

Quiz Policies

Eligibility

The NCSF online quizzes are open to any currently certified fitness professional, 18 years or older.

Deadlines

Course completion deadlines correspond with the NCSF Certified Professionals certification expiration date. Students can obtain their expiration dates by reviewing either their certification diploma or certification ID card.

Cancellation/Refund

All NCSF continued education course studies are non-refundable.

General Quiz Rules

- You may not have your quiz back after sending it in.
- Individuals can only take a specific quiz once for continued education units.
- Impersonation of another candidate will result in disqualification from the program without refund.

Disqualification

If disqualified for any of the above-mentioned reasons you may appeal the decision in writing within two weeks of the disqualification date.

Reporting Policy

You will receive your scores within 4 weeks following the quiz. If you do not receive the results after 4 weeks please contact the NCSF Certifying Agency.

Re-testing Procedure

Students who do not successfully pass an online quiz have the option of re-taking. The fees associated with this procedure total \$15 (U.S) per request. There are no limits as to the number of times a student may re-test.

Special Needs

If special needs are required to take the quiz please contact the NCSF so that appropriate measures can be taken for your consideration.

Quiz Rules

What Do I Mail Back to the NCSF?

Students are required to submit the quiz answer form.

What do I Need to Score on the Quiz?

In order to gain the .5 NCSF continued education units students need to score 80% (8 out of 10) or greater on the CEU quiz.

Where Do I Mail My Quiz Answer Form?

You will mail your completed answer form to:

NCSF

Attn: Dept. of Continuing Education

5915 Ponce de Leon Blvd., Suite 60

Coral Gables, FL 33146

How Many CEUs Will I Gain?

Professionals who successfully complete the any continuing education quiz will gain .5 NCSF CEUs per quiz.

How Much does each quiz cost?

Each quiz costs the student \$15.00.

What Will I Receive When The Course Is Completed?

Students who successfully pass any of the NCSF online quizzes will receive their exam scores, and a confirmation letter.

How Many Times Can I Take The Quizzes For CEUs?

Individuals can take each NCSF quiz once for continuing education credits.

Nutrition Bars

Their Purpose

Nutrition bars have become the food of choice for many people on the run. The bars offer a fast, convenient food source that requires no preparation, a long shelf life and no refrigeration. For this reason many consumers grab them as quick snacks or meal replacements, assuming they are healthy alternatives to other food choices.

The Sports/Nutrition/Energy Bar industry started in 1987 with the original PowerBar. The concept was to create an energy source for athletes concerned with energy depletion associated with long duration training. The high-carbohydrate, low-fat bars consisted largely of high-fructose corn syrup and grape and pear juice concentrate, with added vitamins and minerals. The bars were more functional than flavorful, aimed at satisfying the blood glucose levels needed for high performance. However, it didn't take long before the energy bars became more taste oriented, as different companies tried to capitalize on a fast emerging market.

Early studies suggested that the bars were not really an energy breakthrough, but more of a convenient alternative to other food choices²⁴. One study, conducted at Ball State University, on high-carbohydrate bars, used nine trained cyclists to analyze energy replacement and performance. The cyclists rode for an hour to deplete their glycogen stores. The following day, they rode for a half-hour and then performed sprint training. After the sprints, the cyclists were given one hour's rest and randomly assigned to eat 1,000 calories' worth of PowerBars, Tiger's Milk bars, or cinnamon-raisin bagels, over the next four-hour period. An hour after completing the refuel interval, they rode for one hour. Researchers measured their energy output and blood sugar levels.

The results concluded that the bagels led to the same aerobic performance as the energy bars. This suggests that the bars offer no magical performance enhancement compared to ordinary carbohydrate rich foods; rather, it's the number of calories and carbohydrates in each food that is significant. The researchers suggested that for the average person, eating a normal diet is satisfactory for maintaining activity levels even if engaged in routine exercise. Most people do not even burn off the calories from a bar during an average, moderate intensity workout. It's the endurance athlete that really needs to monitor carbohydrate intake and may benefit from the high glycemic index of the bars, when consumed during exercise or as a post exercise refuel.

