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ACSM's  
**Certified  
 News**



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**News You Need**



**Certification  
 Update**



**A Question  
 of Value**

by: Richard Cotton  
 National Director  
 of Certification

*“Give a man a fish and you feed him for a day; teach him how to fish and you feed him for a lifetime.” – Lao Tzu*

These are exciting times in the health and fitness field. Never before has the value of physical activity been more appreciated than it is now. There are numerous studies to support the healthcare savings reaped by exercisers versus sedentary populations. Exercise has been shown to be the one common thread for people who maintain weight loss. And, while we may not agree with their program design, fitness “professionals” have considerable exposure in the various reality TV shows like “The Biggest Loser.”

It is time for ACSM to once again “Lead the Way” in the advancement of the fitness profession. Many of us may be frustrated by the depiction of fitness professionals in the popular media. We are often portrayed as either drill sergeants relentlessly pushing clients through impossible – if not dangerous – workouts, or bubble-headed, body-beautifuls hired by the rich and famous as status symbols because it is “cool” to have a personal trainer. These are some difficult images to overcome, but we can turn this around.

We must take a hard look at the value of the services that we provide as fitness professionals – thus the Lao Tzu quote as the lead this column. I certainly understand there is value in leading a client through a well-crafted workout based on the client’s health, fitness, goals and preferences. What I challenge you with is this: Are you really providing the highest value of service possible?

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**Nutrition Tips for Health  
 and Athletic Performance  
 Enhancement in Adults**

By Peter Ronai, M.S., ACSM RCEP, CSCS-D  
 ACSM Program Director Certified



The theme of this issue of ACSM’s *Certified News* is Nutrition Tips for Health and Athletic Performance Enhancement. Our three feature articles will address: 1) nutritional strategies to prevent and manage diseases, 2) improve health, and 3) enhance athletic performance. The first two articles will address dietary approaches and the last article will examine the effects and purported benefits of five popular dietary supplements. Overweight (defined as a body mass index (BMI) of 25 to 29.9 kg/m<sup>2</sup>), obesity, defined as a BMI of ≥ 30kg/m<sup>2</sup>, and diabetes (primarily type 2) are continuing public health problems in the United States (U.S.)<sup>1</sup>. All contribute to heart disease and plague the “baby boomers” (people born between 1946 and 1964). The annual costs of overweight and obesity have previously been estimated to be approximately \$100,000,000<sup>2</sup>. Both regular physical activity and or exercise and proper nutrition are important tools for obtaining/maintaining a healthy weight, preventing/controlling a number of chronic diseases, and enhancing athletic performance.

In 1999, it was estimated that approximately 29% of men and 44% of women were attempting to lose weight and that only 22% of men and 19% of women were reducing

their energy intake and engaging in >150 minutes of regular physical activity or exercise per week<sup>2</sup>. The prevalence of overweight has increased in adults in the U.S. from 44.8% in 1960 to 66% in 2004. In that same population, obesity has increased from 13.3% in 1980 to 32% in 2004 (7). Less than one third of U.S. adults (32%) are considered to be at a healthy weight (BMI between 18.5 and 24.9 kg/m<sup>2</sup>)<sup>7</sup>. In addition 17.5% of children between the ages of 6 and 11 and 17% of adolescents between the ages of 12 and 19 were considered overweight between 2001 and 2004 (overweight in children and adolescents was defined by the age and sex specific 95<sup>th</sup> percentile cutoff points in the Centers for Disease Control and Prevention (CDC) growth charts established in 2000)<sup>7</sup>. Overweight and obesity are associated with an increased risk of a number of chronic diseases and conditions including hypertension, coronary heart disease, type 2 diabetes, stroke, gallbladder disease, dyslipidemia, osteoarthritis, sleep apnea, certain cancers, metabolic syndrome, reduced life expectancy, and early mortality (1, 3, 5).

A weight loss of approximately 5% to 10% has been shown to improve health and reduce

**Nutrition Tips... Continued on Page 2**

**Nutrition Tips... Continued from Page 1**

risk factors for coronary heart disease, type 2 diabetes, hypertension, dyslipidemia and metabolic syndrome<sup>2</sup>. Recommendations for safe and effective weight loss and management from the American College of Sports Medicine (ACSM)<sup>2</sup> include:

- Striving for long-term weight loss accomplished by incorporating modifications in both eating and exercise behaviors.
- Eating 500 to 1,000 fewer calories a day.
- Exercising 150 minutes a week initially and gradually increasing to 300 minutes a week and/or expending > 2,000 kcal/week of leisure activity.
- Reducing dietary fat intake to < 30% of daily calories.

\* Consulting with a physician or trained healthcare professional before engaging in a weight loss program<sup>2</sup>.

