

# QUICK REFERENCE GUIDE

3<sup>RD</sup> EDITION



GROW STRONG.™

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## Supplement Quick Reference Guide

This information is educational material for dotFIT certified fitness professionals. This literature is not to be used to imply that dotFIT products may diagnose, treat, cure or prevent any disease.

## Introduction to dotFIT Health Products

The goal of dietary supplements in this category is to help establish and preserve health and contribute to healthy aging by delivering important nutrient compounds<sup>1</sup> that may be unattainable from diet alone. This may be due to any of the following reasons (also see *dotFIT Worldwide's Position on Vitamin & Mineral Supplementation in Introduction of the [Practitioner Dietary Supplement Reference Guide](#)*):

- Insufficient food intake<sup>2,3,4,5</sup>
- Increased needs that are not met by diet alone<sup>5,6,7,8,9,10,11,12,13,14,15,16,17</sup>
- Special populations, age-related requirements or practicality of foods sources<sup>14,17,18,19,20,21,22,23</sup>
- Lack of interest in or avoidance of essential food groups<sup>24,25,26,27,28,29,30,31,32</sup>
- Low body fat maintenance<sup>2,33,34,35,36</sup>
- Variability of actual nutrient content of food<sup>37,38,39,40,41,42,43,44</sup>
- Inability to move enough to eat enough<sup>45,46</sup>
- Eating too few calories to obtain proper nutrition through food in an effort to maintain a healthy weight in today's world, where many people maintain a sedentary lifestyle<sup>45,46,47</sup>
- Low sun exposure<sup>17,48,49,50,51,52,53,54,55</sup>
- Inability to define the perfect diet.<sup>2,56,57,58,59,60</sup>

The bottom line is that the vast majority of—if not all—Americans do not meet established nutritional guidelines with food alone. Vitamin mineral supplementation is a viable way to fill the gaps.

### Why don't Americans get enough nutrients?

“Why don't we get enough? I wouldn't say that it's because foods now are nutrient deficient. It's because we are not eating what we are supposed to eat. There are these dietary guidelines and they are very nice, but no one is following them...To assume that everyone is on an ideal diet is naive and I think in fact irresponsible.”

The above statements were authored in an article by four nutrition experts: Balz Frei, PhD, chairman of the Linus Pauling Institute at Oregon State University; Bruce Ames, PhD, of the Children's Hospital Oakland Research Institute; Jeffrey Blumberg, PhD, of Tufts University; and Walter Willett, MD, of the Harvard School of Public Health.<sup>61</sup>

## ActiveMV™

### Purpose & Rationale

The ActiveMV is a multivitamin and mineral formula designed for exercising individuals and provides essential nutrients without additional calories. It helps fill common nutritional gaps from suboptimal diets. This allows the body to function at its full vitamin and mineral level potential as opposed to down regulating to the often-unavoidable limitations from food alone. This is important among physically active persons seeking to reach and maintain relatively low body fat while increasing or sustaining lean body mass. Studies demonstrate that athletes/exercisers require additional vitamins and minerals due to increased energy demands and proper recovery from exercise, including maintaining or increasing lean body mass compared to less active or sedentary counterparts.

### Typical Use

For all persons with an active lifestyle, 12-65 years of age, except those who are pregnant, trying to conceive, or lactating.

- Those 12-17 years old take 1 tablet per day immediately following first food meal of the day.
- Males 18-50 years take 2 daily: 1 immediately following first food meal of the day and 1 after last meal.
- Male and female athletes and exercisers 18-65 years of age who consistently train intensely take 2 tablets per day, 1 with the morning meal and 1 with the evening meal.

### Unique Features

- Incorporates a controlled-release delivery system to ensure daily ideal nutrient levels and prevent tissue oversaturation and losses.
- NSF Certified for Sport, verifying purity, potency and absence of contaminants.
- Synergistic with all dotFIT products when following program recommendations.
- Nutrients are in their proper bioavailable and functionally available forms, ratios and strengths to help maintain a safe and optimal range 24 hours per day.
- Contains choline bitartrate, which is rarely found in multivitamin formulas and is now considered an essential nutrient for proper muscle, liver and brain functions.

### Contraindications

dotFIT multivitamin and mineral formulas are contraindicated in pregnancy and lactation. Pregnant women should use a prenatal formula. Lactating women should use the Women's MV formula unless advised otherwise by a physician. This formula is 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 and K content in two tablets per day may be contraindicated for those individuals taking blood-thinning medication. In all cases, consult with a physician.

### Supplement Facts

Serving Size: 1 Tablet  
Servings Per Container: 60

	Amount Per Serving	% Daily Value
Vitamin A (as beta carotene and as retinol acetate)	1200 mcg (4000 IU)	133%
Vitamin C (from ascorbic acid and calcium ascorbate)	400 mg	444%
Vitamin D3 (as cholecalciferol)	15 mcg (600 IU)	75%
Vitamin E (as d-alpha tocopheryl succinate)	101 mg (150 IU)	673%
Vitamin K (as Vitamin K1 [phytonadione] and Vitamin K2 [menaquinone-7])	50 mcg	42%
Thiamin (as thiamine mononitrate)	5 mg	417%
Riboflavin (as riboflavin-5-phosphate sodium)	2.5 mg	192%
Niacin (as niacinamide)	15 mg	94%
Vitamin B6 (as pyridoxal-5-phosphate monohydrate)	3 mg	176%
Folate	170 mcg DFE (100 mcg folic acid)	43%
Vitamin B12 (as cyanocobalamin and methylcobalamin)	15 mcg	625%
Biotin	150 mcg	500%
Choline (from choline bitartrate)	100 mg	18%
Iron (from ferrous fumarate)	5 mg	28%
Iodine (from kelp)	25 mcg	17%
Magnesium (from magnesium oxide and magnesium citrate)	100 mg	24%
Zinc (from zinc citrate)	7.5 mg	68%
Selenium (from L-selenomethionine)	35 mcg	64%
Copper (from copper gluconate)	0.5 mg	56%
Chromium (from chromium picolinate)	50 mcg	143%

## Women'sMV™

### Purpose & Rationale

The Women'sMV is a multivitamin and mineral formula designed to address specific needs of non-pregnant females up to age 50.<sup>62,63</sup> Most vitamin and mineral needs remain the same for males and females in this age group. Special needs may develop in response to life stage, diet type, activity level and body size. In reference to the latter, the Dietary Reference Intakes (DRIs) for certain nutrients among women are slightly less than men.<sup>63</sup> Special needs generally include slightly higher levels of iron and other common dietary nutrient shortfalls more specific to women, such as calcium, folate, magnesium, fiber, and vitamins A, C, E and K.<sup>64,65</sup> This formula is designed to deliver these nutrients in proper bioavailable forms, which ideally complement the dotFIT SuperCalcium formula for those not meeting calcium recommendations for bone health, including the majority of females and approximately 50% of males.<sup>66</sup>

### Typical Use

- For use by women 13-50 years of age not using the ActiveMV Formula
- Non-pregnant women and lactating females unless physician recommends otherwise
- 1 tablet per day before or after main meal with fluid

### Unique Features

- Contains 10mg of iron to help correct common marginal intakes.
- Includes optimal doses and forms of folic acid (levels associated with a protective effect on cognition in women<sup>67</sup>), vitamins B6 and B12.<sup>68,69,70,71,72</sup>
- Contains proper amounts of health and bone-building nutrients vitamin D,<sup>73,74</sup> and the two essential forms of vitamin K.<sup>75,76</sup> While K1 and K2 have similar and unique properties, K2 (menaquinone) has only recently emerged as serving an important role in vascular and bone health.
- Magnesium in this formula complements the typical American female's diet to help achieve desired magnesium levels. Additionally, this formula works synergistically with the dotFIT SuperCalcium, which also contains magnesium,

thus keeping total intake in the safe optimal nutrient range.

- Contains choline bitartrate, which rarely found in multivitamin formulas.<sup>77</sup> Choline is now considered an essential nutrient for proper muscle, liver and brain functions, lipid metabolism and cellular membrane composition and repair, and typical intakes are inadequate in the U.S.
- Synergistic with all dotFIT products when following program supplement recommendations.
- Use of controlled-release delivery systems ensures daily ideal nutrient levels and prevent tissue oversaturation and losses.
- Third-party tested.

### Contraindications

dotFIT multivitamin and mineral formulas are contraindicated in pregnancy. Pregnant women should use a prenatal formula as directed by their physician. This formula is 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 and K content in two tablets per day may be contraindicated for those individuals taking blood-thinning medication. In all cases, consult with a physician.

Supplement Facts		
Serving Size: 1 Tablet Servings Per Container: 60		
	Amount Per Serving	% Daily Value
Vitamin A (As beta carotene and as retinol acetate)	1800 mcg (6000 IU)	200%
Vitamin C (from ascorbic acid and calcium ascorbate)	250 mg	278%
Vitamin D3 (as cholecalciferol)	25 mcg (1000 IU)	125%
Vitamin E (as d-alpha tocopheryl succinate)	67 mg (100 IU)	447%
Vitamin K (as Vitamin K1 [phytonadione] and Vitamin K2 [menaquinone-7])	50 mcg	42%
Thiamin (as thiamine mononitrate)	6 mg	500%
Riboflavin (as riboflavin-5-phosphate sodium)	1.7 mg	131%
Niacin (as niacinamide)	20 mg	125%
Vitamin B6 (as pyridoxal-5-phosphate monohydrate)	2 mg	118%
Folate	680 mcg DFE (400 mcg folic acid)	170%
Vitamin B12 (as methylcobalamin)	10 mcg	417%
Biotin	100 mcg	333%
Pantothenic Acid (as d-calcium pantothenate)	15 mg	300%
Choline (from choline bitartrate)	150 mg	27%
Iron (from ferrous fumarate)	10 mg	56%
Iodine (from kelp)	100 mcg	67%
Magnesium (from magnesium oxide and magnesium citrate)	100 mg	24%
Zinc (from zinc citrate)	12 mg	109%
Selenium (from L-selenomethionine)	50 mcg	91%
Chromium (from chromium picolinate)	50 mcg	143%
Boron (from boron citrate)	1 mg	*

\* Daily Value not established.

## Over50MV™

### Purpose & Rationale

The Over50MV is a multivitamin and mineral formula designed specifically for the general population 50 years and older seeking to support longevity by ingesting a superiorly formulated (Practitioner Product) multivitamin and mineral (MVM) dietary supplement when compared to the typical under-formulated mass-market MVM products. It is used to fill the inadvertent nutritional gaps left from food alone. This allows the body to function at its full vitamin and mineral potential as opposed to down-regulating to often unavoidable dietary limitations and changes, which occur naturally during the aging process. This formula does not contain iron, and includes levels of vitamin B6, vitamin D and calcium that satisfy the higher recommended daily amounts for adults 50 years and older. As aging continues, including the inevitable decline in digestive abilities, other nutrient needs may also increase. This formula considers the requirements<sup>78,79,80</sup> of older individuals by providing nutrients related to age-related obstacles in order to support healthy aging

81,82,83,84,85,86

### Typical Use

- For the general population over 50 years of age
- Individuals using ActiveMV formula would switch to the Over50MV formula at age 65
- Two tablets per day after main meal with fluid

### Unique Features

- Contains optimal doses of folate, B6 and B12<sup>87,88,89,90</sup> along with proper amounts of health and bone-building nutrients such as vitamin D<sup>91,92</sup> and both essential forms of vitamin K.<sup>93,94</sup>
- Contains vitamin B12 is in two forms: methylcobalamin and cyanocobalamin.
- Magnesium citrate in this formula complements the typical American diet to help achieve desired magnesium levels and, when needed, work synergistically with dotFIT SuperCalcium, which also contains magnesium, thus keeping total intake in the safe optimal nutrient range. The magnesium in this formula is in the citrate form

for greater bioavailability when compared to other forms.<sup>95</sup>

- Contains choline, rarely found in multivitamin products, has been identified as a widely under consumed nutrient of concern. It is essential for proper muscle, liver and brain functions, lipid metabolism and cellular membrane composition and repair.
- Synergistic with all dotFIT products when following program supplement recommendations.
- Use of controlled-release delivery systems to ensure daily ideal nutrient levels and prevent tissue over-saturation and losses.

### Contraindications

dotFIT multivitamin and mineral formulas are contraindicated in pregnancy and lactation. Pregnant women should use a prenatal formula. This formula is contraindicated for anyone suffering adverse reactions to any of the supplement's ingredients. Individuals taking blood-thinning medication should consult with a physician due to the Vitamin K content.

## Supplement Facts

Serving Size: 2 Tablets		
Servings Per Container: 60	Amount Per Serving	% DV
Vitamin A (765 mcg as beta carotene and 500 mcg as acetate)	1265 mcg (4000 IU)	141%
Vitamin C (as calcium ascorbate)	250 mg	278%
Vitamin D3 (as cholecalciferol)	25 mcg (1000 IU)	125%
Vitamin E (as d-alpha tocopheryl succinate)	33.5 mg (50 IU)	223%
Vitamin K (as Vitamin K1 [phytonadione] and Vitamin K2 [menaquinone-7])	50 mcg	42%
Vitamin B1 Thiamin (as thiamine mononitrate)	6 mg	500%
Vitamin B2 Riboflavin	6 mg	462%
Vitamin B3 Niacin (as niacinamide)	20 mg	125%
Vitamin B6 (as pyridoxine hydrochloride)	10 mg	588%
Folate	400 mcg DFE (235 mcg folic acid)	100%
Vitamin B12 (as cyanocobalamin and methylcobalamin)	50 mcg	2083%
Biotin	100 mcg	333%
Vitamin B5 Pantothenic Acid (as d-calcium pantothenate)	10 mg	200%
Choline (from choline bitartrate)	150 mg	27%
Iodine (from kelp powder)	75 mcg	50%
Magnesium (from magnesium citrate)	150 mg	36%
Zinc (from zinc citrate)	15 mg	136%
Selenium (from L-selenomethionine)	70 mcg	127%
Copper (from copper gluconate)	1 mg	111%
Chromium (from chromium polynicotinate)	100 mcg	286%



# VeganMV™

## Purpose & Rationale

The VeganMV is a multivitamin and mineral (MVM) formula which supplies non-animal forms of vitamins and minerals in amounts complementary to nutritional gaps commonly found in typically consumed vegan diets when compared to current recommended dietary allowances (RDAs) or optimal levels of nutrients and other important bio-actives. This formula fills the inadvertent nutritional gaps left from food alone and/or increased by activity, helping the body function at full vitamin a mineral potential as opposed to down-regulating to often unavoidable dietary limitations or choices. The added supply of nutrients without the calories also helps control healthy desired body composition while simultaneously contributing to optimal nutrient levels. This formula is designed to work synergistically with the typical vegan or vegetarian individual's food intake to help the body avoid a potential triage effect (sacrificing long term health for short term survival).<sup>\*</sup> The formula is ideal for the vegan seeking to support healthy longevity by ingesting a superiorly formulated MVM dietary supplement when compared to the typical under-formulated mass-market MVM products. Potential micronutrient shortages in a vegan diet may be of particular concern for athletes and regular exercisers.<sup>96</sup> Without regular consumption of animal-derived food sources, including fortified sources, vegan micronutrient shortages of concern are generally vitamin D and B12, zinc, calcium, iodine and iron.<sup>95,97,98,99,100,101,102</sup>

## Typical Use

- Vegans and/or vegetarians to support common dietary insufficiencies based on food choices alone
- 1 tablet per day immediately after first main meal

## Unique Features

- Contains optimal sources of vitamin B12, iron, vitamin D2 (ergocalciferol), iodine and zinc to meet the needs of vegans and those consuming a plant-based diet.

<sup>\*</sup> Human bodies have been programmed to favor short-term survival including reproduction over long-term health when there are shortages of essential nutrients. In other words when there are less than optimal vitamins or minerals entering our bodies, they will be routed to the areas that are needed to keep us alive such as energy production, blood formation, etc., at the expense of other areas of metabolism whose lack of optimal nutrition has only long-term consequences such as the maladies associated with aging.<sup>103</sup>

- Use of controlled-release delivery systems to ensure daily ideal nutrient levels and prevent tissue over-saturation and losses.
- Synergistic with all dotFIT products when following program supplement recommendations.
- Third-party tested.

## Contraindications

dotFIT multivitamin and mineral formulas are contraindicated in pregnancy and lactation. Pregnant women should use a prenatal formula. Lactating women should use the Women's MV formula unless advised otherwise by a physician. This formula is 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. In all cases, consult with a physician.

## SUPPLEMENT FACTS

Serving Size: 1 Tablet  
Servings Per Container: 60

	Amount Per Serving	% Daily Value
Vitamin A (as Beta Carotene)	6000 mcg (10000 IU)	667%
Vitamin C (from Magnesium Ascorbate)	200 mg	222%
Vitamin D-2 (as Ergocalciferol)	50 mcg (2000 IU)	250%
Vitamin E (as d-alpha tocopheryl succinate)	82.64 mg (100 IU)	551%
Vitamin K-1 (as Phytonadione)	25 mcg	21%
Vitamin K-2 (as Menaquinone-7)	25 mcg	21%
Vitamin B-1 (as Thiamine Mononitrate)	6 mg	500%
Vitamin B-2 (as Riboflavin)	6 mg	462%
Vitamin B-3 (as Niacinamide)	20 mg	125%
Vitamin B-6 (as Pyridoxine HCl)	6 mg	353%
Folate	333mcg DFE (200 mcg folic acid)	83%
Vitamin B-12 (as Cyanocobalamin)	15 mcg	625%
Biotin	50 mcg	167%
Pantothenic Acid (as d-calcium pantothenate)	10 mg	200%
Iron (from Ferrous Fumarate)	15 mg	83%
Iodine (from Potassium Iodide)	50 mcg	33%
Magnesium (from Magnesium Ascorbate)	50 mg	12%
Zinc (from Zinc Picolinate)	15 mg	136%
Selenium (from Sodium Selenite)	50 mcg	91%
Copper (from Copper Bisglycinate Chelate)	1 mg	111%
Chromium (from Chromium Picolinate)	100 mcg	286%

## KidsMV™

### Purpose & Rationale

KidsMV is a multivitamin and mineral formula designed specifically to provide the nutrients a growing child needs and often does not get in sufficient amounts due to various factors, such as poor food choices, lack of interest in certain foods or food groups, and finicky eating behaviors. The dotFIT KidsMV is a superiorly formulated (Practitioner Product) multivitamin and mineral formula (MVM) when compared to the typical under-formulated mass-market MVM products.<sup>104</sup>

### Typical Use

- All children ages 2-11 unless a specific medical condition prohibits the intake of any nutrient contained in the formula
- Ages 2-4 take 1 tablet daily
- Ages 5-11 take 2 tablets daily
- Ages 12-17 use 1 adult ActiveMV tablet per day instead of the KidsMV

### 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 compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT.
- Third-party tested.

### Contraindications

The dotFIT KidsMV is 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. The KidsMV is also contraindicated for anyone suffering adverse reactions to any of its ingredients. In all cases, consult with a physician.

## Supplement Facts

Serving Size: 1 Tablet

Servings Per Container: 60

	Amount Per Serving	%Daily Value Children <4	%Daily Value Children & Adults >4
Vitamin A (as Beta-Carotene 2,000 IU and Retinyl Palmitate 500 IU)	2,500 IU	100%	50%
Vitamin C (as Ascorbic Acid)	50 mg	125%	83%
Vitamin D (as cholecalciferol)	250 IU	63%	63%
Vitamin E (as D-Alpha-Tocopheryl Succinate)	20 IU	200%	67%
Vitamin K (as Phytonadione)	30 mcg	*	38%
Thiamin (as Thiamin Mononitrate)	1 mg	143%	67%
Riboflavin	1 mg	125%	59%
Niacin (as Niacinamide)	6 mg	67%	30%
Vitamin B6 (as Pyridoxine HCl)	1 mg	143%	50%
Folate (as Folic Acid)	100 mcg	50%	25%
Vitamin B12 (as Cyanocobalamin)	3 mcg	100%	50%
Biotin	10 mcg	7%	3%
Pantothenic acid (as D-Calcium Pantothenate)	2 mg	40%	20%
Iron (as Ferrous Fumarate)	5 mg	50%	28%
Iodine (as Potassium Iodide)	50 mcg	71%	33%
Magnesium (as Magnesium Oxide)	20 mg	10%	5%
Zinc (as Zinc Oxide)	5 mg	63%	33%
Selenium (as Selenomethionine)	20 mcg	*	29%
Choline Bitartrate	100 mg	*	*

% Daily Value based on a 2,000 calorie diet.

\* Daily Value not established.

## VitaminD3

### Purpose & Rationale

This formula supplies a source of vitamin D3 (ergocalciferol) that can help the body achieve total vitamin D [serum 25-hydroxyvitamin D concentration) to a bodily level of >30 ng/mL (75-100 nmol/L)], which has recently been associated with greater health outcomes in many areas. Additionally, higher levels (>40 ng/mL) are associated with improvements in athletic performance.

The desired level of >30 ng/mL (75-100 nmol/L) is generally unachievable without supplementation based on the typical American diet, lack of natural sources and negative health implications from regular exposure to UVB radiation from sun exposure. According to the Center for Disease Control, 70% of Americans have insufficient levels of vitamin D. Older individuals, those with darker skin pigmentation, and people who have higher body-fat levels are at risk for insufficient levels. As we age, the body becomes less efficient at making vitamin D. Melanin, a pigment in the skin acts as a natural sunscreen, blocking UVB radiation and thus vitamin D production. Because vitamin D is fat soluble, it is stored in body fat and is less available to other tissues throughout the body among those with higher body-fat levels.

### Typical Use

- Use as a supplement to all other vitamin D sources including a multivitamin and mineral (MVM) formula to achieve the desired level.
- Take with meals as needed to achieve desired level.

### Unique or Features

- Progressive target usage recommendation noted on product label.
- NSF Certified for Sport—third party tested for purity, potency and absence of contaminants.

- When this formula is combined with other dotFIT products, a safe and optimal range of supplemental vitamin D3 (2,000 – 2,600 IUs/day) is maintained.
- The tolerable upper intake level is 4,000 IUs/day.

### Contraindications

People using medications that are metabolized in the gastrointestinal tract by cytochrome P450 3A4 (CYP 3A4) enzymes should use vitamin D supplements under physician supervision because vitamin D is thought to induce this enzyme and may result in a reduced bioavailability of these types drugs and other CYP3A4 substrates.<sup>105</sup> Drugs include: Atorvastatin (Lipitor), lovastatin (Mevacor), clarithromycin (Biaxin), cyclosporine (Neoral, Sandimmune), diltiazem (Cardizem), estrogens, indinavir (Crixivan), triazolam (Halcion), and others.<sup>105</sup> If using Orlistat (Xenical, Alli), which decreases absorption of fat-soluble vitamins including vitamin D, patients are recommended to supplement with a MVM that contains all fat-soluble vitamins.<sup>106</sup> The MVM with vitamin D should be taken at least two (2) hours from any Orlistat dose.<sup>106</sup> Overuse of sunscreens can lead to vitamin D deficiency and therefore supplementation and monitoring as noted in dosing section, of serum 25(OH)D concentrations, is warranted.<sup>107,108,109</sup> In all cases, consult with a physician.

Supplement Facts		
Serving Size: 1 Softgel Capsule		
	Amount Per Serving	% DV
Vitamin D-3 (as cholecalciferol)	25 mcg (1,000 IU)	125%*
* % Daily Values are based on a 2,000 calorie diet.		



