

Current Statistics and Future Predictions

At present, Americans are at an unprecedented point in history as the impact of obesity is now expected to reduce the lifespan of the current generation.¹ In other words, children may not live as long as their parents due to obesity's ill effects. Since the 1970s children of all ethnic groups, geographic location and socioeconomic class have become increasingly overweight. Currently, one in five or approximately nine million young people are overweight or obese,² and that number is expected to rise to at least one in four by 2015.³ The adverse psychological and physical effects of obesity are well documented. However, the impact on children is more profound as they endure health complications and related emotional issues earlier and for a longer period of time. Notably, diseases which were once nonexistent or rare in children are observed with greater frequency, including type II diabetes, high cholesterol and hypertension. Researchers foresee that by 2050, life expectancy will be shortened by two to five years as a result of childhood obesity.⁴

Among adults 20 years and older, 33.3 percent are overweight, defined as having a **body mass index** (BMI) over 25, and 35.9 percent are obese (BMI \geq 30); seven to eight million adults are extremely obese (BMI > 40) and thousands are super-obese (BMI >50).^{5,6} Obesity continues to rise particularly among children and adolescents, African American women and extremely obese individuals. This epidemic is not exclusive to the United States as approximately 1.6 billion adults (>15 yrs) are overweight and at least 400 million are obese around the world.⁷ Shorter life expectancy and higher mortality rates are characterizations of obese people^{8,9} due to related chronic diseases such as heart disease, stroke, type II diabetes, hypertension and cancer.¹⁰ One report concluded that obesity has a greater impact on chronic disease than smoking, alcohol or poverty, and that being obese is analogous to aging 20 years.¹¹ Experts predict that 9 out of 10 people will become overweight or obese at some point in their lifetime,¹² and if recent trends continue, it is estimated that every adult will be either overweight or obese by 2048.¹³ To view the rise in obesity in the United States over the past few decades, click [here](#).

Contributing Causes of Excess Weight Gain

The Human Appetite

The cause of overweight and obesity is multifactorial with biological, environmental, cultural and behavioral components. The biological mechanisms that influence our drive to eat and ability to store excess body fat are likely related to humans withstanding periods of scarcity. Ironically, these mechanisms were once essential for survival but are now detrimental in societies where food is plentiful, hunting and gathering are nonexistent, manual labor has been replaced by machinery and automated systems, and typical daily routines are mostly sedentary. Indeed, the rise in obesity commenced in the early 1970s and data indicates calorie intake rose concurrently. According to the Center for Disease Control and Prevention (CDC), daily intake increased by 168 and 335 calories among males and females respectively, between 1971 and 2000. Although biological, including genetic mechanisms that contribute to excess weight gain, there is general consensus that our surroundings play a much larger role in the current epidemic.¹⁴

Environmental Influences on Food Intake

Scientific studies have identified several environmental factors that influence the amount of food people consume including larger portion sizes, food advertising, food trends, social settings, cultural factors and the pure pleasure derived from eating.^{15,16} In a modern day version of the classic bottomless soup bowl experiment, participants ate soup from either regular bowls or from bowls that were being continuously refilled without the participants' knowledge.¹⁷ Those who ate from the bottomless bowl consumed 73 percent more than those whose bowls did not refill. Several other studies have similar findings - as meal size increases, underestimating simultaneously increases, and in one experiment participants underestimated a large meal by up to 1,000 calories.^{18 19,20,21} The impact of eating an extra 1,000 calories a day once a week without compensating with increased physical activity is a 15 pound weight gain after one year. This is not an implausible scenario as numerous fast-food and restaurant meals provide up to 2,000 calories – an entire day's worth of calories for many individuals. In fact, the "Freshmen 15" refers to the annual weight gain that commonly occurs among first-year college students living on their own with easy access to abundant amounts of energy dense, inexpensive food.

Underestimating calories and food intake occurs more so among overweight and obese women, and higher body mass index (BMI) values appear to be related to greater error.^{22,23} That is, the higher the BMI, the fewer calories people report eating, which means they believe they eat far fewer calories than they actually consume. Studies have also shown that people unknowingly consume more calories when food is present in large quantities and in wide varieties such as buffets, parties and social gatherings. TV watching, eating from large packages, alcohol consumption, dining out frequently, eating with others present and having tempting foods within eyesight also cause people to eat more.^{24,25} The collective findings from these studies are that people eat more than they believe, particularly with larger meals, and that several environmental factors influence people to take in extra calories without realizing it. Therefore, a prudent approach to deal with environmental influences includes raising awareness of food portions and calorie content, identifying the conditions which induce over-eating, and taking action to prevent excess consumption. Nutrition and fitness professionals are challenged with arming clients with tools to combat such issues which are specific to the individual.

The Environment's Impact on Activity Levels

One of the characteristics of the 21st century is efficiency, and the environment continues to evolve to make transportation, work, household chores, consumer services, communication and food preparation ultra efficient. As a result, the energy cost of work and daily living has decreased and the opportunities for movement continue to decline with fast-paced modern day living. Recreation has also become more sedentary, especially among those who spend more time watching TV, surfing the internet, text messaging with friends and playing video games. Only 29 percent of the U.S. population reports engaging in regular physical activity while the remaining is considered inactive.²⁶ As such, the top six activities in the United States are primarily sedentary - driving, office work, activities done while sitting quietly, caring for kids (the exception), watching TV, movies and eating.²⁷ A more efficient lifestyle often lends to a busier and more hectic daily routine which demands convenience, more sedentary behaviors and minimal physical activity. The price of sedentary living is high - decreased energy requirements and a higher risk of weight gain if food intake is not appropriately managed.

Invisibility of Gradual Weight Gain

Despite these environmental influences and the natural human tendency to eat for reasons other than hunger, humans regulate their body weight fairly well. Annual weight gain among adults averages one to three pounds,^{28,29} which equates to a daily energy imbalance of only 10 to 30 calories. This small excess is easily missed – a stick of gum, a couple crackers or that last bite at every meal. Ironically, this makes weight control quite difficult because the minute changes in daily weight are not seen or captured on the scale. This makes weight gain essentially invisible on a daily, weekly and monthly basis. Hence, most people do not notice their weight creeping up until their clothes no longer fit, they've gained a significant amount of weight or health issues appear.

Another contributing factor to unwanted weight gain is related to the level of consumer knowledge of proper weight control. Data from the International Food Information Council (IFIC) Foundation revealed that only 15 percent of Americans were able to provide an accurate estimate of the number of calories they should consume daily to maintain their body weight; only one third correctly identified that “calories in general are most likely to cause weight gain;” (note that one third of the adult population currently has a healthy body weight); and only 17 percent increase their physical activity when they eat more than usual.³⁰ These percentages must change to overcome unwanted weight gain and to stop the progression of obesity. It is certainly not necessary for people to know exactly how many calories to consume daily provided body weight or size is monitored regularly and needed adjustments to intake and activity patterns are made. However, judging by the current obesity statistics, most people do not take this approach. **Although humans have various mechanisms to guard against starvation, we have yet to develop mechanisms to protect against the long-term effects of over-consumption. Instead, the body achieves equilibrium by gaining mass when energy intake exceeds daily requirements. Therefore, long-term weight management for the vast majority will require cognitive control of food intake and movement, and providing tools to enable people to do so is an invaluable and perhaps essential part of the solution.**

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