Recently, the Institute of Medicine recommended that adults and children wishing to maintain a healthy BMI and prevent and or manage metabolic syndrome engage in at least 60 and >60 minutes of daily, moderate level physical activity respectively<sup>3,5</sup>. As previously mentioned, diabetes is also a major public health problem in the U.S. Approximately 23.6 million people or 7.8 percent of the U.S. population have diabetes, with 1.6 million new cases being diagnosed in 2007<sup>6</sup>. Diabetes was the seventh leading cause of all U.S. deaths in 2006 and persons with diabetes are at two times greater risk of dying than people without diabetes<sup>6</sup>. Common complications of diabetes include heart disease and stroke, hypertension, kidney disease, neuropathies, amputations, dental disease, other illnesses and complications of pregnancy. Total direct and indirect costs of diabetes was estimated to be approximately \$174 billion in the U.S. in 2007<sup>6</sup>. Monitoring and controlling blood glucose, blood lipids and blood pressure are just a few recommended strategies for preventing diabetic complications<sup>6</sup>. Sound nutritional guidance is extremely important for maintaining a healthy weight, preventing or managing chronic diseases and enhancing athletic performance. Exercise professionals often receive questions concerning the ideal manipulation of macronutrients and the use of nutritional supplements for weight management, enhanced athletic performance enhancement and optimal health.

Exercise professionals best serve their clients/patients by educating them, providing them with current information and by making referrals to other members of their team who have proper academic training in clinical nutrition and dietetics. We are very fortunate to have three authors sharing their expertise with us in this issue of *ACSM's Certified News*. Stella Volpe, Ph.D., R.D., FACSM, from the University of Pennsylvania will discuss nutrition and chronic diseases as it per-

tains to baby boomers. Erin Quann, M.A., R.D. from the University of Connecticut will discuss the effects of manipulating macronutrient (e.g., low-fat versus very low carbohydrate diets) composition on blood lipids and body composition in individuals engaging in resistance training.

In 1994, the Food and Drug Administration (FDA) passed the Dietary Supplement Health Education Act (DSHEA). The passage of this act has placed the responsibility for the safety of dietary supplements with the manufacturers, not the FDA<sup>4</sup>. In addition, manufacturers are responsible for labeling their products. This label however, does not need to provide the same details as packaged foods. The manufacturer, not the FDA, must conduct safety tests and evaluate statements and claims made regarding these supplements. This can contribute to consumer confusion and inappropriate use of certain dietary supplements. In 2005, dietary supplement sales represented a \$200 billion industry<sup>4</sup>. Julie Barrett, B.S., R.D., from the University of California San Diego will review some of the more popular dietary supplements for athletic performance enhancement and recovery. Each of the previously mentioned authors will highlight current concepts in nutrition and provide readers with practical and valuable information. I hope that you enjoy this issue!

**About the Author**

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**References**

1. American College of Sports Medicine. Guidelines for Exercise Testing and Prescription, 7th edition. Baltimore, MD: Lippincott Williams & Wilkins, 2006. pp. 216.
2. American College of Sports Medicine. Position Stand. Appropriate Intervention Strategies for Weight Loss and Prevention of Weight Regain for Adults. *Medicine & Science in Sports & Exercise*; 33(12):2145-2156, 2001.
3. Brooks, G.A., N.F. Butte, W.M. Rand, J.P. Flatt, and B. Caballero. Chronicle of the Institute of Medicine physical activity recommendation: how a physical activity recommendation came to be among dietary recommendations. *American Journal of Clinical Nutrition*. 79:921S-930S. 2004.
4. Corbin, C. B. Dietary Supplements: Helping Clients Make Informed Decisions. *ACSM's Health & Fitness Journal*; 11(5): 21-26, 2007.
5. Grundy, S.M., J.I. Cleeman, S.R. Daniels, K.A. Donato, R.H. Eckel, B.A. Franklin, D.J. Gordon, R. M. Krauss, P.J. Savage, S.C. Smith Jr., J.A. Spertus, and F. Costa. Diagnosis and management of the metabolic syndrome: an American Heart Association/National Heart, Lung, and Blood Institute Scientific Statement. *Circulation*. 112: 2735-2732, 2005.
6. National Diabetes Information Clearinghouse (NDIC). National Institute of Diabetes Digestive and Kidney Diseases, National Institutes of Health. *National Diabetes Statistics, 2007* pp.1 - 13. Accessed July 25, 2008.
7. Weight-control Information Network (WIN) National Institute of Diabetes Digestive and Kidney Diseases, National Institutes of Health. *Statistics Related to Overweight and Obesity* pp. 1 - 14. 2007. Accessed July 25, 2008.

