take 1 tablet daily with a meal and 8 oz. of water. For optimal results, use daily with dotFIT™ SuperCalcium+ (if calcium intake from food is less than 1000 mgs per day).

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 60
Amount Per Serving	% Daily Value	
Vitamin A (as Beta Carotene 5,000 IU and Acetate 1,000 IU)	6,000 IU	120%
Vitamin C (as Ascorbic acid)	400 mg	667%
Vitamin D (as Cholecalciferol)	1,000 IU	250%
Vitamin E (as D-Alpha Tocopheryl Succinate)	50 IU	167%
Vitamin K (as Phytonadione)	50 mcg	63%
Vitamin B1 (as Thiamine Mononitrate)	6 mg	400%
Vitamin B2 (as Riboflavin)	6 mg	353%
Niacin (as Niacinamide)	20 mg	100%
Vitamin B6 (as Pyridoxine HCl)	10 mg	500%
Folic Acid	400 mcg	100%
Vitamin B12 (as Cyanocobalmin)	100 mcg	1,667%
Biotin	100 mcg	33%
Pantothenic Acid (as Calcium Pantothenate)	10 mg	100%
Iron (as Ferrous Fumarate)	8 mg	44%
Iodine (from Kelp)	75 mcg	50%
Magnesium (as Magnesium Oxide)	100 mg	25%
Zinc (as Zinc Citrate)	15 mg	100%
Selenium (as L-Selenomethionine)	70 mcg	100%
Copper (as Copper Gluconate)	1 mg	50%
Chromium (as Chromium Picolinate)	100 mcg	83%

\* % Daily Value not established.  
**Other Ingredients:** Croscarmellose, Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source), Silica, Povidone.

### Unique Features

- Formula and use follow strict scientific research criteria
- Serves as the foundation of all other dotFIT supplement recommendations
- Because all dotFIT products are formulated to work synergistically, when consuming other dotFIT products and supplements exclusively, you never need to worry about nutrient overages, which is common with other product lines
- The nutrients are in their proper forms, ratios and strengths to help maintain a safe and optimal range 24 hours/day
- Uses the most sophisticated controlled-release delivery systems to ensure ideal nutrient levels and prevent tissue over-saturation and losses
- Manufactured in a FDA-registered facility, in compliance with Good

Manufacturing Practices (GMP)  
exclusively for dotFIT, LLC

### **Contraindications**

- The dotFIT multivitamin and mineral formulas are contraindicated in pregnancy and lactation.
- The dotFIT multivitamin and mineral formulas are contraindicated for those with hemochromatosis (an inherited disease that leads to iron-overload, affecting 0.5 percent of the population) because of the iron content.

# VegetarianMV™

## What is it?

A health aid designed for people who do not consume animal products and those who eat a diet high in carbohydrates.

## How does it work?

The nutrients typically lacking in vegetarian or high carbohydrate diets include zinc, iron and vitamin B12. Folic acid is reduced in this formula because many carbohydrate-based foods are fortified with this vitamin. There is minimal calcium in this formula to maximize the absorption of iron. When used properly, this formula has the greatest chance to

- Help stave off chronic disease
- Supply essential nutrients in an attempt to prevent nutrient deficiencies
- Overcome marginal deficiencies from today's common limitations in obtaining sufficient and optimal nutrient intake

## Who should take this product?

This formula contains non-animal sources and is suitable for males over 18 years and females over 18 who are not pregnant.

## Suggested Use

As a dietary supplement, take 1 tablet daily with a meal and 8 oz. of water.

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 60
Amount Per Serving	% Daily Value*	
Vitamin A (as Beta Carotene)	10,000 IU	200%
Vitamin C (as Ascorbic acid)	200 mg	333%
Vitamin D (as Ergocalciferol)	1,000 IU	250%
Vitamin E (as D-Alpha Tocopheryl Succinate)	100 IU	333%
Vitamin K (as Phytonadione)	50 mcg	63%
Vitamin B1 (as Thiamine Mononitrate)	6 mg	400%
Vitamin B2 (as Riboflavin)	6 mg	353%
Niacin (as Niacinamide)	20 mg	100%
Vitamin B6 (as Pyridoxine HCl)	6 mg	300%
Folic Acid	200 mcg	50%
Vitamin B12 (as Cyanocobalamin)	15 mcg	250%
Biotin	50 mcg	17%
Pantothenic Acid (as Calcium Pantothenate)	10 mg	100%
Iron (as Iron Carbonyl)	15 mg	83%
Iodine (from Kelp)	50 mcg	33%
Magnesium (as Magnesium Oxide)	50 mg	13%
Zinc (as Zinc Citrate)	15 mg	100%
Selenium (as L-Selenomethionine)	50 mcg	71%
Copper (as Copper Gluconate)	1 mg	50%
Chromium (as Chromium Picolinate)	100 mcg	83%

\* % Daily Value not established.  
**Other Ingredients:** Calcium phosphate, Croscarmellose, Microcrystalline Cellulose, Hydroxypropylmethylcellulose, Stearic acid (Vegetable source), Magnesium stearate (Vegetable source), Silica, Povidone.

## Unique Features

- Formula and use follow strict scientific research criteria
- Serves as the foundation of all other dotFIT supplement recommendations
- Because all dotFIT™ products are formulated to work synergistically, when you consume other dotFIT products and supplements exclusively, you never need to worry about nutrient overages, which is common with other products
- The nutrients are in their proper forms, ratios and strengths to help maintain a safe and optimal range 24 hours per day
- Uses the most sophisticated controlled-release delivery systems to ensure ideal nutrient levels and prevent tissue over-saturation and losses
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMP) exclusively for dotFIT, LLC

## **Contraindications**

- The dotFIT multivitamin and mineral formulas are contraindicated in pregnancy and lactation.
- The dotFIT multivitamin and mineral formulas are contraindicated for those with hemochromatosis (an inherited disease that leads to iron-overload, affecting 0.5 percent of the population) because of the iron content.

## PrenatalMV™

### What is it?

A health aid designed for women who are pregnant or trying to conceive. It has been updated to include the latest recommendations of the National Academy of Sciences for pregnant women.

### How does it work?

The PrenatalMV delivers a combination of nutrients in a controlled-release preparation that, when used properly, has the greatest chance to

- Support a healthy pregnancy
- Supply essential nutrients in an attempt to fulfill the needs of the baby and to maintain the health of the mother
- Overcome marginal deficiencies from today's common limitations in obtaining sufficient and optimal nutrient intake

### Who should take this product?

The PrenatalMV formula is for

- Females preparing for pregnancy and who are pregnant
- Lactating females can use Women'sMV or ActiveMV formulas (due to iron intake) unless advised otherwise by a physician

### Suggested Use

Take one tablet with breakfast as a nutritional supplement. For optimal results, use daily with dotFIT™ SuperCalcium+ (if calcium intake from food is less than 1000 mgs per day).

## Supplement Facts

Serving Size: 1 Tablet

Servings Per Container: 30

Amount Per Serving	% Daily Value	
Vitamin A (as Beta Carotene)	5,000 IU	100%
Vitamin C (as Ascorbic Acid)	250 mg	417%
Vitamin D (as Cholecalciferol)	600 IU	150%
Vitamin E (as d-Alpha Tocopheryl Succinate)	100 IU	333%
Vitamin K (as Phytonadione)	50 mcg	63%
Vitamin B1 (as Thiamine Mononitrate)	4 mg	267%
Vitamin B2 (as Riboflavin)	4 mg	235%
Niacin (as Niacinamide)	20 mg	100%
Vitamin B6 (as Pyridoxine HCl)	8 mg	400%
Folic Acid	600 mcg	150%
Vitamin B12 (as Cyanocobalamin)	12 mcg	200%
Biotin	50 mcg	17%
Pantothenic Acid (as Calcium Pantothenate)	15 mg	150%
Iron (as Ferrous Fumarate)	27 mg	150%
Iodine (as Potassium Iodide)	150 mcg	100%
Magnesium (as Magnesium Oxide)	100 mg	25%
Zinc (as Zinc Citrate)	10 mg	67%
Selenium (as L-Selenomethionine)	100 mcg	143%
Copper (as Copper Gluconate)	0.5 mg	25%
Chromium (as Chromium Picolinate)	50 mcg	42%

\* %Daily Value not established.

Other Ingredients: Sorbitol, calcium phosphate, microcrystalline cellulose, xanthan gum, titanium dioxide, hydroxypropylmethylcellulose, stearic acid (vegetable source), magnesium stearate (vegetable source), silica.

### Unique Features

- The dotFIT Prenatal MV follows strict scientific research criteria
- The nutrients are in their proper forms, ratios and strengths to maintain a safe and optimal range 24 hours/day.
- Uses the most sophisticated controlled-release delivery systems to ensure ideal nutrient levels and prevent tissue over-saturation and losses
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

The dotFIT multivitamin and mineral formulas are contraindicated for those with hemochromatosis (an inherited disease that

leads to iron-overload, affecting 0.5 percent of the population) because of the iron content.



## KidsMV™

### What is it?

A health aid designed for a growing child who does not get sufficient amounts of important nutrients, such as vitamin D, due to myriad factors such as poor food choices, lack of interest in certain foods or food groups and picky eating behavior.

### How does it work?

The KidsMV delivers a combination of nutrients in a controlled-release preparation that, when used properly, has the greatest chance to

- Supply essential nutrients in an attempt to prevent marginal nutrient deficiencies
- Develop and function optimally, especially academically
- Overcome marginal deficiencies from today's common limitations in obtaining sufficient and optimal nutrient intake

### Who should take this product?

All children ages two to 11 unless a specific medical condition prohibits the proper intake of any nutrient contained in the formula.

### Suggested Use

- Ages two to four take one daily
- Ages five to 11 take two daily
- Ages 12 to 17 use one adult ActiveMV™ tablet

Supplement Facts		
Serving Size: 1 Tablet		Servings Per Container: 60
Amount Per Serving	% Daily Value	
Vitamin A (as Beta Carotene 2,000 IU and Palmitate 500 IU)	2,500 IU	50%
Vitamin C (as Ascorbic acid)	50 mg	83%
Vitamin D (as Cholecalciferol)	250 IU	63%
Vitamin E (as D-Alpha Tocopheryl Succinate)	20 IU	67%
Vitamin K (as Phytonadione)	30 mcg	38%
Vitamin B1 (as Thiamine Mononitrate)	1 mg	67%
Vitamin B2 (as Riboflavin)	1 mg	59%
Niacin (as Niacinamide)	6 mg	30%
Vitamin B6 (as Pyridoxine HCl)	1 mg	50%
Folic Acid	100 mcg	25%
Vitamin B12 (as Cyanocobalamin)	3 mcg	50%
Biotin	10 mcg	30%
Pantothenic Acid (as Calcium Pantothenate)	2 mg	20%
Iron (as Ferrous Fumarate)	5 mg	20%
Iodine (as Potassium Iodide)	50 mcg	33%
Magnesium (as Magnesium Oxide)	20 mg	5%
Zinc (as Zinc Oxide)	5 mg	33%
Selenium (as L-Selenomethionine)	20 mcg	29%

\* % Daily Value not established.  
**Other Ingredients:** Sucrose, Fructose, Natural flavor, Stearic acid (vegetable source), beet juice concentrate (natural red color), Magnesium stearate (Vegetable source), PureLo Natural Sweetener (Luo Han Guo fruit).

### Unique Features

- Formula and use follow strict and updated scientific research criteria for all youth ages
- Uniquely formulated to maintain a safe and optimal range of nutrients when combined with other dotFIT™ products
- The nutrients are in their proper forms, ratios and strengths to complement food intake and help maintain a safe and optimal range for 24 hours a day
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

The dotFIT multivitamin and mineral formulas are contraindicated for those with hemochromatosis (an inherited disease that leads to iron-overload, affecting 0.5 percent of the population) because of the iron content.

## SuperCalcium+™

### What is it?

A health aid designed to supply the body with specific amounts of calcium in various salt forms for maximal absorption. Vitamin D and magnesium are included to further enhance absorption and utilization.

### How does it work?

Taking adequate amounts of calcium and vitamin D supplies the nutrients that help prevent or slow the progression of osteoporosis (bone weakening), hip fractures, certain cancers and falls among the elderly.

### Who should take this product?

dotFIT™ SuperCalcium+ is suitable for

- Anyone not meeting the recommended amounts of calcium by not consuming two to three daily servings of dairy products or fortified products
- Individuals not getting optimal amounts of vitamin D through food, supplements or regular sun exposure

### Suggested Use

As a dietary supplement take 1 tablet one to two times daily with a meal and 8 oz. of water.

<b>Supplement Facts</b>		
Serving Size: 2 Tablets		Servings Per Container: 60
Amount Per Serving	% Daily Value	
Vitamin D (as Cholecalciferol)	400 IU	100%
Calcium (as Carbonate, Citrate, Fumarate, Succinate, Gluconate, Aspartate, Ascorbate, Amino Acid Chelate, Ketoglutarate)	1,000 mg	100%
Magnesium (as Oxide, Citrate, Fumarate, Succinate, Gluconate, Aspartate, Ascorbate, Amino Acid Chelate, Ketoglutarate)	500 mg	125%

\* % Daily Value not established.  
**Other Ingredients:** Croscarmellose, Stearic acid (Vegetable source), Titanium Dioxide, Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).

### Unique Features

- Contains calcium, magnesium and vitamin D, which are necessary for proper calcium absorption and utilization
- Calcium and magnesium are prepared in mineral transporters including various salt forms designed to optimize delivery and utilization
- Considers the use of other dotFIT products so you can maintain a safe and optimal range of total nutrient intake
- SuperCalcium+ is one component in the dotFIT longevity program
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

The use of calcium supplements by those with a history of kidney stones has varied results. Some individuals with a history of stones will benefit from the supplementation of calcium with food as it aids in the removal of oxalates. Consult with a physician when a history of kidney stones exists, or when taking these drugs: biphosphonates, hydrogen blockers, levothyroxine, proton pump inhibitors, quinolones and tetracyclines.

## SuperiorAntioxidant™

### What is it?

A health aid designed to provide nutrients that have been shown to help protect against excess free radicals and may help

- Stave off the cellular damage they cause
- Decrease the risk of chronic disease
- Improve the maintenance of eye health
- Protect against heart disease
- Prevent cognitive decline

### How does it work?

Excess free radical damage is caused by the normal aging process and environmental stresses. The dotFIT™ SuperiorAntioxidant provides a unique blend of compounds known to quench damaging free radicals in many important parts of the body including the eyes, brain, heart and muscles.

### Who should take this product?

dotFIT SuperiorAntioxidant is suitable for

- Everyone, exercisers and non-exercisers, interested in reducing free radical damage
- Those who want to achieve optimal health and functioning
- People interested in reducing the risk of chronic and age-related disease
- Intense exercisers who are looking to reduce the increased free radical production and damage associated with demanding training bouts
- Those who are interested in the dotFIT longevity program

### Suggested Use

One tablet per day before or after a main meal with a favorite beverage.

