UF IFAS Extension UNIVERSITY of FLORIDA

FCS8100

Food and Fitness: Myths and Truths[1]

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Introduction

Mass media today is filled with information about nutrition, fitness, and health. Much of the information is inconsistent or unreliable, often causing confusion for those concerned about their nutritional needs. Active people, including athletes, who have the facts can make good choices when it comes to health and fitness. Read on to learn about common nutrition and fitness concerns, including supplements, hydration, meal timing, and nutrition and energy needs for active people.

Eating for Fitness

Whether you are an athlete, an avid exerciser, or just lead an active lifestyle, the importance of what you eat and drink cannot be overemphasized. Regardless of activity level, everyone needs energy, water, vitamins, and minerals everyday simply to function. Nutritional needs vary from person to person, but for individuals who are more active, the requirement for certain nutrients may be substantially different from those of less active people. Without proper nutrition, the performance and physical fitness of active people can suffer.

Nutritional Needs Are Different for Active People

Active people need more energy (calories) and water compared with those who are less active, but vitamin and mineral needs do not change based on activity levels. No matter how active or inactive people are, we all can use MyPlate (Figure 3, page 3) as a guide to eating well for fitness and health.

The energy our bodies need comes from carbohydrate, fat, and protein in the foods we eat. The amount of energy (calories) each of us needs depends on our age, size, and activity level. A healthy eating plan will provide not only enough calories to support individual fitness levels, but also the necessary vitamins and minerals the body needs to function optimally.

There are many popular myths about what active people should eat and drink to perform their best. Take this quiz to check your food and fitness IQ.

Food and Fitness Quiz

For each statement, circle "Myth" or "Truth." Then check your answers and see how you did!

1. Athletes and other active people need protein or amino acid supplements.

   Myth Truth

2. Adequate carbohydrate intake is essential for top performance.

   Myth Truth

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2. Linda B. Bobroff, professor, Department of Family, Youth and Community Sciences; and Amy Mullins, Family and Consumer Sciences Agent II, UF/IFAS Extension Leon County; UF/IFAS Extension, Gainesville, FL 32611.

3. Physically active people who eat a balanced diet still need vitamin and mineral supplements to get the nutrients they need for an active lifestyle.

   Myth Truth

4. Drinking water or other fluids during exercise impairs performance.

   Myth Truth

5. Before an intense aerobic workout or competition, it is best to eat a meal high in carbohydrates.

   Myth Truth

How Well Did You Do?

1. Athletes and other active people need protein or amino acid supplements.

MYTH

Physically active people and most athletes do not need supplements to get the extra protein they need for their active lifestyles. Even if you include strength training in your exercise program, supplemental protein or amino acids are unnecessary for building muscle tissue. Your training program, along with a healthy diet that contains adequate protein, accomplishes that!

Since athletes and active people need more calories to meet their energy needs, the extra food that they eat will provide the protein needed for muscle growth and repair, which contributes to top performance. Eating a balanced diet that includes a variety of lean protein sources is the best way for active people to get the extra calories and protein they need.

Figure 1. You can get the protein needed for an active lifestyle from foods like meat, poultry, fish, legumes, nuts and seeds, and dairy foods.
Credits: Brandon Smith/iStock/Thinkstock

2. Adequate carbohydrate intake is essential for top performance.

TRUTH

Your body converts **all** of the carbohydrate that you eat into glucose, which is the primary energy source during activity. Glucose that we get from food but do not use immediately for energy is stored in the liver and muscles as glycogen. Glycogen is converted back to glucose (blood sugar) when it is needed as fuel for muscle activity. Glycogen stores can provide glucose for about two hours of moderate physical activity. Eating a diet with adequate carbohydrate gives you glucose for current energy needs and also maintains your stored glycogen so it will be there when you need it.

Carbohydrates come from a wide variety of foods, including grains, fruits, vegetables, and dairy foods. In a nutritious diet, the best carbohydrate sources are whole grains, whole fruit rather than juice, a variety of vegetables eaten raw or cooked using methods that maintain their nutritional value, and low-fat dairy foods. Although snack foods such as cookies, cakes, pies, candies, and chips also contain carbohydrate, they are poor choices for a healthy diet. These foods provide empty calories, which are calories that provide little or no nutritional value other than energy. Keep these foods to a minimum to avoid unwanted weight gain and to reach optimal athletic performance.