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# Nutrition: Popular Supplements for Performance and Recovery

By: Julie Barrett, R.D.

For the average person, choosing dietary supplements can be a daunting task. Supplement retailers provide a multitude of options and market their products as beneficial to people of various ages and activity levels. Some compounds are sold as a single nutrient and some are combined with other nutrients due to purported synergistic benefits. Your local vitamin and health food stores carry supplements that claim to increase lean body mass, promote anabolism (growth), repair muscle tissue, resist muscle fatigue, increase fat metabolism sparing glycogen stores, boost immunity, and improve muscle strength, power, and endurance. The need and/or benefit of many dietary supplements should be determined on an individual basis and discussed with a physician and/or registered dietitian.

When approached by clients or patients it is important to inform them that supplements are not regulated or standardized by the Food and Drug Administration (FDA) and that a substance labeled "all natural" does not mean it is safe. There may be negative side effects associated with supplements and they may also contain other substances not listed on the label.

The purpose of this article is to review some of the more popular dietary supplements for performance and recovery, including an antioxidant compound that has recently sparked the interest of researchers in its ability to improve performance. The effects and purported benefits of caffeine, creatine, glutamine, glucosamine and quercetin are presented.

## Caffeine

Caffeine, consumed mainly as coffee, tea, soda, and chocolate, is the most widely used stimulant. It is well known for stimulating both the central nervous and cardiovascular system, increasing alertness, energy, and ability to concentrate. Supplement companies market caffeine as beneficial to anyone who wants to increase their energy for high-powered workouts and delay the onset of muscle fatigue, while caffeine anhydrous is purported to increase mental alertness. If consumed in excess, caffeine is known to induce negative effects such as anxiety, restlessness, insomnia, and rapid heart rate. It also acts as a diuretic and can lead to dehydration without adequate fluid intake.

Caffeine is thought to promote fat metabolism during exercise, however the literature does not fully support this claim. Although mobilization of fatty acids occurs, net fat oxidation is unchanged by the ingestion of caffeine<sup>7</sup>. Many studies have concluded that caffeine does enhance athletic performance. A meta-analysis of 40 double blind studies using dosages from 5-10 mg/kg of body weight, concluded that compared to placebo, caffeine improved a number of test outcomes (e.g.,  $VO_{2max}$ , perceived exertion, and time to exhaustion) by ~12% with the greatest improvements seen in endurance exercise rather than short-term or graded exercise<sup>8</sup>. Dosages as low as 2mg/kg and 3mg/kg of body weight have also been suggested to promote ergogenic benefits by improving cycling time by up to 4%<sup>9</sup>. In order to get the *buzz* needed to stimulate a workout or to power through a tough train-

ing day, natural sources of caffeine such as coffee or tea provide ample amounts to obtain ergogenic benefits. The chart below shows the caffeine content in a variety of widely available beverages. In addition to caffeine, some of these popular *so called* energy drinks contain up to 4g sugar per fl oz. whereas plain coffee and tea have none.

## Caffeine Content of Popular Beverages

Beverage	Caffeine (milligrams)
Plain coffee, brewed, 8oz.	95
Espresso, 1 fl oz.	64
Black tea, brewed, 8oz.	47
Green tea, brewed, 8oz.	30-50
Coke, 12oz.	35
Diet Coke, 12oz.	47
Red Bull, 8.3oz.	76
Rockstar, 16oz.	160
Full Throttle, 16oz.	144

## Creatine

This amino acid metabolite is synthesized by the body from glycine, arginine, and methionine, and has long been used as an ergogenic aid in both amateur and professional athletes. Ingesting dietary sources of creatine from beef, tuna, cod, herring, and pork, provides the average meat eater about 1-2 g/day. Supplement companies have suggested doses of creatine for maximal benefit range from 5-25 g/day. However, these doses have not been scientifically evaluated.

Supplement labels claim that creatine is converted to phosphocreatine in the human body, which helps to fuel skeletal muscles and provides support for immediate energy

**Popular Supplements... Continued from Page 7**

production during high-intensity workouts. Exogenous creatine has been suggested to enhance intracellular phosphocreatine stores without any effect on ATP levels, however it does increase myoblast fusion and myotube formation, an important step in muscle formation that may reduce time for muscle recovery<sup>15</sup>. Several studies have reported ergogenic benefits from creatine supplementation including increased total and lean body mass and improved performance in high-intensity, short duration, repetitive tasks, such as lifting weights, after 4-6 days of loading 15-20 g/day<sup>12</sup>. Researchers have reported that creatine supplementation has increased lean body mass by 2.2% ± 0.7%, however this outcome is highly controversial. Additionally, performance in short duration repetitive tasks was shown to be improved by 6.4% ± 0.8%<sup>1</sup>, however these findings have not been consistent. A number of supplement labels also claim that creatine may help promote cellular hydration, however, studies examining the effects of supplementation on thermoregulatory response have had mixed results. While researchers agree that the osmotic effects of creatine increase intracellular water, finding are inconsistent regarding these adaptations supporting improved thermoregulation during exercise<sup>2,10,12</sup>.