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 30
Amount Per Serving		% Daily Value*
D. Salina natural mixed carotenoids	1.5 mg	*
Lutein	6 mg	*
Lycopene	10 mg	*
Zeaxanthin (from Marigold flowers)	4 mg	*
Coenzyme Q10 (CoQ-10)	100 mg	*
Alpha Lipoic Acid	200 mg	*
OptiBerry® (from Wild blueberry, Strawberry, Cranberry, Wild bilberry, Elderberry, Raspberry)	30 mg	*

\* % Daily Value not established.

**Other Ingredients:** Dicalcium phosphate, Microcrystalline Cellulose, Croscarmellose, Stearic acid (Vegetable source), Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).

### Unique Features

- Contains only the most effective antioxidants in their proper amounts
- Accurately complements the dotFIT multivitamin formulas
- Ingredients are prepared in a controlled-release delivery system
- Uses the OptiBerry® berry blend which is clinically proven to have superior antioxidant activity
- This formula considers use of other dotFIT products so you can maintain a safe and optimal range of total nutrient intake
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

dotFIT SuperiorAntioxidant formula is contraindicated in pregnancy and lactation.

## JointFlexibilityPlus™

### What is it?

A health aid designed to supply glucosamine and chondroitin in the forms and amounts used in published research to support healthy joint tissue and function.

### How does it work?

Cartilage is slowly lost in joints with injury and age (most noticeable between 50 and 60 years of age). Because cartilage acts as a cushion between bone joints, its loss causes friction, pain and stiffness. JointFlexibilityPlus provides glucosamine and chondroitin, which are natural compounds found in and around the cells of cartilage that help

- Provide lubrication
- Retain water around the joint
- Delay structural degeneration of joint tissue

### Who should take this product?

dotFIT™ JointFlexibilityPlus is suitable for

- Individuals who want relief of mild joint discomfort with far fewer of the side effects that occur from chronic non-steroidal anti-inflammatory drug (NSAID) use such as aspirin or ibuprofen
- Those interested in a longevity program

### Suggested Use

As a dietary supplement, take 1 tablet three times daily with meals.

Supplement Facts		
Serving Size: 1 Tablet		Servings Per Container: 90
Amount Per Serving	% Daily Value**	
Glucosamine Sulfate (as 2KCl)	500 mg	*
Chondroitin Sulfate	400 mg	*

\*% Daily Value not established.  
\*\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

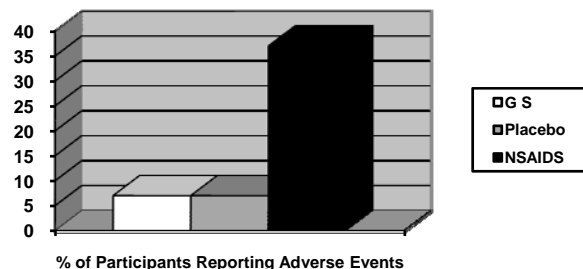
**Other Ingredients:** Calcium carbonate, Croscarmellose, Stearic acid (Vegetable source), Silicon dioxide, Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).

### Unique Features

- Contains no other added ingredients so you may take other products (multivitamin, antioxidant) without worrying about reaching excessive levels that may be detrimental over time
- Dosages and compounds are in the precise amounts used in research that have shown to improve mobility, joint comfort, and knee-joint strength
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

- The use of any glucosamine/chondroitin sulfate formula is contraindicated during pregnancy and lactation because of a lack of data for this population
- Diabetics may wish to discuss glucosamine use with their physician



## SuperOmega-3

### What is it?

A health aid designed maintaining cardiac and brain health. It provides two key essential fatty acids EPA and DHA that have demonstrated myriad health benefits related to heart and brain function.

### How does it work?

The SuperOmega-3 delivers 60% EPA and 40% DHA—double the potency of typical fish oil products—which, when used properly, has the greatest chance to

- Reduce negative CV incidences
- Protect against age-related macular degeneration (AMD)
- Reduce the risk of dementia thus preserving cognitive function in the aging population
- Deliver the same benefits as the oil in fish

### Who should take this product?

Omega-3 FA supplementation would be for all adults (over 18) who do not receive 1-2 grams per day of the omega-3 fatty acids EPA & DHA (equivalent to 2-4 servings of fatty fish/weekly) as a potential natural preventative aid in age-related cognitive decline and prevention of CV disease.

### Suggested Use

For maintaining cardiac and brain health, take 1 or 2 softgels with any meal.

<b>Supplement Facts</b>		
Serving Size: 1 Softgel		
Servings Per Container: 30		
<b>Calories</b> 13		
Calories from Fat 11		
Amount Per Serving	% Daily Value	
<b>Total Fat</b>	1.2 g	<b>2%</b>
Saturated Fat	0.1 g	<1%
Trans Fat	0 g	<b>0%</b>
Polyunsaturated Fat	1.1 g	*
Monounsaturated Fat	0.2 g	*
<b>Cholesterol</b>	1 mg	<1%
Vitamin E (D-Alpha Tocopheryl)	2 IU	<b>7%</b>
Total Omega-3 Polyunsaturates	600 mg	*
EPA (Eicosapentaenoic acid)	360 mg	*
DHA (Docosahexaenoic acid)	240 mg	*
*% Daily Value not established.		
<b>Other Ingredients:</b> Glycerin, Water (Purified), Methacrylic acid, Copolymer, Triacetin FCC.		

### Unique Features

- Each softgel is uniquely enteric-coated to withstand stomach acid and dissolve in the small intestine. The result is maximum absorption and no "Fishy Repeat" or "Fish Burps"
- dotFIT's SuperOmega-3 fish oil complex is mercury-free & contains no PCBs
- This formula considers use of other dotFIT products so you can maintain a safe and optimal range of total nutrient intake
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

- Anyone taking greater than 3g per day should do so only under the care of

their physician due to risk of excessive bleeding at higher doses

- Should not be used if on anticoagulants or have uncontrolled hypertension
- May raise blood sugar and LDL in people with diabetes

## Advanced Brain Health™

### What is it?

A health aid designed support brain function and to slow (and possibly stop or reverse) age-related decline in mental function.

### How does it work?

Advanced Brain Health contains only well-researched brain support substances in their appropriate amounts, which, when used properly, has the greatest chance to

- Support brain function
- Slow age-related decline in mental functions
- Support the maintenance of brain tissue

### Who should take this product?

Adults age 45 and older interested in supporting brain and nerve function during aging.

### Suggested Use

- One to 3 tablets per day with food
- Typical dosage based on age
  - 45-55 years – 1/day
  - 56-65 years – 2/day
  - Over 65 years – 3/day

<b>Supplement Facts</b>		
Serving Size: 1 Tablet		Servings Per Container: 30
Amount Per Serving	% Daily Value	
Acetyl-L Carnitine	500 mg	*
Phosphatidylserine	100 mg	*
Alpha Lipoic Acid	100 mg	*
Vitamin B12 (as Cyanocobalamin)	100 mcg	1,667%

\* % Daily Value not established.  
**Other Ingredients:** Dicalcium Phosphate, Microcrystalline Cellulose, Sorbitol, Stearic acid (Vegetable source), Hydroxypropyl Methylcellulose, Magnesium stearate (Vegetable source), Silica.

### Unique Features

- Accurately complements the dotFIT™ multivitamin, antioxidant, and omega-3 formulas
- This formula considers use of other dotFIT products so you can maintain a safe and optimal range of total nutrient intake
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

- The dotFIT Advanced Brain Health formula is contraindicated in pregnancy and lactation and for anyone suffering adverse reactions to any of the ingredients.
- Pregnant or lactating females should use only the dotFIT PrenatalMV™ supplement.

## FatReleaser™

aka FatRelease™

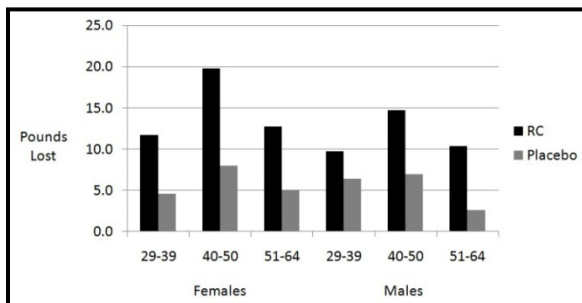
### What is it?

A fat loss aid designed to

- Decrease the body's absorption of fat
- Support appetite
- Deliver the many potential benefits of green tea, including antioxidant properties
- Support the liver, one of your body's most active organs

### How does it work?

As you gain weight the liver can accumulate excess fat, which can have a negative effect on the liver's health and ability to burn fat. The combination of ingredients in this product has been shown to support proper liver functioning, decrease the absorption of fat and calories and increase weight loss results. This formula is entirely new and only available through dotFIT.



As demonstrated in the graph, during three months of dieting, the Rhododendron group lost two- to three-hundred percent more weight than the placebo subjects.

### Who should take this product?

dotFIT FatReleaser is suitable for

- Anyone who wants to lose weight, especially females with a body fat

greater than 32 percent and males with a body fat greater than 22 percent

- People who have difficulty limiting fat intake
- Individuals using the 90-day cycling program

### Supplement Facts

Serving Size: 1 Tablet Servings Per Container: 90

Amount Per Serving	% Daily Value
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<b>Green Tea Extract (Leaf)</b>	200 mg **
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Standardized for 98% Polyphenols (196mg), 75% Catechins (150mg), 45% EGCG (90 mg), 7% Caffeine (naturally occurring - 14 mg.)

<b>Choline (as Choline Bitartrate)</b>	133 mg **
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<b>N-Acetyl Cysteine (NAC)</b>	50 mg **
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<b>Milk Thistle Seed Extract (80% Silymarin)</b>	166 mg **
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<b>dotFIT™ Proprietary Herbal Complex</b>	133 mg **
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(*Rhododendron caucasicum* and *Engelhardtia chrysolepis*)

\*\* % Daily Value not established.

**Other Ingredients:** Calcium Phosphate, Croscarmellose, Stearic acid (Vegetable source), Magnesium Stearate (Vegetable source), Silica, Hydroxypropylmethylcellulose and Titanium Dioxide.

### Suggested Use

Take one tablet three times daily, 30 minutes before meals and with at least 8 oz. of water.

### Unique Features

- The product supports weight loss at many different levels within the body (appetite, metabolism, fat absorption, etc.)
- Non-stimulant body fat and weight loss aid
- Blend is proprietary to dotFIT
- Can be used alone or in the 90-day cycling program to keep the body from adjusting to a single fat loss method
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

FatReleaser is contraindicated in pregnancy and



lactation because of a lack of data for this population.

## CarbKiller™

aka CarbRepel™

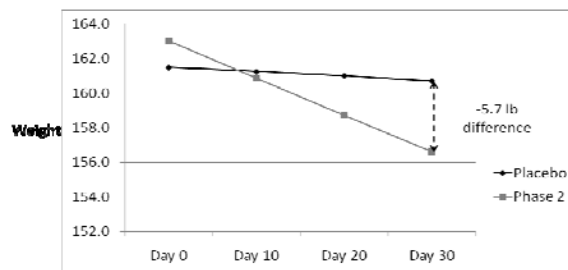
### What is it?

A fat loss aid designed to

- Block carbohydrates or sugars from being absorbed and stored as body fat
- Keep food in the stomach longer which prolongs the feeling of fullness
- Manage appetite and control food intake
- Boost weight loss results

### How does it work?

CarbKiller contains the best researched carb blocker which decreases the amount of carbs that will be absorbed by the body. The unique blend of fiber helps control appetite by helping you feel full sooner and for longer periods of time. All ingredients are supported by scientific studies including two approved Food and Drug Administration (FDA) claims.



In the figure above, subjects consumed a 2000-2200 calorie carbohydrate rich diet. The Phase 2 group experienced ~700% greater weight loss compared to the placebo.

### Who should take it?

dotFIT CarbKiller is suitable for

- Anyone who wants to lose weight and needs help with appetite control

- People who tend to overeat carbohydrates
- Individuals using the 90-day cycling program

### Suggested Use

As a dietary supplement, take 2 tablets twice daily approximately 30 minutes before your largest carbohydrate containing meal with 8 oz. of water.

Supplement Facts	
Serving Size: 2 Tablets	Servings Per Container: 60
Amount Per Serving	% Daily Value
Phase 2 Starch Neutralizer <sup>®</sup> **	750 mg **
<small>White Kidney Bean Extract (<i>Phaseolus vulgaris</i>)</small>	
Citrus Pectin	375 mg **
Pomegranate Fruit Extract	137.5 mg **
<small>(Total Polyphenols 110 mg, Ellagic Acid 55 mg)</small>	
<small>** % Daily Value not established.</small>	
<small>Other Ingredients: Calcium Phosphate, Sorbitol, Stearic acid (Vegetable source), Xanthan gum, Silica, Povidone, Magnesium Stearate (Vegetable source), Inulin and Hydroxypropylmethylcellulose.</small>	

### Unique Features

- Contains the first all natural nutritional ingredient that has been scientifically proven to block the digestion and absorption of starch from carbohydrates
- Non-stimulant body fat and weight loss aid
- Formula is proprietary to dotFIT
- Can be used alone or as part of the 90-day cycling program to keep the body from adjusting to a single fat loss method
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

The compounds in CarbKiller are  
contraindicated in pregnancy and lactation

because of a lack of data for these populations.

## ThermoShock™

aka ThermAccel™

### What is it?

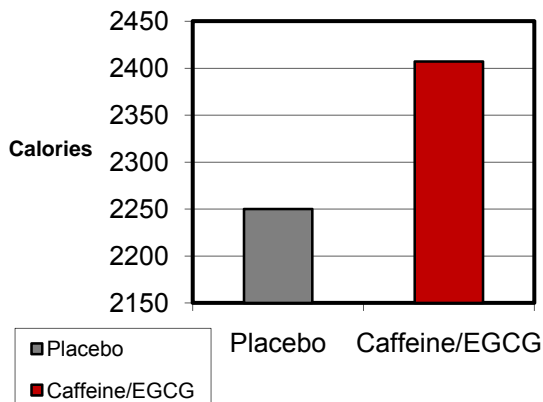
A fat loss aid designed to

- Increase total daily calorie burn by raising thermogenesis (boosting metabolism by wasting calories and fat as heat)
- Improve your desire to move by enhancing alertness and stimulating the central nervous system
- Suppress appetite
- Increase fat burning

### How does it work?

ThermoShock helps to

- Increase thermogenesis (wasting calories as heat) by combining a new energy complex with caffeine and caffeine-containing herbs
- Address appetite control by incorporating two powerful natural ingredients, Caralluma fimbriata and LeptiCore™, that work through unique body fat regulation pathways
- Studies show at least a 10% increase in 24 hour EE or equivalent to 157 more calories burned in the caffeine/EGCG group (average subject's weight 173lbs)



## Who should take this product?

dotFIT™ ThermoShock is suitable for

- Anyone who wants to lose weight or body fat and can tolerate stimulants such as caffeine
- People who need help controlling appetite and food intake
- Fitness models, bodybuilders and those who are close to their final desired body composition goal
- Individuals using the 90-day cycling program

### Suggested Use

As a dietary supplement, take 2 tablets with 8 oz. of water up to 2 times daily, approximately 30 minutes before breakfast and lunch. Do not consume within 5 hours of bedtime.

