

FOOD Insight™

IFIC Foundation
<http://ific.org>

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Gold Medal Nutrition: Fueling for Fitness and Optimal Performance

The torch is already circling the world and the Summer Olympic Games will soon be here. When watching the best athletes from around the globe, we might wonder about the training and discipline



that brought them to the games and what we can do to bring our own performance and diets closer to their level. Whether hitting the gym or competing in an upcoming marathon or other event of “Olympic-sized” proportions, athletes and active people alike recognize how a sound eating plan — or better termed a *fueling* plan — cannot only help them exercise with more energy, meet training goals faster, and perform better, but recover more completely from workouts, decrease the risk of injuries, and stay in overall better shape. It wasn’t too long ago that athletes had to be convinced that nutrition made a difference. Now, the trend is to see more and more athletes and active people who are seeking out sports nutrition professionals, looking for the edge that nutrition can provide.

But it’s not just hard-core athletes who understand the link between what we eat and how it affects our health and wellness. The recent IFIC Foundation Food & Health Survey (2008) found that nearly two-thirds (67 percent) of Americans say they are currently making changes to

improve the healthfulness of their diets to enhance overall well-being (69 percent) or physical health (69 percent). And Americans truly believe that there are benefits to eating specific foods and beverages, like improving physical energy and stamina (77 percent). This awareness of how food can be a “training partner” for athletes and active people brings many opportunities for those working with athletes and developing educational programs geared towards fitness and performance.

Eating on a Schedule

Everyone knows breakfast is important, but for athletes, it is even more critical, as athletes’ bodies may be spending the whole night in “recovery” mode. So, in the morning, it’s time for more fuel to get into the body for the work ahead. Fueling the muscles with energy early in the day can boost workouts later on. Eating every 3-4 hours during the day (with a plan for 3 meals and 3-4 snacks) helps spread out energy over the day, maintaining muscle energy and helping athletes recover better from workouts.

Developing a strategic eating plan is an essential part of nutrition success for athletes. Just as athletes and coaches plan workouts in

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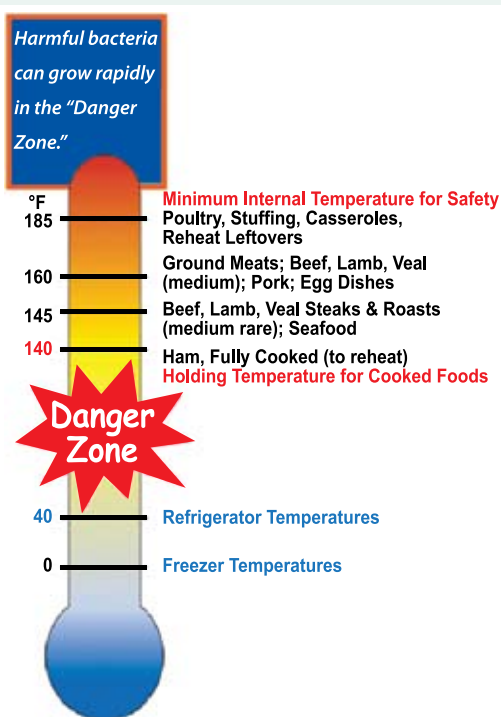
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“How to Tell if Your Food Has Gone Bad:” IFIC, Expert Chris Bruhn, and Monkeysee.com Provide Food Safety Messages on the Web

The Danger Zone: A Destination to Avoid!

The Danger Zone is a temperature range, from 40 degrees to 140 degrees Fahrenheit, in which bacteria grow the most rapidly in food. In this temperature range, bacteria can **double** in number in as little as 20 minutes! Therefore, it is critical that foods not be left out of the refrigerator for more than two hours, and to make sure that hot foods are kept at the proper temperature.