Types of Bars

Although the original sports bars were designed for endurance athletes, it would be naïve to assume that only athletes use the energy bars. Nutrition bar and supplement companies know that if athletes use them, then the average person will surely equate the use of these bars with improved performance. This has become blatantly obvious, as supermarkets, health food stores, and drug stores carry a huge selection ranging from diet bars to bars "just for women". In 1995 sales of energy bars totaled \$50 million dollars. Today, sales are heading towards the \$150 million mark, according to the trade publication Supermarket News.

To compete in this saturated market, each manufacturer needs a niche. The impressive names no longer are enough, so bars are now catering to special consumer interests. Viactiv and Luna bars are targeting women, offering increased calcium and folate in lower calorie bars. Supplement companies go after the muscle mass market, offering large amounts of protein in each bar. Other companies, like GeniSoy and Soy Sensations, stake their claim on soy products for vegetarians and menopausal females. Additional companies have addressed the natural foods seeking consumer, like Clif and Boulder bars. Some have even gone after the brain market. Companies like Think! promise to boost your brainpower with herbs and vitamins (unsubstantiated in research trials).

The obvious popularity of these bars has not gone unnoticed. Large conglomerates including Nestle (PowerBar), Kraft (Balance Bar), and Rexall Sundown (Met-Rx) have purchased the companies that produce the popular brands. With all this corporate power, the marketing of these bars has gone mainstream and focuses on the average consumer, rather than the athlete for whom they were originally designed.

The companies can easily draw new consumers by focusing on general misconceptions. Who couldn't use more "energy"? Most people don't equate the word energy with calories. According to the FDA, any food with calories is an "energy" food. The Center for Science in the Public Interest has petitioned the FDA to disclose the information on the label, but to date the FDA has done nothing.

In addition to the hopes of gaining energy, some consumers buy the bars in attempts to be compliant with fad diets like the Atkin's Revolution and Zone (40-30-30) Diet. In most cases the companies simply replace some of the high-fructose corn syrup with protein (from whey or soy protein isolate or casein) and with fat (often palm kernel oil). Palm

kernel oil is popular because it's saturated enough to stay solid at room temperature, so the coating doesn't smear all over your hands. What palm kernel oil does to your arteries is another question, since it is twice as much saturated fat as lard.

For individuals following high-protein diets there are low carb high protein bars named accordingly, Ultimate Lo Carb, for instance. Other bars offer high protein content with different quantities of carbohydrates like Met-Rx Protein Plus, Promax, Protein Fuel, Protein Revolution, Pure Protein, Solid Protein, and Steel bar. To take the matter one step further, companies suggest they have "special proteins" like Met-Rx's metamyosin. They often add other proposed "growth factors" like glutamine to increase product marketability for fitness enthusiasts. There is no conclusive evidence that special protein blends are better than basic food protein. The fact of the matter is, you can get the same quantity of protein in real foods at a fraction of the cost.

The other major category of nutrition bars falls under supplement bars. This is the broadest category including basically everything a person thinks he or she needs in their diet. In most cases the bars are a mix of energy nutrients with vitamins, minerals and a bunch of sugar. With names like cherry cheesecake, carmel nut blast, mocha fudge, and toffee chocolate chip, these bars taste more like candy than health food. And, they are advertised accordingly. Ads from Viactiv say "Just taste these delicious, satisfying new energy sources for women," while Boost claims. "Boost bars are the ideal snack and help give you the energy to do the things you want to do." These bars offer calories and nutrients (much in the same way a banana and a handful of nuts would), as well as convenience, which has made them a mainstay in many people's diet.

Dieters' Concerns

Most people like the fact that the bars offer a healthy selection for their daily choices of fast food. The bars offer a defined amount of calories from carbohydrates, protein, and fat, making calories easy to track. They are commonly sold in single portions, so dieters do not have to guess portion size, and are sold individually, reducing the temptation to eat another just because it's there. For these reasons, energy bars may work well for people attempting to control their caloric intake, but the bars do not offer any magic weight loss cure and can become problematic if consumed too often.