## SuperOmega-3™

### Purpose & Rationale

This is a marine source of the omega-3 fats, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which are commonly low in Western diets in the amounts necessary to complement individual food intake to reach tissue levels consistent with those found in persons shown to better health and healthier aging properties than people with lower levels. Achieving these levels throughout the lifespan may help accomplish the goal of a longer “playspan,” or additional years of physical activity, performance, productivity and overall health, especially when combined with a daily multivitamin and mineral (MVM) formula, as opposed to typical age-related declines in health observed in the U.S. and other developed countries. Humans cannot synthesize omega-3 fatty acids (nor omega-6), making them essential nutrients that must be supplied by diet. Use of the SuperOmega-3 Fish Oils supplement compensates for the common shortage of marine omega-3 fish oils in a mercury-free, easy-to-ingest form for those who do not or cannot consume diets (e.g. specific oily fishes and certain plant foods) containing these essential health components.

### Typical Use

- Anyone not consuming 2 servings or 8 oz. of fatty fish weekly; does not have allergies to fish; and is seeking to support cardiovascular, brain and eye health, unless medical reasons prevail as diagnosed by a qualified health professional.
- Take 1 soft gel with any meal. Increase only if supervised by a licensed health professional.

### Unique Features

- Sourced from wild-caught Alaska pollock from the pure waters of Alaska’s Bering Sea. Delivers the desired fish oils in the recommended amounts of >500 mg/d with a 3:2 ratio of EPA to DHA.
- MSC-certified—AlaskOmega® omega-3 concentrates are certified sustainable and

traceable by the Marine Stewardship Council (MSC), the first omega-3 concentrate to achieve this distinction.

- NSF Certified for Sport—third party tested for purity, potency and absence contaminants.
- Superior manufacturing process produces the market leading “fresher oil,” which translates into better product stability, longer shelf life and no “fish burps.”<sup>110</sup>
- Mercury-free and contains no PCBs.
- Organic Technologies, producer of AlaskOmega® omega-3 fish oil concentrates and natural oils, has among the industry’s lowest product specification limits for oil oxidation and environmental contaminants.<sup>111</sup>

### 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.<sup>112</sup> This product should not be used if the individual is on anticoagulants or has uncontrolled hypertension unless approved by personal physician.<sup>113,114</sup> More than 3g per day may raise blood sugar and LDL cholesterol in people with diabetes using continuous large dosages.<sup>112,115</sup> In all cases, consult with a physician.

## Supplement Facts

Serving Size: 1 Softgel  
Servings Per Container: 60

Amount Per Serving	% Daily Value*
Calories	10
Calories from Fat	10
Total Fat	1 g 2%*
Fish Oil - AlaskOmega®	1000mg **
EPA (Eicosapentaenoic acid) (360 mg)	
DHA (Docosahexaenoic acid) (240 mg)	

\* Percent Daily Values are based on a 2,000 calorie diet.

\*\* Daily Value not established.

## SuperCalcium+™

### Purpose & Rationale

This product supplies bone building nutrients commonly low in Western diets in the amounts necessary to complement food intake to help build and maintain bone health throughout one's lifespan. Osteoporosis results from an imbalance between bone deposition and resorption (breakdown). The consequent decline of bone mass increases the risk of fractures. Osteoporosis affects millions of people worldwide, predominantly postmenopausal women. In the United States, low bone mass is a threat for more than 40 million people.<sup>116</sup> The significant departure in adulthood from the use of dairy products (especially milk) and the warnings on sun exposure have significantly reduced the ability of the U.S. population to acquire adequate levels of calcium and vitamin D through diet alone.

### Typical Use

- For any adult not meeting the recommended intakes for calcium (1,000-1,300 mg/d) and required bone health co-factors (vitamin D, K, magnesium and boron) through diet, which is most of the U.S. population.<sup>117</sup>
- Females: Take 1-2 tablets daily with meals. If needed, take 1 tablet with a morning meal and the second with an evening meal.
- Males: Take 1 tablet daily only if dietary calcium falls short of recommendations, unless supervised by a qualified health professional.<sup>118,119</sup>

### Unique Features

- Contains calcium, magnesium, vitamins D and K, which have all been shown to be crucial for bone health, including calcium utilization.
- Calcium and magnesium are prepared in their proper salt forms designed to optimize delivery and utilization.
- Vitamins K1 and K2 are included to maximize bone deposition of calcium.
- Boron is added to help maximize the role of vitamin D in bone health.
- This formula complements the use of other dotFIT products in order to allow the user to

maintain a safe and optimal range of total nutrient intake.

- NSF Certified for Sport—third party tested for purity, potency and absence of contaminants.
- Manufactured in a facility that is in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT.
- Third-party tested.

### 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 although studies have found no connection with supplementation.<sup>120,121,122</sup> Consult with a physician when a history of kidney stones exists, or when taking these drugs: bisphosphonates,<sup>123</sup> hydrogen blockers, levothyroxine,<sup>123</sup> proton pump inhibitors, quinolones<sup>124</sup> and tetracyclines.<sup>125</sup> Excessive vitamin K does not increase the risk of blood clots, but those taking Warfarin (Coumadin®) for anti-coagulation should avoid supplemental vitamin K because Warfarin is a vitamin K antagonist.<sup>126,127</sup> In all cases, consult with a physician.

## Supplement Facts

Serving Size: 1-2 Tablets  
Servings Per Container: 60 to 120

	Amount 1 tablet	% DV	Amount 2 tablets	% DV
Vitamin D (as Cholecalciferol)	200 IU	50%	400 IU	100%
Vitamin K (as phytonadione K1 and menaquinone K2)	30 mcg	38%	60 mcg	75%
Calcium (as carbonate)	500 mg	50%	1,000 mg	100%
Magnesium (as oxide and citrate)	125 mg	32%	250 mg	63%
Boron (as Sodium Borate)	1 mg	**	2 mg	**

\*\* % Daily Value not established.

## UltraProbiotic™

### Purpose & Rationale

This product supplies eight strains of the two most studied and used live microorganisms in adequate amounts to improve the natural balance of beneficial gut bacteria often disturbed by lifestyle and environmental factors. Proper use may help establish (re-colonize) and maintain the user's intestinal microbial system to support the health and function of the gastrointestinal (GI) tract and subsequently other important systems of human health. Diet, natural aging and lifestyle, including intense exercise and other stresses, can upset proper bacteria harmony to a point where GI tract problems develop, triggering other negative health outcomes.<sup>128,129</sup> Probiotics are live microorganisms, which, when proper strains are administered in adequate amounts, may offer health benefits to the user by restoring the balance in favor of the good bacteria.<sup>128,129,130,131,132,133</sup>

### Typical Use

- All adults (unless contraindicated by an existing health condition or discouraged by a qualified medical professional) trying to establish a healthy and balanced gut microflora to achieve the associated benefits of a healthy functioning GI tract (e.g. nutrient digestion, absorption, signaling and pathogen inhibition).
- Athletes participating in prolonged high-intensity or endurance activities seeking immune support.
- Those seeking to restore the natural balance of beneficial gut bacteria that may be compromised by diet, aging, weight and lifestyle, including stress.
- Take 1 capsule daily with a meal or as directed by a health professional.

### Unique Features

- The select strains have been cultivated under harsh conditions, developing the ability to adapt to extreme changes in environment (e.g. pH and temperature).
- No refrigeration required. Contains the most stable cultures on the market using a patented

polymatrix preservation system (Patent #6,653,062) to maximize stability and cell count without refrigeration.

- Each capsule starts with ~80 billion CFUs/capsule, thus assuring the desired live potency (minimum of 35 billion CFUs) reaches the intestinal targets at any time through the product's shelf life.
- The prebiotic blend consists of FOS (food source for probiotics) and FiberAid® arabinogalactans that help support the growth of probiotics.
- Third-party tested.
- Vegan friendly.

### Contraindications

This product should be avoided by people with a predisposition to pathogenic infections, such as in severe immunodeficiency and short bowel syndrome, unless under a qualified physician's care.<sup>134</sup> Although probiotics are commonly used during pregnancy or lactation, they should only be used as recommended by the attending physician.<sup>135,136,137</sup> In all cases, consult with a physician.

## Supplement Facts

Serving Size: 1 Vegetarian Capsule

	Amount Per Serving	% DV
Proprietary probiotic blend (35 billion cells per cap)	186 mg	*
<i>Lactobacilli acidophilus</i>	La-14	
<i>Bifidobacterium lactis</i>	Bl-04	
<i>Lactobacilli salivarius</i>	Ls-33	
<i>Lactobacilli plantarum</i>	Lp-115	
<i>Bifidobacterium bifidum</i>	Bb-02	
<i>Bifidobacterium longum</i>	Bl-05	
<i>Lactobacilli rhamnosus</i>	Lr-32	
<i>Lactobacilli bulgaricus</i>	Lb-64	
Prebiotic blend (FOS, FiberAid® arabinogalactans)	50 mg	*
* Daily Value not established.		

# SuperiorAntioxidant™

## Purpose & Rationale

This product supplies important natural compounds, often limited in human diets, that are not only necessary constituents of vital tissues, but also have been shown to possess antioxidant and anti-inflammatory properties in specific areas that support everyday health and healthy aging. Intense, prolonged exercise, normal biological processes, including aging, can increase free-radical production and inflammation and associated body damage. The goals of these combined ingredients are to: 1) supply structural components limited by diet or age; 2) contain *excess* free radicals caused by normal biological processes, stress, aging, exercise and the environment, which is thought to be a major contributor to the aging process; and 3) help reduce harmful inflammation

## Typical Use

- For adults interested in supporting daily recovery from life and exercise and supporting healthy aging (including supporting eye and brain health) by decreasing free-radical damage and common inflammation, while maintaining levels of energy producing catalytic compounds that otherwise decrease with age.
- Intense exercisers to reduce the increased free-radical production and damage associated with intense and prolonged training bouts.
- Take 1 tablet per day after main meal with fluid.
- Can be combined with a dotFIT multivitamin for maximum potential and associated benefits.

## Unique Features

- Contains only the most effective researched antioxidants in their proper forms and amounts. Most competitive formulas are significantly under-formulated.

- Accurately complements the dotFIT multivitamin formulas.
- NSF Certified for Sport, verifying purity, potency and absence of contaminants.
- Vegetarian friendly.
- Uses the OptiBerry® blend, which is clinically proven to have superior antioxidant activity based on the ORAC (oxygen radical absorption capacity) scale.
- This formula considers use of other dotFIT products to help maintain a safe and optimal range of total nutrient intake.

## Contraindications

This product is contraindicated in pregnancy and lactation due to a lack of clinical trials performed with this population (other than lutein and zeaxanthin) and for anyone suffering adverse reactions to any of the ingredients. In all cases, consult with a physician.

## Supplement Facts

Serving Size: 1 Vegetarian Capsule  
Servings per Container: 30

	Amount Per Serving	% DV
Alpha Lipoic Acid	200 mg	*
Co-Enzyme Q10 (CoQ-10)	100 mg	*
OptiBerry® Blend	30 mg	*
Wild blueberry ( <i>vaccinium angustifolium</i> ) fruit powder, Strawberry ( <i>fragaria chiloensis</i> ) fruit powder, Cranberry ( <i>vaccinium macrocarpon</i> ) fruit powder, Wild bilberry ( <i>vaccinium myrtillus</i> ) fruit extract, Elderberry ( <i>sambucus nigra</i> ) fruit extract, Raspberry ( <i>rubus idaeus</i> ) seed powder		
Lycopene 10%	10 mg	*
Lutein 5%	6 mg	*
Zeaxanthin	5 mg	*
D. Salina natural mixed carotenoids	1.5 mg	*

\* % Daily Value not established.

# DigestiveEnzymes

## Purpose & Rationale

This product supplies a digestive enzyme complex with five forms of naturally occurring digestive enzymes,  $\alpha$ -amylase, lactase, lipase, cellulase and a neutral protease to support healthy digestion which is often compromised by western lifestyles including diet, stress, aging, chemicals, etc. Digestive enzymes are necessary for the proper breakdown of carbohydrates, proteins, milk-based products, oils, fats, fibers, and other food components to yield the nutritional constituents that are indispensable in human structural development, function and maintenance throughout life. By consuming these five supplemental enzymes, which are obtained from gastric-resistant microbial sources, the objective is to add to the body's natural production to assist in proper digestion of foods to improve non-clinical digestive irregularities such as bloating, gas, cramps, and constipation while enhancing extraction/absorption of the nutrients (amino acids, vitamins, minerals, glucose, etc.) contained in foods. Additionally, some evidence supports the use of digestive enzyme supplementation (primarily proteases) for attenuating inflammation and enhancing exercise-induced muscle recovery.

## Typical Use

- Take three (3) capsules total daily. Take one (1) capsule with each of three main meals or as directed by a health professional.
- Not recommended if contraindicated by an existing health condition or discouraged through qualified medical advice.
- If using solely for GI discomfort, and if after 30-days of proper use there is no change, there may be no reason to continue use for this goal.
- For exercisers to potentially reduce exercise-induced DOMS and improve nutrient uptake to enhance recovery.

## Unique Features

DigestiveEnzymes 5-enzyme complex (DigeZyme) is from Sabinsa Corporation, a manufacturer with more

than 120 scientists conducting ongoing research both in India and the United States.

- Contains microbe-derived enzymes, which have distinct advantages over animal-based enzymes
  - Survives the different pH levels in the GI tract for more activity throughout passage
  - Lower dosages with more potency
  - Heat stable - can operate in high temperatures
  - Economical and sustainable source
  - Vegan friendly and gluten free
- Specifications adhere to the most stringent international standards and regulatory norms – Food Chemicals Codex, an acceptable standard for the US FDA
- Contains lactase to help breakdown lactose from dairy and other foods and cellulase to specifically assist in helping manage the digestion of fibers
- Manufactured in a regularly inspected NSF certified facility, in compliance with Good Manufacturing Practices (GMPs)

## Contraindications

Should be avoided during pregnancy or lactation because of lack of data or should only be used as recommended by the attending physician. According to the Natural Medicine Data Base, proteases may be contraindicated when taking anticoagulant/antiplatelet drugs and Amoxicillin (Amoxil, Trimox).<sup>138</sup>

Supplement Facts		
Serving Size: 1 Capsule		
	Amount Per Serving	% DV
Digestive Enzyme Complex (Digezyme®)	50 mg	*
Alpha Amylase (1200 DU), Protease (300 PC), Cellulase (55 CU), Lactase (200 ALU), Lipase (10 FIP)		
* Daily Value not established.		



## JointFlexPlus™

### Purpose & Rationale

This product supplies natural components, which are not available through typical diets but are shown to help maintain joint and skin health, in proper amounts. Joint pain is often a condition of degeneration of the protective covering at bone articular surfaces (cartilage). Age and injury are associated with an increased risk of development with other associated lifestyle factors, such as obesity.<sup>139</sup> The ingredients in this formula are designed to improve the ratio of the normal biological processes of cartilage degradation and synthesis to favor synthesis when compared to a non-supplemented state, and to provide lubrication to help enhance or maintain healthy joint tissue and function. The ingredients also help maintain the integrity of the extracellular matrix in the dermis below the skin, which is crucial for youthful skin appearance. Regular use over 12 weeks has been shown to reduce visible aging signs such as wrinkles and fine lines as well as the dehydration and scaling of the skin.

### Typical Use

- Individuals concerned with joint and cartilage health
- For overuse or age-related joint discomfort
- Take 1 capsule in the morning and 1 capsule at night before a meal with least 8 oz. of fluid.
- For optimal results, take 2 capsules in the morning and 2 capsules at night before a meal or as directed by a health care professional.

### Unique Features

- Contains the patented formula BioCell Collagen II.
- Dosages and compounds are in the amounts demonstrated by research to improve mobility, joint comfort and knee-joint strength.
- Formula considers use of other dotFIT products to help the user maintain a safe and optimal range of total nutrient intake.
- Manufactured in compliance with Good Manufacturing Practices (GMPs).
- Third-party tested.

### Contraindications

The use of this formula is not recommended during pregnancy or lactation due to the absence of use data for these populations. No known contraindications exist at this time. In all cases, consult with a physician.

<b>Supplement Facts</b>	
Serving Size: 2 Capsules	
Servings Per Container: 30	
	<b>Amount Per Serving</b>
	<b>% DV</b>
BioCell Collagen® (Proprietary chicken sternal cartilage extract)	1,000 mg *
Hydrolyzed Collagen Type II	600 mg *
Chondroitin Sulfate	200 mg *
Hyaluronic Acid (HA)	100 mg *
*% Daily Value (DV) not established.	

# AdvancedBrainHealth™

## Purpose & Rationale

This product supplies nutrition that is often limited by typical diets and factors associated with the natural aging process, and shown to support healthy brain structure and function during the aging process. Several substances show potential to support brain function and to slow age-related decline in mental function. These substances include phosphatidylserine (PS), acetyl-L-carnitine (ALC), alpha-lipoic acid (ALA) and vitamin B-12, which 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, which are essential for normal brain and neurological function.<sup>140,141,142,143</sup> Clinical findings support the benefit of nutritional supplements for cognitive performance and mood/behavior and suggest that additional supplementation may be required for the elderly.<sup>144,145</sup>

## Typical Use

Typical dosage based on age and split with meals throughout the day:

- 45-55 years: One serving (4 capsules) per day with any meal
- 56-65 years: Two servings (8 capsules) per day. One serving (4 capsules) with the morning meal and one serving (4 capsules) with the evening meal.
- Over 65 years: Three servings (12 capsules) per day. One serving (4 capsules) with the morning meal and two servings (8 capsules) with the evening meal.

## Unique Features

- Contains well-researched brain support substances in their proper amounts.
- Complements the dotFIT multivitamin, antioxidant and Omega-3 formulas.
- 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 facility in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT.
- Third-party tested.

## Contraindications

Contraindicated in pregnancy and lactation and for anyone suffering adverse reactions to any of the ingredients. In all cases, consult with a physician.

Supplement Facts		
Serving Size: 4 Softgel Capsules		Servings Per Container: 60
	Amount Per Serving	%DV*
Calories	20	
Calories from Fat	20	
Vitamin B12 (as Cyanocobalamin)	100 mcg	1,667%
Acetyl-L Carnitine	500 mg	**
Phosphatidylserine	100 mg	**
Alpha Lipoic Acid	100 mg	**
* Percent Daily Value based on a 2,000 calorie diet.		
** % Daily Value(DV) not established		
<b>Other Ingredients:</b> Rice Bran Oil, Gelatin, Glycerin, Water, Beeswax, Sunflower Lecithin and Carob		

## Introduction to dotFIT Weight Loss Products

Dieting to lose weight without financial motivation is challenging for most everyone and generally ends with much of the weight regained within the first year.<sup>146,147,148,149,150</sup> For those individuals seeking to reduce weight and/or body fat, dotFIT recommends exercise (significant physical activity including resistance training) and calorie-restricted meal planning based on a safe desired rate of loss. Appropriate supplementation, including a daily multivitamin and mineral formula (MVM) (at a minimum), may help individuals avoid the loss of lean body mass and fill unavoidable nutrient gaps caused by the restricted food intake and necessary calorie deficit for weight loss. This section explores the goal and rationale for the use of the very few dietary supplements that have demonstrated safety and success in assisting in weight and/or body-fat reduction and maintenance.

Dieting (calorie restriction) for weight loss and maintenance is difficult at best.<sup>151</sup> During typical energy restriction, 25% of weight loss comes from lean body mass (LBM), also known as fat free mass (FFM).<sup>152,153</sup> Greater losses of LBM may occur depending on the magnitude of the deficit.<sup>154,155,156</sup> Although exercise helps protect LBM losses, exercise is not a weight-loss solution on its own.<sup>157</sup> Weight regain is all but inevitable for most dieters as the body launches its evolutionary based natural weight-loss defenses. Primary reasons for difficulties in reaching and maintaining weight loss include: 1) a need to continuously decrease calorie intake to overcome natural plateaus caused by overall weight/LBM reduction and exercise-induced fitness improvements (both conditions can lead to a slower metabolism)<sup>158,159,160,161</sup> 2) decreases in energy levels (e.g. daily fatigue); 3) increases in appetite/cravings;<sup>162</sup> 4) environmental obstacles/influences (e.g. easy access to palatable foods, advertising,<sup>155,163</sup> time constraints, inability to increase daily/exercise activities, etc.) driving people back to old habits;<sup>155,163</sup> and 5) as mentioned above, due to the amount of exercise needed to achieve and sustain weight loss, exercise consistently has been shown to be an ineffective weight loss solution by itself.<sup>164,165,166</sup>

Dietary supplements effectively addressing any or all the problems described above may be helpful in assisting users in avoiding or overcoming typical plateaus related to early weight loss without the otherwise obligatory increase in activity and/or decrease in food intake to continue desired weight/fat reduction. With the associated negative side effects and minimal results of many weight-loss prescription drugs (including those that have been pulled off the market<sup>167</sup>),<sup>149,168</sup> there is high interest in safe, natural and effective alternatives for assisting in weight management.<sup>149,169,170,171,172,173,174,175,176</sup>

The goal of supplements in this category is to assist individuals in complying with the daily routine that leads to weight and/or body-fat reduction. The dietary supplements described in this section are currently used by thousands of practitioners for their clients in more than 1,000 facilities in North America. All supplement ingredients listed here 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
- Protect LBM loss during energy restriction
- Raise energy levels, which may help increase physical activity throughout the day
- Reduce the drive to consume food
- Decrease calorie absorption.

Other than the regular use of meal replacements, which can be used successfully throughout life as an adjunct to traditional daily food planning, the dieter would cease supplementation once the weight goal is achieved.

## WeightLoss & LiverSupport™

### Purpose & Rationale

The purpose of this product is to provide natural substances known to support the health and proper functioning of the liver, especially when unwanted fat accumulates as a result of weight gain that can lead to poor liver health affecting metabolism of all food stuffs.<sup>177</sup> Because of the surge of overweight and obese humans, unhealthy livers have reached epidemic proportions in developed countries. Reports on the prevalence of poor liver function due to weight gain suggest that 27-34% of the general population in the U.S. and 40-90% of the obese population worldwide have poor liver health.<sup>178</sup> Weight gain and/or poor eating habits often lead to a fatty liver, which increases the oxidative stress on this vital organ and compromises its overall functioning including inhibiting the body's ability to control proper usage/burning of sugar and fat.<sup>177,178,179,180,181,182</sup>

This product also supports appetite control with the incorporation of Irvingia Gabonensis.

### Typical Use

- Recommended for overweight and obese individuals to support a complete weight-loss program and liver health.
- Can be used alone or as part of the dotFIT LeanPak90.
- Take 1 tablet, three times daily, 30 minutes before meals with at least 8 oz. of fluid.
- Discontinue after reaching fat-loss goal.

### Unique Features

- Potentially works at many different levels within the body (e.g. antioxidant, appetite control, and metabolism of liver fat and sugar) to support the loss of body fat and overall metabolism.
- Non-stimulant weight-loss aid.
- Can be used alone or as part of the LeanPak90.
- Manufactured in compliance with Good Manufacturing Practices (GMPs).
- Third-party tested.

### Contraindications

WeightLoss & LiverSupport™ is contraindicated in pregnancy and lactation because of a lack of data for this population. Because of N-Acetyl Cysteine, do not take if using anticoagulant drugs or nitroglycerine. In all cases, consult with a physician.