Supplement Facts	
Serving Size: 2 Tablets	Servings Per Container: 60
Amount Per Serving	% Daily Value
LumaThin™ Caralluma Powder	520 mg **
dotFIT™ *Proprietary LeptiCore™ Complex (Acacia Polysaccharides, Esterified Fatty Acids, Pomegranate Extract, Aphanizomenon Flos-Aquae Extract and Beta-Carotene)	310 mg **
L-Theanine	100 mg **
ThermoShock™ Thermogenic Complex Green Tea Extract (providing 270 mg EGCG), Caffeine (providing 350 mg of caffeine), Yerba Mate Powder, Guarana Seed Powder and Cayenne Fruit)	1000 mg **
** % Daily Value not established.	
Other Ingredients: Calcium Phosphate, Povidone, Sorbitol, Croscarmellose, Stearic acid (Vegetable source), Magnesium Stearate (Vegetable source), Silica and Hydroxypropylmethylcellulose.	

### Unique Features

- Contains a unique thermogenic blend
- A stimulant used for aggressive body fat/weight reduction programs
- dotFIT Dual Stage Release Technology delivers active ingredients according to varying levels in the digestive tract
- Can be used alone or as part of the 90-day cycling program to keep the body

from adjusting to a single fat loss method

- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### **Contraindications**

- ThermoShock is contraindicated for pregnant and lactating women and those under the age of 18
- Caffeine is contraindicated in hypertension, anxiety and thyroid disease. Caffeine can interfere with some medications such as lithium and MAO inhibitors. Caffeine is also contraindicated in those with cardiac arrhythmias, other forms of heart disease and peptic ulcers

# Creatine Monohydrate

## What is it?

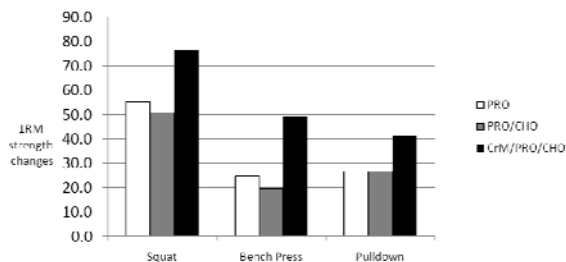
A performance aid designed to

- Improve anaerobic performance (sports and activities requiring quick bursts of energy)
- Increase strength and power
- Enhance muscle size and/or body composition

## How does it work?

Creatine is a natural substance found in muscle that when supplemented accomplishes the above by

- Increasing the synthesis of the high energy compound phosphocreatine (PCr) and PCr levels in muscle allowing more strength and delayed fatigue leading to better, stronger workouts
- Increasing muscle cell swelling, which can also enhance muscle protein synthesis



The figure above clearly shows the creatine group out-performing the other groups.

## Who should take it?

dotFIT Creatine Monohydrate is suitable for

- Experienced anaerobic athletes who want to enhance their performance and are not concerned with weight gain
- Experienced exercisers who consistently weight train and are looking to gain muscle
- Elderly persons seeking to enhance daily functions (confirmed by physician)

## Suggested Use

As a dietary supplement, Loading Phase: For the first 5 days take 4 tablets, 4 times daily with 8 oz. of cold water or your favorite beverage.

Maintenance Phase: From day 5 onward consume 4 tablets, 1-2 times daily. On training days: Take 1 or 2 of the daily recommended 4 tablets shortly before and after exercise. For increased effects consume your creatine with 25-45g of a pre- or post-exercise carbohydrate food/beverage. For maximum results, use for a minimum of four weeks.

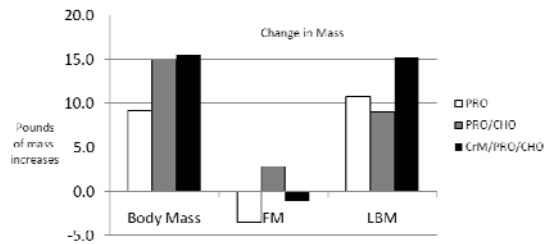
Supplement Facts	
Serving Size: 2 Tablets	Servings Per Container: 90
Amount Per Serving	% Daily Value
Creatine (as Creatine Monohydrate)	2,500 mg *
* % Daily Value not established.	
<b>Other Ingredients:</b> Croscarmellose, Sorbitol, Stearic acid (Vegetable source), Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source), Titanium dioxide.	

## Unique Features

- Contains pure creatine monohydrate, the form shown in over 500 studies to yield desired results
- Convenient tablet delivery (no mess, consistent dose, no stomach upset)
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

## Contraindications

- Due to one study performed on rats and two human case reports, creatine supplementation is contraindicated for those with kidney problems or at risk for kidney disease because of possible increased kidney stress.
- Creatine supplementation should be avoided by pregnant or lactating women because of the lack of studies done with this population.
- Athletes not desiring weight gain should avoid creatine supplementation or attempt to lose body fat simultaneously in order to offset muscle weight increases thus still receiving creatine's potential performance benefits.



In the figure above, there were significantly greater increases in lean body mass (LBM) in the CrM group.

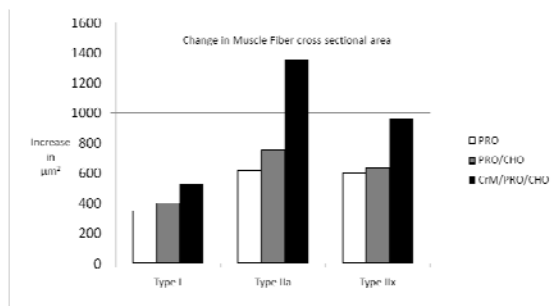
## CreatineXXL™

### What is it?

A performance aid designed to increase exercise intensity, training volume and lean muscle mass to a greater extent than creatine alone.

### How does it work?

By adding beta-alanine to help delay fatigue (see figure below), CreatineXXL may increase the well-known strength- and size-enhancing effects of taking creatine supplements alone. In addition to creatine, this product supplies other compounds that optimize muscle cell volume which stimulates protein synthesis.



The figure above demonstrates CrM significantly increased muscle hypertrophy in all three muscle fiber types when compared to the other two groups without CrM.

### Who should take this product?

- Intermediate and advanced exercisers and athletes seeking an advantage during high intensity, high-volume training regimes
- Anyone who is trying to overcome training and muscle size plateaus

### Suggested Use

As a dietary supplement, on high intensity training days, take 5 tablets 30 minutes before workouts with 8 oz. of water or your favorite beverage. Then take the remaining 5 tablets throughout the remainder of the day. On non-training days, take 5 tablets, twice daily with morning and evening meals. For increased effect consume with 25-45g of a carbohydrate food/beverage. For maximum results, use for a minimum of four weeks.

Supplement Facts	
Serving Size: 5 Tablets	Servings Per Container: 60
Amount Per Serving	% Daily Value
Creatine (as Creatine Monohydrate)	3,000 mg *
Beta-Alanine	1,600 mg *
dotFIT™ Proprietary Cell Hydration Complex (L-Glutamine, L-Glycine)	2,100 mg *
* % Daily Value not established.	
<b>Other Ingredients:</b> Calcium phosphate, Stearic acid (Vegetable source), Sorbitol, Povidone, Croscarmellose, Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).	

### Unique Features

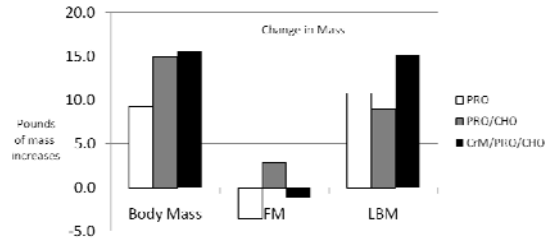
- No other performance/weight gain product on the market contains this combination of ingredients in a convenient tablet form
- Can be used alone or with NO7Rage™ and AminoBoostXXL™ as part of the dotFIT™ "Xtreme Muscle Stack", providing maximum muscle pump and continuous training results for serious exercisers and athletes
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

- Athletes who wish to prevent weight gain should avoid CreatineXXL.



- Women who are pregnant or lactating are contraindicated because of a lack of data for these populations.



The figure above shows significantly greater increases in lean body mass (LBM) in the CrM group.

# NO7Rage™

## What is it?

A performance aid designed to enhance blood and nutrient flow to exercising muscles. This helps intensify training sessions, resulting in improved strength, performance and size when compared similar products or to training without using supplements. The ingredients in NO7Rage have been shown to

- Improve reaction time, endurance and power
- Improve mental focus and training motivation
- Enhance muscle gain
- Improve strength

## How does it work?

NO7Rage contains a proprietary blend of compounds that work together to increase blood flow cell volume and mental focus. Greater blood flow to skeletal muscle increases the delivery of oxygen, energy and rebuilding nutrients, and also speeds up the removal of waste products. All of this leads to potential strength improvements, less muscle breakdown and increased muscle size. Results may be enhanced by properly consuming a specific ratio of the muscle building blocks contained in AminoBoostXXL.

## Who should take this product?

- Intermediate and advance athletes and exercisers looking for an edge during high-intensity, high-volume training
- Anyone trying to overcome training and muscle size plateaus

- Anyone who needs or wants to stimulate training desire, workout intensity or mental focus

## Suggested Use

Thirty to 40 minutes before workout

- Users under 150 lbs. take 1.5 scoops
- 150-200 lbs. take 2 scoops
- More than 200 lbs. take 2.5 scoops

Supplement Facts			
Serving Size: 25 g (1 Scoop)			
Servings Per Container: 40			
Calories 44			
Calories from Fat 0			
Amount Per Serving	% Daily Value**	Amount Per Serving	% Daily Value**
Total Fat	0 g 0%	Magnesium (Gluconate)	5 mg 1%
Saturated Fat	0 g 0%	Sodium (Chloride)	118 mg 5%
Trans Fat	0 g 0%	Potassium (Citrate)	100 mg 3%
Cholesterol	0 mg 0%	NO7Rage™ Proprietary Blend	6800 mg *
Total Carbohydrate	11 g 4%	Taurine	*
Dietary Fiber	0 g 0%	Glycerol	*
Sugars	0 g 0%	L-Citrulline L-Malate	*
Protein	0 g 0%	Betaine Anhydrous	*
Vitamin C	250 mg 416%	Creatine Monohydrate	2500 mg *
Vitamin E	50 IU 166%	Glucuronolactone	400 mg *
(D-alpha Tocopheryl succinate)		Caffeine	175 mg *
Vitamin B6 (Pyridoxine HCL)	25 mg 1250%		
Vitamin B12 (Methylcobalamin)	120 mcg 2000%		

\*% Daily Value not established.  
\*\*Percent Daily Values are based on a 2,000 calorie diet  
Other Ingredients: Maltodextrin, Silica, Waxy maize, Beet powder, Citric acid, Malic acid, Tricalcium Phosphate, Natural and Artificial flavor, Sucralose.

## Unique Features

- Contains L-citrulline which has been shown to be the most effective ingredient for inducing nitric oxide (NO) production
- Contains a unique, proprietary blend of taurine, glycerol and betaine to enhance the “muscle pump” during resistance training workouts
- Includes an exclusive blend of glycerol powder that may be the most important active ingredient related to desired results
- An essential component of the dotFIT “Xtreme Muscle Stack” for serious exercisers and athletes

## **Contraindications**

- NO7Rage supplementation is contraindicated in pregnancy and lactation because of the CNS stimulant (caffeine). Caffeine can interfere with some medications such as lithium and MAO inhibitors.
- Caffeine is contraindicated in those with cardiac arrhythmias, other forms of heart disease, hyperthyroidism and peptic ulcers.
- Creatine is contraindicated for those with kidney problems because of potentially greater kidney stress.

## WorkoutExtreme™

### What is it?

A performance aid designed to increase exercise focus, performance, and intensity without weight gain. This formula supplies several compounds that have shown to

- Increase energy levels
- Delay the onset of fatigue
- Improve training intensity
- Boost mental focus

### How does it work?

WorkoutExtreme contains a unique blend (caffeine, ginseng, taurine, glucuronolactone) that has been shown to enhance mental focus and work capacity.

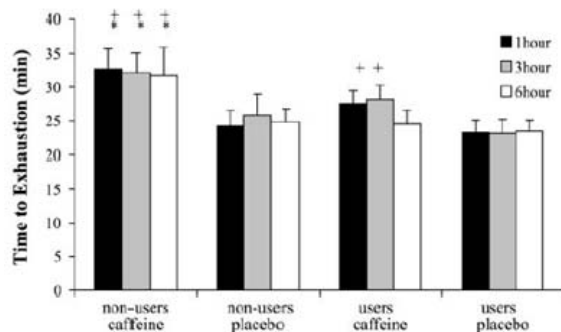


Figure above shows caffeine's effects based on time of administration before exercise.

### Who should take this product?

dotFIT WorkoutExtreme is suitable for

- All athletes looking for an energy boost without water retention
- Endurance athletes who do not want to gain weight but are interested in improving performance
- Anyone not bothered by stimulants as an energy booster

- Those who are experiencing a training or weight loss plateau
- Not for use by those who experience adverse effects from stimulants

### Suggested Use

As a dietary supplement, take 4 capsules 30 minutes before a workout with 8 oz. of water or your favorite beverage. Do not consume within 5 hours of bedtime.

Cycle for 3 weeks on and 3 weeks off during intense training cycles.

<b>Supplement Facts</b>	
Serving Size: 4 Capsules	Servings Per Container: 30
Amount Per Serving	% Daily Value**
Taurine	1000 mg *
Glucuronolactone	600 mg *
Panax Ginseng (8% Ginsenosides)	300 mg *
Caffeine Anhydrous	300 mg *

\* % Daily Value not established.  
 \*\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.  
 Other Ingredients: Talc U.S.P., Magnesium Stearate (Vegetable source), Silicon Dioxide, Gelatin.

### Unique Features

- Increases workout energy and intensity without weight gain in a convenient pill form
- Ginseng is standardized and certified for proper ginsenosides that have shown positive metabolic effects
- Uses a rapid release capsule delivery system to maximize the formula's potential and provides an immediate impact on training intensity
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

- WorkoutExtreme supplementation is contraindicated in pregnancy and lactation because of the CNS stimulants caffeine and ginseng
- Caffeine can interfere with some medications such as lithium and MAO inhibitors
- Caffeine is contraindicated in heart disease, hyperthyroidism and peptic ulcers
- American ginseng (Panax) is contraindicated for those taking cholinesterase and MAO inhibitors, anticoagulants, antiplatelet drugs and hypoglycemic medicines because of potential interactions

## Recover&Build™

### What is it?

A performance aid designed to speed up the recovery process which allows you to maintain intense training bouts and ultimately improve performance.