Keep in mind that even when the body burns fat for energy, it still needs available glucose for fuel, so be sure to include carbohydrate-containing foods at every meal and snack. Your diet can be high in healthy carbohydrates if you follow the MyPlate eating plan. Learn about selecting foods for a healthful diet at: http://www.choosemyplate.gov/.

Table 1. Suggested Cooking Methods for Vegetables

Steam or cook in small amount of water on stove Microwave Roast in oven Stir-fry
With all methods, avoid over-cooking or browning vegetables. Vegetables should more firm than mushy. Season with herbs and spices and limit added salt. Use vegetable oil low in saturated fat when stir-frying.

Figure 2. Fruits and vegetables provide water, fiber, and a variety of vitamins and minerals that are needed for good health. Include them as part of your healthy eating plan for fitness and health.
Credits: peangdao/iStock/Thinkstock

3. Physically active people who eat a balanced diet still need vitamin and mineral supplements to get the nutrients they need for an active lifestyle.

MYTH

Vitamins and minerals are micronutrients that we need in our diets in very small amounts. They have a variety of functions in our bodies, including helping to regulate the chemical reactions that are critical for life. Micronutrients are **not** a direct source of energy, but they help our bodies obtain energy from the protein, fat, and carbohydrate in the foods we eat.

Vitamins and minerals are widely distributed in foods, but no single food contains all the vitamins and minerals we need. This is why it is important to eat a variety of foods from all five food groups shown on MyPlate. When we eat foods from all of the food groups, it helps to ensure that we are getting an adequate supply of all vitamins, minerals, and other nutrients needed for fitness and health.

People who severely limit their food intake or omit foods from one or more food groups may not get enough vitamins or minerals. In these cases, a multivitamin or mineral supplement may be necessary to make up for an inadequate intake of these nutrients from foods. A generic multivitamin supplement will provide folic acid needed by women of child-bearing age and other nutrients often consumed in inadequate amounts.

Taking large amounts (megadoses) of vitamin and mineral supplements can cause adverse health effects and is not recommended. Even the water-soluble vitamins (vitamin B complex and vitamin C) can cause health problems when taken in excess. Megadoses of water-soluble vitamins may cause the following serious issues:

- irregular heartbeat (niacin—vitamin B_3)
- nerve degeneration (vitamin B_6)
- diarrhea (vitamin C)
- gastrointestinal upset (vitamin C)
- kidney stones (vitamin C)

Excessive intake of the fat-soluble vitamins A and D is an even greater health hazard. Since the body can store high levels of these vitamins, toxic levels can build up, causing illness and sometimes even death. People are more likely to get toxic levels of these vitamins from supplements rather than food. Always consult your doctor before taking any vitamin or mineral supplement.

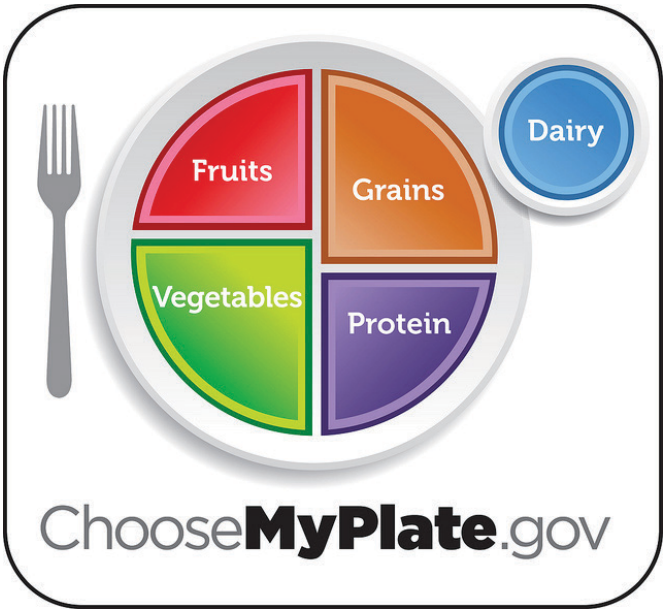

Figure 3. Each of the MyPlate food groups has a slogan:
Grains—*Make half your grains whole*
Vegetables—*Vary your veggies*
Fruits—*Focus on fruits*
Dairy – *Get your calcium-rich foods*
Protein – *Go lean with protein*