Creatine supplementation has not been identified as harmful, but long-term side effects have not been evaluated to date. Anyone who decides to include creatine supplementation in their regimen should first consult their physician or qualified nutrition professional (e.g. Registered Dietitian). For more information on creatine, please visit: [www.nlm.nih.gov/medlineplus/druginfo/natural/patient-creatine.html](http://www.nlm.nih.gov/medlineplus/druginfo/natural/patient-creatine.html)

**Glutamine**

Glutamine is a conditionally essential amino acid that is involved in many metabolic processes in the human body. It serves as an important fuel for lymphocytes and macrophages, key cells of the immune system, while also playing a role in gluconeogenesis, the conversion of alternate metabolites to form glucose for energy when glycogen stores become depleted. Glutamine may become essential during conditions when glutamine catabolism occurs at an increased rate, such as trauma, starvation, infection, and untreated diabetes mellitus. During prolonged or high intensity exercise, muscle and plasma glutamine concentra-

tions decline and remain depressed during recovery<sup>13</sup>.

Researchers have attempted to link decreased plasma glutamine with immune function due to the high rate of upper respiratory tract infections in over-trained athletes. During exercise, glutamine is released from the muscle to be supplied to target tissues and to maintain normal blood concentrations as they would under catabolic stress. Therefore it has been proposed that reductions in glutamine may be a result of muscle damage<sup>14</sup>. Immune cells that migrate to muscle tissue for repair have an increased rate of glutamine uptake, thereby reducing concentrations in the muscle. Although many researchers have concluded depressed glutamine in over-trained individuals is associated with increased incidence of upper respiratory tract infections, a review of literature concluded that there is not a clear cause and effect connection<sup>13</sup>.

Glutamine has become a popular sports supplement consumed for purported ergogenic benefits of increased strength, quicker recovery, and decreased frequency of respiratory infections; all potential consequences of over-training. The role of amino acids in the synthesis of protein leading to building lean body mass is one mechanism by which glutamine is suggested to increase strength and support quicker recovery. However, glutamine supplementation of 0.9mg/kg lean muscle mass/day combined with 6 weeks of strength training demonstrated no changes in multiple strength measurements and no gains in lean body mass compared with strength training alone<sup>3</sup>.

**Glucosamine**

Glucosamine is a naturally occurring amino monosaccharide, found in connective and cartilage tissues. Supplementation with this compound has become popular for people of all ages who participate in regular physical activity due to the theory that increased physical activity may be associated with degenerative processes to articular cartilage<sup>16</sup>. Pharmaceutical companies claim glucosamine supplementation provides support of tissue and joint function, promotes joint flexibility and mobility, and helps rebuild cartilage and lubricate joints.

This compound has been extensively evaluated as a prevention and/or treatment of osteoarthritis (OA), a form of arthritis characterized by erosion of articular cartilage resulting in pain and loss of function. Several randomized control trials (RCTs) have evaluated the efficacy of glucosamine supplementation in the prevention and treatment of osteoarthritis, however results have been inconclusive<sup>4</sup>. Both animal and human studies have suggested that glu-

cosamine may slow the progression of OA and may reduce pain associated with degradation of cartilage, however insufficient evidence exists to demonstrate clinical benefit<sup>4,8</sup>. The Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT), a large, multi-center RCT funded by the National Institutes of Health, evaluated whether glucosamine, chondroitin sulfate, or a combination of both were effective in the treatment of pain associated with OA of the knee. Results suggested that supplementation had no significant effect when compared to placebo<sup>4</sup>.

**Quercetin**

This flavanoid found in apples, onions, and berries has primarily been evaluated for its antioxidant properties and its role in reducing the risk of certain cancers. More recently it has also been investigated for its potential benefit to athletes and those engaging in regular exercise. Exercise has been documented to increase the production of reaction oxygen species (ROS), which may eventually lead to the development of chronic diseases associated with oxidative stress, such as atherosclerosis, hypertension, and cancer. While the benefits of regular exercise outweigh the acute oxidative stress, it has been suggested that antioxidant supplementation may enhance the body's defenses against ROS<sup>13</sup>.