Reference: http://www.fsis.usda.gov/OA/pubs/cfg/Color/jpg/07-dangerzone_small.jpg



Being food safety savvy is important for everyone, especially at-risk populations such as pregnant women, children, persons who are immune compromised, or older individuals. IFIC, therefore, is always looking for new ways to share food safety information that everyone can use. One new strategy IFIC has employed is the addition of a video produced in partnership with a new Web-based company called Monkeysee.com. Monkeysee.com produces high-quality “how-to” videos and expert interviews at no cost to the viewer. The new video, “How to Tell if Your Food Has Gone Bad,” on the “Ask an Expert” page of www.ific.org stars food safety expert Christine Bruhn, PhD, Director of the Center for Food Safety Research at the University of California, Davis. In the video Dr. Bruhn explains how to tell when food is no longer safe to eat in an entertaining and easy-to-navigate way.

As the platform for effectively communicating food safety and nutrition information continues to evolve, Monkeysee.com provides an avenue to communicate using new technology. Furthermore, Monkeysee.com’s “how to” videos offer a visual, “learn at your own pace” quality that many Americans are seeking when searching for credible information on a new topic.

This “how-to” video includes 10 different “mini-video” clips. The following highlights some of the key food safety information demonstrated and discussed by Dr. Bruhn.



Food Safety Basics

Dr. Bruhn begins her video series by discussing food safety basics. First, she cautions consumers never to taste a food to determine if it has gone bad. Since it is hard to assess food safety by visual cues alone, Dr. Bruhn stresses the importance of monitoring food temperatures, most commonly known as “keeping hot foods hot and cold foods cold.” Additionally, she reminds viewers “when in doubt, throw it out” to prevent foodborne illness.

Many of the food safety practices Dr. Bruhn demonstrates are not novel ideas, but are often overlooked in consumers’ busy lives. Food safety basics such as washing hands properly, preventing cross-contamination (contamination of a food product from another source; food to food, equipment to food, or people to food), and avoiding the Danger Zone temperature range are the hallmarks of preventing foodborne illness.

Bread

From a store-bought loaf of bread to a homemade baguette, Dr. Bruhn covers all the bases on how to tell if your bread has gone bad. Dr. Bruhn points out that performing a “squeeze test” on a loaf of bread

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How to Tell if Your Food Has Gone Bad

is a good way to get an idea of the freshness of the product. Searching the product for any visual signs of mold is also helpful in determining if the bread is safe to eat.

Luncheon Meat

Luncheon meat, an everyday ingredient in packed lunches for children and adults alike, is common in refrigerators across the country. Most luncheon meats are labeled with a sell-by or use-by date on the package. Dr. Bruhn suggests consuming luncheon meats within 7-10 days of the date marked on the package and also advises consumers to consume luncheon meat within 3-5 days of first opening the package.

Dairy Products

With dairy products such as milk, yogurt, and cottage cheese, Dr. Bruhn discusses the importance of consuming these food products within 7 to 10 days of the sell-by or use-by date. When it comes to cheese, Dr. Bruhn states, “The time when mold is good is when you have a mold-ripened cheese.” Other varieties of hard cheese can become moldy, and not in a good way. Consumers will be happy to know that simply removing the moldy area can save a whole block of cheese from going to waste. Dr. Bruhn recommends cutting a quarter-to a half-inch off beyond the moldy area of the cheese to ensure food safety.

Leftovers

Dr. Bruhn goes on to tackle a tricky food safety topic—leftovers. What looks tasty on the surface may be harboring harmful bacteria. As always, Dr. Bruhn warns consumers not to judge leftovers solely on appearance, and again, encourages consumers not to taste the leftovers to see if they have gone

bad. Dr. Bruhn warns, “Good as it might taste, it might make us sick afterwards.”

According to Dr. Bruhn, proper food handling is critical when it comes to leftovers—they should be refrigerated no more than two hours after preparation. Dr. Bruhn encourages consumers to label leftovers with the date before placing them in the refrigerator, and to eat the leftovers within 3-5 days of that date.