Since the bars offer some level of control, many people replace their foods with the bars alone. This is not a good idea, because unless you eventually learn appropriate eating habits, you would have to live on the bars to maintain weight loss. Although it's true that energy bars are preferable to candy bars and fast food, they still do not provide enough variety to consume as a primary staple in the diet. Fiber, phytochemicals and certain compounds cannot be consumed adequately from the bars. Likewise, if you look at the costs per calorie, real food is a better deal. Energy bars easily cost \$0.70 per 100 Calories. In comparison, raisins are only \$0.18/100 Cal.; banana, \$0.20; granola bar, \$0.28⁵.

Many people love the bars because they taste good.

Balance Gold advertises that their product "Tastes like a candy bar!" As it should, considering it has more calories and fat than a Three Musketeers, when compared by weight. The newest trend in bars is to make them tastier than their healthier predecessors, and most consumers see "health food bars" as healthy, opting to switch to their new favorite flavors. In fact, if people looked at the caloric intake of the bars, they would find they could just as easily consume healthy snacks, like a banana and cup of light yogurt, with fewer calories and half the cost. Additionally, people that consume the bars for more dietary protein probably already consume adequate amounts in their daily diet.

Dieters may have another concern with the consumption of energy bars. People that consume energy/nutrient bars because they are trying to lose weight need to consider their physiological response to the bars. Proponents of lower carbohydrate diets consider insulin response a key factor in their ability to lose weight. Many bars are consumed because they are supposed to provide relatively low calories with a low glycemic response. One study, conducted at Ohio State University, suggests this may not be the case. This study found that energy bars, advertised as having low or moderate levels of carbohydrate, don't actually affect insulin levels as expected. "None of the manufacturers of these low- and moderate-carbohydrate snack foods have the data to support the claim that their products keep after-meal insulin levels low," said Steven Hertzler, "Our study shows these energy bars lead to an insulin response closer to what we see with high-carbohydrate bars." This information suggests that the bars cause a reaction more favorable for refueling athletes rather than dieters looking to lose weight by creating a favorable environment to burn fat.

If that information isn't bad enough, consumers may be surprised to find that the labels may be even more misleading. Labels are expected to provide consumers with the information necessary to make educated decisions on food choices. ConsumerLab.com looked at the accuracy of nutrient labels on energy bars by testing 30 different bars to see what the products actually contained. Of the 30 reviewed, only 12 passed. "Undeclared carbs was the most common problem," says Todd Cooperman, MD, of ConsumerLab.com. "In fact, 15 of the 30 bars exceeded carbohydrate claims often by as much as 20 grams, despite many claims about being low in carbohydrates. The explanation was that many products included glycerin as an ingredient, but the manufacturers weren't counting glycerin (or glycerol) as a carbohydrate." Sugar alcohols and like compounds found in the bars are now advertised as low-impact carbohydrates. Some common sugar alcohols include sorbitol, maltitol, mannitol and xylitol. They are considered low impact carbohydrates because their caloric value is less than four calories per gram, but they are not calorie free. Do the math. If the energy from the nutrients does not add up to equate to the calories listed, then there are hidden calories.

Fitness Enthusiasts

For many people that exercise, the common belief is

they must take some ergogenic aid to reach their fitness goals. Since professional and nationally competitive athletes consume pre-event foods, eat post-exercise energy mixtures, drink carbohydrate solutions and supplement proteins, carbohydrates, vitamins, and minerals, many fitness enthusiasts feel they need to do the same thing to reach a higher level of performance. The truth of the matter is that most people who engage in fitness activities do not train at the intensities or for the durations that competitive athletes do. For this reason their energy and nutrient needs are not as high. So, for the majority of exercisers, supplementing food is not necessary, if they eat a balanced diet.