## Supplement Facts

Serving Size: 1 Tablet

Servings Per Container: 90

Amount Per Serving

		% DV
Green Tea (Camelia Sinensis) Leaf Extract	200 mg	*
[Standardized to 98% Polyphenols (196 mg), 80% Catechins (160 mg), 45% EGCG (90 mg), 2% Caffeine (naturally occurring 4 mg)]		
Choline (as Choline Bitartrate)	133 mg	*
N-Acetyl Cysteine	50 mg	*
Milk Thistle (Silybum Marianum L.) Seed Extract	166 mg	*
(Standardized to 80% Silymarin)		
Irvingia Gabonensis Seed Extract	150 mg	*

\* Daily Value not established



## CarbRepel™

### Purpose & Rationale

The purpose of this product is to help reduce absorption of a significant percentage of ingested carbohydrate calories to help maintain or accelerate desired weight loss during a diet and exercise program, especially in people who tend to crave or overeat carbohydrates/sugars. The common white bean, *Phaseolus vulgaris*, produces an alpha-amylase enzyme inhibitor (the enzyme that breaks down carbohydrates and allows them to be absorbed into the body<sup>183</sup>), which has been characterized and tested in numerous clinical studies.<sup>184</sup> A specific and proprietary ingredient, Phase 2 Carb Controller®, has demonstrated the ability to enhance weight loss when compared to placebo with doses of 500 to 3,000 mg per day, in either a single dose or in divided doses by blocking the action of alpha amylase<sup>184</sup> and produces superior results when compared with other starch/carbohydrate blockers with anti-amylase activity.<sup>185</sup>

### Typical Use

- 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.
- Can be used alone or as part of the LeanPak90.
- Take 2 tablets, twice daily, 30 minutes before the largest carbohydrate-containing meals or snacks with at least 8 oz. of appropriate fluid.
- Discontinue after reaching fat-loss goal or until lifestyle helps maintain desired progress.

### Unique Features

- The all-natural ingredient Phase 2 Carb Controller® is the first nutritional ingredient to be

clinically and scientifically proven to neutralize starch.

- The FDA has accepted the following claims based on 16 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.”
- Can be used alone or as part of the LeanPak90.
- Manufactured in a regularly inspected NSF certified facility, in compliance with Good Manufacturing Practices (GMPs).
- Third-party tested.

### Contraindications

The compounds in CarbRepel are contraindicated in pregnancy and lactation because of a lack of data for this population. In all cases, consult with a physician.

## Supplement Facts

Serving Size: 2 Tablets  
Servings Per Container: 60

Amount Per Serving	% DV
Phase 2 Starch Neutralizer®† White Kidney Bean Extract ( <i>Phaseolus vulgaris</i> )	750mg *
Citrus Pectin	375 mg *
Pomegranate Fruit Extract (Total Polyphenols 110 mg, Ellagic Acid 55 mg)	137.5 mg *

\*Daily Value not established.

## ThermAccel™

### Purpose & Rationale

The purpose of this product is to increase total daily energy expenditure (calorie burn) by increasing resting energy expenditure and overall metabolism, including daily activities to accelerate or continue desired weight loss, especially when diet and exercise may be maximized based on acceptable lifestyle parameters. ThermAccel is uniquely formulated to deliver a “better stimulant effect” when compared to currently available popular energy formulas that often lead to “burnout” and related stress, including “end-of-day fatigue.” It is designed to produce balanced and enhanced energy levels that may help users increase voluntary daily activities. With the addition of ThermAccel, through its thermogenic effect and potential balanced energy boost, users may be able to avoid or overcome natural plateaus during weight reduction without having to continually “add more work.” A few natural plant extracts have demonstrated success with appetite control while restricting calories.<sup>186,187</sup> Theoretically, these combined effects would ease the workload and mitigate hunger to allow continued weight reduction with less hardship.

### Typical Use

- Adults without adverse effects to stimulants and seeking to accelerate weight loss, help control appetite and shorten plateaus.
- People who need a serious multi-pronged approach to weight control, including a strong stimulatory effect to help increase metabolism.
- Discontinue after reaching body-fat reduction goal or when lifestyle supports desired body-fat goal without assistance.
- Maximum dose: Take 4 tablets daily, 2 at breakfast and 2 with lunch with at least 8 oz. of water. If sensitive to caffeine, start with 2 tabs daily in 1-tab doses and move to two (2) tabs max dose twice daily if comfortable

### Unique Features

- The thermogenic blend delivers a superior but balanced stimulatory effect, eliminating the end-

of-day “burnout” associated with other thermogenic products.

- Formula and recommendations have no competitor based on its multiple body-fat reduction targets, which are designed to aggressively achieve the final desired outcomes.
- Contains Sinetrol™ by Fytexia, whom was awarded Best Natural Wellness Product Provider
- Delivery system uses two-stage technology involving microspheres and macrospheres, providing immediate and prolonged activity for the entire day.
- Can be used alone or as part of the LeanPak90.
- Third-party tested.

### Contraindications

This product is contraindicated for pregnant and lactating women and those under 18 years of age. Caffeine is contraindicated for those with anxiety, hypertension and thyroid disease. Caffeine can interfere with some medications such as lithium and MAO inhibitors. Caffeine is also contraindicated in those with heart disease, peptic ulcers and cardiac arrhythmias. Excessive caffeine should not be mixed with beta-agonists. Theoretically, concomitant use of large amounts of caffeine might increase cardiac inotropic effects of beta-agonists.<sup>188</sup> Do not mix with diuretic drugs. Excessive amounts of caffeine in combination with diuretics may increase the risk of hypokalemia.<sup>189</sup> In all cases, consult with a physician.

Supplement Facts		
Serving Size	2 Tablets	
Servings Per Container	60	
	Amount Per Serving	% DV
Caralluma Fimbriata Powder	520 mg	*
Sinetrol™ (Mediterranean Citrus Extract)	600 mg	*
L-Theanine	100 mg	*
ThermAccel™ Thermogenic Complex [Caffeine Anhydrous (providing 200 mg of caffeine), Green Tea Leaf (providing 270 mg EGCG), Yerba Mate, Guarana Seed Extract and Cayenne Fruit]	527 mg	*
*% Daily Value not established.		

# LeanMR™ Meal Replacement Shake Mix

## Purpose & Rationale

The purpose of this product is to support weight/body-fat reduction and maintenance by delivering better, satisfying nutrition in fewer calories throughout the day by delivering energy and nutrients with low calories to help increase voluntary daily activities and increasing meal frequency within the necessary calorie allotment for weight/body-fat reduction or maintenance to support satiety, energy and activities. LeanMR also delivers accurate portion sizes to help correct the otherwise common underreporting of calorie intake that often sabotages weight control. The product incorporates a high whey protein and unique fiber formula to total calorie ratio to assist in maintaining lean body mass (LBM) and appetite control. Early studies demonstrated the use of meal replacements (MRs) to be an effective aid to weight reduction<sup>190,191,192,193</sup> and, in almost all cases, are shown to be more effective than conventional methods of dietary restriction.<sup>194,195,196,197</sup> Additionally, MRs were shown to be just as effective as dietary restriction combined with pharmacological therapy<sup>198</sup> and an important continuing protocol for maintaining weight loss.<sup>199,200,201</sup> By 2009, meal replacements had risen to the “evidence-based” category as a weight loss and maintenance treatment.<sup>202,203</sup>

## Typical Use

- Generally used to replace one to two meals a day and allow freedom of choice from traditional foods for the remaining allotted meals and calories.
- For weight-loss maintenance, consume four to five meals/snacks daily that include two MRs for convenience and to help ensure overall diet quality while reducing food costs.<sup>204,205</sup>

## Unique Features

- Contains the highest quality whey protein isolate.
- Contains less than 1g of lactose per serving.

- Proprietary blend of carbohydrates, including functional fibers, delivers a “better lasting” energy and satiety to support aggressive weight loss goals.
- Contains no aspartame or sugar and relatively low sodium.
- 6-7g of fiber for satiety and health (including helping to maintain the integrity of the digestive track and bowel regularity).
- Healthy blend of essential fats.
- Does not contain unnecessary nutrients.

## Contraindications

Contraindicated in those with allergies to milk or other ingredients contained in this product.

## Supplement Facts

Serving Size: 2 scoops (49.8g)  
Serving Per Container: 20

	Amount Per Serving	% DV*
Calories	180	
Calories from Fat	15	
Total Fat	2 g	3%
Saturated Fat	0.5 g	3%
Trans Fat	0 g	**
Cholesterol	10 mg	3%
Total Carbohydrate	24 g	8%
Dietary Fiber	7 g	28%
Sugars	0 g	**
Protein	21 g	40%
Calcium	115 mg	12%
Iron	2 mg	11%
Sodium	140 mg	8%

<b>Sustained Release Carbohydrates Blend</b>	19.5 g	**
Rice Maltodextrin, Digestion Resistant Maltodextrin (Fibersol-2), Isomaltulose, Glucomanan		
<b>Lean Fats Blend</b>	2.5 g	**
Flaxseed Powder, High Oleic Sunflower Oil, Conjugated Linoleic Acid		

\* Percent Daily Value based on a 2,000 Calorie Diet

\*\* Daily Value Not Established

# BestPlantProtein™

## Purpose & Rationale

The purpose of this product is to supply a high-quality, non-animal protein source to help increase total protein intake or provide timely delivery of protein as needed. Proper use of highly rated protein sources (high digestibility and appropriate amino acid content) can deliver the exercise-induced higher protein requirements for exercisers and athletes while minimizing calories to achieve body composition goals. BestPlantProtein comes in a powdered mix form, which enables one to adjust the total meal (or daily) protein and other nutrient content as desired while remaining within a specific calorie allotment.

## Typical Use

- A vegetable-based, low-calorie, source of protein for anyone pursuing weight/fat loss.
- For anyone who is not meeting protein requirements for specific goals, including anti-aging.
- As a pre-/post-workout supplement for vegan and vegetarian physique competitors or other weight/body-fat conscious athletes during the final weeks of competition dieting to meet protein requirements with fewer calories.
- For exercisers during intense training and especially when combined with calorie restriction for weight/fat loss.
- Suitable for those wanting a great tasting, convenient, high-quality and vegetable-based protein source.

## Unique Features

- 21g of a high biological value protein, 7g of carbohydrates and 3g of healthy fat in only 130 calories.
- Co-factors from all-natural sources ensure nutrient uniformity and stability with good taste and easy mixing.
- Hypoallergenic, gluten free, non-GMO and contains no dairy or soy.

- No gas or bloating as is common with other plant-based protein powders.
- Contains less than 1g of sugar and uses the natural sweetener stevia.
- Formulated and manufactured for great taste and pleasing texture in a regularly inspected NSF certified facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT.
- Third-party tested.

## Contraindications

There are no known contraindications with BestPlantProtein's ingredients for healthy individuals.

<b>SUPPLEMENT FACTS</b>		
Serving Size: 1 Scoop (34 g) Servings Per Container: 30		
	Amount Per Serving	% Daily Value*
Calories	130	
Calories from Fat	20	
Total Fat	3 g	5%
Saturated Fat	0.5 g	3%
Sodium	270 mg	11%
Potassium	160 mg	5%
Total Carbohydrate	7 g	2%
Dietary Fiber	1 g	<1%
Sugars	<1 g	**
Protein	21 g	42%
Calcium	65 mg	6%
Iron	7 mg	38%
Magnesium	40 mg	10%
<b>Multi Source Plant Protein Blend:</b> (Pea protein isolate, Cranberry seed, Chia seed, Sacha Inchi seed)	23,855 mg	**
<b>Branch Chain Amino Acids:</b> (L-Leucine, L-Isoleucine and Valine)	6,225 mg	**
<b>Glutamine</b>	3,475 mg	**
<b>Enzyme Blend:</b> (Alpha-galactosidase and Bromelain)	110 mg	**
* Percent Daily Values are based on a 2,000 calorie diet. ** Daily Value not established.		
<b>Other Ingredients:</b> Inulin, natural cocoa, natural chocolate, stevia, xanthan gum, natural flavor, glycine and silica.		

## dotFIT's Position on the Use of Supplements for Enhancing Performance

Sports at all levels have become fiercely competitive, primarily because the rewards for winning continue to expand into previously unimaginable economic territories. Giving athletes the necessary competitive edge now requires sophisticated evolving nutrition and exercise protocols, including the proper integration of individualized dietary supplements. Additionally, because of improved methods and frequency of drug testing, athletes are seeking healthy legal alternatives to help enhance performance. Maximizing potential during high-level competition requires athletes and qualified trainers to leverage all available resources. In fact, surveys from the 2008 Olympics showed at least 90% of the 11,000 athletes reported the regular use of dietary supplements.<sup>206</sup> Other polls of competitive athletes of all ages show the same numbers.<sup>207,208,209,210</sup> Additionally, approximately 85% of health club participants regularly use dietary supplements to enhance health or exercise outcomes.<sup>211</sup>

There is strong scientific and empirical evidence that a limited number of natural/bio substances, prepared in formulations matched from positive clinical trials and ingested properly within a training and nutrition plan, can safely improve recovery,<sup>212,213,214,215,216,217</sup> muscle protein synthesis,<sup>216,217,218,219,220,221,222,223,224,225</sup> time to exhaustion<sup>226,227,228,229,230,231,232,233</sup> and training-induced size or performance for many athletes.<sup>214,234,235,236,237,238,239</sup>

### Performance Dietary Supplement Rationale

Competitive athletes and exercisers constantly seek physical improvement to remain competitive in their respective sport by attempting to make continuous strength and performance gains, or simply enhance exercise sessions over time, as with avid exercisers. Exercise stimulates natural human skeletal muscle synthesis and performance throughout life when compared to a non-exercise state.<sup>240,241</sup> Various forms of mechanical loading (exercise design) initiate muscle protein's related anabolic signaling and the mode, intensity and volume of exercise differentially affect signaling, thus long-term outcomes.<sup>242,243,244</sup> The general goal of most athletes is to maximize the body's natural muscle protein synthesis (MPS) processes, which include applying peak strength during exercise and recovering adequately from each training bout to constantly increase performance and if desired, increase skeletal muscle size. Thus, the athletes/exerciser's goal is to continue to improve physically by making each training session build on the previous, leading to continuous athletic/physical progress since unaccustomed exercise continues to set the stage (initiates anabolism) for the desired muscle remodeling that would potentially improve performance/size.<sup>220,245,246</sup> However, despite the constant initiation of MPS by exercise, positive training progress slows dramatically with age and experience, and training plateaus become common occurrences.<sup>246,247,248,249</sup> This leads researchers and athletes to believe that something is missing (nutritionally) in the pre- or post-exercise period that would otherwise continue progression from proper unaccustomed training (at least until there is an unavoidable age decline\*). In other words, exercise is only a continual trigger event for the desired result, leaving nutritional/bio-ingredient modulations to deliver the progressive outcome.<sup>241,248,250</sup> These conditions set the stage for dietary supplementation when all else is equal and training and diet protocols are optimized for the desired progression.



\* Eventually, as in all aspects of life, age will become a factor in abating progress, but depending on age and level of training experience, this inevitable decline can be prolonged to a point where one has the greatest potential to not just extend their athletic success or “playing lifespan” but also remain self-sufficient throughout life.<sup>247,249,251</sup>

## AminoXXXL™

### Purpose & Rationale

The purpose of this product is to supply the proper combination of specific essential amino acids that has been shown in clinical trials to speed recovery from continuous training bouts and enhance exercise induced muscle protein synthesis (MPS) through specific pathways within a palatable, fast acting and low-calorie delivery system. Through reduced recovery times and enhanced MPS, AminoXXXL (AB) may help exercisers and athletes avoid “overtraining and overreaching” syndromes or training plateaus. For the non-exercising adult population, AB may serve as a supplement to improve the otherwise declining normal net muscle protein balance that leads to the inevitable loss of muscle while aging. Proper use of AB delivers isolated essential amino acids (EAA) including high doses of leucine in appropriate amounts and ratios at precise times in relation to exercise to reduce normal muscle breakdown and stimulate synthesis. Because of its very low-calorie contents and ability to preserve lean body mass (LBM) during calorie restriction, it can serve as the essential pre-and post-exercise recovery and additive MPS stimulator supplement for athletes and exercisers involved in sports that require extremely low body fat and/or prolonged dieting to make weight classes. AB's convenience and high palatability make it ideal for non-exercising adults to help offset age-related muscle loss (e.g. sarcopenia, which begins in the fourth decade) with a relatively low nitrogen load (compared to whole proteins), which may be especially important in the later stages of aging when appetite and organ function begin diminishing.

### Typical Use

- All exercisers/athletes seeking continuous physical and performance progress.
- Recovery aid for exercisers/athletes to help reduce muscle soreness.
- May serve as the sole pre- and post-activity supplement for athletes requiring low body fat, prolonged restricted calorie dieting and/or weight restrictions.
- Ideal for recovery during multiple daily training sessions or tournament play.

- Can be used with NO7Rage™ and ExtremeCreatineXXXL™ as part of the dotFIT “Super Stack,” providing enhanced progressive exercise-induced results.
- All non-exercisers more than 30 years of age.

### Unique Features

- Uses a leucine-enriched EAA blend that has been shown to increase muscle protein synthesis significantly in clinical trials with both adult athletes and non-athletes.
- The proprietary EAA composition is designed to increase availability of the EAA in proportion to their requirement for MPS and muscle deposition.
- High anabolic formula delivered in a palatable, low-calorie, relatively low-nitrogen drink.
- Can be used with NO7Rage and CreatineXXL as part of the dotFIT “Super Stack,” providing enhanced progressive exercise-induced results.
- NSF Certified for Sport for verification of purity, potency and absence of contaminants.

### Contraindications

Not to be used by those with kidney disease, liver disease and phenylketonurics because it contains phenylalanine. 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.

## Supplement Facts

Serving Size: 1 Scoop (17.3g)

Servings Per Container: 37

	Amount Per Serving	% Daily Value
Calories	5	
Total Carbohydrate	2 g	<1%*
Sodium (as Sodium Chloride)	90 mg	4%
AminoXXXL Complex	11.9g	**
L-Leucine	4g	**
L-Phenylalanine	1.67 g	**
L-Lysine HCl	1.67 g	**
L-Threonine	1.3 g	**
L-Valine	1.1 g	**
L-Histidine Base	900 mg	**
L-Isoleucine	900 mg	**
L-Methionine	360 mg	**

\* Percent Daily Value Based on a 2,000 Calorie Diet

\*\* Daily Value Not Established

# VeganAminoXXXL™

## Purpose & Rationale

The purpose of this product is to supply the proper combination of specific essential amino acids (EAA) that has been shown in clinical trials to speed recovery from continuous training bouts and enhance exercise induced muscle protein synthesis (MPS) through specific pathways within a palatable, fast acting and low-calorie delivery system. Through reduced recovery times and enhanced MPS, AminoXXXL (AB) may help exercisers and athletes avoid “overtraining and overreaching” syndromes or training plateaus. For the non-exercising adult population, AB may serve as a supplement to improve the otherwise declining normal net muscle protein balance that leads to the inevitable loss of muscle while aging. Proper use of AB delivers isolated essential amino acids including high doses of leucine in appropriate amounts and ratios at precise times in relation to exercise to reduce normal muscle breakdown and stimulate synthesis. Because of its low-calorie contents and ability to preserve lean body mass (LBM) during calorie restriction, it can serve as the essential pre-and post-exercise recovery and additive MPS stimulator supplement for athletes and exercisers involved in sports that require extremely low body fat and/or prolonged dieting to make weight classes. AB's convenience and high palatability make it ideal for non-exercising adults to help offset age-related muscle loss (e.g. sarcopenia, which begins in the fourth decade) with a relatively low nitrogen load (compared to whole proteins), which may be especially important in the later stages of aging when appetite and organ function begin diminishing.

## Typical Use

- All exercisers/athletes seeking continuous physical and performance progress.
- Recovery aid for exercisers/athletes to help reduce muscle soreness.
- May serve as the sole pre- and post-activity supplement for athletes requiring low body fat, prolonged restricted calorie dieting and/or weight restrictions.
- Ideal for recovery during multiple daily training sessions or tournament play.
- Can be used with NO7Rage™ and ExtremeCreatineXXXL™ as part of the dotFIT

“Super Stack,” providing enhanced progressive exercise-induced results.

- All non-exercisers more than 30 years of age.

## Unique Features

- Vegan and vegetarian friendly.
- GMO free, all-natural sweeteners, and no artificial flavors or colors.
- Uses a leucine-enriched EAA blend that has been shown to increase muscle protein synthesis significantly in clinical trials with both adult athletes and non-athletes.
- The proprietary EAA composition is designed to increase availability of the EAA in proportion to their requirement for MPS and muscle deposition.
- High anabolic formula delivered in a palatable, low-calorie, relatively low-nitrogen drink.
- Can be used with NO7Rage and CreatineXXXL as part of the dotFIT “Super Stack,” providing enhanced progressive exercise-induced results.
- NSF Certified for Sport for verification of purity, potency and absence of contaminants.

## Contraindications

Not to be used by those with kidney disease, liver disease and phenylketonurics because it contains phenylalanine. 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.

## Supplement Facts

Serving Size: 1 Scoop (23 g)  
Servings Per Container: 37

	Amount Per Serving	% Daily Value
Calories	70	
Total Carbohydrate	7 g	0%
Total Sugars	5 g	*
AminoXXXL Complex	11.9 g	*
L-Leucine	4 g	*
L-Phenylalanine	1.67 g	*
L-Lysine HCl	1.67 g	*
L-Threonine	1.3 g	*
L-Valine	1.1 g	*
L-Histidine Base	900 mg	*
L-Isoleucine	900 mg	*
L-Methionine	360 mg	*

\* Daily Value Not Established

# Creatine Monohydrate

## Purpose & Rationale

The purpose of this product is to supply an NSF Certified for Sport (NSFCS) superior creatine supplement in its most clinically successful monohydrate form using the raw material Creapure® to maximize the well-known size and performance enhancing effects of creatine supplementation. This patented raw material helps creatine remain stable during digestion, thus making it almost fully available to the body. Proper dosing of creatine monohydrate (CM) may improve the ability of creatine supplementation to enhance training outcomes in various sports and types of exercise when compared to equal amounts of other creatine products. The goal of supplementing CM is to increase levels of creatine in the muscle and accelerate regeneration of creatine phosphate (PCr) beyond what can practically be achieved by diet alone. Creatine loading is much like the goal of carbohydrate loading by endurance athletes. However, instead of increasing glycogen storage, and thus delaying glycogen depletion, loading creatine would enhance PCr levels and delay its depletion and speed repletion. This practice would benefit strength and power activities, including sprinting and weightlifting, that are dependent on PCr as an energy source. Other sports that also require repetitive bursts of speed and power, such as specific intermittent team sports that combine intermittent aerobic and anaerobic activity (e.g. football, baseball, rugby and hockey), could also benefit from creatine supplementation.

## Typical Use

- All adult athletes seeking to improve training outcomes related to lean body mass, strength and power activities, such as sprinting, weightlifting and jumping. Use of this product also translates to other sports requiring repetitive bursts of speed and power, such as specific intermittent team sports that combine intermittent aerobic and anaerobic activity (e.g. football, baseball, rugby and hockey).
- Older adults seeking healthier aging and improved daily living as recommended by a qualified physician.
- Aerobic or endurance athletes to potentially delay fatigue, especially under high heat conditions, and assist in post-exercise glycogen resynthesis.
- Creatine loading and maintenance strategy

- Mix 1 scoop (5g) with 4-8 oz. of fluid/shake and take four times daily with a carbohydrate containing meal/drink for first five days. Thereafter, take 1 scoop twice daily to maintain stores. To maximize creatine uptake, split doses throughout the day with meals/drinks containing carbohydrate and/or protein (depending on size and caloric allotment).
- On training days, use one dose before workout and one after with meals/drinks. May mix with your pre-/post-training formula.