More recently, researchers have proposed a potential ergogenic benefit of quercetin supplementation. Evidence from animal studies suggest that quercetin stimulates glycogenolysis and oxygen consumption with concentrations of 50mM-300mM. These effects were attributed to its action on mitochondrial energy metabolism, specifically the uncoupling of oxidative phosphorylation<sup>6</sup>. In human trials, 6 weeks of antioxidant supplementation with quercetin significantly improved high-intensity cycling performance through enhanced power output compared to antioxidant supplementation without quercetin<sup>11</sup>. Further studies are needed to determine if quercetin alone has similar effects rather than combined with other compounds that may be providing a synergistic effect.

**Summary**

The supplements discussed above have been marketed as providing ergogenic benefits or providing protection from the stress of exercise on the human body. Since the FDA does not regulate dietary supplements, health and sports nutrition professionals must critically evaluate the efficacy of their recommended use.

In order to appropriately fuel the body for exercise and recovery, the average person

**Popular Supplements... Continued on Page 10**

QUESTION	ANSWER
1	D
2	B
3	A
4	E
5	D
TEST #1:	B
TEST #2:	FALSE
TEST #3:	B

SELF-TEST ANSWER KEY FOR PAGE 11

# Nutrition and Physical Activity for Baby Boomers

Stella L. Volpe, PhD, RD, LDN, FACSM

## Definition of Baby Boomer

The term “baby boomer” is used to describe an individual who was born between 1946 (post World War II) and 1964<sup>1,2</sup>. Presently, that would include individuals who are about 43 to 62 years of age. The reason they are called “baby boomers” is due to the surge in birth rates during that era. With aging, come many changes, negative and positive. Nutrition and physical activity can help to stave off some of the negative changes, and as with any age, both play key roles to promoting and maintaining overall health. This article will present some ideas on “baby boomer nutrition and physical activity.”

## Evaluating People's Concerns about Nutrition

The first step is to evaluate how much baby boomers care about nutrition and physical activity. In a survey conducted by the American Dietetic Association: Nutrition and You: Trends 2000<sup>5</sup>, they reported that, as the baby boomer generation approaches the age of 50, they have increased concerns about their diet and nutrition. Based on their survey, of people's attitudes, beliefs, knowledge, and practices related to food, nutrition, and health, they labeled people into three distinct categories: “I'm Already Doing It,” “I Know I Should, But...,” “Don't Bother Me.” Those who stated they are “already doing it” comprised about 28% of those surveyed and state they already have made significant changes to their eating behavior and are eating healthily. The “I know I should, but...,” which comprised 40% of those surveyed, said that they know what comprises a healthy diet, but for some reason, have not made changes toward eating healthily. Those individuals who said “don't bother me” may or may not know about healthy diets, but do not seem to be concerned about their intake. About 32% of those surveyed comprised this category<sup>5</sup>.

Table 1 indicates the changes in people's attitudes about diet and nutrition from four previous American Dietetic Association surveys, as well as the 2000 survey.

## What's Next?

Though the above information provides an estimation of the general population's attitudes toward diet and nutrition, as a practitioner, the first step would be to find out your clients' attitudes and goals, which is common practice for clients of all ages. Baby boomers, however, have needs that are specific to their age group, and these needs will be discussed below.

## Sarcopenia, Diet and Exercise

Sarcopenia, which refers to a complex, multifactorial progression of muscle loss, is typically facilitated by a combination of consumption of a less healthy diet and a sedentary lifestyle<sup>6,7</sup>. Some have reported that low-grade chronic inflammation can also contribute to the progression of sarcopenia<sup>6</sup>.

It has been reported that, on average, after the age of 40, muscle mass decreases by about 0.5% to 1% per year<sup>6</sup>. Note, that this represents an average loss, and can be attenuated in individuals who have been exercising (including weight training) and/or who begin to exercise.

In addition to weight-bearing exercise (i.e., walking, jogging), a slight increase in the consumption of protein can help to prevent the large decline in muscle mass. The Recommended Dietary Allowance (RDA) for protein is 46 and 56 g/day for women and men 31 years of age and older, respectively. To date, however, there is not enough scientific evidence to suggest how much more protein a person should consume<sup>6</sup>. Keep in mind, however that many Americans already consume above the RDA for protein, though it has been reported that older Americans consume below



the RDA. Regardless, the goal for your clients may be not to increase protein intake, but to alter protein intake to include more high biological value sources (or to increase both total and high biological value protein sources, if initial protein intake is too low). High biological value protein contains the essential amino acids required by humans. In addition, if two protein foods of lower biological value are consumed and together comprise all of the essential amino acids, these two sources, consumed together, would be considered as high biological value protein. Sources of high biological value protein include: eggs (or just egg whites if fat and cholesterol intake are a concern), lean fish (e.g., bass, sole, haddock or cod), lean meat and low-fat dairy foods. Low biological value foods are mostly found in grains, seeds, vegetables, plants, and legumes. These are excellent foods that should be included in the diet, despite the fact that they are of lower biological value (See Table 2).