### How does it work?

Recover&Build provides the key building blocks of muscle - branched chain amino acids - in the most CURRENTLY studied ratio that can reduce muscle damage and enhance recovery by

- Supplying an additional fuel source to help meet energy demands
- Supporting muscle protein synthesis
- Minimizing muscle protein breakdown

### Who should take this product?

dotFIT Recover&Build is suitable for

- Athletes and exercisers of any fitness level during intense or excessive training bouts
- Weight-conscious athletes or in-season bodybuilders
- Anyone beginning an intense exercise program
- In combination with other performance products to amplify their effects, especially to enhance recovery

### Suggested Use

- Minimum dose: Take five tablets before exercise
- Optimal dose and for those over 200 lbs.: Take eight tablets before exercise

<b>Supplement Facts</b>		
Serving Size: 3 Tablets		Servings Per Container: 30
Amount Per Serving		% Daily Value
L-Leucine	1,800 mg	*
L-Isoleucine	360 mg	*
L-Valine	360 mg	*

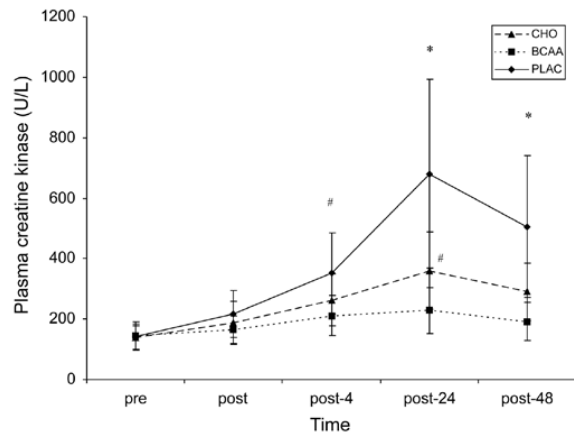
\* % Daily Value not established.  
**Other Ingredients:** Calcium phosphate, Sorbitol, Povidone, Stearic acid (Vegetable source), Hydroxypropylmethylcellulose, Magnesium stearate (Vegetable source).

### Unique Features

- Contains the CURRENT ideal ratio of branched chain amino acids - leucine, isoleucine and valine - in a convenient tablet form
- Uses a proprietary “swell and release” delivery system for rapid release and uptake by the working muscles
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

### Contraindications

- BCAA supplementation is contraindicated in pregnancy and lactation because of the lack of studies done with this population.
- BCAA supplementation is contraindicated for those with the hereditary disorder maple syrup urine disease or who have kidney disorders.



In the figure above, plasma creatine kinase (CK) is shown to be accurate indicator of muscle damage. Significantly lower serum CK activities were found in the BCAA trial at the 4-, 24-, and 48-h time points than in the PLAC trial ( $P < 0.05$ ) Greer BK et al. *Int J Sport Nutr Exerc Metab.* 2007 Dec;17(6):595-607.

## AminoBoostXXL™

### What is it?

A performance aid designed to deliver the ideal blend of nutrients to take advantage of “metabolic windows of opportunity” for optimal recovery and results. When taken properly, AminoBoostXXL

- Maximizes the body’s muscle building mechanisms
- Can lead to greater strength and size gains, especially if you’ve hit a plateau

### How does it work?

Following intense training, your body is in negative protein balance until amino acids are provided. Muscle protein synthesis is stimulated by taking this specific blend of amino acids before and after exercise.

### Who should take this product?

AminoBoostXXL is suitable for

- All athletes who train hard and need rapid muscle tissue recovery. This includes all track and basketball athletes, most baseball players, wrestlers, boxers, runners, cyclists, etc.
- Physique competitors, especially while dieting to lose weight or body fat
- All older athletes and intense exercisers
- Anyone who is experiencing a plateau and trying to gain muscle

### Suggested Use

As a dietary supplement, add 1 scoop (16g) to 8 oz. cold water and mix vigorously. Alternatively, mix with 20-40 grams of your favorite fast-acting carbohydrate beverage. For maximum

results: On training days, use 1 serving 20 minutes pre-workout and 1 serving immediately post-workout. Individuals under 150 lbs. use half of the above recommended dosage.

<b>Supplement Facts</b>		
Serving Size: 16 g (1 Scoop)		
Servings Per Container: 33		
<b>Calories 50</b>		
Calories from Fat 0		
Amount Per Serving	% Daily Value**	
Total Fat	0 g	0%
Saturated Fat	0 g	0%
Trans Fat	0 g	0%
Cholesterol	0 mg	0%
Total Carbohydrate	0 g	0%
Dietary Fiber	0 g	0%
Sugars	0 g	0%
Protein	12 g	24%
Amino Boost XXL Proprietary Blend	12 g	*
L-Leucine		*
L-Phenylalanine		*
L-Lysine		*
L-Valine		*
L-Threonine		*
L-Isoleucine		*
L-Histidine		*
L-Methionine		*
* % Daily Value not established.		
** Percent Daily Values are based on a 2,000 calorie diet		
<b>Other Ingredients:</b> Citric Acid, Malic Acid, Beet Powder, Lecithin, Natural and Artificial Flavor, Sucralose, Silica, Pectin, Sodium Chloride.		

### Unique Features

- This formula uses a proprietary essential amino acid blend that significantly increased muscle protein synthesis
- Can result in significantly greater muscle gains than traditional protein and carbohydrate shakes and bars
- Contains fewer calories and less nitrogen load on the kidneys, thus providing the greatest “bang for your buck” of any post-workout supplement
- Can be used alone or with NO7Rage™ and CreatineXXL™ as part of the dotFIT™ "Xtreme Muscle Stack"



providing maximum muscle pump and continuous training results for serious exercisers and athletes

### **Contraindications**

- This product, as with any protein or creatine-containing supplement, is contraindicated for users with kidney or liver disease.
- This product is contraindicated for phenylketonurics because it contains phenylalanine.
- This product is also contraindicated for pregnant or lactating females because it has not been tested in these groups and because protein can be adequately supplied by the diet for fetal growth or lactation needs.

## MuscleDefender™

### What is it?

A performance aid designed to replenish glutamine which is depleted from long training sessions and over-training. Doing so allows you to maintain demanding training schedules and maximal performance.

### How does it work?

Glutamine enhances recovery from prolonged, exhaustive exercise by

- Increasing muscle protein synthesis
- Refilling muscle fuel stores (glycogen synthesis)
- Supporting the immune system

### Who should take it?

dotFIT MuscleDefender is suitable for

- Highly stressed athletes who restrict calories, such as in-season bodybuilders and fitness competitors
- Endurance athletes with frequent and heavy training loads
- Exercisers who severely restrict calories for weight or fat loss
- Any athlete susceptible to over-training due to excessive workloads
- Use with other performance products to amplify their effects, especially to minimize over-training and enhance recovery

### Suggested Use

As a dietary supplement, mix 1 scoop (8g) with 8 oz. of water or your favorite beverage. On training days, use 1 serving immediately after

exercise. For maximum results use 1-2 servings daily

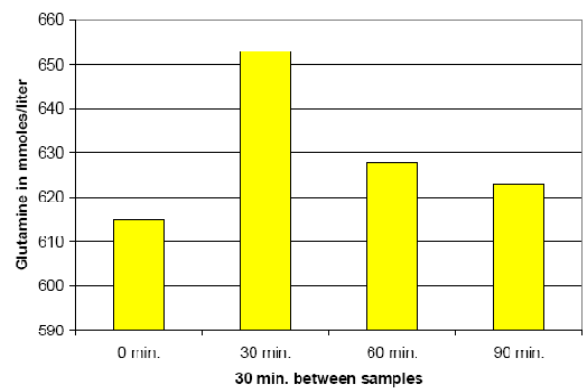
Supplement Facts		
Serving Size: One Level Scoop (8g)		
Servings Per Container: 50		
Amount Per Serving		% Daily Value
L-Glutamine	7.6 g	*
Magnesium (from 400 mg Magnesium Glycyl Glutamine <sup>®</sup> )	34 mg	8.5%
Chromium (from 8 mg Chromium Nicotinate Glycinate Chelate <sup>®</sup> )	200 mcg	167%
*% Daily Value not established.		
Other Ingredients: None.		

### Unique Features

- Produced in an easy-to-mix powder
- Contains L-glutamine peptide and a patented, stable form of L-glutamine from Albion that has been demonstrated to elevate the body's glutamine levels. These levels remain elevated for 90 minutes after consumption

### Contraindications

- Glutamine supplementation is contraindicated in those with kidney problems or at risk for kidney disease because of possible increased kidney stress.
- Glutamine supplementation should be avoided by pregnant or lactating women because of the lack of studies done with this population.
- Glutamine supplementation should not be employed by children and adolescents due to limited data.



# Pre/Post Workout Formula & Meal Replacement™

## What is it?

A performance formula that can deliver enhanced exercise induced results and aid in weight control.

## How does it work?

As a pre- and post-workout drink, the product delivers ideal amounts of carbohydrate, protein and fat in a form that can be rapidly digested in order to quickly reach muscle tissues to deliver energy, speed recovery and increase muscle building (see Fig 1).

Other uses for this product include

- Boosting energy and curbing hunger between meals
- Weight loss -- to control calories and provide accurate calorie counts
- Weight gain -- to increase daily calorie intake when unable to do so by consuming whole food

## Who should use this product?

- All athletes and regular exercisers
- Anyone who needs a convenient and ideal pre- and post-exercise meal or snack
- Individuals who want to gain weight or muscle and need to increase their calorie intake
- People who want to enhance weight loss by replacing one to two meals per day with this formula. Research has shown doing so increases weight loss and makes it easier to sustain results long-term

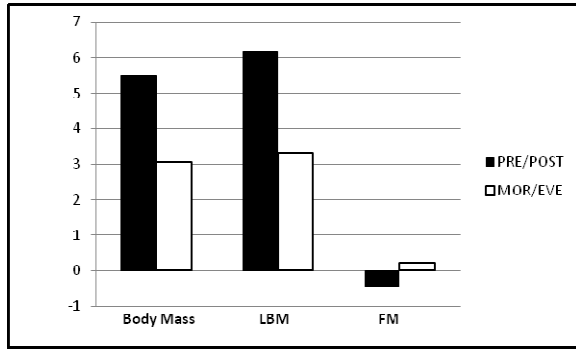
## Suggested Use

For pre-workout meals or snacks, add one or two scoops of powder to at least one cup (8 oz.) of cold water or liquid of your choice. To maximize recovery after workouts or competition, use one to two additional scoops.

Nutrition Facts		Calories 2,000 2,500	
Serving Size: 2 Scoops (64g) Serving Per Container: About 25		Calories from Fat 25	
Amount Per Serving	% Daily Value*		
Total Fat	3g 5%	Total Fat	Less than 65g 80g
Saturated Fat	1g 5%	Saturated Fat	Less than 20g 25g
Trans Fat	0g **	Cholesterol	Less than 300mg 300mg
Cholesterol	35mg 12%	Sodium	Less than 2,400mg 2,400mg
Sodium	125mg 5%	Potassium	3,500mg 3,500mg
Total Carbohydrate	35g 12%	Total Carbohydrate	300g 375g
Dietary Fiber	3g 12%	Dietary Fiber	25g 30g
Sugars	3g **	Calories per gram: Fat 9 Carbohydrate 4 Protein 4	
Protein	20g 40%	<b>INGREDIENTS:</b> Maltodextrin, Protein Blend (Whey Protein Concentrate, Calcium Caseinate, Micellar Casein, Whey Protein Isolate), Cocoa powder, Fat Blend (Sunflower oil, Medium Chain Triglycerides and Safflower oil), Gums (Carboxymethyl Cellulose, Xanthan gum), Natural and Artificial Flavors, Vitamin and Mineral Blend, Sodium Chloride, Sweeteners (Sucralose, Acesulfame Potassium).	
Vitamin A (as Beta Carotene)	600IU 12%	Contains Ingredients: Derived from Milk and Soy.	
Vitamin C (as Ascorbic acid)	6mg 10%		
Vitamin D (as Cholecalciferol)	40IU 10%		
Vitamin E (as d-Alpha Tocopheryl Succinate)	3IU 10%		
Vitamin B1 (Thiamine Mononitrate)	15mg 10%		
Vitamin B2 (as Riboflavin)	17mg 10%		
Niacin (as Niacinamide)	2mg 10%		
Vitamin B6 (as Pyridoxine HCl)	2mg 10%		
Vitamin B12 (as Cyanocobalamin)	1mcg 17%		
Biotin	30mcg 10%		
Pantothenic acid (as Calcium Pantothenate)	1mg 10%		
Calcium (from Milk Protein and Carbonate)	300mg 30%		
Iron (as Ferrous Fumarate)	3.2mg 18%		
Iodine (as Potassium Iodide)	15mcg 10%		
Magnesium (as Magnesium Oxide)	40mg 10%		
Zinc (as Zinc Citrate)	15mg 10%		
Copper (as Copper Gluconate)	200mcg 10%		

## Unique Features

- Low sugar, NO ASPARTAME
- Healthy blend of essential fats
- Perfect blend of the highest quality proteins
- Ideal blend of fast- and continuous-acting carbohydrates for quick and steady energy and recovery
- Works in synergy with other dotFIT™ products so you can maintain a safe and optimal range of total nutrient intake
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) and maintains rigorous product testing from raw materials to the finished products exclusively for dotFIT, LLC



Training results from 23 experienced recreational bodybuilders resistance training for 10 weeks with all things (diet, supplements, training, etc.) equal except the addition of pre/post feedings yielded significantly greater gains in body mass, LBM, strength and reduction in fat mass for the pre/post feeding subjects.

# WheySmooth™

## What is it?

A performance formula that can deliver high quality protein and the essential amino acids our bodies need for optimal development, functioning and recovery with few calories.

## How does it work?

Whey proteins have unique sequences of amino acids and small peptides that have demonstrated superior absorption and tissue-building effects than other proteins.

The combination of fast- and slow-acting proteins/amino acids in WheySmooth may help maximize the body's ability to build muscle.

## Who should take it?

WheySmooth is suitable for

- Adults who do not meet protein requirements from food, especially fitness competitors, bodybuilders and other athletes (strength, endurance and active recreational) during an adaptation period
- Weight and body fat conscious athletes during the final weeks of competition dieting, in order to meet protein requirements with fewer calories
- Athletes who tend to over-train
- Anyone wanting a great tasting, convenient protein source
- Those concerned with proper timing of protein intake and want the quick digestibility that cannot be accomplished by traditional food sources.

## Suggested Use

Add two scoops of powder to one cup (8-10 fl oz.) of cold water or liquid of your choice (increase or decrease the amount of liquid to achieve desired consistency). Shake, stir or blend until dissolved. Add your favorite carbohydrates as needed. Add crushed ice and/or your favorite fruit for a thicker, tastier shake.