Energy bars can be a good source of calories for people on the run and may aid in providing nutrients missed from a diet controlled by a busy work schedule, but they should not be used in place of real food sources. Elizabeth Applegate, a nutritionist and exercise expert at the University of California at Davis, cautions people “not to replace wholesome food with energy bars,” particularly when the bar selection is composed of highly processed milk and soy protein, high-fructose corn syrup, and oils. When bars contain the majority of calories in the diet, consumers may miss “the benefits of foods like vegetables, beans, low-fat dairy, and other real foods that can cut the risk of cancer, heart disease, and stroke.”²

Clif Bar and Boulder Bars have attempted to put more real food into the bar by including fruits, fiber, and whole grains, as well as a hefty dose of sugar. They are preferred to the engineered food bars that taste like candy but are little more than sugarcoated vitamins, minerals, and protein and, again, should not replace fruits and whole grains in the diet. Fitness enthusiasts looking to control their weight should be cautioned that adding one or two bars a day to a diet would usually undo the calories expended in a daily workout. Eating two bars a day alone equates to 32.5 lbs of sugar a year in the diet! This is not to suggest they cannot be part of a healthy diet, but they definitely should not dominate it.

Over Consumption

People that find themselves consuming two or three bars a day should understand two primary areas for additional concern. Firstly, and as addressed previously in this article, replacing real foods with engineered foods has its drawbacks. Energy bars can displace important foods from the diet. This is particularly true for whole grains, fresh fruits and vegetables, as they are among the most health protective foods (and are already under-consumed in the typical diet). Replacing them in the diet will likely lead to an even lower intake of fiber, carotenoids, and other health-protective phytochemicals.

Secondly, eating too many highly fortified energy bars could potentially contribute to an overdose of minerals or nutrient additives. Many of these fortified bars offer 30-50% of many vitamins and minerals. When consumed regularly in the diet, along with other food sources, the nutrients add up. Unlike many vitamins that are simply excreted with over-consumption, some minerals and fat-soluble vitamins can build up to levels of toxicity. A health conscious person may eat a fortified breakfast cereal and take a multi-vitamin in one

meal, add a bar or two or three during the day, and eat other foods for lunch and dinner; all of a sudden, their mineral levels are off the charts. The body may develop health problems related to mineral imbalances. Since some minerals compete with others in the body, too much of any one may have negative consequences. Good nutrition relies on the proper balance of nutrients; this balance may be difficult to achieve with excessive supplementation.

Moderation is the Key

Variety is the spice of life. A diet rich in energy bars is often poor in variety. Without variety in their diets, people may be missing out on important nutrients. A good goal might be to consume at least 20 to 30 different kinds of foods per week³. So, if energy bars are a necessary part of the diet then complement the engineered foods with a variety of natural foods.

Energy bars are still best served for the people they were originally designed for, competitive athletes and those with heavy training volumes. They offer convenient, portable calories for individuals in need of energy for workouts and to refuel following a training session. For most people the added calories and high sugar content are not a necessary addition to the maintenance of a healthy diet.

The bars may be used as a meal replacement for individuals on the go and may be a better snack choice than a donut or candy bar, but for the average person consuming them, as a supplement to a normal diet, it probably is no better than a daily vitamin.

Product	Price	Weight (oz)	Calories	Sugar (teaspoons)
Balance (yogurt honey peanut)	1.29	1.8	200	4.75
Balance Gold (caramel Gold nut blast)	1.29	1.8	210	4.25
Clif Bar (carrot cake)	1.59	2.4	240	5.25
EAS AdvantEdge (chocolate almond)	1.99	2.0	220	4.75
Ironman Triathlon Hi Energy Bar (coffee crunch)	1.42	2.0	230	5.5
Luna (lemonzest)	1.79	1.7	180	3.5
MET-Rx (peanut butter)	2.69	3.5	340	7.25
PowerBar (peanut butter)	1.29	2.3	230	1.25
PowerBar Harvest (iced oatmeal raisin)	1.49	2.3	260	4.25
PowerBar ProteinPlus (vanilla yogurt)	1.99	2.8	290	5.5