It is essential to note that there is little substantiation that a high protein intake increases the risk of kidney disease in healthy adults; nonetheless, kidney function does decrease with age<sup>6</sup>. Thus, it is important that kidney function is also evaluated prior to recommending increased protein intake. Nevertheless, increasing higher biological value protein intake, even when protein intake may need to be lowered (as is usually the case with kidney disease), is still beneficial<sup>6</sup>.

It is clear that the combination of a healthy diet, that includes high biological value protein, and physical activity, that includes weight bearing and/or resistance exercise, can help to prevent the high rate of sarcopenia in baby boomer<sup>6,7</sup>. Though exercise and good nutrition are key, frailty, disability and disease can greatly decrease or prevent a person from being physically active as they age. In this case, physical activity (i.e. type, intensity) would need to be adjusted if any can be performed, and greater attention would need to be paid to dietary intake.

Table 1. People's Attitudes and Behaviors for Diet and Nutrition

Categories	1991	1993	1995	1997	2000
"I'm Already Doing It"	26%	23%	24%	26%	28%
"I Know I Should, But..."	38%	42%	36%	34%	40%
"Don't Bother Me"	36%	35%	40%	40%	32%

Adapted from reference #5.

## Nutrition and Physical... Continued from Page 9

Table 2. Biological Value of Specific Foods\*

Food	Score (%)
Whole Egg	100
Whole Soy Bean	96
Cow's Milk	91
Cheese	84
Rice	83
Fish	76
Beef	74
Tofu	64
Whole Wheat	64
White Flour	41

\*Whole egg is given a value of 100, based on nitrogen retention (a measure of protein incorporation in the body)

Adapted from: [http://en.wikipedia.org/wiki/Biological\\_value](http://en.wikipedia.org/wiki/Biological_value) (retrieved September 5, 2008)

## Other Factors to Consider

There are many issues to consider with training and/or counseling clients, and these include: overall goals, time constraints, family obligations, work, gender, race, ethnicity, socioeconomic status (SES), etc. The first thing to remember is to not have pre-conceived notions of a person's fitness levels or goals, just because they are a baby boomer. Over the years, including most recently, many individuals in the baby boomer category are still competing in sports at elite levels.

Maitland and colleagues<sup>3</sup> evaluated the association of nationality and race with anthropometry, nutrient intakes, health history and SES of peri-menopausal women (40 to 55 years of age). In comparing black (Caribbean and African American) and white women, both groups had similar mean ages, education and SES. All participants did not meet the Dietary Reference Intakes for calcium and iron, yet they consumed more energy than needed. More blacks were above the anthropometric recommendations and more whites had a greater calcium intake, yet reported more depression. With these varied results, it is important that nutrition counseling and exercise training are appropriately matched<sup>3</sup>.

In addition, obesity rates earlier in life have been reported to be greater in the baby boomers compared to their "silent generation" counterparts (born from 1926 through 1945)<sup>4</sup>. Though there were no differences in the prevalence of arthritis between the birth cohorts, the relative risk of arthritis increased over time, due to the greater rate of obesity in the baby boomers<sup>4</sup>. Greater rates of obesity and arthritis may require very different exercise and eating patterns, compared to those discussed previously to prevent sarcopenia.

## Health Tips for Baby Boomers

Some general tips for baby boomers include:

- Be active each day for at least 30 minutes. Physical activity should include some type of aerobic activity (e.g., walking, running, swimming) and some type of resistance training (e.g., weight training, Pilates)
- Consume proteins of high biological value
- Consume a varied diet, that includes whole grains, dark, leafy green and colorful vegetables, low-fat or skim dairy products, nuts, lean meat and poultry, and fish with high omega-3 content
- Stop smoking if you smoke
- Maintain a healthy body weight
- If you drink alcohol, drink in moderation

## Summary

The Baby Boomer generation shares commonalities among themselves, like others before and those to follow. Most certainly, entire generations cannot be stereotyped. However, this short review was meant to pique your interest in some of the areas that should be considered when working with this population. Though sarcopenia may be more rapid in this age group, it is imperative that assumptions are not made simply due to age. Fitness and dietary evaluations, as well as overall health evaluations (e.g., kidney function) and personal goals are required, and will provide the needed information to arrange the best fitness and nutrition plan.