## Unique Features

- Contains Creapure®, a pure CM made in Germany, which helps creatine remain stable during digestion, rendering it almost fully available to the body, thus giving it more potential to enhance training outcomes when compared to equal amounts of other creatine products.
- Convenient powdered form with relatively neutral flavoring allows for easy mixing alone or with other products such as pre-/post-workout shakes
- NSF Certified for Sport (NSFCS), an independent third-party test, which ensures purity and potency for drug-tested athletes.

## Contraindications

Although there is no supporting evidence, persons regularly using nephrotoxic drugs (drugs that harm kidney function) such as cyclosporine, aminoglycosides, gentamicin, nonsteroidal anti-inflammatory drugs (NSAIDs), naproxen and others, should not use high doses of creatine without a doctor's consent.<sup>252,253</sup> Persons with bipolar disorder should consult a physician regarding creatine use as there have been reports of mania in people with this disorder.<sup>254</sup>

## Supplement Facts

Serving Size: 6.8g (1 heaping scoop) Servings Per Container: 60

	Amount Per Serving	% Daily Value*
Calories	5	
Total Carbohydrate	1g	<1%*
Creapure® Creatine Monohydrate	5g	**

\* Percent Daily Values are based on a 2,000 calorie diet.

\*\* % Daily Value not established.

## ExtremeCreatineXXXL™

### Purpose & Rationale

Supplies a stimulant-free, performance enhancing, product containing creatine monohydrate, beta-alanine, and glutamine. Proper dosing of creatine and beta-alanine alone or together safely improves training outcomes and performance in athletes participating in high-intensity activities, such as jumping, sprinting, weightlifting/bodybuilding. Additionally, it improves crossover activities, including team sports that require on and off bursts of power, such as football, baseball, rugby, and hockey. The addition of glutamine in an effective dose appears justified based on the named athletes now training at a higher level, thus requiring enhanced recovery mechanisms in pathways glutamine is known to stimulate. There is also a convenient and economical factor involved with ExtremeCreatineXXXL. Two daily servings have a clinically effective dose of all three ingredients (5 g of creatine, 3.2 g of beta-alanine, 7 g of glutamine), making it a 30-day supply of all three ingredients. Therefore, as a standalone supplement, it contains the maintenance doses of the three ingredients that deliver results. Although there will be almost immediate gains, it may take up to 25 days to start realizing maximum benefits based on bypassing the higher dose creatine and beta-alanine loading periods as shown in their respective [PDSRG](#) sections.

### Typical Use

- All adult athletes and intense exercisers seeking to improve training outcomes related to lean body mass, strength, and power activities. Usage also translates to other sports requiring repetitive bursts of speed and power.
- As a stand-alone product:
  - Take two scoops daily to achieve immediate training benefits and reach near-maximum creatine and beta-alanine supplemented levels within 28 days. Continue throughout the desired training period (always take with some protein and carbohydrates, but within allotted calories based on body-composition goal).
  - To stack with other products for size and performance benefits, see Tables 1, 2, and 4.

### Unique Features

- Contains Creapure®, a pure creatine monohydrate made in Germany, which helps creatine remain stable during digestion. This renders it almost fully available to the body, increasing its potential to enhance training outcomes when compared to other creatine products.
- Contains beta-alanine in a patented form known as CarnoSyn®.
- Contains L-glutamine in a stable, patented dipeptide form (magnesium glycyl glutamine chelate).
- Stimulant-free powdered form with relatively neutral flavoring to allow for easy mixing with other products.
- NSF Certified for Sport, an independent third-party test that ensures potency and purity for drug-tested athletes.
- Vegan-friendly.

### Contraindications

Although there is no supporting evidence, persons regularly using nephrotoxic drugs (drugs that harm kidney function), such as cyclosporine, aminoglycosides, gentamicin, nonsteroidal anti-inflammatory drugs (NSAIDs), naproxen and others, should not use high doses of creatine without a doctor's consent.<sup>252,253</sup> Persons with bipolar disorder should consult a physician regarding creatine use since there have been reports of mania in people with this disorder.<sup>255</sup> Athletes who wish to prevent weight gain should avoid this product. Women who are pregnant or lactating are contraindicated because of a lack of data for these populations. Beta alanine supplementation currently appears to be safe in healthy populations at recommended doses.<sup>233</sup> The only reported side effect is paresthesia (tingling), but studies indicate that this is harmless and can be attenuated by using divided lower doses (1.6 g).<sup>233,256,257</sup> Glutamine supplementation is contraindicated in those with kidney problems or at risk for kidney disease because of possible increased kidney stress.<sup>258</sup> Any persons using anticonvulsants, (or any drug used for epilepsy)<sup>259</sup> and Lactulose should avoid glutamine supplementation. Theoretically, glutamine might antagonize the anti-ammonia effects of lactulose because glutamine can be metabolized to ammonia.<sup>260</sup>



# Supplement Facts

Serving Size: 1 Rounded Scoop (10.7g)

Servings Per Container: 60

	Amount Per Serving	% Daily Value
Calories	5	
Total Carbohydrate	1 g	0%
CreaPure® Creatine Monohydrate	2.5 g	*
CarnoSyn® Beta-Alanine	1.6 g	*
L-Glutamine	3.5 g	*

\* Daily Value Not Established

Table 1 – Adult Performance & Size Stack 1 with AminoXXXL + Creatine Monohydrate + ExtremeCreatineXXXL

Week	AminoXXXL (workout days only)	CreatineMonohydrate	ExtremeCreatineXXXL
1	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>		
2	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>	<p>Loading phase:</p> <ul style="list-style-type: none"> <li>1 scoop with 4-8 oz. of fluid and carbohydrate containing meal/drink 4 times a day for first 5 days (20 g/day total)</li> <li>2 of the servings to be taken before and after workouts</li> </ul> <p>After first 5 days:</p> <ul style="list-style-type: none"> <li>1 scoop daily with post workout shake (FirstString or Pre/Post Workout shake)</li> <li>1 scoop with a meal on non-workout days</li> </ul>	<p>Begin on 6<sup>th</sup> day:</p> <ul style="list-style-type: none"> <li>Workout days <ul style="list-style-type: none"> <li>1 scoop with pre-workout meal or shake</li> <li>1 scoop with any other meal or shake</li> </ul> </li> <li>Non-workout days <ul style="list-style-type: none"> <li>1 scoop with morning meal and 1 scoop with evening meal, separate from meals with CreatineMonohydrate for even distribution</li> </ul> </li> </ul>
3 and beyond	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>	<ul style="list-style-type: none"> <li>1 scoop with a meal on non-training days</li> <li>1 scoop daily with post-workout shake on training days</li> </ul>	<ul style="list-style-type: none"> <li>Workout days <ul style="list-style-type: none"> <li>1 scoop with pre-workout meal or shake</li> <li>1 scoop with any other meal or shake</li> </ul> </li> <li>Non-workout days <ul style="list-style-type: none"> <li>1 scoop with morning meal and 1 scoop with evening meal separate from meals with CreatineMonohydrate</li> </ul> </li> </ul>

**Table 2 – Adult Super Stack 2 for Size and Performance with AminoXXXL + ExtremeCreatineXXXL + NO7Rage**

Week	AminoXXXL (workout days only)	ExtremeCreatineXXXL	NO7Rage (workout days only)
1	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>		
2	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>	<p>Workout days</p> <ul style="list-style-type: none"> <li>1 scoop with pre-workout meal or shake (FirstString or Pre/Post Workout shake or WheySmooth)</li> <li>1 scoop anytime with meal or shake</li> </ul> <p>Non-workout days</p> <ul style="list-style-type: none"> <li>1 scoop with morning meal</li> <li>1 scoop with evening meal</li> </ul>	
3 and beyond	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>	<p>Workout days</p> <ul style="list-style-type: none"> <li>1 scoop with pre-workout meal or shake</li> <li>1 scoop anytime with meal or shake</li> </ul> <p>Non-workout days</p> <ul style="list-style-type: none"> <li>1 scoop with morning meal</li> <li>1 scoop with evening meal</li> </ul>	<ul style="list-style-type: none"> <li>1-2.5 scoops ~10 minutes before workout, depending on weight and caffeine sensitivity (one scoop contains 175mg of caffeine)</li> <li>May mix with AminoXXXL</li> </ul>

## WorkoutExtreme™

### Purpose & Rationale

The purpose of this product is to deliver a NSF Certified for Sport formula with a combination of ingredients that demonstrate the ability to increase time to exhaustion or delay fatigue, especially in continuous intermittent intensity and endurance sports, while also delivering positive cognitive benefits, such as improving training desire, reaction time and focus. WorkoutExtreme can be used by anyone not bothered by stimulants, as a pre-workout or event energy enhancement supplement. Combining purified caffeine (anhydrous) with glucuronolactone and clinically favorable dose of taurine may enhance the well-known performance enhancing effects of caffeine alone. This product can be used in individually designed doses, which gives the user the potential to improve training sessions and competition outcomes when compared to no supplementation or commercially available “like-products” purporting similar outcomes.

### Typical Use

- Adult exercisers/athletes not bothered by stimulants seeking to delay fatigue and prolong and improve performance during exercise and events.
- Any adult not bothered by stimulants, as a pre-workout or event energy enhancement supplement or as a daily pick-me-up.
- For short to long event-duration/endurance activities (running, cycling, etc.):
  - Take 5 capsules 40-60 minutes before activity (totaling 350mg caffeine) unless caffeine sensitive, in which case start with 2 capsules and adjust as necessary, OR
  - Use 1.4 to 3 mg of caffeine per pound of body weight (not to exceed 600mg) and take 40-60 minutes before activity.
  - If competing, experiment to achieve proper dose and abstain from all caffeine, including WorkoutExtreme, approximately five days before competition (see Table 3).
- For intermittent athletes (e.g. football, baseball, soccer, hockey, rugby and swimming):
  - Take 5 capsules 40-60 minutes before activity (totaling 350mg caffeine) unless caffeine sensitive, in which case start with 2 capsules and adjust as necessary.

- If using regularly, it is recommended to cycle use three weeks on and at least one week off or use only as needed before activities.
- Should not be mixed with other stimulants or taken within four hours of other products containing stimulants (especially caffeine), such as coffee and energy drinks.

### Unique Features

- A rare combination of clinically effective doses of both caffeine anhydrous and taurine, which may significantly amplify caffeine’s well-known performance enhancement effects.
- Uses a rapid-release capsule delivery system to maximize the formula’s potential and provide a timely impact on training intensity.
- Ideal dosing instructions for any activity.
- Manufactured in a regularly inspected NSF certified facility, in compliance with Good Manufacturing Practices (GMPs).
- NSF Certified for Sport, an independent third-party test that ensures potency and purity for drug-tested athletes.

### Contraindications

Contraindicated in pregnancy and lactation because of caffeine content at higher dosages<sup>261</sup> and because studies are not performed using this population with other ingredients. Taurine and caffeine may interfere with some medications, such as lithium<sup>262</sup> and MAO inhibitors.<sup>263</sup> While caffeine consumption does not increase the risk of developing hypertension,<sup>264</sup> caffeine is contraindicated for those with hypertension, anxiety and thyroid disease.<sup>265</sup> Caffeine is also contraindicated in those with cardiac arrhythmias, other forms of heart disease and peptic ulcers.<sup>266</sup> Caffeine should not be mixed with beta-agonists because theoretically, concomitant use of large amounts of caffeine might increase cardiac inotropic effects of beta-agonists.<sup>267</sup> Do not mix with diuretic drugs. Theoretically, excessive amounts of caffeine in combination with diuretics may increase the risk of hypokalemia.<sup>268</sup> Although evidence that caffeine ingestion causes cardiac arrhythmias is inconclusive, individuals should consult with their physician before using WorkoutExtreme.<sup>269</sup>

# Supplement Facts

Serving Size: 2 Capsules		Servings per Container: 75
	Amount Per Serving	% DV
Taurine	1200 mg	*
Glucuronolactone	240 mg	*
Caffeine Anhydrous	140 mg	*
*% Daily Value not established.		

**Table 3 – Endurance Competitor Training Supplement Training Program—Workout Days Only**

Week	AminoXXXL	FirstString or WheySmooth (to control calories)	MuscleDefender	WorkoutExtreme
1+	<ul style="list-style-type: none"> <li>1 scoop 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>	<ul style="list-style-type: none"> <li>1.5 scoops 30-40 minutes before workout</li> <li>1.5 scoops 30-40 minutes after workout</li> </ul>		
6 weeks before competition	<ul style="list-style-type: none"> <li>1 scoop 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>	<ul style="list-style-type: none"> <li>1.5 scoops 30-40 minutes before workout</li> <li>1.5 scoops 30-40 minutes after workout</li> </ul>	<ul style="list-style-type: none"> <li>1 scoop before workout</li> <li>1 scoop immediately after workout</li> <li>May mix with AminoXXXL</li> </ul>	<ul style="list-style-type: none"> <li>5 capsules 40-60 minutes before workout every other training day (total caffeine 350mg)</li> <li>Start with 2 capsules if caffeine sensitive</li> <li>Do not take other stimulants within 4 hours</li> <li>Discontinue 5 days before competition</li> <li>On competition day, take dosage as described above (5 capsules 40-60 minutes before activity)</li> </ul>

## NO7Rage™

### Purpose & Rationale

The purpose of this product is to deliver a combination of ingredients that demonstrate the ability to increase nitric oxide (NO) production to enhance blood and nutrient flow in and out of exercising muscles to amplify the training session and response. These novel NO booster ingredients are supplied together with other compounds known to improve strength and force production, and increase time to exhaustion and training endurance, while also delivering positive cognitive benefits such as improved training desire, reaction time and focus. This product has the ability, through multiple pathways, to significantly enhance strength, performance and size training induced outcomes when compared to similar mass-market products or a non-supplemented state. In addition, its stimulant properties, energy substrate contributions and muscle lactate buffering properties can dramatically improve the training session itself, setting the stage for greater gains when everything else is equal, such as recovery time and overall nutrition.

### Typical Use

- As a pre-workout supplement for adults not adversely affected by caffeine, seeking sustained motivation before and during training, and an enhanced overall training or competition outcome.  
Same as above plus a complementary ergogenic supplement for intermediate and advanced anaerobic athletes to enhance and continue size and/or strength gains from exercise (5g of creatine and 2,000mg of beta-alanine in two scoops). See NO7Rage inclusion in Table 4.

### Unique Features

- Contains L-citrulline malate, which has been shown to be a more effective substrate than arginine for inducing NO production.
- Contains two novel forms of arginine, nitrosigine and agmatine sulfate. Both significantly increase plasma arginine to desired levels shown to enhance NO production.
- Contains a unique blend of taurine, glycerol and pine bark (pycnogenol) to enhance the pump during resistance training workouts.

- The proprietary flavoring generally appeals to a greater portion of users over competitive products.
- Can be used alone or with AminoXXXL, CreatineMonohydrate and/or CreatineXXL as part of the dotFIT "Loading and Stacking Programs."
- Dosage instructions will be far more "efficacy accurate" per individual compared to other products.
- Third-party tested.

### Contraindications

Contraindicated in pregnancy and lactation because of the central nervous system stimulant (caffeine) and due to a lack of ingredient studies with this population. Caffeine may 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 if caffeine sensitive. Alternatively, separate by at least four hours. Do not use if taking erectile dysfunction drugs. The product should not be used by anyone with a heart condition or if the individual is using related medications. Do not use if taking medication for hypothyroidism.

## Supplement Facts

Serving Size: 1 scoop (16 g)  
Servings Per Container: 40

	Amount Per Serving	% DV†
Calories	10	
Total Carbohydrate	2g	1%
Vitamin C (as ascorbic acid)	250 mg	417%
Vitamin E (as dl-alpha tocopheryl acetate)	30 IU	100%
Sodium	140 mg	6%
Potassium (as potassium citrate)	320 mg	9%
Creatine Monohydrate	2,500 mg	*
Taurine	2,000 mg	*
Glycerol Powder 65% (Hydromax®)	2,000 mg	*
L-Citrulline	1,000 mg	*
Beta-Alanine (as CarnoSyn®)	1,000 mg	*
Inositol Arginine Silicate (Nitrosigine™)	750 mg	*
Agmatine Sulfate	500 mg	*
Glucuronolactone	400 mg	*
Caffeine	175 mg	*
Pine Bark (95% proanthocyanidins)	100 mg	*
Alpha Lipoic Acid	10 mg	*

\*Percent Daily Values are based on a 2,000 calorie diet.

†Daily value not established



**Table 4 – Adult Ultimate Stack for Size and Performance AminoXXXL + CreatineMonohydrate + ExtremeCreatineXXXL + NO7Rage**

Week	AminoXXXL (workout days only)	CreatineMonohydrate	ExtremeCreatineXXXL	NO7Rage (workout days only)
1	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>			
2	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>	<p>Loading phase:</p> <ul style="list-style-type: none"> <li>1 scoop with 4-8 oz. of fluid and carbohydrate containing meal or shake (FirstString or Pre/Post Workout shake or WheySmooth) 4 times a day for first 5 days.</li> <li>2 of the servings to be taken before and after workouts.</li> </ul> <p>After first 5 days:</p> <ul style="list-style-type: none"> <li>1 scoop daily with post-workout shake</li> </ul>	<p>Beginning on sixth day:</p> <ul style="list-style-type: none"> <li>Workout days: <ul style="list-style-type: none"> <li>1 scoop with pre-workout meal or shake</li> <li>1 scoop anytime with meal or shake</li> </ul> </li> <li>Non-workout days: <ul style="list-style-type: none"> <li>1 scoop with morning meal or shake</li> <li>1 scoop with evening meal or shake, separate from meals with Creatine Monohydrate for even distribution</li> </ul> </li> </ul>	
3	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>	<ul style="list-style-type: none"> <li>1 scoop daily with post-workout shake</li> <li>1 scoop with a meal on non-training days</li> </ul>	<p>Workout days:</p> <ul style="list-style-type: none"> <li>1 scoop with pre-workout meal or shake</li> <li>1 scoop anytime with meal or shake</li> </ul> <p>Non-workout days:</p> <ul style="list-style-type: none"> <li>1 scoop with morning meal or shake</li> <li>1 scoop with evening shake, separate from meals with Creatine Monohydrate</li> </ul>	
4 and beyond	<ul style="list-style-type: none"> <li>1.5 scoops 10 minutes before workout</li> <li>1 scoop immediately after workout</li> </ul>	<ul style="list-style-type: none"> <li>1 scoop daily with post-workout shake</li> <li>1 scoop with a meal on non-training days</li> </ul>	<p>Workout days:</p> <ul style="list-style-type: none"> <li>1 scoop with pre-workout meal or shake</li> <li>1 scoop any time with meal or shake</li> </ul> <p>Non-workout days:</p> <ul style="list-style-type: none"> <li>1 scoop with morning meal or shake</li> <li>1 scoop with evening shake, separate from meals with Creatine Monohydrate</li> </ul>	<ul style="list-style-type: none"> <li>1-2.5 scoops ~10 minutes before workout, depending on weight and caffeine sensitivity (one scoop contains 175mg of caffeine). May mix with AminoXXXL.</li> </ul>

## MuscleDefender™

### Purpose & Rationale

The purpose of this product is to supply L-glutamine in a stable patented dipeptide form (magnesium glycyl glutamine chelate) in order to greatly improve the ability of oral L-glutamine supplementation to function as an effective immuno-nutrient and support cell growth and survival during times of depletion brought on by various stresses. Replenishing glutamine during times of depletion caused by rapid growth, tissue repair or other high metabolic demands, particularly when combined with prolonged calorie restriction, may help to maintain health (immune support), including the integrity of the intestinal tract and enhance recovery as compared to a non-supplemented state. Because of the many important functions of glutamine, there is a dramatic increase in the net release of glutamine from peripheral tissues, including muscle, to central tissues (e.g. liver, and immune system) during inflammatory and other physically stressful conditions,<sup>270</sup> giving rise to the basis of supplementation during clinical (e.g. trauma, infection and wound healing) and non-clinical (intense prolonged exercise) situations.<sup>270,271</sup>

### Typical Use

- Athletes and exercisers under prolonged demanding physical stress, especially when combined with extended periods of energy restriction as in weight/body-fat conscious athletes attempting to “make weight” or attain extremely low body fat.
- Anyone seeking to support the immune system, intestinal integrity and/or recovery related to exercise/physical-induced stresses, including to reduce the likelihood of overtraining/overreaching.
- Take approximately 0.1g/lb of body weight split three times daily with half the dose 40 minutes before exercise, one-quarter of the dose immediately following, and the last quarter spaced at least eight hours from other doses to maximize the highest potential to achieve stated goals.
- Example for a 175-pound athlete: ~18g/day with activity taking place at 8:00 AM
  - 9g at 7:20 AM (with pre-workout protein and carbohydrate formula/shake)
  - 4.5g immediately following activity (e.g. 11:00 AM)
  - 4.5g before bed or mid-evening.
- Long duration activities (>3 hours) or continuous daily bouts with intermittent rest periods may require dosing during the span of all activities.

### Unique Features

- An easy-to-mix powder that can be added to other nutrition products, including sports drinks and shakes.
- Synergistic with all other dotFIT products.
- Contains L-glutamine in a dipeptide patented, stabilized compound (Magnesium-Glycyl-Glutamine) from Albion<sup>272</sup> for potentially greater absorption and ability to reach desired target tissues.<sup>273</sup>
- NSF Certified for Sport, which verifies purity, potency and absence of contaminants.

### Contraindications

Contraindicated in those with kidney problems or at risk for kidney disease because of possible increased kidney stress.<sup>274</sup> Unless supervised by a qualified health professional, glutamine supplementation should be avoided by children and pregnant or lactating women because of the lack of studies done in these populations. Any persons using anticonvulsants (or any drug used for epilepsy)<sup>275</sup> and/or Lactulose should avoid glutamine supplementation. Theoretically, glutamine might antagonize the anti-ammonia effects of lactulose because glutamine can be metabolized to ammonia.<sup>276</sup>

## Supplement Facts

Serving Size 5.4g (1 level scoop)  
Serving Per Container: 70

	Amount Per Serving	% DV*
Magnesium (as magnesium glycinate glutamine chelate)‡	34 mg	9%
Chromium (as chromium nicotinate glycinate chelate)‡	150 mcg	125%
L-Glutamine	5 g	**

\*Percent Daily Values are based on a 2,000 calorie diet.

\*\* % Daily Value not established.

## Recover&Build™

### Purpose & Rationale

The purpose of this product is to supply the branched chain amino acids (BCAAs) valine, isoleucine and, most importantly, leucine at specific times and in amounts consistent with clinical trials that demonstrate the ability of BCAA supplementation to reduce muscle damage, soreness and potentially enhance recovery and muscle protein synthesis (MPS) initiated from exercise. BCAA supplementation may be especially useful during prolonged energy restriction, continuous high-intensity activity, extended exercise bouts or any combination of these conditions. Proper dosing supplies a low-calorie, isolated group of amino acids with a high affinity towards peripheral tissues (skeletal muscles) rather than liver metabolism, which happens to most other amino acids involved in MPS. The BCAAs are metabolized to become available for protein synthesis and energy production. Therefore, during exercise, appropriate supplementation may increase BCAAs in the body's "amino acid pool" to spare endogenous BCAA stores from catabolism (reduce muscle breakdown), delay fatigue and help supply additional substrate for MPS and energy.