Adapted from Liebman, B & Schardt, D. Nutrition Action Healthletter. Dec 2000

If you eat 1,600 calories per day, the USDA recommends limiting added sugar to 6 teaspoons per day; if you eat 2,200 calories, the limit is 12 teaspoons of added sugar⁴. Not all the sugar in these energy bars is added. Some occurs naturally in ingredients such as dried fruits and honey. ●

CEU Quiz

Nutrition Bars

1. What were sport-energy bars originally designed for?
 - A. Reducing the caloric intake of endurance athletes while maintaining energy
 - B. Increase available energy during distance events
 - C. Increasing protein intake for athletes
 - D. Provide additional vitamins and minerals to the diet
2. Which of the following statements is true regarding energy bar consumption?
 - A. The bars provide more energy than real food even if the calories are the same
 - B. The bars provide nutrients you cannot get out of real food sources
 - C. The bars may have additional sugars not listed on the label
 - D. All of the above are true
3. What is a common additive to energy bars that increase the quantity of saturated fat in the food?
 - A. Cholesterol
 - B. Corn oil
 - C. Palm Kernel Oil
 - D. Trans fatty acids
4. Which of the following is a reason the energy bars have become popular with dieters?
 - A. They provide a healthier choice to fast food selections
 - B. They have a controlled serving size
 - C. They have a defined amount of calories
 - D. They reduce the temptation to eat more because they are sold in a single serving
 - E. All of the above are true
5. What is the probable cause for the energy bar having more calories than the energy nutrient value listed on the label?
 - A. The protein in the bars are more calorically dense than other proteins
 - B. Sugar alcohols are not listed on the label
 - C. The energy nutrients all have more calories than in normal foods
 - D. All of the above
6. When not being consumed for sports performance why is it recommended to eat real foods instead of energy bars when available?
 - A. Energy bars are quickly digested and make people feel hungry sooner
 - B. All energy bars provide a low glycemic index
 - C. The bars often replace foods containing phytochemicals and fiber
 - D. Energy bars are addictive
7. Which of the following is a risk with consuming too many bars in addition to a regular diet?
 - A. The bars can add too many minerals to the diet
 - B. The bars can cause dehydration
 - C. The bars may cause eating disorders
 - D. All of the above
8. What is the recommendation for food variety in the diet per week?
 - A. 7-10 different foods
 - B. 11-15 different foods
 - C. 16-20 different foods
 - D. 20-30 different foods
9. Which of the following is a reason most fitness enthusiasts exercising at a moderate intensity three times per week do not need to supplement their diet with energy bars?
 - A. Most people eat adequate calories in the normal diet
 - B. Most people consume adequate protein in their diet
 - C. The added calories can prevent fat loss and even add weight
 - D. The bars add large quantities of sugar
 - E. All of the above
10. Approximately how many teaspoons of sugar are found in the average energy bar?
 - A. 1
 - B. 2
 - C. 4
 - D. 6

Quiz Answer Form

FIRST NAME _____ LAST NAME _____ M.I. _____

TITLE _____

ADDRESS _____ APT. _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

COUNTRY _____ POSTAL CODE _____

CERTIFICATION NO. _____ CERTIFICATION EXP. ____/____/____

MEMBERSHIP NO. _____ MEMBERSHIP EXP. ____/____/____

Quiz Name	Member Price	Total
	\$15	



Discover



Visa



Mastercard



Amex



Check/Money Order

Account No. _____

Exp. Date _____

Security Code _____

Signature _____

Date _____

Quiz Answers

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

Fill in each blank with the correct choice on the answer sheet. To receive 0.5 CEUs, you must answer 8 of the 10 questions correctly.

Please mail this Quiz answer form along with the proper enclosed payment to:

NCSF
5915 Ponce de Leon Blvd., Suite 60
Coral Gables, FL 33146

Questions? 800-772-NCSF