## About the Author

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## Helpful Web sites

American Dietetic Association:  
<http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/index.html>  
United States Department of Agriculture:  
<http://www.mypyramid.gov/>

## References

1. <http://www.statcan.gc.ca/Daily/English/061026/d061026b.htm>. Retrieved: July 30, 2008.
2. [http://www.census.gov/Press-Release/www/releases/archives/facts\\_for\\_features\\_special\\_editions/006105.html](http://www.census.gov/Press-Release/www/releases/archives/facts_for_features_special_editions/006105.html). Retrieved: July 30, 2008.
3. Leveille SG, Wee CC, Iezzoni LI. Trends in obesity and arthritis among baby boomers and their predecessors, 1971-2002. *Am J Public Health*. 2005;95(9):1607-1613. Epub 2005 Jul 28.
4. Maitland TE, Gómez-Marín O, Weddle DO, Fleming LE. Associations of nationality and race with nutritional status during perimenopause: implications for public health practice. *Ethn Dis*. 2006;16(1):201-206.
5. Nutrition and You: Trends 2000. What Do Americans Think, Need, Expect? *J Am Dietetic Assoc*. 2000;100(6):626-627.
6. Paddon-Jones D, Short KR, Campbell WW, Volpi E, Wolfe RR. Role of dietary protein in the sarcopenia of aging. *Am J Clin Nutr*. 2008;87(5):1562S-1566S.
7. Roubenoff R. Physical activity, inflammation, and muscle loss. *Nutr Rev*. 2007;65(12 Pt 2):S208-S212.

## Popular Supplements.. Continued from Page 8

need not look further than their local grocery store. Eating a varied, well balanced diet that meets energy, protein, and micronutrient requirements is sufficient to maintain health. When micronutrient requirements are not met with food, a multivitamin can make up for what may be lacking in the diet.

## About the Author

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1. Branch, J.D. Effect of creatine supplementation on body composition and performance: a meta-analysis. *International Journal of Sport Nutrition and Exercise Metabolism*, 13(2):198-226, 2003.
2. Branch, J.D., W.D. Schwarz, B. Van Lunen. Effect of creatine supplementation on cycle ergometer exercise in a hyperthermic environment. *Journal of Strength and Conditioning Research*, 21(1):57-61, 2007.
3. Candow, D.G., P.D. Chilibeck, D.G. Burke, et al. Effect of glutamine supplementation combined with resistance training in young adults. *European Journal of Applied Physiology*, 86(2):142-149, 2001.
4. Distler, J. A. Angelouch. Evidence-based practice: Review of clinical evidence on the efficacy of glucosamine and chondroitin in the treatment of osteoarthritis. *Journal of the American Academy of Nurse Practitioners*, 18(10):487-493, 2006.
5. Doherty, M., P.M. Smith. Effects of caffeine ingestion on exercise testing: a meta-analysis. *International Journal of Sport Nutrition and Exercise Metabolism*, 14(6):626-646, 2004.
6. Gasparin, F.R.S., C.L. Salgueiro-Pagadiferria, L. Bracht, et al. Action of quercetin on glycogen catabolism in the rat liver. *Xenobiotica*, 33(6):587-602, 2003.
7. Graham T.E., J.W. Helge, D.A. MacLean, et al. Caffeine ingestion does not alter carbohydrate or fat metabolism in human skeletal muscle during exercise. *Journal of Physiology*, 529(3):837-847, 2000.
8. Hua, J., S. Suguro, S. Hirano, et al. Preventive actions of a high dose of glucosamine on adjuvant arthritis in rats. *Inflammation Research*, 54(3):127-132, 2005.
9. Jenkins, N.T., J.L. Trilk, A. Singhal, et al. Ergogenic effects of low doses of caffeine on cycling performance. *International Journal of Sport Nutrition and Exercise Metabolism*, 18(3):328-342, 2008.
10. Kilduff, L.P., Georgiades, E., James, N., et al. The effects of creatine supplementation on cardiovascular, metabolic, and thermoregulatory responses during exercise in the heat in endurance-trained humans. *International Journal of Sport Nutrition and Exercise Metabolism*, 14(4):443-460, 2004.

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# Of Gremlins, Prisms, and Choice



## Hear your true voice

First, identify what your gremlin is telling you about you. Listen to your internal voice and clarify the disempowering thought. Your emotion and accompanying body sensations are good indicators that your gremlin is active. Emotions like happiness, gratitude, or joy resonate in our bodies in a unique way. We may feel light, uplifted, open, or energized. In contrast, gremlin-speak feels distressful emotionally. In addition, you may experience headaches, muscle aches, stomach upset, sweaty palms, a tight throat or clenched teeth.

When you hear your gremlin, pause for a moment. Examine what's happening around you and inside of you. What emotion do you feel? What sensation? What is your gremlin saying about you?