Supplement Facts		
Serving Size: 65 g		
Servings Per Container: 25		
Amount Per Serving		
Calories 240	Calories from Fat 40	
		% Daily Value
Total Fat	4.5 g	7%
Saturated Fat	2 g	10%
Cholesterol	85 mg	29%
Sodium	85 mg	4%
Total Carbohydrate	12 g	4%
Dietary Fiber	3 g	11%
Sugars	2 g	
Protein	40 g	80%
Vitamin A	200 IU	4%
Vitamin B6 (as Pyridoxal 5'-phosphate)	10 mg	500%
Calcium (from Milk Proteins)	300 mg	30%
Iron	1.8 mg	10%
Proprietary Enzyme Blend	1,250 mg	**
Lactase (8,000 ALU), Aminogen®		
<small>**Percent Daily Values are based on a diet of 2,000 calories a day. Your daily values may be higher or lower depending on your calorie needs.</small>		
<small>***Daily Value not established.</small>		
	Calories: 2,000	2,500
Total Fat	Less than 65 g	80 g
Saturated Fat	Less than 20 g	25 g
Cholesterol	Less than 300 mg	300 mg
Sodium	Less than 2,400 mg	2,400 mg
Total Carbohydrate	300 g	375 g
Dietary Fiber	25 g	30 g
Calories per gram:		
Fat 9 • Carbohydrate 4 • Protein 4		
Ingredients: Protein Blend (Whey Protein Concentrate, Calcium Caseinate, PeptoPro - Casein Hydrolysate, Micellar Casein, Egg Whites, Whey Protein Isolate), Cocoa Powder, Maltodextrin, Sunflower Oil, Gums (Carboxymethyl Cellulose, Xanthan Gum), Enzyme Blend (Lactase, Aminogen), Natural and Artificial Flavors, Pyridoxal 5'-phosphate, Sweeteners (Sucralose, Acesulfame Potassium).		
Contains Ingredients Derived from Milk and Soy.		

## Unique Features

- One serving contains 40 grams of protein from extremely high quality sources, giving WheySmooth its unique "fast and slow" release pattern
- Only two grams of sugar per serving and NO ASPARTAME
- Formulated with PeptoPro® peptide complex for rapid absorption and utilization

- Contains Aminogen®, an enzyme complex for more complete digestion, absorption and retention
- Provides co-factors to ensure greater amino acid and protein utilization
- Great taste, easy mixing
- Contains lactase to prevent gas or bloating, which are common to other protein powders
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

# FirstString™

## What is it?

A great-tasting performance formula that can enhance exercise-induced results, leading to maximum increases in strength and size.

## How does it work?

As a pre- and post-workout drink, FirstString delivers ideal blends of carbohydrates, protein and fat in a form that can be rapidly digested in order to quickly reach muscle tissues to deliver energy, speed recovery and increase muscle building (see Fig 1).

In addition, this formula meets the NCAA guidelines for college athletes.

## Who should take it?

dotFIT™ FirstString is suitable for

- All athletes, especially youth and collegiate, looking to gain strength or muscle
- Youth athletes to help maximize athletic development and overall growth potential

## Suggested Use

- Over 200 lbs. add/mix four (4) scoops (one serving) of First String with 16-20 fl. oz. of cold water/fluid
- Under 200 lbs. add/mix two (2) scoops (half serving) of First String with 8-12 fl. oz. of cold water/fluid

## Timing

- 1st serving: 30-40 minutes pre-workout
- 2nd serving: Post-workout or immediately following training

- 3rd serving: Snack or bedtime

## Unique Features

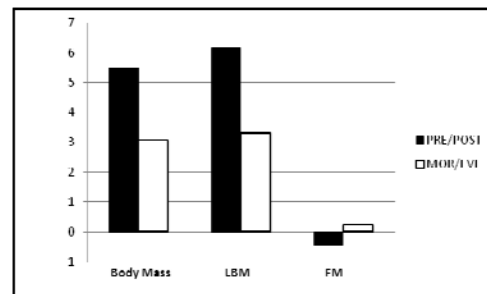
- Contains Aminogen® for more complete digestion, absorption and retention
  - NO Aspartame and low sugar
  - Ideal carbohydrate mix to help maximize protein synthesis
  - Sophisticated blend of the highest quality fast and slow acting proteins
  - Not spiked with unnecessary nutrients
- Manufactured in a FDA-registered facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

## Supplement Facts

	Serving Size: 2 Scoops (75g)		Serving Size: 4 Scoops (149g)	
	About 32		About 16	
	Calories 285	Calories from Fat 30	Calories 570	Calories from Fat 60
<b>Amount Per Serving</b>	<b>Amount Per Serving</b>	<b>% Daily Value*</b>	<b>Amount Per Serving</b>	<b>% Daily Value*</b>
<b>Total Fat</b>	3g	5%	6g	9%
Saturated Fat	1.25g	6%	2.5g	13%
Trans Fat	0g	**	0g	**
<b>Cholesterol</b>	50mg	17%	100mg	33%
<b>Sodium</b>	80mg	4%	160mg	7%
<b>Total Carbohydrate</b>	45g	15%	89g	30%
Dietary Fiber	1.5g	6%	3g	12%
Sugars	4g	**	8g	**
<b>Protein</b>	21g	42%	42g	84%

**INGREDIENTS:** Maltodextrin, Protein Blend (Whey Protein Concentrate, Calcium Caseinate, Micellar Casein, Whey Protein Isolate), Fat Blend (Sunflower Oil, Medium Chain Triglycerides and Safflower Oil), Natural and Artificial Flavors, Gums (Carboxymethyl Cellulose, Xanthan Gum), Vitamin and Mineral Blend, Aminogen®, Sweeteners (Sucralose, Acesulfame Potassium).

Contains Ingredients: Derived from Milk and Soy.



Training results from 23 experienced recreational bodybuilders resistance training for 10 weeks with all things (diet, supplements, training, etc.) equal except the addition of pre/post feedings yielded significantly greater gains in body mass, LBM, strength and reduction in fat mass for the pre/post feeding subjects.





## Appendix 1

### dotFIT Worldwide's Position on Vitamin & Mineral Supplementation

Content utilized by permission from The National Academy of Sports Medicine

#### Abstract

Defining the perfect diet has been a laborious task for the nutritional sciences for decades. Likewise, specifying the optimal intake of vitamins and minerals is difficult in the face of continuing nutrient research. This makes giving concrete nutrient recommendations challenging. For most nutrients, there is a large therapeutic range within which the average person will receive benefit and simultaneously remain below the threshold that can yield adverse events. It is one matter to define nutrient recommendations and another to actually consume the recommended dosages through the course of a normal day with typical foods. The notion that you will satisfy all physiological needs of the body for proper and ideal nutrient intake with food alone is impractical and outdated. Some of the obstacles to proper eating and ideal nutrient intake include insufficient food intake, increased needs that are not met by food alone, and dislike or avoidance of essential food groups.

Therefore, at worst vitamin and mineral supplementation acts as insurance against short and long-term dietary lapses, and guesswork in nutrient intake, including the ability to define the optimal diet. At best, using valid science to increase the nutrient content of available and typical food intakes may yield optimal functioning for an extended period, as compared to a non-supplemented state.

#### Introduction

The notion of vitamin and mineral supplementation, including the fortification of food, began with the intent to supply essential dietary nutrients significantly lacking in some geographical regions and to shore up inadequate nutrient content of the general population's typical food intake to meet the Recommended Dietary Allowances (RDAs). Without supplementation, severe nutritional deficiencies would be widespread, as they once were.<sup>1</sup>

The RDAs are, by definition, "the levels of intake of essential nutrients that, on the basis of scientific knowledge, are judged by the Food and Nutrition Board to be adequate to meet the known (current) nutrient needs of practically all (97-98% of the population) healthy persons."<sup>2</sup> They are not intended to be final, minimal or optimal. Rather, RDAs and the Dietary Guidelines are designed to prevent nutritional deficiencies by providing Americans with goals for adequate nutrient intake that most are not reaching.<sup>3,4,5,6,7,8,9,10,11</sup>

Dietary nutrient recommendations for achieving health are continuously being revised and generally trend upward as the scientific community gathers more data related to how different nutrient intake levels may affect overall health and longevity. Therefore, rather than simply updating the RDAs, which are set only for the average person to avoid deficiencies, the US Food and Nutrition Board, now an element of the Institute of Medicine, released the new Dietary Reference Intakes (DRIs) in 1994 and have updated them since. These evidence-based standards go beyond amending deficiencies; they also suggest the amount of nutrients needed for enhancing health. DRIs are as follows:

The Recommended Dietary Allowance (RDA) is the average daily dietary intake level that is sufficient to meet the nutrient requirements of nearly all (97 to 98 percent) healthy individuals in a specific life stage and gender group. The RDA is intended primarily for use as a goal for daily intake by individuals.<sup>12</sup>

Estimated Average Requirement (EAR) is the daily intake value that is estimated to meet the requirement, as defined by the specified indicator of adequacy, in 50 percent of the individuals in a life stage or gender group. At this level of intake, the other 50 percent of individuals in a specified group would not have their nutritional needs met. The EAR is used in setting the RDA.<sup>12</sup>

Adequate intake level (AI) is a value based on experimentally derived intake levels or approximations of observed mean nutrient intakes by a group (or groups) of healthy people.<sup>12</sup>

The Tolerable Upper Intake Level (UL) is the highest level of daily nutrient intake that is likely to pose no risks of adverse health effects in almost all individuals in the specified life stage group. As intake increases above the UL, the risk of adverse effects may increase. The intent is to set the UL so that it is below the threshold of even the most sensitive members of a group.<sup>12</sup>

However, despite the efforts of the scientific community, including the Food and Nutrition Board of the National Research Council and its DRIs, the general population is not meeting the majority of the requirements for vitamins and minerals. According to “What We Eat In America, NHANES,” Americans meet very few of the standards for dietary adequacy.<sup>9</sup> All recent nutrient intake surveys have shown the same results: virtually no one gets the recommended amounts of all nutrients from food alone.<sup>13</sup>

## **Why the Inadequacies?**

1. The majority of the general population does not have the ability to properly analyze foods, much less buy, prepare and consume each in the proper array to meet daily requirements.<sup>14,15</sup>
2. Today’s sedentary environment, which is promoted by increasingly inactive jobs, convenient forms of communication, easy access to food, comfort and entertainment, prohibits most of the general population from consuming the calories necessary to reach these recommended nutrient levels without gaining weight.<sup>16,17,18,19,20,21,22,23,24,25,26,27,28,29</sup> In addition, because of the lack of movement in today’s society, the large portion of the American adult population participating in weight reducing diets are forced to severely restrict food intake in order to sustain weight loss, a condition that all but assures nutrient inadequacies without supplementation.<sup>30,31,32</sup>

3. In general, food preferences established early in life keep people from more diverse nutritional choices. For most, the early introduction of sugar and fatty convenient foods (e.g. fast food outlets) creates addictions to these types of food, leaving many undernourished in terms of the RDAs for the long term. In other words, the foods most people normally choose are high in energy but low in nutrients.<sup>33,34,35</sup>

4. Available nutritional information regarding particular foods is not necessarily accurate. The true nutritional content of a given food is dependent upon such factors as its origin, time and maturity of its harvest, slaughter, cooking method, processing, and shelf life.<sup>13,36,37</sup> In addition, any calculations are vulnerable to analytical error.<sup>38,39</sup> These factors illustrate that just because a list of nutrients associated with a food is published, those nutrients are not guaranteed to actually enter the body. Performing an ingredient test on each food before it enters the body is not a practical solution.

Vitamin and mineral losses become cumulative. While an argument can be made that the RDAs include a margin of safety to address some of these problems, many of the RDAs are established as “sub-optimal,” as demonstrated by the continual upward trend.<sup>40,41</sup> No margin of safety can compensate for a nearly complete lack of an essential nutrient due to any of the above factors, especially soil content. This was illustrated, though inadvertently, in a study conducted by Clark, Combs and Turnbull.<sup>42</sup> The study’s subjects were selected from a region in the United States where there is little to no selenium in the soil. The dramatic cancer preventative benefits witnessed in the selenium-supplemented group compared to the placebo users are most likely attributed to the lack of selenium in the food supply from this area. All these uncontrollable issues become the strongest argument in support of the current scientific approach that no matter how well you plan your diet, you need “insurance.”<sup>43,44,45</sup>

Even trained professionals struggle with guidelines. In a 1995 study published in the Journal of the American Dietetic Association,<sup>46</sup> dietitians were asked to design diets that met the 1989 RDAs and 1990 Dietary Guidelines while providing 2200-2400 calories (the average non-athletic female gains weight at 1800 calories)<sup>47</sup> and remaining palatable to the individuals in the study. Using software designed specifically for creating a healthy diet, these trained dietitians were unable to accomplish the objective.<sup>46</sup> If health professionals cannot consistently reach the RDAs and dietary guidelines within an average amount of calories that promotes leanness while being universally palatable, how is the general public expected to do so?

Poor nutrition has been linked to an increased risk of many diseases including cancer, heart disease, and diabetes. One highly regarded researcher proposes that nutrient inadequacies may actually illicit a triage response where the body would prioritize the use of lacking nutrients by urgency which, if true, would accelerate cancer, aging, and neural decay but would leave critical metabolic functions intact; basically favoring short-term survival at the expense of long-term health.<sup>48</sup>

Collectively, the aforementioned circumstances strongly suggest nutrient augmentation to food intake in order to meet the existing DRIs, which still may not be optimal<sup>40,41,49,50</sup>

<sup>,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68</sup> but are adequate for avoiding deficiency diseases.

## Discussion

The original paradigm based on nutritional essentiality is undergoing a shift. Many well-informed health professionals and well-respected institutions are breaking precedent by recommending the use of a multiple vitamin and mineral supplement (VMS) in conjunction with a well-balanced diet.<sup>43,44,49,69,70,71</sup> Aside from the “insurance” value, the changing views on VMS recommendations are also a result of ongoing research into the amount of a nutrient required to prevent a chronic disease from occurring, rather than simply preventing a deficiency state.<sup>2,64,72,73,74,75,76,77</sup> These revised recommendations led to the reconstruction of the RDAs into the Dietary Reference Intakes (DRI).<sup>2,12,78,79,80</sup>

RDA levels of specific nutrients will continue to be revised, and wide ranges of safe and potentially effective intakes established (see

**Figure 24**). This makes it nearly impossible for the general population to reach potentially beneficial amounts while remaining within a calorie level that would promote healthy body fat levels without supplementation.<sup>47,50,75,81,82,83</sup> The DRIs provide a new framework within which recommendations of nutrient intake and clear health benefits can be established.