### Typical Use

- Athletes and exercisers of any fitness level, during intense or excessive training bouts to decrease muscle breakdown and enhance recovery, and not using AminoXXXL (AB).
- Anyone attempting body-fat reduction while maintaining or increasing lean body mass and not using AB.
- For intermittent activity (most team sports >1.5 hours, including combined intermittent aerobic and anaerobic activity, such as football, soccer, basketball, baseball, rugby and hockey) and strenuous endurance exercise for reducing fatigue factors (rates of perceived exertion and mental fatigue).

- Minimum dose: Take 8 tablets 20-30 minutes before workout.
- If over 175 lbs, take 8 tablets 20 -30 minutes before workout and 2-4 tablets during activity (~midpoint).

### Unique Features

- Contains leucine, isoleucine and valine in a ratio and potency supported by clinical evidence.
- Manufactured in a regularly inspected NSF certified facility in compliance with Good Manufacturing Practices (GMPs) and third-party tested exclusively for dotFIT.

### Contraindications

BCAAs are contraindicated for those with the hereditary disorder maple syrup urine disease.<sup>277</sup> This product, as with any protein or creatine-containing supplement, is contraindicated for users with kidney or liver disease.<sup>278</sup> Recover&Build 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.

## SUPPLEMENT FACTS

Serving Size: 8 Tablets  
Servings Per Container: 20

Amount Per Serving	% Daily Value
L-Leucine	5600 mg **
L-Isoleucine	1920 mg **
L-Valine	1920 mg **

\*\* % Daily Value not established.

## FirstString™

### Purpose & Rationale

The purpose of this product is to provide an NSF Certified for Sport and NCAA-compliant shake formula containing ideal performance enhancing nutrition that can be properly integrated within daily meal planning and training protocols. Based on current scientific evidence, FirstString is designed to provide the ideal rapidly digesting powdered “food-form” training formula for size, strength and performance athletes, further defined as purely anaerobic (e.g. off-season bodybuilders, power lifters and sprinters), intermittent (most team sports involving intermittent aerobic and anaerobic activity, such as football, soccer, basketball, baseball, rugby, and hockey) and short- to medium-distance endurance athletes. The low-fat and 2:1 ratio of carbohydrates to protein in this formula is designed to help fulfill the athlete’s macronutrient needs throughout the day. Because of its rapid digesting whey protein and specialized carbohydrate mix, FirstString also provides the perfect pre-/post-workout formula to maximize training/competition and subsequent outcomes. If more carbohydrate is needed, as for endurance athletes or carbohydrate loading, it can be added to the mix.

### Typical Use

- For athletes of all ages, including those who are drug tested and whose primary goals are maximizing growth and performance including muscle protein synthesis (MPS) and recovery from strenuous activity.
- As a pre-workout supplement, consume the amount below 30-40 minutes prior to activity based on body size:
  - 100-150 lbs.: 1.5 scoops
  - 151-200 lbs.: 2 scoops
  - 201-250 lbs.: 3 scoops
  - >250 lbs.: 4 scoops
- Immediately following training, repeat the same dose unless also using AminoXXXL. If also using AminoXXXL, consume FirstString 30 minutes following the immediate post-exercise dose of AminoXXXL.
- As a meal replacement or weight-gain supplement, use as needed throughout the day to meet individual goals for protein, carbohydrates, calorie and nutrient timing.
- Anyone wanting a great tasting, convenient meal replacement and/or additional protein source.

### Unique Features

- The carbohydrate content satisfies the profile for maximizing protein synthesis while fitting into a “low sugar” claim, which appeals to prevailing perceptions. Two scoops contain 2g of protein, 45g of carbs and 3g of sugar.
- Sophisticated, ideal blend of the highest quality fast and extended acting proteins.
- Co-factors ensure nutrient uniformity and stability with great taste and easy mixing.
- No gas or bloating with only 2.5g of lactose per serving
- Synergistic with all other dotFIT products and normal diet. dotFIT powders are NOT “spiked” with unnecessary nutrients, unlike most other products in this space (e.g. bars, shakes and ready-to-drinks). Combining multiple products from various manufacturers and food intake can lead to excessive nutrient intake. When consuming only dotFIT products as directed with one’s normal diet, the body’s nutrient levels are kept at a safe and optimal range.
- NCAA-approved protein product and NSF Certified for Sport, which is an additional product guarantee for drug-tested athletes. More info is available at <http://www.dotFIT.com/nsf>

### Contraindications

FirstString is contraindicated in people who cannot consume milk proteins.

Nutrition Facts		
Serving Size:	2 Scoops (73.5g)	
Servings Per Container:	About 32	
	Calories 290	Fat Cal. 30
Amount Per Serving	% Daily Value	
<b>Total Fat</b>	2.5 g	4%
Saturated Fat	0.75 g	4%
Trans Fat	0 g	**
<b>Cholesterol</b>	63 mg	21%
<b>Sodium</b>	125 mg	5%
<b>Total Carbohydrate</b>	44.5 g	15%
Dietary Fiber	0 g	0%
Sugars	3 g	**
<b>Protein</b>	21 g	42%
Vitamin A (as Beta Carotene)	300IU	6%
Vitamin C (as Ascorbic acid)	3 mg	5%
Vitamin D (as Cholecalciferol)	20 IU	5%
Vitamin E (as D-Alpha Tocopheryl succinate)	1.5 IU	5%
Vitamin B1 (Thiamine Hydrochloride)	0.075 mg	5%
Riboflavin	0.085 mg	5%
Niacin (as Niacinamide)	1 mg	5%
Vitamin B6 (as Pyridoxine HCl)	0.1 mg	5%
Vitamin B12 (as Cyanocobalamin)	0.3 mcg	5%
Biotin	15 mcg	5%
Pantothenic acid (as d-Calcium Pantothenate)	0.5 mg	5%
Calcium (as Calcium Lactate Gluconate)	150 mg	15%
Iron (as Ferrous Sulfate)	0.5 mg	3%
Iodine (as Potassium Iodide)	32.5 mcg	22%
Magnesium (as Magnesium Phosphate)	20 mg	5%
Zinc (as Zinc Sulfate)	0.75 mg	5%
Copper (as Copper Gluconate)	0.1 mg	5%
Aminogen® (13 Units)	125 mg	**

## Pre/Post Workout Formula

### Purpose & Rationale

The purpose of this product includes one or more of the following: 1) a meal replacement as needed for weight loss and/or weight maintenance; 2) meal or daily supplement for weight gain; 3) before and after workout formula to enhance exercise-induced results; and/or 4) daily protein supplement to help meet the current higher protein recommendations for active persons. While each of the dotFIT powders have a more specific role (LeanMR for weight loss, WheySmooth for low-calorie pre/post workout and protein supplementation and/or low-carbohydrate weight loss meal replacement (MR), FirstString primarily for performance and/or muscle/weight gain goals), Pre/Post Workout Formula is the only dotFIT powder that may be used (as it exists in its native form) as described for any goal (performance, health, weight loss, or muscle gain).

### Typical Use

- As a pre- and post-workout supplement for performance goals, consume the amounts below 30-40 minutes before exercise based on body size:
  - 100-150 lbs.: 1.5 scoops
  - 151-200 lbs.: 2 scoops
  - 201-250 lbs.: 3 scoops
  - >250 lbs.: 4 scoops
- Immediately following training, repeat the same dose unless also using AminoXXXL (see [muscle stacking](#)). If using AminoXXXL, consume Pre/Post Workout Formula 30 minutes following the immediate post-exercise dose of AminoXXXL.
- As a meal replacement for weight/fat loss, use Pre/Post Workout Formula to supply two small meals within any calorie-restricted meal plan of >4 meals per day. As a weight-gain supplement, use as needed throughout the day to meet individual protein, carbohydrate, calorie and nutrient timing goals.
- Anyone seeking a great tasting, convenient meal replacement and/or additional protein source.

### Unique Features

- Carbohydrate content satisfies the necessary profile for maximizing protein synthesis while fitting into a “low sugar” claim, which appeals to prevailing perceptions. One serving contains 21g

of protein, 33-35g of carbohydrates and only 3g of sugar.

- Sophisticated, ideal blend of the highest quality fast and extended acting proteins.
- No aspartame and relatively low in sodium.
- Co-factors ensure nutrient uniformity and stability with great taste and easy mixing.
- No gas or bloating as is common with other protein powders. Less than 1.5g of lactose per serving.
- Synergistic with all other dotFIT products and traditional food intake. dotFIT powders are NOT “spiked” with unnecessary nutrients. Most other products in this space (e.g. bars, shakes and ready-to-drinks) 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 body’s nutrient levels are kept at a safe and optimal range.

### Contraindications

Pre/Post Workout Formula is contraindicated in people who cannot consume milk proteins.

## Nutrition Facts

Serving Size: 2 Scoops (61 g)

Servings Per Container: 20 servings

### Amount Per Serving

Calories 240

Calories from Fat 25

		% Daily Value*
<b>Total Fat</b>	<b>2.5 g</b>	<b>4%</b>
Saturated Fat	1 g	5%
Trans Fat	0 g	**
<b>Cholesterol</b>	<b>60 mg</b>	<b>20%</b>
<b>Sodium</b>	<b>140 mg</b>	<b>6%</b>
<b>Total Carbohydrates</b>	<b>33 g</b>	<b>11%</b>
Dietary Fiber	0g	0%
Sugars	3 g	**
<b>Protein</b>	<b>21 g</b>	<b>42%</b>

Vitamin A 0% • Vitamin C 0%

Calcium 15% • Iron 2%

\*Percent Daily Values are based on a 2,000 calorie diet.

\*\* % 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	



## Unflavored Pre/Post Workout Formula

### Purpose & Rationale

The purpose of this product includes one or more of the following: 1) a meal replacement as needed for weight loss and/or weight maintenance; 2) meal or daily supplement for weight gain; 3) before and after workout formula to enhance exercise-induced results; and/or 4) daily protein supplement to help meet the current higher protein recommendations for active persons. While each of the dotFIT powders have a more specific role (LeanMR for weight loss, WheySmooth for low-calorie pre/post workout and protein supplementation and/or low-carbohydrate weight loss meal replacement (MR), FirstString primarily for performance and/or muscle/weight gain goals), Pre/Post Workout Formula is the only dotFIT powder that may be used (as it exists in its native form) as described for any goal (performance, health, weight loss, or muscle gain).

### Typical Use

- As a pre- and post-workout supplement for performance goals, consume the amounts below 30-40 minutes before exercise based on body size:
  - 100-150 lbs.: 1.5 scoops
  - 151-200 lbs.: 2 scoops
  - 201-250 lbs.: 3 scoops
  - >250 lbs.: 4 scoops
- Immediately following training, repeat the same dose unless also using AminoXXXL (see [muscle stacking](#)). If using AminoXXXL, consume Pre/Post Workout Formula 30 minutes following the immediate post-exercise dose of AminoXXXL.
- As a meal replacement for weight/fat loss, use Pre/Post Workout Formula to supply two small meals within any calorie-restricted meal plan of >4 meals per day. As a weight-gain supplement, use as needed throughout the day to meet individual protein, carbohydrate, calorie and nutrient timing goals.
- Anyone seeking a great tasting, convenient meal replacement and/or additional protein source.

### Unique Features

- Carbohydrate to protein ratio of 1.5 to 1
- Carbohydrate content satisfies the necessary profile for maximizing protein synthesis while fitting into a “low sugar” claim, which appeals to prevailing perceptions.

- Sophisticated, ideal blend of the highest quality fast and extended acting proteins.
- No artificial colors, flavors or sweeteners.
- 200 mg of calcium and 170 mg of potassium per serving.
- Co-factors ensure nutrient uniformity and stability with great taste and easy mixing.
- No gas or bloating as is common with other protein powders. Less than 1.5 g of lactose per serving.
- Synergistic with all other dotFIT products and traditional food intake. dotFIT powders are NOT “spiked” with unnecessary nutrients. Most other products in this space (e.g. bars, shakes and ready-to-drinks) 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 body’s nutrient levels are kept at a safe and optimal range.

### Contraindications

Pre/Post Workout Formula is contraindicated in people who cannot consume milk proteins.

Nutrition Facts	
20 servings per container	
Serving size 2 Scoops (61g)	
Amount per serving	
<b>Calories</b>	<b>240</b>
% Daily Value*	
<b>Total Fat</b> 3 g	<b>4%</b>
Saturated Fat 1 g	<b>5%</b>
Trans Fat 0g	<b>**</b>
<b>Cholesterol</b> 45 mg	<b>15%</b>
<b>Total Carbohydrate</b> 32 g	<b>12%</b>
Dietary Fiber 0 g	<b>0%</b>
Total Sugars 4 g	
<b>Protein</b> 20 g	
<b>Sodium</b> 190mg	<b>8%</b>
Vitamin D 0 mcg	0%
Calcium 200 mg	15%
Iron 0 mg	0%
Potassium 170 mg	4%
**Daily Value not established.	

## WheySmooth™

### Purpose & Rationale

The purpose of this product is to deliver a high-quality protein source to help increase protein intake as needed while simultaneously minimizing calories for athletic training and body-composition goals. WheySmooth comes in a powdered mix form, which enables one to adjust the total meal (or daily) protein and other nutrient content as desired and remain within a specific calorie allotment. Because of whey protein's superior absorption and amino acid profile, specifically essential amino acids (EAA) compared to other sources, the purpose of WheySmooth is to improve all mechanisms of action related to muscle protein synthesis (MPS), diet and training outcomes. Therefore, when compared to other complete protein sources, WheySmooth can improve lean body mass preservation and appetite control during weight loss, leading to favorable body composition changes. Additionally, it can maximize MPS throughout the day, which optimizes training-induced muscle hypertrophy and performance. The product also enables the consumption of more protein (EAA) with fewer calories for lifelong weight control while staving off inevitable age-related muscle loss. Other potential health benefits include immune system support.

### Typical Use

- Ideal for athletes and exercisers seeking to acquire the highest amount of protein with the fewest number of calories in order to maximize training induced size, performance, strength, and body-composition outcomes.
- For anyone pursuing weight/fat loss, WheySmooth is ideal as a high-protein, low-calorie protein source.
- Anyone who is not meeting protein requirements for specific goals, including higher amounts needed for exercise and aging.
- As a pre-/post-workout supplement for physique competitors or other weight/body-fat conscious athletes during the final weeks of competition dieting, helping to meet protein requirements with fewer calories.

- Any exerciser during intense training, especially when combined with calorie restriction.
- Anyone seeking a great tasting, convenient, and high-quality protein source.

### Unique Features

- 25g of the highest biological value protein, 8g of carbohydrates and 2.5g of healthy fat in only 160 calories.
- Co-factors ensure nutrient uniformity and stability with great taste and easy mixing.
- No gas or bloating as is common with other protein powders. Less than 2.5g of lactose per serving.
- Contains only 2g of sugar.
- Aspartame-free.
- NSF Certified for Sport, which independently verifies purity, potency and absence of contaminants. Learn more at <http://www.dotFIT.com/nsf>

### Contraindications

WheySmooth is contraindicated in people who cannot consume milk proteins.

Nutrition Facts		
Serving Size: 1 Scoop (40g)		
Servings Per Container: approximately 28.5 servings		
Amount Per Serving		
Calories 160		Calories from Fat 25
		<b>% Daily Value*</b>
<b>Total Fat</b>	2.5g	4%
Saturated Fat	1g	5%
Trans Fat	0g	
<b>Cholesterol</b>	75mg	25%
<b>Sodium</b>	125mg	5%
<b>Total Carbohydrate</b>	8g	3%
Dietary Fiber	1g	4%
Sugars	2g	
<b>Protein</b>	25g	
Vitamin A	0%	Vitamin C 0%
Calcium	15%	Iron 8%
*Percent Daily Values are based on a 2,000 calorie diet.		
** % 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	

## Unflavored WheySmooth™

### Purpose & Rationale

The purpose of this product is to deliver a high-quality protein source to help increase protein intake as needed while simultaneously minimizing calories for athletic training and body-composition goals. WheySmooth comes in a powdered mix form, which enables one to adjust the total meal (or daily) protein and other nutrient content as desired and remain within a specific calorie allotment. Because of whey protein's superior absorption and amino acid profile, specifically essential amino acids (EAA) compared to other sources, the purpose of WheySmooth is to improve all mechanisms of action related to muscle protein synthesis (MPS), diet and training outcomes. Therefore, when compared to other complete protein sources, WheySmooth can improve lean body mass preservation and appetite control during weight loss, leading to favorable body composition changes. Additionally, it can maximize MPS throughout the day, which optimizes training-induced muscle hypertrophy and performance. The product also enables the consumption of more protein (EAA) with fewer calories for lifelong weight control while staving off inevitable age-related muscle loss. Other potential health benefits include immune system support.

### Typical Use

- Ideal for athletes and exercisers seeking to acquire the highest amount of protein with the fewest number of calories in order to maximize training induced size, performance, strength, and body-composition outcomes.
- For anyone pursuing weight/fat loss, WheySmooth is ideal as a high-protein, low-calorie protein source.
- Anyone who is not meeting protein requirements for specific goals, including higher amounts needed for exercise and aging.
- As a pre-/post-workout supplement for physique competitors or other weight/body-fat conscious athletes during the final weeks of competition dieting, helping to meet protein requirements with fewer calories.
- Any exerciser during intense training, especially when combined with calorie restriction.
- Anyone seeking a great tasting, convenient, and high-quality protein source.

### Unique Features

- 25 g of the highest biological value protein, 6 g of carbohydrates in only 150 calories.
- Co-factors ensure nutrient uniformity and stability with great taste and easy mixing.
- No gas or bloating as is common with other protein powders. Less than 2.5 g of lactose per serving.
- Contains only 2g of sugar.
- No artificial sweeteners, flavors or colors
- 200 mg of calcium and 224 mg of potassium per serving.
- NSF Certified for Sport, which independently verifies purity, potency and absence of contaminants. Learn more at <http://www.dotFIT.com/nsf>

### Contraindications

WheySmooth is contraindicated in people who cannot consume milk proteins.

Nutrition Facts	
30 servings per container	
Serving size 1 Scoop (38g)	
Amount per serving	
<b>Calories</b>	<b>150</b>
	% Daily Value*
<b>Total Fat</b> 3 g	<b>4%</b>
Saturated Fat 1g	<b>5%</b>
Trans Fat 0g	<b>**</b>
<b>Cholesterol</b> 60 mg	<b>20%</b>
<b>Total Carbohydrate</b> 6 g	<b>2%</b>
Dietary Fiber 0 g	<b>0%</b>
Total Sugars 2 g	
<b>Protein</b> 25 g	
<b>Sodium</b> 170 mg	<b>7%</b>
Vitamin D 0 mcg	0%
Calcium 200 mg	15%
Iron 0 mg	0%
Potassium 224 mg	5%
**Daily Value not established.	

## Flavor Packets

### Purpose & Rationale

The purpose of this product is to provide a convenient way for consumers to add various flavors to the Unflavored Pre/Post Workout shake formula and the Unflavored WheySmooth shake formula to support their health, fitness and weight management goals.

### Unique Features

- Gluten free
- Dairy free
- Available in a variety pack of 10 packets with 5 different flavors including cookie dough, birthday cake, orange cream, strawberry and peanut butter
- Available in single flavor packs of 10

<b>Nutrition Facts</b>	
10 servings per container	
<b>Serving size: 1 flavor packet (3.27g)</b>	
<b>Amount per serving</b>	
<b>Calories</b>	<b>10</b>
% Daily Value*	
<b>Total Fat</b> 0 g	<b>0%</b>
Saturated Fat 0g	<b>0%</b>
Trans Fat 0g	<b>**</b>
<b>Cholesterol</b> 0 mg	<b>0%</b>
<b>Total Carbohydrate</b> 3 g	<b>1%</b>
Dietary Fiber 0 g	<b>0%</b>
Total Sugars 0 g	
<b>Protein</b> 0 g	
<b>Sodium</b> 0 mg	<b>0%</b>
<b>Vitamin D</b> 0 mcg	
<b>Calcium</b> 0 mg	
<b>Iron</b> 0 mg	
<b>Potassium</b> 0 mg	
**Daily Value not established.	

## All Natural WheySmooth™

### Purpose & Rationale

The purpose of this product is to deliver a high-quality protein source to help increase protein intake as needed while simultaneously minimizing calories for athletic training and body composition goals. All Natural WheySmooth comes in a powdered mix form, which enables one to adjust the total meal (or daily) protein and other nutrient content as desired and remain within a specific calorie allotment. Because of whey protein's superior absorption and amino acid profile, specifically essential amino acids (EAA) compared to other sources, the purpose of All Natural WheySmooth is to improve on all mechanisms of action related to muscle protein synthesis (MPS), diet and training outcomes. Therefore, when compared to other complete protein sources, All Natural WheySmooth can improve lean body mass preservation and appetite control during weight loss, leading to favorable body composition changes. Additionally, it can maximize MPS throughout the day, which optimizes training-induced muscle hypertrophy and performance. The product also enables the consumption of more protein (EAA) with fewer calories for lifelong weight control while staving off inevitable age-related muscle loss. Other potential health benefits include immune system support.

### Typical Use

- Ideal for athletes and exercisers seeking to acquire the highest amount of protein with the fewest number of calories to maximize training induced size, performance, strength, and body-composition outcomes.
- For anyone pursuing weight/fat loss, All Natural WheySmooth is ideal as a high-protein, low-calorie protein source
- Anyone who is not meeting protein requirements for specific goals including higher amounts needed for exercise and aging.
- As a pre-/post-workout supplement for physique competitors or other weight/body-fat conscious athletes during the final weeks of competition dieting, to meet protein requirements with fewer calories.
- Any exerciser during intense training, especially when combined with calorie restriction.

- Anyone seeking a great tasting, convenient, and high-quality, all-natural protein source.

### Unique Features

- Contains 140 calories per serving
- 0.3:1 ratio of carbohydrates to protein.
- Contains 25g of high-quality protein per serving (whey protein concentrate and whey protein isolate).
- Grass-fed, non-GMO, rBGH-free, gluten-free.
- Stevia-sweetened
- No artificial colors or flavors.
- Whey protein is domestic, and the product is manufactured in the USA.
- NSF Certified for Sport, which independently verifies purity, potency and absence of contaminants. Learn more at <http://www.dotFIT.com/nsf>

### Contraindications

WheySmooth is contraindicated in people who cannot consume milk proteins.