Fruits and Vegetables

Dr. Bruhn provides several tips on how to tell if specific fruits and vegetables are no longer safe for consumption. For example, with more and more Americans buying their lettuce pre-packaged and pre-washed, Dr. Bruhn suggests checking the date on the pre-packaged lettuce and consuming the lettuce by that date. Visually inspecting the lettuce is also useful. Be aware of lettuce that appears watery, broken down, or has a foul smell. Dr. Bruhn also discusses other common fruits and vegetables, such as bananas, citrus, strawberries, and tomatoes.

Frozen Foods

In today’s fast-paced society, there is a need for convenience when it comes to food, which may be one of the reasons that frozen foods are such a popular purchase. In this segment, Dr. Bruhn recommends using frozen foods within three months to one year, and to use the dates on the food packages as guidance. When it comes to preparing frozen foods, Dr. Bruhn also recommends defrosting frozen items in the refrigerator or in the microwave.

Pantry Foods

Contrary to popular belief, foods kept in the pantry will not last forever. In this particular video segment, Dr. Bruhn discusses how to tell when pantry foods have gone bad. Dr. Bruhn encourages

consumers to inspect the package’s integrity, and to be wary of dented cans and broken or ripped packaging, both of which should be thrown away immediately.

Washing Produce

Dr. Bruhn offers practical tips on washing specific types of produce in this video segment and demonstrates proper washing techniques for everything from lettuce to tomatoes, melons, and strawberries.



Properly Storing Food in the Refrigerator

In this last video segment, Dr. Bruhn dissects the layout of a common home refrigerator and offers food safety tips on everything from avoiding cross-contamination in the refrigerator to using a refrigerator thermometer to ensure the proper temperature is maintained. In summary, Dr. Bruhn reinforces the Partnership for Food Safety Education’s Fight BAC!® *Four Core Practices for Safe Food Handling*, which encourages consumers to *clean, separate, cook, and chill*, in order to keep food safe from harmful bacteria (for more information, visit <http://www.fightbac.org/>).

To view “How to Tell If Your Food Has Gone Bad,” please visit the following links:

<http://www.ific.org/videos/askanexpert.cfm> or

<http://www.monkeysee.com/play/7754-how-to-tell-if-your-food-has-gone-bad>.

Finally, be on the look-out for additional food safety and nutrition “Ask an Expert” videos on [IFIC.org](http://www.ific.org) in the future!

Gold Medal Nutrition

detail, having a nutrition program planned out ahead of time can really make a difference in performance. Durham, NC-based sports dietitian Michelle Rockwell, MS, RD, CSSD works with athletes of all ages. She says it is important to help athletes plan fueling *times* and *places* ahead of time. "I recommend small to moderate-sized meals throughout the day and encourage athletes to plan their breakfast the night before, keep snacks at hand (in sports bags, in their lockers, or even in their cars), and have recovery nutrition readily available immediately post-workout." That way, she says, athletes never run out of fuel, especially before and after workouts when they need it most.

Keeping Balanced Meals on the Plate

Athletes typically respond well to eating high-quality foods when they know their benefits. At meals, if athletes can look for lean protein to build and maintain muscle mass (low-fat meat, poultry, fish, or beans), high-carbohydrate grains for muscle energy (pasta, rice, couscous, or corn), a fruit and a vegetable for key nutrients like Vitamin C and Vitamin A, and a good calcium source (skim milk, soy milk, or yogurt), that's a great start to a healthful sports plan. To enhance immune function, joint health, and satiety, Rockwell also looks for a good source of unsaturated fats on a regular basis, including fatty fish, nuts, seeds, nut butters, olives, avocados, oils, and oil-based salad dressings like vinegar and olive oil dressings.