## Establishing beneficial nutrient levels with little to no risk

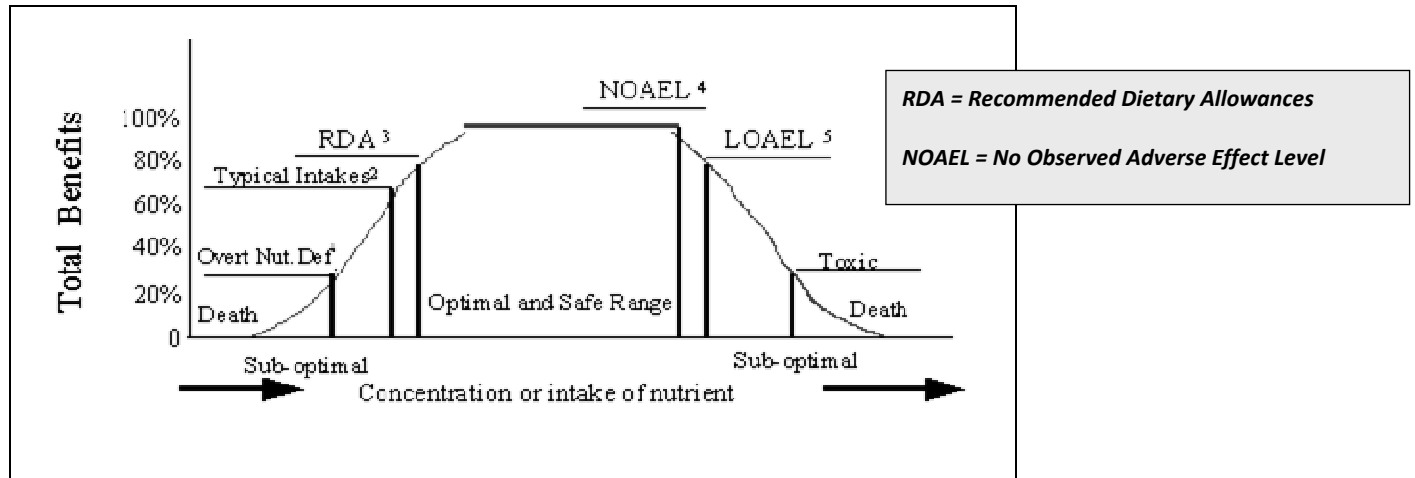
The issue still pending is just how much of each nutrient is needed, in general, to receive an optimal physiological response that fulfills the potential for health and performance. Though these exact amounts are currently unknown and will always vary by individual, volumes of information exist on approximate values within a wide range of safety that suggest efficacy for the general population.<sup>40,41</sup> In other words, the benefits of doses properly extrapolated from current research would greatly outweigh any unlikely risks from these doses, especially when compared to the risks resulting from no supplementation at all.

Using information available today, we must consider three levels of nutrient activity:

1. The amount of the nutrient to prevent overt deficiency disease.<sup>14</sup>
  - ✓ Approximately between two-thirds of the current RDAs and the actual RDAs.
2. When applicable, the amount of a nutrient that may support optimal benefits.<sup>42,54,60,61,62,63,64,65,66,84,85</sup>
  - ✓ Approximately between the current RDAs and the No Observed Adverse Effect Level (NOAEL).
3. The amount of a nutrient that may cause adverse reactions.<sup>40,41,86</sup>
  - ✓ Lowest Observed Adverse Effect Level (LOAEL) and higher.

Figure 24 illustrates how, within a wide range of safety, the amount of a nutrient required to achieve optimal benefits in performance and health can be approximated. As the concentrations of nutrient intake increases, different levels of biological function (total benefits) are approached.

**Figure 24:** Ultimate Goal of Nutrient Augmentation



1. Overt nutritional deficiency.
2. Typical intakes (2/3 of RDA, thus sub-optimal).
3. The RDAs, which we have established as sub-optimal for many nutrients.
4. NOAEL – A safe intake greater than the RDAs, and it is likely between this nutrient amount and its RDA where the optimal level of intake exists.
5. LOAEL – An intake that is not safe for all consumers therefore should generally be considered sub-optimal.

### Safe and beneficial dosages

Cautious review of existing information following the criteria in

**Figure 24** suggests total nutrient intake to fall somewhere within the ranges shown in Table 1. Any nutrient not appearing in the table indicates that too little information exists to establish a range. Therefore, consuming a balanced diet will presumably meet the currently known need. These totals include the nutrient content of food intake and supplementation. Considering most nutrient ranges shown in

Table 7 fall well within known safety margins and the often small contribution food makes to most of these desired levels, it would generally not be necessary for individuals to compile the nutrient content of daily food intake. Respecting this, daily supplementation should be no higher (maybe lower when marked) than the upper amount listed, which is commonly well below the tolerable upper limit. More

active individuals may maintain intakes closer to the higher side of the range. Recently, it has been proposed that the age and gender of an adult determines the appropriate levels of certain nutrients.

These doses, even at the high end, are meant to enhance natural physiology (fulfilling potential related to health). They are not in pharmacological amounts that would be used to treat symptoms of disease. The use of vitamins and minerals for therapy should be conducted by a qualified physician.

**Table 7:** Safe and Probable Optimal Range Including Food Sources

Nutrient	Low – High	Upper Limit (UL)	LOAEL
Pre-formed Vitamin A <sup>1</sup>	0 IU - 10,000 IU	10,000 IU (3000 mcg)	21,645 IU
Beta Carotene <sup>2</sup>	10,000 IU - 25,000 IU	-	-
Vitamin D (D3)	400 IU – 900 IU	2000 IU	3800 IU*
Vitamin E	100 IU – 800 IU	1,500 IU (1000 mg)	-
Vitamin K	60-120 mcg	-	-
Vitamin C	200 mg – 1000 mg	2,000 mg	3,000 mg
Vitamin B1	2 mg – 30 mg	-	-
Vitamin B2	5 mg – 30 mg	-	-
Vitamin B3 (niacinamide)	30 mg – 50 mg	35 mg	1000 mg
Vitamin B6	6 mg – 50 mg	100 mg	500 mg
Folic acid	400 mcg – 900 mcg	1,000 mcg	5,000 mcg
Vitamin B12	6 mcg – 50 mcg	-	-
Calcium <sup>5</sup>	1200 mg – 2000 mg	2,500 mg	5,000 mg
Magnesium <sup>5</sup>	420 mg – 600 mg	350 mg <sup>4</sup>	350 mg
Iodine	150 mcg - ?	1,100 mcg	1,700 mcg
Iron <sup>3</sup>	15 mg – 25 mg	45 mg	70 mg
Zinc <sup>3</sup>	15 mg – 30 mg	40 mg	60 mg
Copper	2 mg – 4 mg	10 mg	-
Manganese	2 mg – 5 mg	11 mg	15 mg
Potassium	2000 mg -?	-	-
Selenium <sup>3</sup>	200 mcg – 250 mcg	400 mcg	910 mcg
Chromium	200 mcg – 1000 mcg	-	-

Chronic ingestion of nutrients anywhere in the range illustrated in

Table 7 has been established as safe for the general population and may prove to be highly beneficial.

## Proper intake

The synergy of these nutrients, including their daily levels, require they be consumed together but

<sup>1</sup> Supplemental amount can be zero if daily intake of beta carotene is within the safe and optimal range.

<sup>2</sup> Smokers, those likely to develop, or those that already have lung cancer, should avoid beta carotene supplementation.

\* Currently being revisited.

<sup>3</sup> Upper range amount is from supplements only.

<sup>4</sup> From supplements only.

<sup>5</sup> Supplemental amounts should be close to the low numbers shown.

distributed as equally throughout a 24 hour period as possible to avoid over-saturation and losses. Individuals should start by following a healthy food plan as closely as possible, including a calorie intake that promotes healthy body fat levels, and adding a controlled-release multiple vitamin and mineral preparation to meet the appropriate nutrient levels.

Using an acceptable pill size, these amounts could be reached through ingestion of a multiple vitamin and mineral formula one to two times daily with meals. Generally, a separate calcium and Vitamin D supplement may need to be included in order to reach desired levels, which would also be consumed in split doses. This method helps maintain tissue target levels throughout the day, as opposed to consuming the total amount at one time which would diminish the desired result.

## **Conclusion**

Vitamins and minerals ingested as described may allow the body to operate at full capacity without disturbing its natural physiology. The belief that individuals consume each health and performance-related compound in optimal doses, ratios and at proper times from food every day is unfounded, especially when all obstacles are taken into account, including the inability to define these levels. In addition, it is common knowledge that the general population does not consume more than what is needed of all necessary substances in their diets. These issues collectively indicate that any nutrient contributing to cellular health and performance has the potential to be lacking when food is the only delivery system.

Because of the safety margins of most nutrients, and paying strict attention to tolerable upper limits, distinctions can be made between the strongest possible evidence and instances where the evidence becomes strong enough regarding ingesting levels of nutrients that show potential in staving off chronic disease. In other words, when supplementing properly, potential benefits would greatly outweigh any unlikely risks. Therefore, at worst vitamin and mineral supplementation acts as insurance against short and long term dietary lapses, and guesswork in nutrient intake, including the ability to define the optimal diet. At best, using valid science to increase the nutrient content of available and typical food intakes may yield optimal functioning for an extended period, as compared to a non-supplemented state.



## Appendix 2

### Three proven strategies for weight reduction, maintenance of weight loss and prevention of weight gain

Dieting to lose weight is difficult at best, and generally ends in frustration for the average person. The majority of people gain most of the weight back within the first year.<sup>1,2</sup>

However, there are three strategies that have consistently proven to be effective in losing weight and maintaining the loss. When combining all three, a person may have the greatest chance of succeeding in accomplishing their desired weight loss (when compared to all current conventional methods of weight loss). When incorporating the three simple methods shown below during caloric restriction, the dieter should significantly reduce the overall effort generally associated with dieting. This allows the participant to more comfortably achieve and maintain the desired outcome.

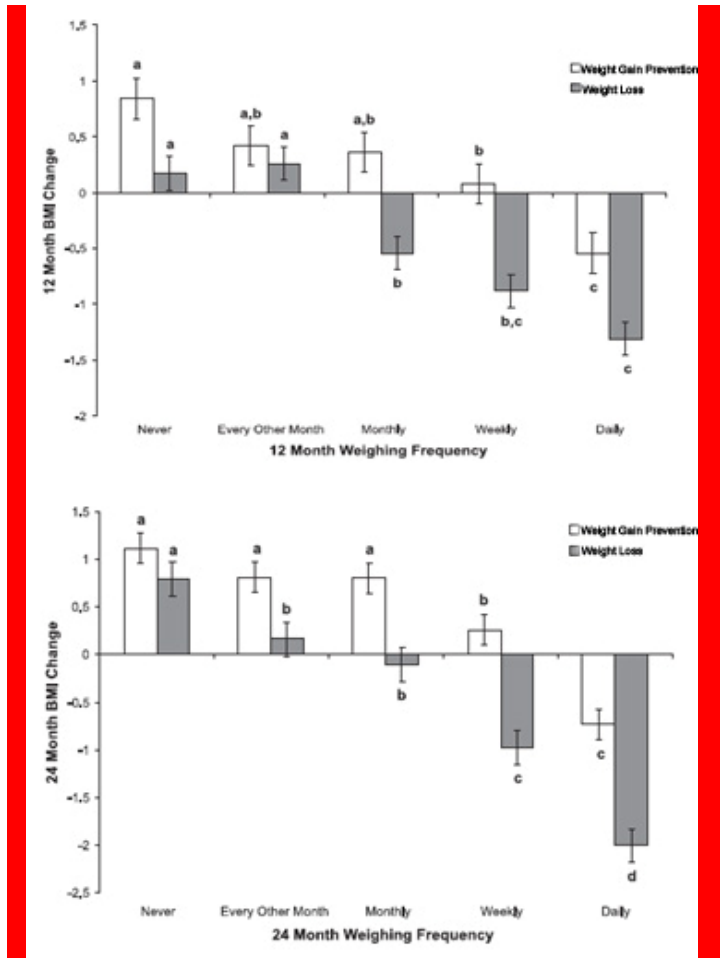
#### 1. Self-weigh as often as possible and chart your progress

All studies investigating self-weighing as a weight control strategy have demonstrated that the more you weigh yourself the greater the weight loss<sup>3</sup>, maintenance of the loss and prevention of weight gain.<sup>3,4,5,6</sup> Research also validated the reverse: the less frequently subjects weighed in, the lower their chance of success, and those who checked their weight the least or never gained weight.<sup>3</sup> Presumably by the time they would weigh themselves, if ever, it was too late to undo the damage without a significant lifestyle change, hence they continued to gain weight.

Figure 1 captures the significant results of regular weighing. More significant is the fact that as time went on the subjects who consistently weighed themselves continued to reduce their body mass index (BMI). This is completely opposite today's norm.<sup>3</sup>

Subjects weighing multiple times a week reported that any time weight was not trending in a desired direction they would make a simple adjustment. Sometimes eating slightly less (including skipping a meal) or an alteration in exercise would allow them to maintain an easy, steady course to the goal.<sup>7</sup> Additionally, the fact that one has to weigh each day (or most days) influences people to “think twice” about consuming something that might give them an undesirable weigh in.

**Figure 25:** Shows the results of weighing frequency: the dark bars were subjects attempting weight loss. The white bars were subjects attempting to prevent weight gain. These amazing results clearly demonstrate the effectiveness of regular weighing.



## 2. Use of pharmacological agents (prescription drugs) to assist weight loss

The goal of incorporating a dietary supplement or drug into a weight loss program is to assist the participant in complying with the conditions necessary for weight reduction.

In 19 studies, participants using weight loss drugs that prevent dietary fat/ calorie absorption and speed metabolism significantly increased total weight loss combined with a dietary/lifestyle regime than when compared to subjects using the dietary/lifestyle regime and placebo.<sup>8</sup> The treatment groups were, on average, three times more likely to lose more than five percent of their total body weight and four times more likely to maintain the weight loss after two years.

The problem with drug therapy is that prescription weight loss drugs should not be used for extended periods of time because they bring along known side effects. Therefore, the goal would be to find safe,

natural alternatives in dietary supplements that have the same basic actions (increase calorie burning and block unneeded calories), thus potential to assist in weight loss.<sup>9,10,11,12,13,14,15,16,17,18,19,20,21,22</sup> The dieter would cease supplementation once the weight goal is reached or when they have their daily routines under control to continue making progress without the supplements.

### 3. Incorporating meal replacements into daily diet

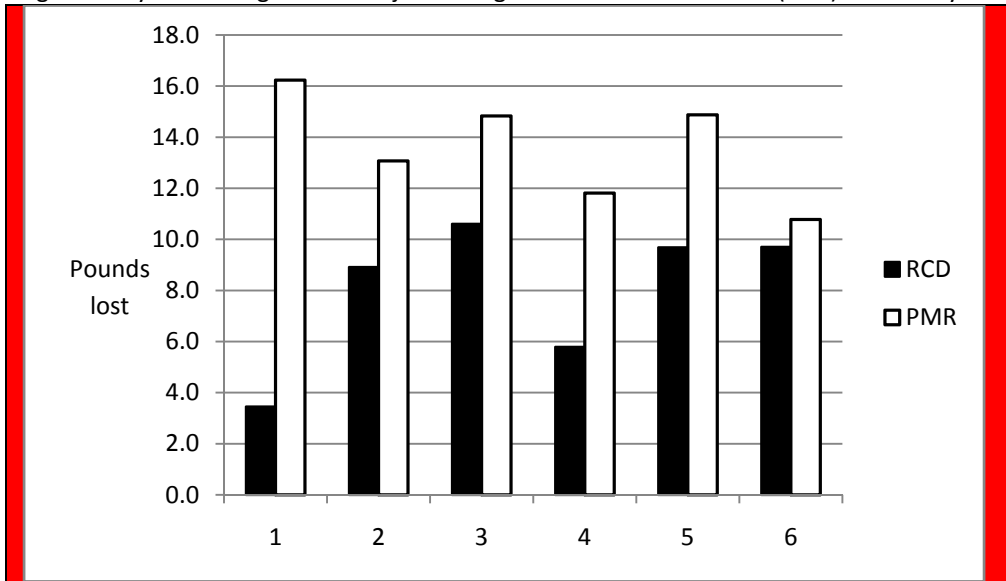
In all studies, meal replacements (MR) have been shown to be an extremely effective aid to weight reduction<sup>23</sup> and in almost all cases more effective than conventional methods of dietary restrictions.<sup>24,25,26,27</sup> Additionally, meal replacements have been shown to be just as effective as dietary restriction combined with pharmacological therapy.<sup>8</sup> And most importantly, continuous use of meal replacements may be the most effective means of all treatments when it comes to maintaining weight loss<sup>1,28,29,30</sup> (see figure 2).