### SUPPLEMENT FACTS

Serving Size: 1 1/2 Scoops (Approx. 35.3 g)  
Servings Per Container: 26

	Amount Per Serving	% Daily Value*
Calories	140	
Calories from Fat	15	
Total Fat	1.5 g	2%
Saturated Fat	1 g	5%
Cholesterol	65 mg	22%
Sodium	65 mg	3%
Potassium	250 mg	7%
Total Carbohydrate	6 g	2%
Sugars	2 g	**
Protein	25 g	50%
Vitamin A	<2%	Vitamin C 0%
Calcium	15%	Iron <2%
Vitamin D	0%	Thiamin 0%
Riboflavin	0%	Vitamin B-6 0%
Vitamin B-12	0%	Pantothenic acid 0%
Phosphorus	<2%	Magnesium 6%

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

	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	

\*\* Daily Value not established



## References

- <sup>1</sup> Murphy SP, White KK, Park SY, Sharma S. Multivitamin-multimineral supplements' effect on total nutrient intake. *Am J Clin Nutr.* 2007 Jan;85(1):280S-284S. Review.
- <sup>2</sup> Nicklas TA, Jahns L, Bogle ML, Chester DN, Giovanni M, Klurfeld DM, Laugero K, Liu Y, Lopez S, Tucker, KL. Barriers and facilitators for consumer adherence to the dietary guidelines for Americans: the HEALTH study. *J Acad Nutr Diet.* 2013 Oct;113(10):1317-31. doi: 10.1016/j.jand.2013.05.004. Epub 2013 Jul 17.
- <sup>3</sup> Marra MV, Boyar AP. Position of the American Dietetic Association: nutrient supplementation. *J Am Diet Assoc.* 2009 Dec;109(12):2073-85.
- <sup>4</sup> Sebastian RS, Cleveland LE, Goldman JD, Moshfegh AJ. Older adults who use vitamin/mineral supplements differ from nonusers in nutrient intake adequacy and dietary attitudes. *J Am Diet Assoc.* 2007 Aug;107(8):1322-32.
- <sup>5</sup> Lee C, Majka DS. Is calcium and vitamin D supplementation overrated? *J Am Diet Assoc.* 2006 Jul;106(7):1032-4.
- <sup>6</sup> Blom HJ, Shaw GM, den Heijer M, Finnell RH. Neural tube defects and folate: case far from closed. *Nat Rev Neurosci.* 2006 Sep;7(9):724-31.
- <sup>7</sup> Shils ME, Vernon RY. Modern Nutrition in health and disease. 7th edition. Philadelphia PA: Lea and Febiger; 1988. 1694 p.
- <sup>8</sup> Winters LR, Yoon JS, Kalkwarf HJ, Davies JC, Berkowitz MG, Haas J, Roe DA. Riboflavin requirements and exercise adaptation in older women. *Am J Clin Nutr* 1992 Sep;56(3):526-32.
- <sup>9</sup> Campbell WW, Anderson RA. Effects of aerobic exercise and training on the trace minerals chromium, zinc and copper. *Sports Med* 1987 Jan-Feb;4(1):9-18.
- <sup>10</sup> Beals KA, Manore MM. Nutritional status of female athletes with subclinical eating disorders. *J Am Diet Assoc* 1998 Apr;98(4):419-25.
- <sup>11</sup> Manore MM. Chronic dieting in active women: what are the health consequences? *Womens Health Issues* 1996 Nov-Dec;6(6):332-41
- <sup>12</sup> Johnson MA. Nutrition and aging--practical advice for healthy eating. *J Am Med Womens Assoc.* 2004 Fall;59(4):262-9.
- <sup>13</sup> Calton JB. Prevalence of micronutrient deficiency in popular diet plans. *J Int Soc Sports Nutr.* 2010 Jun 10;7:24.
- <sup>14</sup> Harris WS, Appel LJ. New guidelines focus on fish, fish oil, omega-3 fatty acids. American Heart Association; <http://www.americanheart.org/presenter.jhtml?identifier=3065754> 2002(November 11)
- <sup>15</sup> Yayuan Zheng<sup>1</sup>, Jianhong Zhu<sup>1</sup>, Manru Zhou<sup>1</sup>, Liao Cui<sup>1</sup>, Weimin Yao<sup>2</sup>, Yuyu Liu<sup>1</sup> Meta-Analysis of Long-Term Vitamin D Supplementation on Overall Mortality 1 Department of Pharmacology, Guangdong Medical College, Zhanjiang, China, 2 Institute of Respiratory Disease, Guangdong Medical College, Zhanjiang, China.
- <sup>16</sup> Hasan S, Fatima N, Bilal N, Suhail N, Fatima S, Morgan EN, Aldebasy Y, Alzohairy MA, Banu N. Effect of chronic unpredictable stress on short term dietary restriction and its modulation by multivitamin-mineral supplementation. *Appetite.* 2013 Jun;65:68-74. doi: 10.1016/j.appet.2013.02.003. Epub 2013 Feb 12.

- <sup>17</sup> Autier P, Gandini S. Vitamin D supplementation and total mortality: a meta-analysis of randomized controlled trials. *Arch Intern Med*. 2007 Sep 10;167(16):1730-7. Review.
- <sup>18</sup> Nutrition and Your Health: Dietary Guidelines for Americans, 2005. 6th ed. Washington, DC: US Government Printing Office; 2005.
- <sup>19</sup> Macpherson H, Ellis KA, Sali A, Pipingas A. Memory improvements in elderly women following 16 weeks treatment with a combined multivitamin, mineral and herbal supplement: A randomized controlled trial. *Psychopharmacology (Berl)*. 2012 Mar;220(2):351-65. doi: 10.1007/s00213-011-2481-3. Epub 2011 Oct 18
- <sup>20</sup> Leishear K et. al. Health, Aging and Body Composition Study. Relationship between vitamin B12 and sensory and motor peripheral nerve function in older adults. *J Am Geriatr Soc*. 2012 Jun;60(6):1057-63. doi: 10.1111/j.1532-5415.2012.03998.x
- <sup>21</sup> Dellavalle DM , Haas JD. Iron supplementation improves energetic efficiency in iron depleted female rowers. *Med Sci Sports Exerc*. 2014 Jun;46(6):1204-15. doi: 10.1249/MSS.0000000000000208.
- <sup>22</sup> Wierniuk A , Włodarek D. Estimation of energy and nutritional intake of young men practicing aerobic sports. *Rocz Panstw Zakl Hig*. 2013;64(2):143-8.
- <sup>23</sup> Dana Ogan and Kelly Pritchett. Vitamin D and the Athlete: Risks, Recommendations, and Benefits. *Nutrients* 2013, 5, 1856-1868; doi:10.3390/nu5061856.
- <sup>24</sup> Krebs-Smith SM, Guenther PM, Subar AF, Kirkpatrick SI, Dodd KW. Americans do not meet federal dietary recommendations. *J Nutr*. 2010 Oct;140(10):1832-8. Epub 2010 Aug 11.
- <sup>25</sup> Striegel-Moore RH, Thompson DR, Affenito SG, Franko DL, Barton BA, Schreiber GB, Daniels SR, Schmidt M, Crawford PB. Fruit and vegetable intake: Few adolescent girls meet national guidelines. *Prev Med*. 2006 Mar;42(3):223-8. Epub 2006 Jan 10.
- <sup>26</sup> Serdula MK, Gillespie C, Kettel-Khan L, Farris R, Seymour J, Denny C. Trends in fruit and vegetable consumption among adults in the United States: behavioral risk factor surveillance system, 1994-2000. *Am J Public Health*. 2004 Jun;94(6):1014-8.
- <sup>27</sup> Economic Research Service, US Department of Agriculture. America's Eating Habits.: Changes and Consequences 1999. USDA/Economic Research Service, Washington D.C.
- <sup>28</sup> Kant AK. Reported consumption of low-nutrient-density foods by American children and adolescents: nutritional and health correlates, NHANES III, 1988 to 1994. *Arch Pediatr Adolesc Med*. 2003 Aug;157(8):789-96.
- <sup>29</sup> Nicklas TA, Weaver C, Britten P, Stitzel KF. The 2005 Dietary Guidelines Advisory Committee: developing a key message. *J Am Diet Assoc*. 2005 Sep;105(9):1418-24. Erratum in: *J Am Diet Assoc*. 2005 Dec;105(12):1869.
- <sup>30</sup> Fulgoni V 3rd, Nicholls J, Reed A, Buckley R, Kafer K, Huth P, DiRienzo D, Miller GD. Dairy consumption and related nutrient intake in African-American adults and children in the United States: continuing survey of food intakes by individuals 1994-1996, 1998, and the National Health And Nutrition Examination Survey 1999-2000. *J Am Diet Assoc*. 2007 Feb;107(2):256-64.
- <sup>31</sup> Krebs-Smith SM, Guenther PM, Subar AF, Kirkpatrick SI, Dodd KW. Americans do not meet federal dietary recommendations. *J Nutr*. 2010 Oct;140(10):1832-8. Epub 2010 Aug 11.

- 32 Wallace TC, McBurney M, Fulgoni VL 3rd. Multivitamin/mineral supplement contribution to micronutrient intakes in the United States, 2007-2010. *J Am Coll Nutr.* 2014;33(2):94-102. doi: 10.1080/07315724.2013.846806
- 33 Beals KA. Eating behaviors, nutritional status, and menstrual function in elite female adolescent volleyball players. *J Am Diet Assoc.* 2002 Sep;102(9):1293-6.
- 34 Jonnalagadda SS, Bernadot D, Nelson M. Energy and nutrient intakes of the United States National Women's Artistic Gymnastics Team. *Int J Sport Nutr.* 1998 Dec;8(4):331-44.
- 35 Caine D, Lewis R, O'Connor P, Howe W, Bass S. Does gymnastics training inhibit growth of females? *Clin J Sport Med.* 2001 Oct;11(4):260-70. Review.
- 36 Trexler ET, Smith-Ryan, AE, Norton LE. Metabolic adaptation to weight loss: implications for the athlete. Trexler et al. *J Intl Soc Sport Nut* 2014, 11:7 <http://www.jissn.com/content/11/1/7>.
- 37 Clark LC, Combs GF Jr, Turnbull BW, Slate EH, Chalker DK, Chow J, Davis LS, Glover RA, Graham GF, Gross EG, Krongrad A, Leshner JL Jr, Park HK, Sanders BB Jr, Smith CL, Taylor JR. Effects of selenium supplementation for cancer prevention in patients with carcinoma of the skin. A randomized controlled trial. Nutritional Prevention of Cancer Study Group. *JAMA* 1996 Dec 25;276(24):1957-63.
- 38 Combs GF. The vitamin's functional aspects in nutrition and health. 2nd Edition. San Diego: Academic Press; 1988.
- 39 Agte V, Tarwadi K, Mengale S, Hinge A, Chiplonkar S. Vitamin profile of cooked foods: how healthy is the practice of ready-to-eat foods? *Int J Food Sci Nutr.* 2002 May;53(3):197-208.
- 40 Viadel B, Barbera R, Farre R. Effect of cooking and legume species upon calcium, iron and zinc uptake by Caco-2 cells. *J Trace Elem Med Biol.* 2006;20(2):115-20.
- 41 Ktenioudaki A1, Alvarez-Jubete L, Gallagher E. A review of the process-induced changes in the phytochemical content of cereal grains: The bread making process. *Crit Rev Food Sci Nutr.* 2013 Sep 2. [Epub ahead of print].
- 42 Oracz J, Zyzelewicz D, Nebesny E. The content of polyphenolic compounds in cocoa beans (*Theobroma cacao* L.), depending on variety, growing region and processing operations: A review. *Crit Rev Food Sci Nutr.* 2013 Sep 25. [Epub ahead of print].
- 43 Oliviero T, Verkerk R, Van Boekel MA, Dekker M. Effect of water content and temperature on inactivation kinetics of myrosinase in broccoli (*Brassica oleracea* var. *italica*). *Food Chem.* 2014 Nov 15;163:197-201. doi: 10.1016/j.foodchem.2014.04.099. Epub 2014 May 9.
- 44 Smoleń S, Sady W, Ledwożyw-Smoleń I, Strzetelski P, Liszka-Skoczylas M, Rożek S. Quality of fresh and stored carrots depending on iodine and nitrogen fertilization. *Food Chem.* 2014 Sep 15;159:316-22. doi: 10.1016/j.foodchem.2014.03.024. Epub 2014 Mar 15.
- 45 Ogden CL, Flegal KM, Carroll MD, Johnson CL. Prevalence and trends in overweight among US children and adolescents, 1999-2000. *JAMA.* 2002 Oct 9;288(14):1728-32.
- 46 Pennington J, Kandiah J, Nicklas T, Pitman S, Stitzel K. Practice paper of the American dietetic association: nutrient density: meeting nutrient goals within calorie needs. *J Am Diet Assoc.* 2007 May;107(5):860-9.
- 47 King JC. An evidence-based approach for establishing dietary guidelines. *J Nutr.* 2007;137:480-483.

- 48 Reichrath J. The challenge resulting from positive and negative effects of sunlight: how much solar UV exposure is appropriate to balance between risks of vitamin D deficiency and skin cancer? *Prog Biophys Mol Biol*. 2006 Sep;92(1):9-16. Epub 2006 Feb 28. Review.
- 49 Kimlin MG, Schallhorn KA. Estimations of the human 'vitamin D' UV exposure in the USA. *Photochem Photobiol Sci*. 2004 Nov-Dec;3(11-12):1067-70. Epub 2004 Nov 17.
- 50 Kimlin MG, Olds WJ, Moore MR. Location and vitamin D synthesis: is the hypothesis validated by geophysical data? *J Photochem Photobiol B*. 2007 Mar 1;86(3):234-9. Epub 2006 Dec 4.
- 51 Holick MF. Vitamin D and sunlight: strategies for cancer prevention and other health benefits. *Clin J Am Soc Nephrol*. 2008 Sep;3(5):1548-54. Epub 2008 Jun 11.
- 52 Vieth R. What is the optimal vitamin D status for health? *Prog Biophys Mol Biol*. 2006 Sep;92(1):26-32. Review.
- 53 Holick MF. Sunlight and vitamin D for bone health and prevention of autoimmune diseases, cancers, and cardiovascular disease. *Am J Clin Nutr*. 2004 Dec;80(6 Suppl):1678S-88S. Review.
- 54 Ng K, Scott JB, Drake BF, Chan AT, Hollis BW, Chandler PD, Bennett GG, Giovannucci EL, Gonzalez- Suarez E, Meyerhardt JA, Emmons KM, Fuchs CS. Dose response to vitamin D supplementation in African Americans: results of a 4-arm, randomized, placebo-controlled trial. *Am J Clin Nutr*. 2013 Dec 24. [Epub ahead of print].
- 55 Bonilla C, Ness AR, Wills AK, Lawlor DA, Lewis SJ, Davey Smith G. Skin pigmentation, sun exposure and vitamin D levels in children of the Avon Longitudinal Study of Parents and Children. *BMC Public Health*. 2014 Jun 12;14(1):597. [Epub ahead of print].
- 56 Dollahite J, Franklin D, McNew R. Problems encountered in meeting the Recommended Dietary Allowances for menus designed according to the Dietary Guidelines for Americans. *J Am Diet Assoc* 1995 Mar;95(3):341-4, 347.
- 57 Institute of Medicine. Dietary Reference Intakes Table – The Complete Set. Washington DC: National Academy Press; 2005. 1-7p.
- 58 Barratt J. Diet-related knowledge, beliefs and actions of health professionals compared with the general population: an investigation in a community Trust. *J Hum Nutr Diet*. 2001 Feb;14(1):25-32.
- 59 Russell R M. New views on the RDAs for older adults. *J Am Diet Assoc* 1997 May;97(5):515-8.
- 60 Deborah A. Cohen, MD, MPH and Susan H. Babey, PhD. Contextual Influences on Eating Behaviors: Heuristic Processing and Dietary Choices. *Obes Rev*. Sep 2012; 13(9): 766–779. Published online May 3, 2012. doi: 10.1111/j.1467-789X.2012.01001.x
- 61 By Hank Schultz Nutra Ingredients-USA.com. Nutrition researchers shoot holes in assertion that multivitamins are unnecessary. 03-Jun-2014. *Annals Inter Med*.
- 62 Institute of Medicine, Food and Nutrition Board. Dietary Reference Intakes: The Essential Guide to Nutrient Requirements. Washington, DC: National Academies Press; 2006.
- 63 Institute of Medicine. Dietary Reference Intakes table—The complete set. Institute of Medicine Web site. <http://www.iom.edu/Global/News%20Announcements/~media/474B28C39EA34C43A60A6D42CCE07427.ashx>. Updated May 3, 2005. Accessed October 26, 2010.

- <sup>64</sup> Eileen Kennedy and Linda Meyers. Dietary Reference Intakes: development and uses for assessment of micronutrient status of women—a global perspective. *Am J Clin Nutr* 2005;81(suppl):1194S–7S.
- <sup>65</sup> Troesch B, Hoeft B, McBurney M, Eggersdorfer M, Weber P. Dietary surveys indicate vitamin intakes below recommendations are common in representative Western countries. *Br J Nutr*. 2012 Aug;108(4):692-8. doi: 10.1017/S0007114512001808. Epub 2012 Jun 13.
- <sup>66</sup> Krebs-Smith SM, Guenther PM, Subar AF, Kirkpatrick SI, Dodd KW. Americans do not meet federal dietary recommendations. *J Nutr*. 2010 Oct;140(10):1832-8. Epub 2010 Aug 11.
- <sup>67</sup> Agnew-Blais JC, Wassertheil-Smoller S, Kang JH, Hogan PE, Coker LH, Snetselaar LG, Smoller JW. Folate, Vitamin B-6, and Vitamin B-12 Intake and Mild Cognitive Impairment and Probable Dementia in the Women's Health Initiative Memory Study. *J Acad Nutr Diet*. 2015 Feb;115(2):231-41. doi: 10.1016/j.jand.2014.07.006. Epub 2014 Sep 8.
- <sup>68</sup> Kimberly A Skarupski, Christine Tangney, Hong Li, Bichun Ouyang, Denis A Evans, and Martha Clare Morris Longitudinal association of vitamin B-6, folate, and vitamin B-12 with depressive symptoms among older adults over time. *Am J Clin Nutr* 2010 92: 330-335.
- <sup>69</sup> Bamini Gopinath, Victoria M. Flood, Elena Ročtchina, Catherine M. McMahon, and Paul Mitchell Serum Homocysteine and Folate Concentrations Are Associated with Prevalent Age-Related Hearing Loss. *J Nutr* 2010 140: 1469-1474.
- <sup>70</sup> Lichtenstein AH, Rasmussen H, Yu WW, Epstein SR, Russell RM. Modified MyPyramid for older adults. *J Nutr*. 2008;138:5-11.
- <sup>71</sup> Mackowiak ED, Bernstein Y, Paul SH. The adult vitamin and mineral supplement maze. *Consult Pharm*. 2010 Apr;25(4):234-40. doi: 10.4140/TCP.n.2010.234.
- <sup>72</sup> Ouyang F, Longnecker MP, Venners SA, Johnson S, Korrick S, Zhang J, Xu X, Christian P, Wang MC, Wang X Preconception serum 1,1,1-trichloro- 2,bis(pchlorophenyl) ethane and B-vitamin status: independent and joint effects on women's reproductive outcomes. *Am J Clin Nutr*. 2014 Dec;100(6):1470-8. doi: 10.3945/ajcn.114.088377. Epub 2014 Oct 22.
- <sup>73</sup> Macdonald HM, Wood AD, Aucott LS, Black AJ, Fraser WD, Mavroei A, Reid DM, Secombes KR, Simpson WG, Thies F. Hip bone loss is attenuated with 1000 IU but not 400 IU daily vitamin D3: a 1-year double-blind RCT in postmenopausal women. *J Bone Miner Res*. 2013 Oct;28(10):2202-13. doi: 10.1002/jbmr.1959.
- <sup>74</sup> Yayuan Zheng, Jianhong Zhu, Manru Zhou, Liao Cui, Weimin Yao, Yuyu Liu Meta-Analysis of Long-Term Vitamin D Supplementation on Overall Mortality 1 Department of Pharmacology, Guangdong Medical College, Zhanjiang, China, 2 Institute of Respiratory Disease, Guangdong Medical College, Zhanjiang, China.
- <sup>75</sup> Katharina Nimptsch, Sabine Rohrmann, Rudolf Kaaks, and Jakob Linseisen Dietary vitamin K intake in relation to cancer incidence and mortality: results from the Heidelberg cohort of the European Prospective Investigation into Cancer and Nutrition (EPIC-Heidelberg). *Am J Clin Nutr* 2010 91: 1348-1358.
- <sup>76</sup> M Kyla Shea, Christopher J O'Donnell, Udo Hoffmann, Gerard E Dallal, Bess Dawson-Hughes, José M Ordovas, Paul A Price, Matthew K Williamson, and Sarah L Booth Vitamin K supplementation and progression of coronary artery calcium in older men and women. *Am J Clin Nutr* 2009 89: 1799-1807.



- <sup>77</sup> Wallace TC, McBurney M, Fulgoni VL III: Multivitamin–mineral supplement contribution to micronutrient intakes in the United States, 2007–2010. *J Am Coll Nutr* 33:94–102, 2014.
- <sup>78</sup> Institute of Medicine, Food and Nutrition Board. Dietary Reference Intakes: The Essential Guide to Nutrient Requirements. Washington, DC: National Academies Press; 2006.
- <sup>79</sup> Institute of Medicine. Dietary Reference Intakes table—The complete set. Institute of Medicine Web site. <http://www.iom.edu/Global/News%20Announcements/~media/474B28C39EA34C43A60A6D42CCE07427.ashx>. Updated May 3, 2005. Accessed October 26, 2010.
- <sup>80</sup> Marra MV, Wellman NS. Multivitamin— Mineral supplements in the Older Americans Act Nutrition Program: Not a one-size-fits- all quick fix. *Am J Public Health*. 2008; 98:1171-1176.
- <sup>81</sup> Barberger-Gateau P Nutrition and brain aging: how can we move ahead? *Eur J Clin Nutr*. 2014 Aug 27. doi: 10.1038/ejcn.2014.177. [Epub ahead of print].
- <sup>82</sup> Leishear K, Boudreau RM, Studenski SA, Ferrucci L, Rosano C, de Rekeneire N, Houston DK, Kritchevsky SB, Schwartz AV, Vinik AI, Hogervorst E, Yaffe K, Harris TB, Newman AB, Strotmeyer ES; Health, Aging and Body Composition Study. Relationship between vitamin B12 and sensory and motor peripheral nerve function in older adults. *J Am Geriatr Soc*. 2012 Jun;60(6):1057-63. doi: 10.1111/j.1532-5415.2012.03998.x.
- <sup>83</sup> Johnson MA. Nutrition and aging--practical advice for healthy eating. *J Am Med Womens Assn*. 2004 Fall;59(4):262-9.
- <sup>84</sup> Sebastian RS, Cleveland LE, Goldman JD, Moshfegh AJ. Older adults who use vitamin/mineral supplements differ from nonusers in nutrient intake adequacy and dietary attitudes. *J Am Diet Assoc*. 2007 Aug;107(8):1322-32.
- <sup>85</sup> Ervin RB, Kennedy-Stephenson J. Mineral intakes of elderly adult supplement and non-supplement users in the third national health and nutrition examination survey. *J Nutr*. 2002 Nov;132(11):3422-7.
- <sup>86</sup> Macpherson H, Ellis KA, Sali A, Pipingas A. Memory improvements in elderly women following 16 weeks treatment with a combined multivitamin, mineral and herbal supplement: A randomized controlled trial. *Psychopharmacology (Berl)*. 2012 Mar;220(2):351-65. doi: 10.1007/s00213-011-2481-3. Epub 2011 Oct 18.
- <sup>87</sup> Kimberly A Skarupski, Christine Tangney, Hong Li, Bichun Ouyang, Denis A Evans, and Martha Clare Morris Longitudinal association of vitamin B-6, folate, and vitamin B-12 with depressive symptoms among older adults over time. *Am J Clin Nutr* 2010 92: 330-335.
- <sup>88</sup> Bamini Gopinath, Victoria M. Flood, Elena Rohtchina, Catherine M. McMahon, and Paul Mitchell Serum Homocysteine and Folate Concentrations Are Associated with Prevalent Age-Related Hearing Loss. *J Nutr*. 2010 140: 1469-1474.
- <sup>89</sup> Lichtenstein AH, Rasmussen H, Yu WW, Epstein SR, Russell RM. Modified MyPyramid for older adults. *J Nutr*. 2008;138:5-11.
- <sup>90</sup> Mackowiak ED, Bernstein Y, Paul SH. The adult vitamin and mineral supplement maze. *Consult Pharm*. 2010. Apr;25(4):234-40. doi: 10.4140/TCP.n.2010.234.
- <sup>91</sup> Macdonald HM, Wood AD, Aucott LS, Black AJ, Fraser WD, Mavroei A, Reid DM, Secombes KR, Simpson WG, Thies F. Hip bone loss is attenuated with 1000 IU but not 400 IU daily vitamin D3: a 1-year double-blind RCT in postmenopausal women. *J Bone Miner Res*. 2013 Oct;28(10):2202-13. doi: 10.1002/jbmr.1959.