Maximizing Workout Fuel

Athletes need to go into workouts well-hydrated and with energy on board. A small snack or medium

sized meal 1 to 3 hours beforehand helps provide muscle energy, fuel workouts, and wards off hunger. During workouts lasting an hour or less, staying hydrated with water or a low-calorie fitness water may work best. But when training longer than an hour, utilizing an easy-to-digest carbohydrate/electrolyte source like a sports drink can provide additional benefits, including better concentration, superior fluid replacement, and better overall performance. Taking in 30-60 grams of carbohydrate per hour of hard exercise should be the goal.

For athletes training for an hour or longer on a daily or near daily basis, competing in multiple events in one day (like a soccer tournament), or training several times a day, recovery nutrition is very important. Drinking water may be fine for recovery for the active person working out 45 minutes 3 times a week, but not for athletes training at a high level. The ultimate goal of recovery nutrition is to help the athlete recover the muscles fully and prepare for the next workout or competition. The recovery plan should include three key ingredients: fluids, carbohydrate, and protein. Many athletes use a recovery beverage that includes all three such as chocolate milk, recovery shakes, or smoothies made with milk or soy milk, juice, and fruit. Drinking or eating recovery fuel with at least 50 grams of carbohydrate and 15 grams of protein within 30 minutes of finishing training helps the muscle begin repairing (protein) and building back muscle glycogen, the storage form of sugar for workouts (carbohydrate). Practicing good recovery nutrition on a daily basis can be the difference-maker for competitive athletes.



Prioritizing Hydration

Athletes and active people should pay special attention to getting enough fluids all day long, with extra fluids before, during, and after workouts and competitions. Because dehydration allows the body to heat up faster and can impair performance (or just make the workout much more difficult to get through), getting on a hydration plan makes a lot of sense. Even a small amount of dehydration – losing just 2% of total body weight – in a workout, can impede performance. Rockwell encourages athletes to keep a water bottle with them during the day and drink all day long. She asks athletes to periodically weigh themselves before and after workouts – and suggests that athletes drink 2-3 cups of fluid for every pound lost in a workout to replenish fluid stores in the body. During hard workouts lasting an hour or longer, a sports drink with 4-8 percent carbohydrate, a mix of two or more carbohydrate sources, and electrolytes like sodium and potassium can enhance performance and help maintain optimal fluid balance. Adding extra salt to food when athletes train in the heat and

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humidity, or when they perspire a lot, is also important for muscle cramp prevention and optimal fluid balance. In these situations, it is important to pay close attention to sodium intake. There is significant individual variation in sodium loss during activity. Emphasis on replacement of fluids is important, but care must be taken to avoid over-hydration.

“I recommend small to moderate-sized meals throughout the day and encourage athletes to plan their breakfast the night before...” Michelle Rockwell, MS, RD, CSSD

Putting it all Together

Whether an athlete is a weekend warrior or trains 3 hours a day on a dedicated schedule, nutrition is one key “make or break” component that can catapult health and performance upward or, if not utilized, can hold athletes back from meeting their performance and health goals. From staying hydrated to refueling muscles, there are many things athletes can do to boost performance – and feel good while they exercise.



Caffeine's Role in Performance

Caffeine is often touted as having a beneficial impact on athletic performance, and research has shown this to be true. Caffeine has been shown to decrease performance times and increase endurance when consumed prior to an event. Recent research suggests that this may be related to caffeine's ability to increase perceived energy, as the stimulating effect it has on the brain may reduce feelings of exercise fatigue. Although caffeine cannot render “superman” benefits, it may help an athlete attain optimal performance in certain types of athletic events. Although caffeine has been shown to help performance, moderation is still important as moderate amounts are more likely to have a beneficial effect on performance than much larger amounts. Moderate consumption is considered 300mg/day or three 8-ounce cups of coffee. Large amounts of caffeine may bring on jittery feelings that are unnecessary before a big competition. Individual metabolism and sensitivities to caffeine may vary, and certain sub-populations such as children and pregnant women may want to limit caffeine. These groups should monitor their caffeine intake and talk with a healthcare provider about appropriate consumption levels.