Now that you can hear the gremlin's voice clearly, you can distinguish it from your own – your true voice. Your true voice is capable of making a neutral observation about circumstances without linking them to a judgment about you. Notice that both voices exist in your head and, just like it's impossible to listen to two conversations at one time, it's equally impossible to hear your true voice speaking if all you can hear is your gremlin.

## Identify your gremlin's perspective

Your gremlin doesn't stop with a simple judgment about you. It validates that judgment by giving you a perspective about some aspect of your life. When you unconsciously accept that perspective as "the way things are," you become stuck. The perspective becomes "The Truth."

Here's an example: Let's say your gremlin says you are an ineffective salesperson, a trainer destined to always struggle. This belief is powerful, and chances are good that every time you approach a prospective client you are already convinced they are not going to hire you. When they don't, they simply reconfirm what you already know. Now your experience confirms your belief. It also generates your perspective about selling personal training: it's hard, or scary, or impossible, or a struggle, or something you will never master. Regardless of your description, this is your gremlin's perspective! And until you make this perspective conscious, your gremlin will continue to run the show.

### The Power of Choice

You can choose to approach selling (or anything, for that matter) from many different perspectives. Think of perspectives as the facets of a prism. Depending on which facet you look through, the world looks different. Now, here's the great part: You get to choose your perspective and it doesn't have to be the one that your gremlin wants!

Playing with perspectives begins with brain-

storming. It can be fun and is always enlightening. When you brainstorm, hold nothing back. Write down every idea that comes to you no matter how far-fetched and implausible. You're not obligated to choose any of them and they will prime your creative juices.

Let's say your current perspective on selling personal training is, "it's hard." Alternative perspectives could be: it's easy, it's a game, it's fun, or it's a great way to meet people. Or, you can really think out of the box and ask yourself, "What would my pet's perspective be? Or what would a red perspective (or your favorite color) look like? Or what perspective does a successful trainer use?" (Ask one to find out!)

Any of these perspectives will shift the prism, permitting you to see what you could not see before because your gremlin was blocking the view. Make a list of every perspective you identify and then examine them in more detail. Notice which resonate with your true voice? Which feels like a good fit? Ask yourself, "If this was my perspective, what would I be saying "yes" to and what would I be saying "no" to?" This will help you clarify all the perspective has to offer.

Choose a perspective that feels right and commit to using it for a week or two. As you experience it, notice how it feels in your body and what emotions it evokes. Notice how it changes things, either the process of doing something or the outcome. You may continue to hear your gremlin's voice, but now that you recognize it for what it is you can begin to move beyond it. Be sure to remember that no perspective is "The Truth." Although any perspective may be true for you, they are simply one facet of a multi-faceted prism, a specific way to examine, explore, and experience an aspect of our life.

Learning to hear and move beyond your gremlin is well worth the practice, and consciously choosing perspectives that resonate and nurture will offer you freedom to grow. Ultimately, the opportunity waiting for you is a life that fulfills and makes you alive. It's your choice.

## About the Author

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"Believe in yourself and you will be unstoppable." – Emily Guay

What an inspirational statement! It evokes a sense of success and aspirations fulfilled. It is a simple concept to understand and yet difficult to achieve.

We can all list the reasons why we're not reaching our full potential. Reasons like, "I can't. I'm too . . ." These statements become a self-fulfilling prophecy and they are how we stop ourselves. This practice has many names: gremlin, saboteur, inner critic, disempowering thought, and negative self-talk to name a few. But they all describe the same thing: an internal voice that tells us we can't be successful, we shouldn't dream, we can't change, we're not qualified for the promotion, we have nothing to contribute, and on and on.

To be human is to have this internal voice, this gremlin. It does have a legitimate purpose; it protects us from risk. But in doing so, its voice often distorts opportunity. It creates insurmountable challenge where there is potential for growth. It prevents change even when the status quo is undesirable and unfulfilling. It makes us victims and robs us of choice. It links a fact ("I didn't stamp an envelope.") with a judgment about our capabilities ("I'm stupid and forgetful") and it is activated by change.

As a coach, I am an agent of change. As a health and fitness professional, you are as well. You routinely help your clients implement lifestyle changes. And since gremlins are activated by change, you can expect your clients' gremlin to show up periodically simply because they've hired you.

In addition, you have your own gremlin to contend with! Think about what happens when you face change – a promotion, a new facility, selling your services to a prospective client, an advanced certification. Does your gremlin remind you why you're not the perfect trainer for the job, that you don't have the ability to grow your business to the max, or that you're not as smart as some of your colleagues?

Happily, you can learn to hear your gremlin's voice and move beyond it. Although the method described here will work for anyone, I recommend you begin by getting acquainted with your own gremlin before introducing the concept to your clients. Once you become more practiced, you can choose to share this information and your observations with them if you wish.