- <sup>92</sup> Yayuan Zheng, Jianhong Zhu, Manru Zhou, Liao Cui, Weimin Yao, Yuyu Liu Meta-Analysis of Long-Term Vitamin D Supplementation on Overall Mortality 1 Department of Pharmacology, Guangdong Medical College, Zhanjiang, China, 2 Institute of Respiratory Disease, Guangdong Medical College, Zhanjiang, China.
- <sup>93</sup> Katharina Nimptsch, Sabine Rohrmann, Rudolf Kaaks, and Jakob Linseisen Dietary vitamin K intake in relation to cancer incidence and mortality: results from the Heidelberg cohort of the European Prospective Investigation into Cancer and Nutrition (EPIC-Heidelberg). *Am J Clin Nutr* 2010 91: 1348-1358.
- <sup>94</sup> M Kyla Shea, Christopher J O'Donnell, Udo Hoffmann, Gerard E Dallal, Bess Dawson-Hughes, José M Ordovas, Paul A Price, Matthew K Williamson, and Sarah L Booth Vitamin K supplementation and progression of coronary artery calcium in older men and women. *Am J Clin Nutr* 2009 89: 1799-1807.
- <sup>95</sup> Coudray C, Rambeau M, Feillet-Coudray C, Gueux E, Tressol JC, Mazur A, Rayssiguier Y. Study of magnesium bioavailability from ten organic and inorganic Mg salts in Mg-depleted rats using a stable isotope approach. *Magnes Res.* 2005 Dec;18(4):215-23.
- <sup>96</sup> Rogerson. Vegan diets: Practical advice for athletes and exercisers. *J Intl Soc Sport Nut* (2017) 14:36 DOI 10.1186/s12970-017-0192-9
- <sup>97</sup> Appleby PN, Key TJ. The long-term health of vegetarians and vegans. *Proc Nutr Soc.* 2016;75:287–93.
- <sup>98</sup> Marsh K, Zeuschner C, Saunders A. Health implications of a vegetarian diet: a review. *Am J Life Med.* 2012;6:250–67
- <sup>99</sup> Clarys P, Deliens T, Huybrechts I, Deriemaeker P, Vanaelst B, De Keyzer W, et al. Comparison of nutritional quality of the vegan, vegetarian, semi-vegetarian, pesco-vegetarian and omnivorous diet. *Nutr.* 2014;6(3):1318–32
- <sup>100</sup> Craig WJ. Health effects of vegan diets. *Am J Clin Nutr.* 2009;89(5):1627S–33S
- <sup>101</sup> Richard J. Bloomer, Trint A. Gunnels and John Henry M. Schriefer. Comparison of a Restricted and Unrestricted Vegan Diet Plan with a Restricted Omnivorous Diet Plan on Health-Specific Measures. *Healthcare* 2015, 3, 544-555; doi:10.3390/healthcare3030544.
- <sup>102</sup> Craig WJ, Mangels AR. Position of the American dietetic association: vegetarian diets. *J Am Diet Assoc.* 2009;109(7):1266–82.
- <sup>103</sup> Ames BN. Low micronutrient intake may accelerate the degenerative diseases of aging through allocation of scarce micronutrients by triage. *Proc Natl Acad Sci USA.* 2006 Nov 21;103(47):17589-94. Epub 2006 Nov 13. Review.
- <sup>104</sup> Refunds issued: Kids' vitamins aren't as healthy as advertised  
<http://www.cnn.com/2012/08/14/health/childrens-vitamins-refund/>.
- <sup>105</sup> Schwartz JB. Effects of vitamin D supplementation in atorvastatin-treated patients: A new drug interaction with an unexpected consequence. *Clin Pharmacol Ther* 2009;85:198-203.
- <sup>106</sup> Roche, Inc. Xenical package insert. Nutley, NJ. May 1999.
- <sup>107</sup> MacLaughlin J, Holick MF. Aging decreases the capacity of human skin to produce vitamin D3. *J Clin Invest.* 1985;76(4):1536– 1538

- 108 Holick MF. Vitamin D: its role in cancer prevention and treatment. *Prog Biophys Mol Biol*. 2006;92:49–59.
- 109 Holick MF. Sunlight "D"ilemma: risk of skin cancer or bone disease and muscle weakness. *Lancet* 2001;357:4-6.
- 110 <http://alaskomega.com/index.php/supply-manufacturing/>.
- 111 <http://alaskomega.com/wp-content/uploads/2015/09/Spec-Tightening.pdf>.
- 112 Kris-Ehrt PM, Harris WS, Appel LJ, et al. Fish consumption, fish oil, omega-3 fatty acids, and cardiovascular disease. *Circ* 2002;106:2747-57.
- 113 Meydani SN, Dinarello CA. Influence of dietary fatty acids on cytokine production and its clinical implications. *Nutr Clin Pract* 1993;8:65-72.
- 114 Gupta H. Barriers to and Facilitators of Long Term Weight Loss Maintenance in Adult UK People: A Thematic Analysis. *Int J Prev Med*. 2014 Dec; 5(12): 1512–1520.
- 115 Malinowski JM, Metka K. Elevation of low-density lipoprotein cholesterol concentration with over-the-counter fish oil supplementation. *Ann Pharmacother* 2007;41:1296-300.
- 116 Nieves, J.W. Osteoporosis: The role of micronutrients. *Am J Clin Nutr*. 2005, 81, 1232S–1239S.
- 117 Price CT, Langford JR, Liporace FA. Essential Nutrients for Bone Health and a Review of their Availability in the Average North American Diet. *Open Orthop J* 2012, 6, 143-149.
- 118 Chung M, Balk EM, Brendel M, et al. Vitamin D and calcium: a systematic review of health outcomes. *Evid Rep Technol Assess* (Full Rep). 2009(183):1-420.
- 119 Giovannucci EL, Liu Y, Stampfer MJ, Willett WC. A prospective study of calcium intake and incident and fatal prostate cancer. *Cancer Epidemiol Biomarkers Prev*. 2006 Feb;15(2):203-10.
- 120 Heaney RP. Calcium supplementation and incident kidney stone risk: a systematic review. *J Am Coll Nutr*. 2008;27(5):519-527.
- 121 Sarubin A. The Health Professional's Guide to Popular Dietary Supplements. Chicago: The American Dietetic Association; 2000. 452 p.
- 122 Pietrow PK, Karellas ME. Medical management of common urinary calculi. *Am Fam Phys*. 2006 Jul 1;74(1):86-94. Review.
- 123 Peters ML, Leonard M, Licata AA. Role of alendronate and risedronate in preventing and treating osteoporosis. *Cleve Clin J Med* 2001;68:945-51.
- 124 Murry JJ, Healy MD. Drug-mineral interactions: a new responsibility for the hospital dietician. *J Am Diet Assoc* 1991;91:66-73.
- 125 Maton PN, Burton ME. Antacids revisited: a review of their clinical pharmacology and recommended therapeutic use. *Drugs* 1999;57:855-70.
- 126 Bügel S. Vitamin K and bone health in adult humans. In: Litwack G, Ed. Vitamins and Hormones: Vitamin K. London: Elsevier 2008; pp. 393-416.

- 127 National Academy of Sciences. A Report of the Panel on Micronutrients. Dietary reference intakes for vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium, and zinc. Washington DC: National Academy Press 2001.
- 128 Maslowski KM, Mackay CR. Diet, gut microbiota and immune responses. *Nat Immunol* 2011;12(1):5e9.
- 129 Nicholson JK, Holmes E, Kinross J, Burcelin R, Gibson G, Jia W, et al. Host-gut microbiota metabolic interactions. *Sci* (New York, NY) 2012;336(6086): 1262e7.
- 130 FAO/WHO. Health and Nutrition Properties of Probiotics in Food including Powder Milk with Live Lactic Acid Bacteria Report of a Joint FAO/WHO Expert Consultation on Evaluation of Health and Nutritional Properties of Probiotics in Food including Powder Milk with Live Lactic Acid Bacteria. Report 2001. Cordoba, Argentina 1-4 October 2001. Report No.: 0254-4725.
- 131 Thomas DW, Greer FR. Probiotics and prebiotics in pediatrics. *Pediatr*. 2010;126(6):1217-1231.
- 132 European Food and Feed Cultures Association. Food culture: definition of food cultures (FC). 2015. Available from: <http://www.effca.org/content/food-culture>. Accessed January 11, 2015.
- 133 Linda V. Thoma, Kaori Suzuki and Jia Zhao. Probiotics: a proactive approach to health. A symposium report. *Br J Nutr* (2015), 114(S1), S1-S15 doi:10.1017/S0007114515004043.
- 134 Goldin BR. Health Benefits of probiotics. *Br J Nutr* 1998;80:S203-7.
- 135 Kim JY, Kwon JH, Ahn SH, et al. Effect of probiotic mix (*Bifidobacterium bifidum*, *Bifidobacterium lactis*, *Lactobacillus acidophilus*) in the primary prevention of eczema: a double-blind, randomized, placebo-controlled trial. *Pediatr Allergy Immunol*. 2010;21(2 Pt 2):e386-e393
- 136 Rautava S, Kainonen E, Salminen S, Isolauri E. Maternal probiotic supplementation during pregnancy and breast-feeding reduces the risk of eczema in the infant. *J Allergy Clin Immunol*. 2012;130(6):1355-1360.
- 137 Mikami K, Kimura M, Takahashi H. Influence of maternal bifidobacteria on the development of gut bifidobacteria in infants. *Pharmaceu* (Basel). 2012;5(6):629-642.
- 138 Natural Medicine Database 2019 Therapeutic Research Center. <https://naturalmedicines.therapeuticresearch.com/>
- 139 Guilak F: Biomechanical factors in osteoarthritis. *Best Pract Res Clin Rheumatol* 2011, 25:815-823.
- 140 McDaniel MA, Maier SF, Einstein GO. "Brain-specific" nutrients: a memory cure? *Nut*. 2003 Nov-Dec;19(11-12):957-75.
- 141 Vogiatzoglou A, Refsum H, Johnston C, Smith SM, Bradley KM, de Jager C, Budge MM, Smith AD. Vitamin B12 status and rate of brain volume loss in community-dwelling elderly. *Neur*. 2008 Sep 9;71(11):826-32.
- 142 Suchy J, Chan A, Shea TB. Dietary supplementation with a combination of alpha-lipoic acid, acetyl-L-carnitine, glycerophosphocoline, docosahexaenoic acid, and phosphatidylserine reduces oxidative damage to murine brain and improves cognitive performance. *Nutr Res*. 2009 Jan;29(1):70-4.
- 143 Walker JG, Batterham PJ, Mackinnon AJ, Jorm AF, Hickie I, Fenech M, Kljakovic M, Crisp D, Christensen H. Oral folic acid and vitamin B-12 supplementation to prevent cognitive decline in community-dwelling older adults with

depressive symptoms--the Beyond Ageing Project: a randomized controlled trial. *Am J Clin Nutr*. 2012 Jan;95(1):194-203. doi: 10.3945/ajcn.110.007799. Epub 2011 Dec 14.

<sup>144</sup> Chan A, Remington R, Kotyla E, Lepore A, Zemianek J, Shea TB. A vitamin/nutriceutical formulation improves memory and cognitive performance in community-dwelling adults without dementia. *J Nutr Health Aging*. 2010 Mar;14(3):224-30.

<sup>145</sup> Remington R1, Bechtel C2, Larsen D3, Samar A4, Doshanjh L5, Fishman P6, Luo Y6, Smyers K1, Page R2, Morrell C5, Shea TB. A Phase II Randomized Clinical Trial of a Nutritional Formulation for Cognition and Mood in Alzheimer's Disease. *J Alzheimers Dis*. 2015 Jan 7. [Epub ahead of print].

<sup>146</sup> Lien LF, Haqq AM, Arlotto M, Slentz CA, Muehlbauer MJ, McMahon RL, Rochon J, Gallup D, Bain JR, Ilkayeva O, Wenner BR, Stevens RD, Millington DS, Muoio DM, Butler MD, Newgard CB, Svetkey LP. The STEDMAN project: biophysical, biochemical and metabolic effects of a behavioral weight loss intervention during weight loss, maintenance, and regain. *OMICS*. 2009 Feb;13(1):21-35.

<sup>147</sup> McGuire MT, Wing RR, Klem ML, Lang W, Hill JO. What predicts weight regain in a group of successful weight losers? *J Consult Clin Psychol* 1999;67:177-85.

<sup>148</sup> Phelan S, Hill JO, Lang W, Dibello JR, Wing RR. Recovery from relapse among successful weight maintainers. *Am J Clin Nutr*. 2003 Dec;78(6):1079-84.

<sup>149</sup> Johansson K1, Neovius M, Hemmingsson E. Effects of anti-obesity drugs, diet, and exercise on weight-loss maintenance after a very-low-calorie diet or low-calorie diet: a systematic review and meta-analysis of randomized controlled trials. *Am J Clin Nutr*. 2014 Jan;99(1):14-23. doi: 10.3945/ajcn.113.070052. Epub 2013 Oct 30.

<sup>150</sup> Kouvelioti R1, Vagenas G, Langley-Evans S. The effects of exercise and diet on weight loss maintenance in overweight and obese adults: a systematic review. *J Sports Med Phys Fitness*. 2014 Apr 16. [Epub ahead of print].

<sup>151</sup> Kraschnewski JL, Boan J, Esposito J et al. Long-term weight loss maintenance in the United States. *Int J Bes (Lond)* 2010; 34: 1644-1654.

<sup>152</sup> Carbone JW, McClung JP, Pasiakos SM. Skeletal Muscle Responses to Negative Energy Balance: Effects of Dietary Protein. 2012 American Society for Nutrition. *Adv Nutr* 3: 119-126, 2012; doi:10.3945/an.111.001792. 119.

<sup>153</sup> Weinheimer EM, Sands LP, Campbell WW. A systematic review of the separate and combined effects of energy restriction and exercise on fat free mass in middle-aged and older adults: implications for sarcopenic obesity. *Nutr Rev*. 2010;68:375-88.

<sup>154</sup> Stiegler P, Cunliffe A. The role of diet and exercise for the maintenance of fat-free mass and resting metabolic rate during weight loss. *Sport Med*. 2006;36(3):239-62.

<sup>155</sup> Trexler ET, Smith-Ryan AE, Norton LE. Metabolic adaptation to weight loss: implications for the athlete. *J Intl Soc Sport Nut* 2014, 11:7 <http://www.jissn.com/content/11/1/7>.

<sup>156</sup> Garthe I, Raastad T, Refsnes PE, Koivisto A, Sundgot-Borgen J: Effect of two different weight-loss rates on body composition and strength and power-related performance in elite athletes. *Int J Sport Nutr Exerc Metab* 2011, 21:97-104.



- 157 Jakicic JM, Otto AD, Lang W, Semler L, Winters C, Polzien K, Mohr KI. The Effect of Physical Activity on 18-Month Weight Change in Overweight Adults. *Obesity (Silver Spring)*. 2011 January; 19(1): 100–109. doi:10.1038/oby.2010.122.
- 158 Thomas DM, Ivanescu AE, Martin CK, Heymsfield SB, Marshall K, Bodrato VE, Williamson DA, Anton SD, Sacks FM, Ryan D, Bray GA. Predicting successful long-term weight loss from short-term weight-loss outcomes: new insights from a dynamic energy balance model (the POUNDS Lost study). *Am J Clin Nutr*. 2015 Mar;101(3):449-54. doi: 10.3945/ajcn.114.091520. Epub 2014 Dec 24.
- 159 Hall KD. Predicting metabolic adaptation, body weight change, and energy intake in humans. *Am J Physiol Endocrinol Metab*. 2010; 298(3): E449-66.
- 160 Jastroch M, Divakaruni AS, Mookerjee S, Treberg JR, Brand MD: Mitochondrial proton and electron leaks. *Essays Biochem* 2010, 47:53–67.
- 161 Kim B. Thyroid hormone as a determinant of energy expenditure and the basal metabolic rate. *Thyroid* 2008, 18:141–144.
- 162 Strohacker K, McCaffery JM, Maclean PS, Wing RR: Adaptations of leptin, ghrelin or insulin during weight loss as predictors of weight regain: a review of current literature. *Int J Obes* 2013:1–9. <http://www.nature.com/ijo/journal/vaop/ncurrent/full/ijo2013118a.html>.
- 163 Gupta H. Barriers to and Facilitators of Long-Term Weight Loss Maintenance in Adult UK People: A Thematic Analysis. *Int J Prev Med*. 2014 Dec; 5(12): 1512–1520.
- 164 Lee IM, Djoussé L, Sesso HD, Wang L, Buring JE. Physical Activity and Weight Gain Prevention *JAMA*. 2010;303(12):1173-1179. doi:10.1001/jama.2010.312
- 165 Bertz F, Brekke HK, Ellegård K, Rasmussen KM, Wennergren M, Winkvist A. Diet and exercise weight-loss trial in lactating overweight and obese women. *Am J Clin Nutr* 2012;96:698–705.
- 166 Nicklas BJ, Chmelo E, Delbono O, Carr JJ, Lyles MF, Marsh AP. Effects of resistance training with and without caloric restriction on physical function and mobility in overweight and obese older adults: a randomized controlled trial. *Am J Clin Nutr*. 2015 May;101(5):991-9. doi: 10.3945/ajcn.114.105270. Epub 2015 Mar 11
- 167 Williams G. Withdrawal of sibutramine in Europe. *Br J Med* 2010;340:c824.
- 168 Rodgers RJ, Tschöpp MH, Wilding JPH. Anti-obesity drugs: past present and future. *Dis Model Mech* 2012;5:621–626.
- 169 Outlaw J, Wilborn C, Smith A, et al. Effects of ingestion of a commercially available thermogenic dietary supplement on resting energy expenditure, mood state and cardiovascular measures. *J Intl Soc Sport Nut* 2013, 10:25 Page 2 of 8 <http://www.jissn.com/content/10/1/25>.
- 170 Jeukendrup AE, Randell R. Fat burners: nutrition supplements that increase fat metabolism. *Obes Rev*. 2011 Oct;12(10):841-51. doi: 10.1111/j.1467-789X.2011.00908.x.
- 171 Janssens PL, Hursel R, Westerterp-Plantenga MS. Capsaicin increases sensation of fullness in energy balance, and decreases desire to eat after dinner in negative energy balance. *Appetite*. 2014 Jun;77:44-9. doi: 10.1016/j.appet.2014.02.018. Epub 2014 Mar 12.

- 172 Saito M, Yoneshiro T. Capsinoids and related food ingredients activating brown fat Thermogenesis and reducing body fat in humans. *Curr Opin Lipidol*. 2013 Feb;24(1):71-7. doi: 10.1097/MOL.0b013e32835a4f40.
- 173 Kuate D, Etoundi BC, Azantsa BK, Kengne AP, Ngondi JL, Oben JE. The use of LeptiCore® in reducing fat gain and managing weight loss in patients with metabolic syndrome. Kuate et al. *Lipids Health Dis* 2010, 9:20.
- 174 Barrett M, Udani JK. A proprietary alpha-amylase inhibitor from white bean (*Phaseolus vulgaris*): A review of clinical studies on weight loss and glycemic control. *Barrett Udani Nut J* 2011, 10:24.
- 175 Heymsfield SB, van Mierlo CA, van der Knaap HC, Heo M, Frier HI. Weight management using a meal replacement strategy: meta and pooling analysis from six studies. *Int J Obes Relat Metab Disord*. 2003 May;27(5):537-49.
- 176 Yun JW. Possible anti-obesity therapeutics from nature—A review. *Phytochemistry* 2010;71:1625–1641.
- 177 Fan JG, Cao HX. Role of diet and nutritional management in non-alcoholic fatty liver disease. *J Gastroenterol Hepatol*. 2013 Dec;28 Suppl 4:81-7. doi: 10.1111/jgh.12244.
- 178 Veena J, Muragundla A, Sidgiddi S, Subramaniam S. Non-alcoholic fatty liver disease: need for a balanced nutritional source. *Br J Nutr*. 2014 Dec 14;112(11):1858-72. doi: 10.1017/S0007114514002591. Epub 2014 Oct 2.
- 179 Jiang J, Torok N. Nonalcoholic steatohepatitis and the metabolic syndrome. *Metab Syndr Relat Disord*. 2008 Spring;6(1):1-7. Review.
- 180 Tilg H, Moschen AR. Inflammatory mechanisms in the regulation of insulin resistance. *Mol Med*. 2008 Mar-Apr;14(3-4):222-31. Review.
- 181 Schiff L, Schiff ER. Diseases of the liver, 6th ed. Philadelphia: JB Lippincott Company;1987.
- 182 Dulloo AG, Antic V, Montani JP. Ectopic fat stores: housekeepers that can overflow into weapons of lean body mass destruction. *Int J Obes Relat Metab Disord*. 2004 Dec;28 Suppl 4:S1-2.
- 183 Obiro WC, Zhang T, Jiang B. The nutraceutical role of the *Phaseolus vulgaris* alpha-amylase inhibitor. *Br J Nutr* 2008, 100:1-12.
- 184 Barrett M, Udani JK. A proprietary alpha-amylase inhibitor from white bean (*Phaseolus vulgaris*): A review of clinical studies on weight loss and Glycemic control. *Barrett Udani Nut J* 2011, 10:24.
- 185 Preuss HG. Bean amylase inhibitor and other carbohydrate absorption blockers: effects on diabetes and general health. *Am Coll Nutr*. 2009 Jun;28(3):266-76.
- 186 Astell KJ, Mathai ML, Su XQ. A review on botanical species and chemical compounds with appetite suppressing properties for body weight control. *Plant Foods Hum Nutr*. 2013 Sep;68(3):213-21. doi: 10.1007/s11130-013-0361-1.
- 187 Astell KJ, Mathai ML, Su XQ. Plant extracts with appetite suppressing properties for body weight control: a systematic review of double blind randomized controlled clinical trials. *Complement Ther Med*. 2013 Aug;21(4):407-16. doi: 10.1016/j.ctim.2013.05.007. Epub 2013 Jun 24.
- 188 McEvoy GK, ed. AHFS Drug Information. Bethesda, MD: American Society of Health-System Pharmacists, 1998.