Athletes may be advised to avoid caffeine due to the belief that it is dehydrating; however, caffeine's mild diuretic effect is typical of any fluid, including water. In addition, research has shown that caffeinated beverages can and do contribute to hydration.

More information is available in the new International Food Information Council Foundation's *Caffeine and Performance Fact Sheet* at: <http://ific.org/publications/factsheets/caferf.cfm>.

Opportunities in Food Safety and Nutrition: Where There's Food, There's a Profession



Choosing a career in nutrition or food safety is more exciting than ever!

Consumers are increasingly interested in food, health, and nutrition, bringing about a growing need for food safety and nutrition professionals with a wide range of skills, specialties, and interests. Not only are there more opportunities in traditional settings like hospitals, schools, and health departments, but there are also many prospects in new fields ranging from communications to the culinary arts, to fitness, and wellness. The time is ripe to enter the field and do what you love to do!

Exciting Careers in Nutrition

Nutrition Communications:

Research shows that consumers feel overwhelmed with the amount of information they receive regarding food, nutrition, and health. They are bombarded with seemingly contradictory messages from a variety of sources such as the news media, friends and family, the Internet, and a host of other sources. In this environment there is a growing need for credible voices that are able to communicate valuable information in “consumer-friendly” language. For this reason, many organizations, in both the private and public sectors, are seeking professionals to fill the niche of nutrition communicator. Such professionals translate nutrition science into clear, understandable messages for consumers and disseminate these messages through communication materials, speaking at conferences, media appearances, and other mediums. In addition, there are opportunities for nutrition professionals with journalism experience to contribute to newspaper columns, magazine articles, and the ever-expanding online world of information.

Food and Culinary: In the past, Registered Dietitians (RD) may have been considered “nutrition nannies,” but food and nutrition go hand-in-hand, and more RDs are showing their love for food by combining careers in culinary arts and dietetics. Such careers may include developing and modifying recipes for healthfulness, leading cooking demonstrations/

classes, working in supermarkets, or contributing to magazines. Some RDs have even found their niche starring in cooking shows and authoring cookbooks. The public is primed for RDs who are willing to step into the spotlight to offer a total diet approach to a healthful lifestyle.

Fitness and Wellness: According to IFIC Foundation research, consumers are more physically active now than they have been in past years. Many are joining gyms or visiting wellness facilities to improve their health. People who use these facilities are an ideal audience for accurate nutrition information. Credentialed nutrition professionals at fitness and wellness centers may counsel clients one-on-one, devise personalized nutrition plans, lead group nutrition sessions, or help athletes determine specific diets for optimal performance. Additionally, many forward-thinking corporations are instituting corporate wellness programs and centers to improve employees’ health in an effort to reduce healthcare costs, thereby opening the door for nutrition professionals to provide consultation to members of these programs.

Exciting Careers in Food Safety

As we all know, the health and welfare of the global population depends on access to a safe food supply. Therefore, food safety professionals continue to be in high-demand around the world. The opportunities for those with a food background, whether it is in food safety, food science,

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Breakfast: More than Meets the Eyes



similar benefits of breakfast for children and adults.

The challenge for health professionals lies in helping consumers find ways to fit breakfast into their hectic schedules.

According to the *2007 International Food Information Council Foundation Food & Health Survey*, 90 percent of consumers ranked breakfast as the most important meal of the day, just less than half reported consuming breakfast all seven days of the week. The opportunity is ripe to begin a new conversation with consumers about their barriers to consuming breakfast and to help them include breakfast in their daily diets. When people are motivated to consume breakfast, they may experience a whole host of benefits that go beyond maintaining a healthy weight—and don't be surprised if they thank you for it.