Meal replacements are generally used to replace one or two meals a day and allow the individual complete freedom for their remaining daily calories.

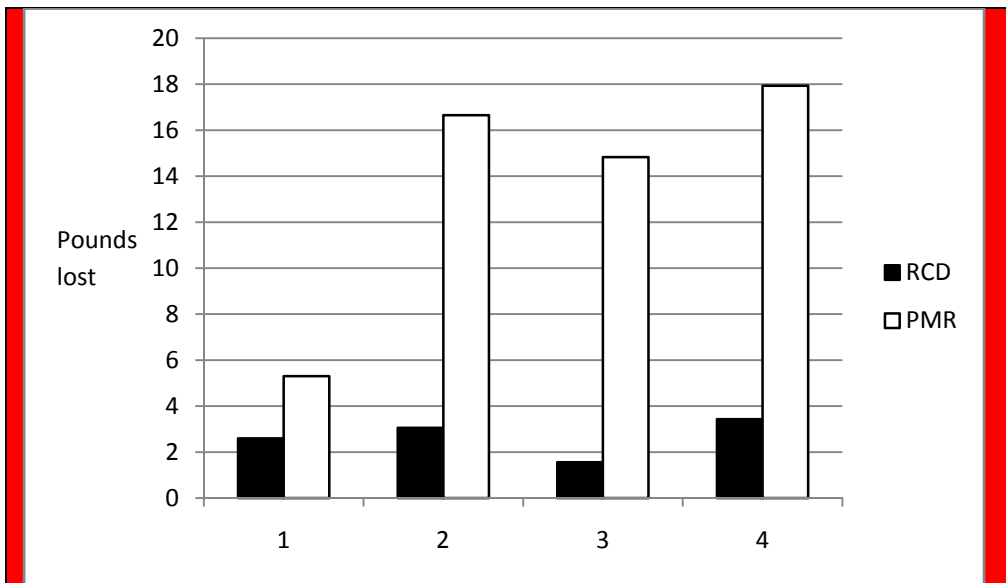
Meal replacements allow

- **Portion control:** people generally attempt to consume meals to completion;<sup>31,32</sup> therefore, meal portion size significantly impacts a person's total calorie intake.<sup>17,33</sup> Overwhelming evidence validates that the smaller the portions, the fewer daily calories consumed<sup>19</sup> and vice-versa – i.e. people tend to “eat with their eyes not their stomachs”. Use of portion controlled meals has proven to yield greater weight loss than conventional diet therapy alone.<sup>34,35,36,37</sup>
- **Accurate calorie counts** of total daily food intake when compared to having to estimate the calories of self-prepared or unmarked meals<sup>38</sup>

**Figure 26:** In all six studies the groups using meal replacements (PMR) as part of their overall calorie intake lost significantly more weight than subjects using the reduced calorie diet (RCD) alone. Heymsfield SB (2003)



**Figure 27:** In a 1-year follow-up in the groups that were tracked, the subjects still using meal replacements maintained significantly more weight loss than the RCD group. Heymsfield SB (2003)



## Appendix 3

### Xtreme Muscle Stack: Creating the Perfect Anabolic Storm

**These diet and supplement manipulations create the greatest muscle size and performance gains while reducing body fat.**

For those who strictly want the “keys to the kingdom of muscle,” go straight to the formulas starting at the end of this article. For those interested in understanding how and why, start here.

Many years ago, it was a widely accepted belief that if one trained hard and focused on diet and supplementation, they could expect to put on ten pounds of muscle a year. If that rate of body change appeals to you, then no need to read any further. However, if you want to maximize your progress and take advantage of truly cutting edge information that has recently emerged, and if you want to break through plateaus, optimize recovery and accelerate muscle gains (with or without body fat loss) then read on. The following article will feed your mind and teach you how to feed your body, allowing you to make gains you dreamed of but never thought possible.

Daily exercise-induced changes in muscle occur at an imperceptible rate (a pound of muscle every two weeks would yield 1.14 ounces a day). Measurable changes to skeletal muscle fibers (type and diameter) require repeated exposure to the stimulus of progressively more challenging exercise over a significant period of time (six to eight weeks).<sup>1,2,3</sup> Surprisingly, recent research has confirmed that it is the immediate post-exercise period when the greatest changes in muscle protein synthesis and tissue structure occurs, making this a critical aspect in the building process.<sup>4,5,6</sup>

Muscle protein synthesis can be stimulated in many ways and the various mechanisms may interact and have additive effects. The secret to naturally achieving one's full potential for muscle size and strength, without gaining unwanted body fat (or better yet, gain size while losing body fat) requires the following: Matching the proper training with a food and dietary supplement plan that optimizes one's internal physiological environment. The areas that can be manipulated and optimized to ensure ideal recovery and growth include

- Dietary factors such as the amount and proper timing of calories, protein, carbohydrate and fat (the macronutrients)
- Specific dietary supplements such as the amino acid (AA) leucine, glutamine, specific AA mixtures and creatine provided to muscle cells at ideal times
- Exercise type and amount
- Hormonal environment (especially insulin modulation)
- Cell volume changes and vasodilatation can enhance an anabolic environment and maximize the flow of nutrients into, and waste products, out of muscle

All of these elements may contribute independently and/or synergistically to muscle protein synthesis and related adaptations to training. In the following text we focus on the above manipulations, minus exercise, that can be employed to maximize the internal hormonal, nutrient, recovery and protein synthesis environment of the body.

## **Diet and Insulin**

Proper diet manipulations can dramatically and positively affect the muscle building hormone production. Accomplishing the proper hormone balance for muscle building, without increasing body fat, is a function of carbohydrates, proteins and fats being supplied in proper ratios, forms and at specific times. This is in relation to training periods while remaining within the caloric allotment necessary for the body composition goal. Using diet to harness the body's most powerful muscle building hormone, insulin, will reduce muscle catabolism (breakdown) and increase muscle anabolism (buildup), leading to maximum net increases in muscle synthesis.

### **Manipulated insulin to maximize muscle building**

In addition to stimulating muscle protein synthesis, insulin also plays a major role in minimizing the damage caused by exercise. Strength training triggers the release of the catabolic hormones cortisol and epinephrine, which work to breakdown glycogen (stored carbohydrate that fuels muscle action) and muscle proteins to supply energy and produce work. However, this process also leads to muscle damage. Although you need to be able to train hard enough to stimulate growth, if you can minimize the tissue damage during and after exercise, your body will spend more time and incoming nutrients building new muscle rather than constantly repairing it, allowing you to avoid training plateaus. In other words, the goal is to add new muscle, not just repair the old.

### **Metabolic windows**

We now know there are certain times, primarily immediately post-workout, when muscle building is at its peak and we refer to these times as "metabolic windows" (see sidebar). This is a short period of time (60-90 minutes) when muscle cells become highly receptive to the incoming nutrients responsible for muscle building; therefore, if there are no or low nutrients, there's low or no muscle building. Insulin is the hormone that starts the cascade of muscle-building events during these short specific periods. By stimulating insulin at specific times with the proper carbohydrate and protein intake before (in order to help blunt cortisol thus muscle breakdown), during and after exercise, you can significantly enhance and accelerate muscle building (anabolism).<sup>7</sup> Through simple but accurate dietary management, we can unlock all of insulin's many muscle-building properties in order to turn on and keep running all of the body's "muscle building machinery".

**Summary:** by managing insulin through proper carbohydrate and protein intake at all meal times (see Table 8), one can maximize the “metabolic windows” of muscle building. Insulin positively affects other anabolic hormones (testosterone, IGF-1, etc.) while blunting catabolic (cortisol) hormones creating a perfect muscle building storm. And as long as we have the right nutrients and control of the insulin, we get bigger, faster and/or stronger from every workout – read on.

### Food/diet composition

As stated above, carbohydrates will play an important role in your performance, recovery and insulin levels. While trying to increase muscle size, carbohydrates (CHO) should make up 45-60% of your total caloric intake. Without adequate CHO, ideal insulin activation will not occur, recovery from intense workouts will not be ideal, and muscular stores of energy for the next workout will be suboptimal. None of this contributes to maximum muscular gains. Protein, which mistakenly receives the greatest focus by many exercisers, needs to be high enough to allow for tissue growth. For even the hardest training bodybuilder when calories are not severely restricted\*, a protein intake of up to 1 gram per pound of bodyweight is more than enough to allow for increased needs due to intense workouts and adding muscle. Higher protein intakes are not necessary and may even impede progress if it takes the place of dietary carbohydrate. Healthy fats will complete the picture, making up the remaining calories and generally supplying 15-30% of total caloric intake. To summarize

- **Calories:** ideally total calorie intake should be slightly above needs so that the extra nutrients/calories would be deposited into muscle tissues, allowing one’s body fat percentage to naturally “drift down” as weight goes up. If simultaneous body fat loss is desired, then the calorie deficit should be no greater than approx. 15% of calorie maintenance or maximum muscle building will be compromised
- **Carbohydrates:** approx. 45-60% of total caloric intake\*
- **Protein:** approx. 15-30% of total caloric intake (max of 1g/lb of bodyweight)\*
- **Dietary fat:** approx. 15-30% of total caloric intake

\*The only time protein needs would be greater is during severe dieting as with physique athletes in the final weeks of contest preparation. During this deprivation period, although protein intake is extremely high and carbohydrates low because of the lower calorie allotment, muscle is at best maintained and generally lost (see side bar on protein and bodybuilders). This highlights the important role carbohydrates play in muscle building.

### Metabolic windows of growth

Immediately following exercise, muscle cell nutrient uptake is at its highest point of the day and therefore this small “window of opportunity” requires a well designed, fast-acting formula<sup>1</sup> to satisfy the muscle’s exercise-induced demands.

Numerous studies have demonstrated that the inclusion of “immediate” pre- & post-training, fast-acting carbohydrate/sugars and protein feedings can stimulate muscle protein synthesis (MPS)<sup>2,3</sup> and reduce muscle damage to a far greater extent than normal feeding patterns.<sup>4,5</sup> In other words, no matter how well you eat throughout the day, you recover faster and build more muscle and strength by including these quickly absorbed pre and post exercise formulas (see figure 28).<sup>6,7</sup>

## Pre- and post-exercise/activity energy and recovery supplementation

Because of the length of time it takes to digest and absorb the nutrients from traditional meals, whole/traditional food meals cannot deliver the required nutrients within a timeframe that allows maximum results induced by exercise. This is when compared to the proper use of quick digesting specialized formulas.<sup>8,9</sup>

### The proper pre-/post-workout formula

There is no longer a debate whether pre- and post-workout feedings enhance exercise-induced results. Volumes of peer review literature and studies continue to not only validate this now established fact, but also document the proper formula.<sup>10,11,12</sup>

The formulas used in scientific studies are all relatively the same: within the range of 1.5-4 parts carbohydrate (CHO) (made up of primarily glucose polymers) to 1 part protein and low to no fat. The CHO range is based on the activity being studied – the longer the workout the higher the carbohydrate/sugar content. This formula produces the desired results i.e. quick lasting energy, faster recovery and more muscle and strength gains from your workout.

### Pre-workout feedings

Although recovery primarily takes place after the workout, you can help speed and enhance the process before you start exercise by ingesting the same formula 10-40 minutes before the workout (always make sure your pre-training full food meal is eaten 2-3 hours before exercise unless you train first thing in the morning and time does not permit). The pre-workout feeding is important because it stimulates insulin production. Remember, insulin is our body's most anabolic hormone thus "king" when it comes to building muscle.<sup>7,13,14</sup> As mentioned, not only does this hormone start and continue the entire muscle-building process, but insulin also helps minimize the damage caused by exercise<sup>7,13,14</sup> by blunting the exercise-induced production of the catabolic hormones. These

### Protein and the bodybuilder

When bodybuilders are in the off-season energy balance phase, they should follow the same protein recommendations as strength athletes.<sup>8</sup> However, during negative energy balance en route to competition-level body fat, protein requirements may dramatically increase.

To reach competitive levels of body fat, calorie intake is continually lowered while exercise—including cardiorespiratory, weight training and posing—is increased. (Competitive levels of body fat are generally unhealthy and impossible to maintain for prolonged periods.)

Each component of this regime may have additive effects on protein requirements. The body's survival mechanisms, related to energy expenditure in excess of energy intake, are probably highly active during this period, forcing a continued reduction in food intake to achieve the goal.<sup>5,6</sup> However, due to anabolic requirements, protein intake cannot be lowered. In fact, protein intake may have to be increased in the final few weeks before competition.

During this period, the body is torn between the use of food components for energy expenditure and the support of muscle tissue. The athlete is forcing the body to achieve abnormally low levels of body fat for competition. When overall energy intake is significantly less than energy expenditure, the hormonal milieu dictates the breakdown of muscle protein for energy supply. When carbohydrate availability is limited, this effect is even more pronounced. Thus, it can be quite a challenge to balance these drastic measures with an appropriate mix of protein and carbohydrate intake. This highlights the importance of the use of dietary supplements for staving off the loss of lean body mass while low body fat is a primary goal.