4. Drinking water or other fluids during exercise impairs performance.

MYTH

Staying well hydrated allows athletes and casual exercisers to perform at their best and is essential to prevent dehydration (severe loss of body fluid). Dehydration decreases performance and can cause serious harm to the body and even death (Table 2). The position statement of the Academy of Nutrition and Dietetics, Dietitians of Canada,

and the American College of Sports Medicine, published in 2009 (http://www.ncbi.nlm.nih.gov/pubmed/19225360), includes recommendations for proper hydration before, during, and after exercise (this position statement is currently under review by these associations):

Table 2. Effects of Dehydration

Water loss	Symptoms
Over 2%	Impaired performance
5%	Chills Nausea Rapid pulse
10%	Decreased sweat production Increased body temperature Heat stroke Hallucinations

Before

The recommendation is to drink 2–3 milliliters (mL) of water or sports drink per pound of body weight at least four hours prior to strenuous exercise. This means that a 150-pound person would need to drink 1¼ to approximately 2 cups of water (one cup is equivalent to 237 mL). This can be calculated using the equations below:

(1) (body weight (lb) x 2 mL) / 237 mL = cups of water

(2) (body weight (lb) x 3 mL) / 237 mL = cups of water

It is important to allow enough time for absorption of the fluid you drink and to use the restroom prior to an event. Pay attention to the color of your urine. If your urine is a dark yellow color, this is an indication that you should drink more fluids.

During

While exercising, the body loses water and electrolytes through sweating, making it essential to drink enough to replace what is lost. It is important to realize that factors such as time, intensity, and duration of the exercise, as well as environmental conditions, all contribute to fluid needs. For activity lasting less than an hour, water is generally fine to replace lost fluids. During strenuous exercise, drink ½ to 1 cup of cool water every 15 to 20 minutes **whether or not you feel thirsty.** Cool water is quickly absorbed and used by your body. For longer duration, it is recommended to consume a 6 to 8% carbohydrate beverage, such as a sports drink, to help replace lost carbohydrates and electrolytes (sodium and potassium) as well as water.

After

For a quick recovery following exercise, it is important to keep drinking fluids. Monitoring your body weight before and after exercising will give you a good indication of the amount of fluid that should be replaced. A good rule of thumb is to drink at least 16 to 24 ounces (2 to 3 cups) of fluid for every pound of body weight lost while exercising. To tell if you're getting enough fluid, continue to check the color of your urine. It should be light yellow; if it is dark yellow, drink more water! It is important to note that **thirst is not a good indicator of fluid needs**! You may not feel thirsty until you have lost 5% of your body water.

Heat stroke results from an uncontrolled increase in body temperature. Symptoms of impending heat stroke include:

- chills
- throbbing pressure in the head
- nausea
- dry skin

If you have any of these symptoms, stop exercising and get medical help right away! Even seasoned and well-trained athletes have died from heat stroke when they were not adequately hydrated during a competition.

Figure 4. Drink water before, during, and after exercising to stay hydrated. For long or extreme workouts, you can have a sports drink to replenish electrolytes lost in sweat. Stay away from drinks high in sugars, which can cause an upset stomach.
Credits: julief514/iStock/Thinkstock

5. Before an intense aerobic workout or competition, it is best to eat a meal high in carbohydrates.

TRUTH

What you eat before exercising, as well as the amount, can affect your workout. Most people do best if their stomachs are not full when they start to exercise. It is a good idea to eat a small meal within three to four hours of exercise to make sure your stomach has adequate time to digest the contents and make it available for the body to use. The

pre-exercise meal should be one that is easily digested and that does not cause discomfort. A small meal that is high in carbohydrate, moderate in protein, low in fat, and low in fiber is best for most people. Pay attention to your reaction to various types of meals and consume foods that do not cause you issues or distress. It is a good idea to avoid eating a new food before an important competition or event.