Consumers be aware: There is something that you can eat every day that might actually have a positive effect on your weight and energy levels. This is the latest word from researchers who have been studying the benefits of breakfast. According to a recent study published in the March 2008 issue of *Pediatrics*, teens who consumed breakfast regularly tended to weigh less, exercise more, and eat a more healthful diet. Conversely, those who did not consume breakfast every day had a greater chance of gaining excess weight. In fact, this is in line with a number of studies that have shown

2008 Food & Health Survey Now Available!

The third annual *International Food Information Council Foundation Food & Health Survey: Consumer Attitudes toward Food, Nutrition & Health* is now available on IFIC.org. This trended survey explores consumer attitudes toward:

- Calories
- Weight management
- Dietary fats
- Carbohydrates and sugars
- Food ingredients such as caffeine and low-calorie sweeteners
- Foods and beverages with added health and wellness benefits

- Food labeling
- Dietary guidance
- Food safety
- And much more.

This is the third consecutive year of the *Food & Health Survey*, building on the findings from previous editions. The full research report and a link to the *2008 Food & Health Survey* Web cast can be found at <http://www.ific.org/research/foodandhealthsurvey.cfm>. A recap of the survey findings will be published in the July/August issue of *Food Insight*.

Hot Off the Presses:

IFIC Foundation Publishes Updated IFIC Review—The Science of Sugars

The IFIC Foundation's newly updated and referenced white paper, *IFIC Review: The Science of Sugars*, examines the most recent research concerning the role of dietary sugars in nutrition and health. The nutrition and policy recommendations of the scientific community are summarized and their conclusions are related to supporting research. As carbohydrates, sugars play many important roles in our food supply—they are a source of calories and, in addition to sweetening, perform many essential technical functions in both processed food and foods prepared in the home. Almost everyone enjoys sugars and sweets, but many consumers wonder whether consumption of sugars affects health. This review takes a look at the research on the subject of nutrition and health aspects of sugars consumption and explains how moderate amounts of sugars can fit into a healthful eating plan.

To purchase copies of the *IFIC Review: The Science of Sugars* visit the IFIC Foundation online Publications Store at <http://www.ificpubs.org/servlet/StoreFront>.

To download a copy of the Review, visit the IFIC Foundation Web site: http://www.ific.org/publications/reviews/upload/IFIC_Review_Science_of_Sugars.pdf

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Opportunities in Food Safety and Nutrition

food manufacturing, food communications, or food technology, are abundant and continue to grow. And by no means is the field limited to traditional roles—food safety careers offer exciting, hands-on experiences that are both challenging and rewarding.

Traditional Roles: Food Production

When you think of careers related to food safety, you might think of companies that produce, manufacture, process, or distribute foods. A large portion of careers related to food safety can be found in the broad-based food, beverage, and agricultural industries. Whether this means working with a food product manufacturer or with a company that supplies a particular ingredient, the food, beverage, and agricultural industries provide countless opportunities that include (but are not limited to): research, product

development, quality assurance, regulatory compliance, packaging, and manufacturing.



Regulatory and Research Roles

Depending on personal strengths, there are food safety opportunities in academia, at research facilities, and at the federal, state, or local regulatory levels. If education and teaching is of interest, positions in the university setting, with extension services, or even a public or environmental

health role may be a good fit. Talented communicators have countless prospects in regulatory affairs, corporate communications, consumer communications, and even public policy. Likewise, if research is of interest, it may be beneficial to pursue a career in chemistry or microbiology. And since many of the foods we eat come from animals, a background in veterinary medicine is a good complement to exploring a career in food safety.

The aforementioned nutrition and food safety careers are not all-inclusive. Opportunities can be found around every corner, from the private to the public sector, from universities to the community level. And as with any career path, it is prudent to look beyond the current opportunities in the field and explore opportunities to apply food safety, nutrition, and communication talents in a novel way.

INTERNATIONAL FOOD INFORMATION COUNCIL FOUNDATION
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