- 189 Rigato, I., Blarasin, L., and Kette, F. Severe hypokalemia in 2 young bicycle riders due to massive caffeine intake. *Clin J Sport Med*. 2010;20(2):128-130.
- 190 Heymsfield SB, van Mierlo CA, van der Knaap HC, Heo M, Frier HI. Weight management using a meal replacement strategy: meta and pooling analysis from six studies. *Int J Obes Relat Metab Disord*. 2003 May;27(5):537-49.
- 191 Smith TJ, Sigrist LD, Bathalon GP, McGraw S, Karl JP, Young AJ. Efficacy of a meal-replacement program for promoting blood lipid changes and weight and body fat loss in US Army soldiers. *J Am Diet Assoc*. 2010 Feb;110(2):268-73.
- 192 Flechtner-Mors M, Boehm BO, Wittmann R, Thoma U, Ditschuneit HH. Enhanced weight loss with protein-enriched meal replacements in subjects with the metabolic syndrome. *Diabetes Metab Res Rev*. 2010 Jul;26(5):393-405.
- 193 Hamdy O, Zwiefelhofer D. Weight management using a meal replacement strategy in type 2 diabetes. *Curr Diab Rep*. 2010 Apr;10(2):159-64. Review.
- 194 Ashley JM, St Jeor ST, Perumean-Chaney S, Schrage J, Bovee V. Meal replacements in weight intervention. *Obes Res*. 2001 Nov;9 Suppl 4:312S-320S.
- 195 Ditschuneit HH. Do meal replacement drinks have a role in diabetes management? *Nestle Nutr Workshop Ser Clin Perform Programme*. 2006;11:171-9; discussion 179-81. Review.
- 196 Li Z, Hong K, Saltsman P, DeShields S, Bellman M, Thames G, Liu Y, Wang HJ, Elashoff R, Heber D. Long-term efficacy of soy based meal replacements vs an individualized diet plan in obese type II DM patients: relative effects on weight loss, metabolic parameters, and C-reactive protein. *Eur J Clin Nutr*. 2005 Mar;59(3):411-8.
- 197 Poston WS, Haddock CK, Pinkston MM, Pace P, Karakoc ND, Reeves RS, Foreyt JP. Weight loss with meal replacement and meal replacement plus snacks: a randomized trial. *Int J Obes (Lond)*. 2005 Sep;29(9):1107-14.
- 198 Douketis JD, Macie C, Thabane L, Williamson DF. Systematic review of long-term weight loss studies in obese adults: clinical significance and applicability to clinical practice. *Int J Obes (Lond)*. 2005 Oct;29(10):1153-67. Review.
- 199 Ditschuneit HH, Flechtner-Mors M. Value of structured meals for weight management: risk factors and long-term weight maintenance. *Obes Res*. 2001 Nov;9 Suppl 4:284S-289S.
- 200 Rothacker DQ. Five-year self-management of weight using meal replacements: comparison with matched controls in rural Wisconsin. *Nut* 2000;16:344-8.
- 201 Flechtner-Mors M, Ditschuneit HH, Johnson TD, Suchard MA, Adler G. Metabolic and weight loss effects of long-term dietary intervention in obese patients: four-year results. *Obes Res*. 2000 Aug;8(5):399-402.
- 202 Adult weight management evidence-based nutrition practice guideline. American Dietetic Association Evidence Analysis Library website. [http://www.adaevidencelibrary.com/topic.cfm?cat\\_2798](http://www.adaevidencelibrary.com/topic.cfm?cat_2798). Accessed January 2, 2008.
- 203 Position of the American Dietetic Association: Weight Management. February 2009 Volume 109 Number 2, *J Am Diet Assn*.

- 204 Raynor HA, Anderson AM, Miller GD, Reeves R, Delahanty LM, Vitolins MZ, Harper P, Mobley C, Konersman K, Mayer-Davis E. Partial Meal Replacement Plan and Quality of the Diet at 1 Year: Action for Health in Diabetes (Look AHEAD) Trial. *J Acad Nutr Diet*. 2015 May;115(5):731-42. doi: 10.1016/j.jand.2014.11.003. Epub 2015 Jan 6,.
- 205 Aljuraiban GS, Chan Q, Oude Griep LM, Brown IJ, Daviglus ML, Stamler J, et al, The Impact of Eating Frequency and Time of Intake on Nutrient Quality and Body Mass Index: The INTERMAP Study, a Population-Based Study. *J Acad Nutr Diet*. 2015.
- 206 Starling S. "Dietary supplements win Olympic gold." 2008. *Nutraingred USA*. 15 Sep. 2008 <http://www.nutraingredients-usa.com/Industry/Dietary-supplements-win-Olympic-gold>.
- 207 Hoyte CO, Albert D, Heard KJ. The Use of Energy Drinks, Dietary Supplements, and Prescription Medications by United States College Students to Enhance Athletic Performance. *J Comm Health*. 2013 Feb 1. [Epub ahead of print].
- 208 Diehl K, Thiel A, Zipfel S, Mayer J, Schnell A, Schneider S. Int J Sport Nutr Exerc Metab. Elite Adolescent Athletes and Use of Dietary Supplements: Characteristics, Opinions, and Sources of Supply and Information. 2012 Jun 15. [Epub ahead of print].
- 209 Kristiansen M1, Levy-Milne R, Barr S, Flint A. Dietary supplement use by varsity athletes at a Canadian university. *Int J Sport Nutr Exerc Metab*. 2005 Apr;15(2):195-210.
- 210 Froiland K1, Koszewski W, Hingst J, Kopecky L. Nutritional supplement use among college athletes and their sources of information. *Int J Sport Nutr Exerc Metab*. 2004 Feb;14(1):104-20.
- 211 Morrison LJ, Gizis F, Shorter B. Prevalent use of dietary supplements among people who exercise at a commercial gym. *Int J Sport Nutr Exerc Metab*. 2004 Aug;14(4):481-92.
- 212 Kerksick C, Harvey T, Stout J, Campbell B, Wilborn C, Kreider R, Kalman D, Ziegenfuss T, Lopez H, Landis J, Ivy JL, Antonio J. International Society of Sports Nutrition position stand: nutrient timing. *J Int Soc Sports Nutr*. 2008 Oct 3;5:17. Erratum in: *J Int Soc Sports Nutr*. 2008;5:18.
- 213 Cermak NM, Res PT, de Groot LC, Saris WH, van Loon LJ. Protein supplementation augments the adaptive response of skeletal muscle to resistance-type exercise training: a meta-analysis. *Am J Clin Nutr*. 2012 Dec;96(6):1454-64. doi: 10.3945/ajcn.112.037556. Epub 2012 Nov 7.
- 214 Stark M, Lukaszuk J, Prawitz A, Salacinski A. Protein timing and its effects on muscular hypertrophy and strength in individuals engaged in weight-training. *J Int Soc Sports Nutr*. 2012; 9: 54. Published online 2012 December 14. doi: 10.1186/1550-2783-9-54.
- 215 Breen L, Philp A, Witard OC, Jackman SR, Selby A, Smith K, Baar K, Tipton KD. The influence of carbohydrate-protein co-ingestion following endurance exercise on myofibrillar and mitochondrial protein synthesis. *J Physiol* 589.16 (2011) pp 4011-4025 4011.
- 216 Rowlands DS, Nelson AR, Phillips SM, Faulkner JA, Clarke J, Burd NA, Moore D, Stellingwerff T. Protein-leucine fed dose effects on muscle protein synthesis after endurance exercise. *Med Sci Sports Exerc*. 2015 Mar;47(3):547-55. doi: 10.1249/MSS.0000000000000447.
- 217 Robinson MM, Soop M, Sohn TS, Morse DM, Schimke JM, Klaus KA, Nair KS. High insulin combined with essential amino acids stimulates skeletal muscle mitochondrial protein synthesis while decreasing insulin sensitivity in healthy humans. *J Clin Endocrinol Metab*. 2014 Dec;99(12):E2574-83. doi: 10.1210/jc.2014-2736.

- 218 Witard OC1, Cocke TL, Ferrando AA, Wolfe RR, Tipton KD. Increased net muscle protein balance in response to simultaneous and separate ingestion of carbohydrate and essential amino acids following resistance exercise. *Appl Physiol Nutr Metab*. 2014 Mar;39(3):329-39. doi: 10.1139/apnm-2013-0264. Epub 2013 Sep 27.
- 219 Churchward-Venne TA, Breen L, Di Donato DM, Hector AJ, Mitchell CJ, Moore DR, Stellingwerff T, Breuille D, Offord EA, Baker SK, Phillips SM. Leucine supplementation of a low-protein mixed macronutrient beverage enhances myofibrillar protein synthesis in young men: a double-blind, randomized trial. *Am J Clin Nutr*. 2014 Feb;99(2):276-86. doi:0.3945/ajcn.113.068775. Epub 2013 Nov 27.
- 220 Stefan M. Pasiakos Exercise and Amino Acid Anabolic Cell Signaling and the Regulation of Skeletal Muscle Mass Nutrients. 2012 July; 4(7): 740–758. Published online 2012 July 10. doi: 10.3390/nu4070740 PMID: PMC3407992.
- 221 Coker RH, Miller S, Schutzler S, Deutz N, Wolfe RR. Whey protein and essential amino acids promote the reduction of adipose tissue and increased muscle protein synthesis during caloric restriction-induced weight loss in elderly, obese individuals. *Nutr J*. 2012; 11: 105. Published online 2012 December 11. doi: 10.1186/1475-2891-11-105 PMID: PMC3546025.
- 222 West DW1, Burd NA, Coffey VG, Baker SK, Burke LM, Hawley JA, Moore DR, Stellingwerff T, Phillips SM. Rapid aminoacidemia enhances myofibrillar protein synthesis and anabolic intramuscular signaling responses after resistance exercise. *Am J Clin Nutr*. 2011 Sep;94(3):795-803. doi: 10.3945/ajcn.111.013722. Epub 2011 Jul 27.
- 223 Witard OC1, Jackman SR, Breen L, Smith K, Selby A, Tipton KD. Myofibrillar muscle protein synthesis rates subsequent to a meal in response to increasing doses of whey protein at rest and after resistance exercise. *Am J Clin Nutr*. 2014 Jan;99(1):86-95. doi: 10.3945/ajcn.112.055517. Epub 2013 Nov 20.
- 224 West DWD, Burd NA, Coffey VG, Baker SK, Burke LM, Hawley JA, Moore DM, Stellingwerff T, Phillips SM. Rapid aminoacidemia enhances myofibrillar protein synthesis and anabolic intramuscular signaling responses after resistance exercise. *Am J Clin Nutr* 2011;94:795–803.
- 225 Carlin MB , Tanner RE , Agergaard J , Jalili T , McClain DA , Drummond MJ. Skeletal muscle Ras-related GTP binding B mRNA and protein expression is increased after essential amino acid ingestion in healthy humans. *J Nutr*. 2014 Sep;144(9):1409-14. doi: 10.3945/jn.114.196691. Epub 2014 Jul 23.
- 226 Vandenberghe TJ1, Hopkins WG. Effects of acute carbohydrate supplementation on endurance performance: a meta-analysis. *Sports Med*. 2011 Sep 1;41(9):773-92. doi: 10.2165/11590520-000000000-00000.
- 227 Doherty M, Smith PM. Effects of caffeine ingestion on rating of perceived exertion during and after exercise: a meta-analysis. *Scand J Med Sci Sports*. 2005 Apr;15(2):69-78. Review.
- 228 Astorino TA, Roberson DW. Efficacy of acute caffeine ingestion for short-term high-intensity exercise performance: a systematic review. *J Strength Cond Res*. 2010 Jan;24(1):257-65. Review.
- 229 Goldstein ER, Ziegenfuss T, Kalman D, Kreider R, Campbell B, Wilborn C, Taylor L, Willoughby D, Stout J, Graves BS, Wildman R, Ivy JL, Spano M, Smith AE, Antonio J. International society of sports nutrition position stand: caffeine and performance. *J Int Soc Sports Nutr*. 2010 Jan 27;7(1):5.
- 230 Ganio MS, Klau JF, Casa DJ, Armstrong LE, Maresh CM. Effect of caffeine on sport-specific endurance performance: a systematic review. *J Strength Cond Res*. 2009 Jan;23(1):315-24. Review.



- 231 de Salles Painelli V, Saunders B, Sale C, Harris RC, Solis MY, Roschel H, Gualano B, Artioli GG, Lancha AH Jr. Influence of training status on high-intensity intermittent performance in response to b-alanine supplementation. *Amino Acids* (2014) 46:1207–1215 DOI 10.1007/s00726-014-1678-2.
- 232 Hobson RM, Saunders B, Ball G, Harris RC, Sale C. Effects of  $\beta$ -alanine supplementation on exercise performance: a meta-analysis. *Amino Acids*. 2012 July; 43(1): 25–37. Published online 2012 January 24. doi: 10.1007/s00726-011-1200-z PMCID: PMC3374095.
- 233 Trexler ET, Smith-Ryan AE, Stout JR, Hoffman JR, Wilborn CO, Sale C, Kreider RB, et al. International society of sports nutrition position stand: Beta-Alanine. *J Intl Soc Sport Nut* 2015 12:30 DOI 10.1186/s12970-015-0090-y.
- 234 Cooper R, Naclerio R, Allgrove J, Jimenez A. Creatine supplementation with specific view to exercise/sports performance: an update. *J Int Soc Sports Nutr*. 2012; 9: 33. Published online 2012 July 20. doi: 10.1186/1550-2783-9-33 PMCID: PMC3407788.
- 235 Buford TW, Kreider RB, Stout JR, Greenwood M, Campbell B, Spano M, Ziegenfuss T, Lopez H, Landis J, Antonio J. International Society of Sports Nutrition position stand: creatine supplementation and exercise. *J Int Soc Sports Nutr*. 2007 Aug 30;4:6.
- 236 Chrusch MJ, Chilibeck PD, Chad KE, Davison KS, Burke DG. Creatine supplementation combined with resistance training in older men. *Med Sci Sports Exerc*. 2001 Dec;33(12):2111-7.
- 237 Kreider RB. Effects of creatine supplementation on performance and training adaptations. *Mol Cell Biochem*. 2003;244:89–94. doi:10.1023/A:1022465203458.
- 238 Cribb PJ, Williams AD, Hayes A. A creatine-protein-carbohydrate supplement enhances responses to resistance training. *Med Sci Sports Exerc*. 2007;39:1960–1968. doi: 10.1249/mss.0b013e31814fb52a.
- 239 Lanhers C, Pereira B, Naughton G, Trousselard M, Lesage FX, Dutheil F. Creatine Supplementation and Lower Limb Strength Performance: A Systematic Review and Meta-Analyses. *Sports Med*. 2015 Sep;45(9):1285-94. doi: 10.1007/s40279-015-0337-4.
- 240 Phillips SM, Tipton KD, Aarsland A, et al. Mixed muscle protein synthesis and breakdown after resistance exercise in humans. *Am J Physiol*. 1997;273:E99–107.
- 241 Phillips SM. A Brief Review of Critical Processes in Exercise-Induced Muscular Hypertrophy. *Sports Med* (2014) 44 (Suppl 1):S71–S77. DOI 10.1007/s40279-014-0152-3.
- 242 Burd NA, Mitchell CJ, Churchward-Venne TA, Phillips SM. Bigger weights may not beget bigger muscles: Evidence from acute muscle protein synthetic responses after resistance exercise. *Appl Physiol Nutr Metab*. 2012, 37, 551–554.
- 243 Mitchell CJ, Churchward-Venne, TA, West DD, Burd NA, Breen L, Baker SK, Phillips SM. Resistance exercise load does not determine training-mediated hypertrophic gains in young men. *J Appl Physiol* 2012, doi:10.1152/jappphysiol.00307.2012.
- 244 Burd, NA, Holwerda AM, Selby KC, West DW, Staples AW, Cain NE, Cashaback JG, Potvin JR, Baker SK, Phillips SM. Resistance exercise volume affects myofibrillar protein synthesis and anabolic signalling molecule phosphorylation in young men. *J Physiol* 2010, 588, 3119–3130

- 245 Hansen M, Bangsbo J, Jensen J, Bibby BM, Madsen K. Effect of Whey Protein Hydrolysate on Performance and Recovery of Top-Class Orienteering Runners. DOI: <http://dx.doi.org/10.1123/ijsnem.2014-0083>.
- 246 Phillips SM. A Brief Review of Critical Processes in Exercise-Induced Muscular Hypertrophy. *Sports Med* (2014) 44 (Suppl 1):S71–S77. DOI 10.1007/s40279-014-0152-3.
- 247 Philp A, Hamilton DL, Baar K. Signals mediating skeletal muscle remodeling by resistance exercise: PI3-kinase independent activation of mTORC1. *J Appl Physiol*. 2011;110:561–8.
- 248 Kumar V, Atherton P, Smith K, Rennie MJ. Human muscle protein synthesis and breakdown during and after exercise. *J App Psychol* Published 1 June 2009 Vol. 106 no. 6, 2026–2039 DOI:10.1152/japplphysiol.91481.2008.
- 249 Dickinson JM, Gundermann DM, Walker DK, Reidy PT, Borack MS, Drummond MJ, Arora M, Volpi E, Rasmussen BB. Leucine-enriched amino acid ingestion after resistance exercise prolongs myofibrillar protein synthesis and amino acid transporter expression in older men. *J Nutr*. 2014 Nov;144(11):1694–702. doi: 10.3945/jn.114.198671. Epub 2014 Sep 3.
- 250 Biolo G, Maggi SP, Williams BD, Tipton KD, Wolfe RR. Increased rates of muscle protein turnover and amino acid transport after resistance exercise in humans. *Am J Physiol Endocrinol Metab* 268: E514–E520, 1995.
- 251 Aquilani R, D'Antona G, Baiardi P, Gambino A, Iadarola P, Viglio S, Pasini E, Verri M, Barbieri A, Boschi F. Essential amino acids and exercise tolerance in elderly muscle depleted subjects with chronic diseases: a rehabilitation without rehabilitation? *Biomed Res Int*. 2014;2014:341603. doi: 10.1155/2014/341603. Epub 2014 Jun 9.
- 252 Buford T, Kreider R, Stout J, Greenwood M, Campbell B, Spano M, Ziegenfuss T, Lopez H, Landis J, Antonio J. International Society of Sports Nutrition position stand: creatine supplementation and exercise. *J Int Soc Sports Nutr*. 2007;4:6. doi: 10.1186/1550-2783-4-6.
- 253 Juhn MS. Oral creatine supplementation. Separating fact from hype. *Phys Sportsmed* 1999;27:47–50,53–54,56,61,89.
- 254 Roitman, S., Green, T., Osher, Y., Karni, N., and Levine, J. Creatine monohydrate in resistant depression: a preliminary study. *Bipolar Disord* 2007;9(7):754–758.
- 255 Roitman S, Green T, Osher Y, Karni N, Levine J. Creatine monohydrate in resistant depression: a preliminary study. *Bipolar Disord* 2007;9(7):754–758.
- 256 Harris RC, Tallon MJ, Dunnett M, Boobis L, Coakley J, Kim HJ, et al. The absorption of orally supplied beta-alanine and its effect on muscle carnosine synthesis in human vastus lateralis. *Amino Acids*. 2006;30(3):279–89. doi:10.1007/s00726-006-0299-9.
- 257 Stellingwerff T, Decombaz J, Harris RC, Boesch C. Optimizing human in vivo dosing and delivery of beta-alanine supplements for muscle carnosine synthesis. *Amino Acids*. 2012;43(1):57–65. doi:10.1007/s00726-012-1245-7.
- 258 Garlick PJ. The nature of human hazards associated with excessive intake of amino acids. *J Nutr*. 2004 Jun;134(6 Suppl):1633S–1639S; discussion 1664S–1666S, 1667S–1672S. Review.
- 259 Meldrum BS. Glutamate as a neurotransmitter in the brain: review of physiology and pathology. *J Nutr* 2000;130:1007S–15S.

- 260 Garlick PJ. Assessment of the safety of glutamine and other amino acids. *J Nutr* 2001;131:2556S-61S.
- 261 Greenwood DC, Alwan N, Boylan S, Cade JE, Charvill J, Chipps KC, Cooke MS, Dolby VA, Hay AW, Kassam S, Kirk SF, Konje JC, Potdar N, Shires S, Simpson N, Taub N, Thomas JD, Walker J, White KL, Wild CP. Caffeine intake during pregnancy, late miscarriage and stillbirth. *Eur J Epidemiol*. 2010;25(4):275-280.
- 262 Mester R, Toren P, Mizrachi I, et al. Caffeine withdrawal increases lithium blood levels. *Biol Psychiatry* 1995;37:348-50.
- 263 MacKenzie T, Comi R, Sluss P, Keisari R, Manwar S, Kim J, Larson R, Baron JA. Metabolic and hormonal effects of caffeine: randomized, double-blind, placebo-controlled crossover trial. *Metab* 2007;56(12):1694-1698.
- 264 Birkett NJ, Logan AG. Caffeine-containing beverages and the prevalence of hypertension. *J Hypertens Suppl* 1988;6(4):S620-S622.
- 265 Nurminen ML, Niittynen L, Korpela R, Vapaatalo H. Coffee, caffeine and blood pressure: a critical review. *Eur J Clin Nutr* 1999;53:831-9.
- 266 Cannon ME, Cooke CT, McCarthy JS. Caffeine-induced cardiac arrhythmia: an unrecognized danger of health food products. *Med J Aust* 2001;174:520-1.
- 267 McEvoy GK, ed. AHFS Drug Information. Bethesda, MD: American Society of Health-System Pharmacists, 1998.
- 268 Rigato I, Blarasin L, Kette F. Severe hypokalemia in 2 young bicycle riders due to massive caffeine intake. *Clin J Sport Med*. 2010;20(2):128-130.
- 269 Institute of Medicine. Caffeine for the Sustainment of Mental Task Performance: Formulations for Military Operations. Washington, DC: National Academy Press, 2001.
- 270 Soeters PB, Grecu I. Have We Enough Glutamine and How Does It Work? A Clinician's View. *Ann Nutr Metab* 2012;60:17-26 DOI: 10.1159/000334880.
- 271 Cruza VF, Krause M, Newsholme P. Amino acid supplementation and impact on immune function in the context of exercise. Cruzat et al. *J Intl Soc Sport Nut* 2014, 11:61 <http://www.jissn.com/content/11/1/61>.
- 272 Grant D, Bynum S, and Ashmead HD, Non-Steroidal Anabolic Composition, US Patent 5,888,553, March 30, 1999.
- 273 Albion Research Notes is a publication of Albion® Human Nutrition. Magnesium Is a Mineral with Prodigious Impact, But Poor Intake. April 2012 Volume 21, No 1.
- 274 Garlick PJ. The nature of human hazards associated with excessive intake of amino acids. *J Nutr*. 2004 Jun;134(6 Suppl):1633S-1639S; discussion 1664S-1666S, 1667S-1672S. Review.
- 275 Meldrum BS. Glutamate as a neurotransmitter in the brain: review of physiology and pathology. *J Nutr* 2000;130:1007S-15S.
- 276 Garlick PJ. Assessment of the safety of glutamine and other amino acids. *J Nutr* 2001;131:2556S-61S.
- 277 Podebrad F, Heil M, Reichert S, Mosandl A, Sewell AC, Böhles H (April 1999). "4,5-dimethyl-3-hydroxy-25H-furanone (sotolone)--the odour of maple syrup urine disease". *J Inher Metab Dis*. 22 (2): 107-114. doi:10.1023/A:1005433516026. PMID 10234605.

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<sup>278</sup> Scarna A, Gijsman HJ, McTavish SF, et al. Effects of branched-chain amino acid drink in mania. *Br J Psychiatry* 003;182:210-3.