Avoid foods that contain simple sugars, such as candy or cookies, as they can cause stomach upset. Choose foods that contain starch as the primary carbohydrate. Some foods you might want to try are:

- cereal
- pancakes
- tortillas with reduced fat cheese
- pasta with meat sauce

Add low-fat milk, fruit, or vegetables for a complete meal. Avoid foods that can cause gas, like beans, peas, and vegetables from the cabbage family. Be sure to include fluids in your pre-game or pre-event meal!

Figure 5. A small serving of pasta with meat sauce combined with a well-tolerated vegetable like steamed green beans makes a good pre-game/workout meal. Be sure to include water in your meal!
Credits: al62/iStock/Thinkstock

I'm Active—Can I Eat All the Fats and Sweets I Want?

No! You may have higher calorie needs than an inactive person, but you want to fuel your body for fitness and health. Foods that are high in fat or sugar, such as mayonnaise and salad dressings, candy, and beverages high in sugar like sweet tea and soft drinks, should be eaten sparingly. These foods are full of calories, but low in vitamins, minerals, fiber, and protein.

A Note of Caution

If you have one or more of the following conditions or if they run in your family, get medical advice before exercising:

- diabetes
- heart disease
- high blood pressure (hypertension)
- high blood cholesterol

Being active may be a part of your treatment plan for these conditions, but your exercise regimen needs to be supervised by your health care team. Have a check-up before changing your activity level.

Follow the advice of your doctor and a registered dietitian (RD or RDN) regarding your diet and fitness plan. This is especially important if you take medications such as insulin, diuretics, or heart stimulants.

Figure 6. Active people of all ages need more calories and fluids than inactive people to maintain their body weight. Being more physically active without changing calorie intake can help with weight loss or maintenance.
Credits: Fuse/Thinkstock

Final Food Facts for Fitness

- Active people do **not** require special foods or diet supplements. A generic multivitamin supplement will provide folic acid needed by women of child-bearing age and will provide other nutrients needed by people who don't get enough of these nutrients in their diets.
- Active and inactive people need the same nutrients, including vitamins, minerals, carbohydrates, fats, proteins, and water. Active people do need more water, calories, and protein than inactive people.
- It is important to drink fluids before, during, and after physical activity. Cool fluids are recommended because

they are absorbed quickly. Drinking fluids replaces water lost from the body during exercise.

- Sports drinks promote fluid consumption and replace carbohydrates and electrolytes lost during intense exercise.
- Soft drinks, fruit juices, and vegetable juices contain enough sugar to cause an unwanted feeling of fullness before a workout. They may cause diarrhea if consumed in excess before exercising.
- Eat a small, easily digested meal with ample carbohydrate several hours before exercising vigorously.

References

Kreider et al. ISSN exercise & sport nutrition review: research & recommendations. *Journal of the International Society of Sports Nutrition. 7*(7), 1–43. http://www.jissn.com/content/7/1/7

Rodriguez N. R., N. M. Di Marco, & S. Langley. American College of Sports Medicine position stand. Nutrition and athletic performance. *Medicine and Science in Sport and Exercise*. *41*(3), 709–31. http://www.ncbi.nlm.nih.gov/pubmed/19225360

Reliable Resources

- Information about dietary supplements—**Center for Food Safety & Applied Nutrition** http://www.fda.gov/Food/DietarySupplements/default.htm
- Physical activity guidelines—**Office of Disease Prevention and Health Promotion** http://health.gov/paguidelines/
- Health and medical information—**WebMD** http://www.webmd.com/
- Nutrition, food safety, and health information—**International Food Information Council** http://www.foodinsight.org/
- Food, nutrition, cooking, fitness, and health information, articles, videos—**The Academy of Nutrition and Dietetics** http://www.eatright.org/
- Exercise, fitness, and wellness information—**American College of Sports Medicine** http://www.acsm.org/access-public-information/search-by-topic

Where Can I Get More Information?

The Family and Consumer Sciences (FCS) agent at your local UF/IFAS Extension office may have printed information about nutrition and may offer nutrition classes for you to attend. Check your telephone book, or find your local UF/IFAS Extension office at this website: http://sfyl.ifas.ufl.edu/map.

Check your local library for books that are written by qualified health professionals. Magazine articles vary in their reliability; check the credentials of the authors. Articles that attempt to sell a product or service are often biased and not reliable.

Your doctor (MD) or a registered dietitian (RD or RDN) can provide reliable information to you.