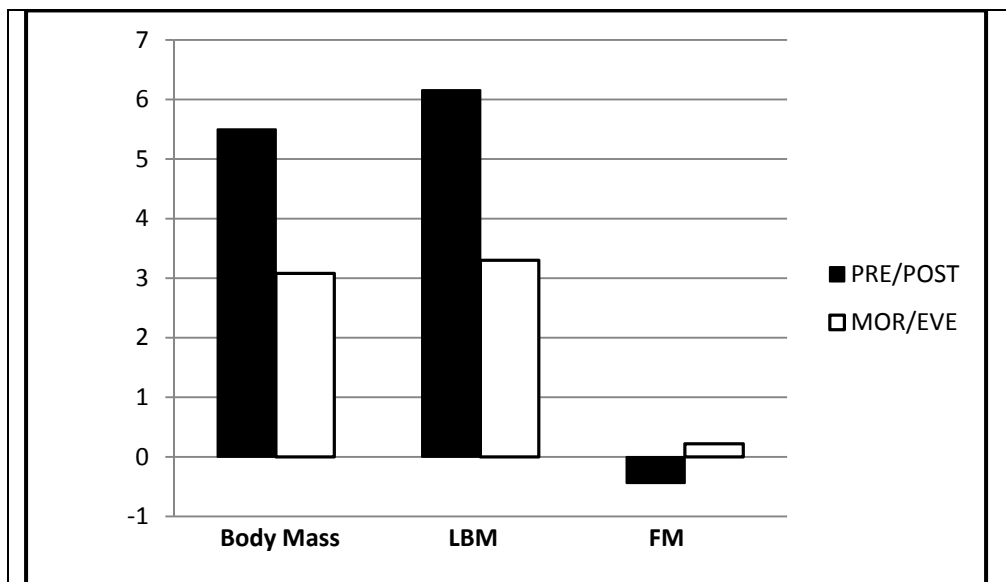


hormones “tear down” muscle tissue.<sup>7,13</sup>

### Post-workout feeding

The proper formula should be ingested as close to immediately after training as possible. Very recently it was discovered that although the post-training metabolic window is active for as much as 60-90 minutes, its maximum activity (greatest nutrient uptake and protein synthesis capabilities) takes place immediately at the end of the training session.<sup>9</sup> From that point on, the longer you wait to supply the proper nutrients or the more time they take to get to the affected tissues, the less muscle building or recovery takes place during this period and can't be made up for at any other point in time (see Figure 28). Simply put, the post-workout feeding activates the muscle building mechanisms that take place in this window of opportunity.

**Figure 28:** Training results from 23 experienced recreational bodybuilders resistance training for 10 weeks with all things (diet, supplements, training, etc.) equal except the addition of pre/post feedings yielded significantly greater gains in body mass, LBM, strength and reduction in fat mass for the pre/post feeding subjects<sup>9</sup>



### Summary

By ingesting the proper exercise formula before training, you not only supply workout energy but also kick off the necessary insulin/hormone release that will work to mitigate exercise-induced damage. When you repeat the process immediately post-workout, you quickly restore energy (glycogen), supply

muscle building nutrients when most needed, and stimulate a renewed insulin release. This initiates and enhances the entire muscle-building hormone process/cascade, thus recovery and results.

## **Dietary supplements**

The final component to maximizing size and performance gains is the integration of dietary supplements. To keep calories within an appropriate range that does not contribute to unwanted fat stores, the primary goal of incorporating dietary supplements into food planning is to supply specific compounds that are used during energy, force production (muscle exertion and subsequent damage) and are needed for recovery/building. Additionally, these specific compounds must be supplied in greater amounts than are used so that a portion of their intake will be deposited into the damaged or depleted structural tissues. This will lead to the desired increase in muscle size.

By isolating these nutrients/compounds from the food form, we can supply them without the calories in order to control body composition. And because they're manufactured in proper forms, dosing dietary supplements allows the user to deliver the needed nutrients into the body at the exact times necessary to take full advantage of periods when muscle cells are most nutrient-sensitive. This is established by training, sleep and meal times.

So, there you have the facts - and below you have the general recipe to create the "perfect muscle building storm."

## **Optimal dotFIT™ Anabolic Diet & Supplement Program: The Xtreme Muscle Stack**

### **Menu plan and eating instructions**

Below is a sample **Performance & Muscle Building Menu and eating instructions** for a 180 LBS athlete (get complete sets of personalized plans from the dotFIT Me™ Program).

### **Arrange your meals around your activities**

Although the meals appear in a breakfast, lunch and dinner fashion (meal numbers have no relevance to eating positions), you must arrange the meals around your training session(s). Space your meals no more than 3-4 hours apart. Other than your pre-event meal and pre- and post- snacks, you may eat the remaining meals in any order that fits your lifestyle or venue.

### **Early morning training**

If you train soon after rising and have no time for complete digestion of a large meal, make sure you consume your pre-training meal (or something very similar) as your final meal of the day, as late as possible, and consume only the pre-workout snack before your early morning workout.

**Pre- and post-training feedings**

The pre/post feedings or snacks are usually shown in a liquid form, but you may substitute based on preference, venue and/or convenience, any of the appropriate dotFIT™ foods. In other words, you may choose a bar as the pre-workout portion and a shake post-workout or vice-versa.

**Table 8:** Sample Anabolic Diet Plan

Performance Menu – 3500 Calories				
<b>Meal 1 – Morning Snack</b> Eat this meal as soon as you wake up.	Pro (g)	Carb (g)	Fat (g)	Calories
1 dotFIT Breakfast Bar	15	29	5	220
1 cup (8 oz) Orange Juice	2	26	-	110
<b>Total:</b>	<b>17</b>	<b>55</b>	<b>5</b>	<b>330</b>
<b>Percent of Calories:</b>	<b>20%</b>	<b>66%</b>	<b>14%</b>	
<b>Meal 2 – Pre Training Meal</b> Eat this meal 2 ½ to 3 hours before workouts or competition.	Pro (g)	Carb (g)	Fat (g)	Calories
1 (3.7 oz) Honey Whole Wheat Bagel	11	64	1	300
2 tbsp Smooth Peanut Butter	8	6	16	188
1 medium Banana	1	27	0.4	105
1.5 cup (12 oz) Skim Milk	13	19	0.9	136
1 each dotFIT Active Multivitamin	-	-	-	-
<b>Total:</b>	<b>33</b>	<b>116</b>	<b>18</b>	<b>729</b>
<b>Percent of Calories:</b>	<b>18%</b>	<b>61%</b>	<b>21%</b>	
<b>Meal 3 – Pre Training Snack (dotFIT Shake, Any Recipe)</b> Eat this snack 10 to 40 minutes before workouts to maximize energy stores.	Pro (g)	Carb (g)	Fat (g)	Calories
2 scoops dotFIT Pre/Post & Meal Replacement Formula, Vanilla	20	35	3	240
1 cup Frozen Mixed Berries	-	17	-	70
Crushed Ice	-	-	-	-
<b>Total:</b>	<b>20</b>	<b>52</b>	<b>3</b>	<b>310</b>
<b>Percent of Calories:</b>	<b>25%</b>	<b>66%</b>	<b>9%</b>	
<b>Meal 4 – Post Training Snack (dotFIT Shake, Any Recipe)</b> Eat or drink this snack immediately after workouts to refill energy stores and enhance recovery.	Pro (g)	Carb (g)	Fat (g)	Calories
2 scoops dotFIT Pre/Post & Meal Replacement Formula, Chocolate	20	35	3	240
1.5 (12 oz) Skim Milk	13	19	0.9	136
<b>Total:</b>	<b>33</b>	<b>54</b>	<b>4</b>	<b>376</b>
<b>Percent of Calories:</b>	<b>35%</b>	<b>56%</b>	<b>9%</b>	
<b>Meal 4 – Post-training Meal</b> Eat this meal within 1.5-hours after workouts	Pro (g)	Carb (g)	Fat (g)	Calories
1 Subway Foot long Turkey Sandwich	37	92	9	560
1 bottle (20 oz) Gatorade	-	35	-	130
1 dotFIT Antioxidant Plus	-	-	-	-
<b>Total:</b>	<b>37</b>	<b>127</b>	<b>9</b>	<b>683</b>
<b>Percent of Calories:</b>	<b>24%</b>	<b>62%</b>	<b>14%</b>	
<b>Meal 5 – Starch/Grain with Meat, Veggies &amp; Fruit</b> Eat this typical dinner within 3-4 hours of previous meal	Pro (g)	Carb (g)	Fat (g)	Calories
6 ounces New York Steak, Lean, Broiled	50	-	11	310
1 large (10.5 Oz) Baked Potato	8	64	0.4	290
1 tbsp Whipped Butter	-	-	8	67
2 tbsp Light Sour Cream	1	2	3	38
1 cup Green Beans, Boiled, Drained	2	10	0.4	44
1 cup Diced Melon	1	13	0.3	53
1 each dotFIT Active Multivitamin	-	-	-	-
<b>Total</b>	<b>62</b>	<b>89</b>	<b>23</b>	<b>802</b>
<b>Percent of Calories</b>	<b>30%</b>	<b>44%</b>	<b>26%</b>	
<b>Meal 6 – Late Snack</b> Eat any time before bedtime	Pro (g)	Carb (g)	Fat (g)	Calories
1 cup Low Fat Frozen Yogurt	8	46	6	280
<b>Total</b>	<b>8</b>	<b>46</b>	<b>6</b>	<b>280</b>
<b>Percent of Calories</b>	<b>14%</b>	<b>83%</b>	<b>3%</b>	
<b>Menu Totals:</b>	<b>211</b>	<b>537</b>	<b>68</b>	<b>3510</b>
<b>Percentage of Total Calories:</b>	<b>23%</b>	<b>60%</b>	<b>17%</b>	
<b>Other Nutrients:</b>	<b>7% Saturated Fat</b>	<b>304 mg Cholesterol</b>	<b>34 g Fiber</b>	

## **Dietary Supplement Program**

Follow your pre- & post-workout feedings as described in the above menu plan, and include the following recommendations:

- dotFIT™ CreatineXXL™
  - A supercharged creatine formula to improve upon the well-known size and performance enhancing effects of creatine-monohydrate. Designed to deliver increased strength-endurance, intensity ( $\beta$ -Alanine) and much greater cell volume effects (glycine and glutamine) than creatine alone, all leading to greater strength, size and performance gains
- NO7RAGE™
  - Contains a blend of compounds that increase muscle blood flow, cell volume (“the pump”) and mental focus. Greater blood flow to muscles increases the delivery of oxygen, energy and rebuilding nutrients as well as speeding up the removal of waste products. This leads to improved strength, less muscle breakdown and increased muscle size and performance
    - Contains creatine, caffeine, etc.
- AminoBoostXXL™
  - This product has the ideal mix of essential amino acids shown to enhance muscle gain and recovery
    - Delivers the ideal blend of nutrients to take advantage of post-training “metabolic windows of growth” adding to the muscle building results produced by the pre- and post-exercise feedings. The unique blend of AA are quickly assimilated into muscle tissues

## Directions for use

**Table 9:** Maximal Protein Synthesis Periodization

Week	NO7Rage*	AminoBoostXXL**	CreatineXXL***	Training Intensity
1	1-2.5 scoops as directed 30 min before WO			Med
2	1-2.5 scoops as directed 30 min before WO			Med-high
3	1-2.5 scoops as directed 30 min before WO			High
4	1-2.5 scoops as directed 30 min before WO	1/2-1 scoop as directed 30 min before & immediately post WO*		High
5	1-2.5 scoops as directed 30 min before WO	1/2-1scoop as directed 30 min before & immediately post WO*		High
6	1-2.5 scoops as directed 30 min before WO	1/2-1scoop as directed 30 min before & immediately post WO*		High
7	1-2.5 scoops as directed 30 min before WO	1/2-1scoop as directed 30 min before & immediately post WO*	6 tabs, 3 after WO, split remaining throughout day with meals	High
8	1-2.5 scoops as directed 30 min before WO	1/2-1scoop as directed 30 min before & immediately post WO*	7 tabs, 3 after WO, split remaining throughout day with meals	High
9	1-2.5 scoops as directed 30 min before WO	1/2-1scoop as directed 30 min before & immediately post WO*	8 tabs, 4 after WO, split remaining throughout day with meals	High
10	1-2.5 scoops as directed 30 min before WO	1/2-1scoop as directed 30 min before & immediately post WO*	9 tabs, 4 after WO, split remaining throughout day with meals	High
11	1-2.5 scoops as directed 30 min before WO	1/2-1scoop as directed 30 min before & immediately post WO*	10 tabs, 4 after WO, split remaining throughout day with meals	High
12	1-2.5 scoops as directed 30 min before WO	1/2-1scoop as directed 30 min before & immediately post WO*	10 tabs, 4 after WO, split remaining throughout day with meals	Competition Week
13		1/2-1scoop as directed 30 min before & immediately post WO*	6 tabs, 2 after WO, split remaining throughout day with meals	Low/med or active rest
14	0	0	0	Off
15	0	0	0	
16	0	0	0	Medium intensity and hold until next intense training cycle

## Economical Anabolic Diet & Supplement Program

Follow the same menu plan as above.

### Dietary Supplement program

Follow your pre- & post-workout feedings as described in the above menu plan and include the following recommendations:

- dotFIT™ CreatineXXL™
  - A supercharged creatine formula to improve upon the well-known size and performance enhancing effects of creatine-monohydrate. Designed to deliver increased strength-endurance, intensity ( $\beta$ -Alanine) and much greater cell volume effects (glycine and glutamine) than creatine alone, all leading to greater strength, size and performance gains
    - Take as shown below (dosage shown is for anyone under 200 LBS and can be adjusted upward for heavier athletes, or dotFIT CreatineMonohydrate added as desired)

**Table 10:** CreatineXXL™ Strategy

Week No.	Tablets per day	Time	Training Intensity
1	5	45 min before workout (WO)*	High
2	8	4 tabs 30 min before (WO)* (4 tabs immediately after)	High
3	10	5 tabs 30 min before (WO)* (5 tabs immediately after)	High
4	10	5 tabs 30 min before (WO)* (5 tabs immediately after )	High
5	10	5 tabs 45 min before (WO)* (5 tabs immediately after )	High
6	10	5 tabs 30 min before (WO)* (5 tabs immediately after )	High
7	10	5 tabs 30 min before (WO)* (5 tabs immediately after )	High
8	10	5 tabs 30 min before (WO)* (5 tabs immediately after )	High
9	10	5 tabs 30 min before (WO)* (5 tabs immediately after )	High
10	10	5 tabs 30 min before (WO)* (5 tabs immediately after )	High
11	8	4 tabs 30 min before (WO)* (4 tabs immediately after )	Peak of training program or week of competition
12	5	split throughout the day	Off
13	0	0	Low/Med
14	0	0	Med/High

- dotFIT™ Recover&Build™
  - Provides the branched-chain amino acids (BCAA), leucine, isoleucine and valine in an ideal ratio with the goal of reducing exercise-induced muscle damage while enhancing recovery, minimizing soreness leading to increasing muscle, especially during low calorie or intense training phases
    - Take as directed with your pre-workout snack

## **A Final Word**

We have presented a significant amount of information to digest. Read it, re-read it and put the information into practice. If you diligently follow the recommendations outlined in this article, you will be amazed at the pace at which your body increases muscle size and strength. If you have been at a plateau and thought adding muscle was no longer possible, then rejoice in the knowledge that you have an arsenal of weapons at your disposal that can allow you to naturally maximize your muscle building physiology. Remember how bodybuilders used to think adding ten pounds in a year was progress? Doing everything correctly, this should be possible in a matter of three months even for the most seasoned athletes, and certainly in less time for the younger population. Now get out there and train hard, and eat smart and continuously.



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### health dotFIT dietary supplements

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## Appendix 1: dotFIT™ Position on Vitamin & Mineral Supplementation

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## **Appendix 2: Three proven strategies for weight reduction, maintenance of weight loss and prevention of weight gain**

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### **Appendix 3: Xtreme Muscle Stack: Creating the Perfect Anabolic Storm**

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