

# Alarm Clocks 2006

An alarm clock is a clock that is designed to make an alarm sound at a specific time. The primary use of these clocks is to awaken people from their sleep in order to start their days in the mornings, but they are sometimes used for other reminders as well. To stop the sound, a button or handle on the clock needs to be pressed, and some stop automatically after a few minutes if left unattended.

Traditional mechanical alarm clocks have a bell on top that rings, but digital alarm clocks can make other noises. Simple battery-powered alarm clocks usually make a beeping sound whereas novelty alarm clocks can speak, laugh, or sing. Some alarm clocks have radios that start playing at specified times, and are known as *clock radios*.

In a mechanical bell-style alarm clock, a spring drives a gear that propels a clacker back and forth between two bells or between the sides inside a single bell. In an electric bell-style alarm clock, the bell rings with an electromagnetic circuit and armature that turns the circuit on and off again repeatedly.

Modern digital alarm clocks typically feature a radio alarm function as well as a beeping or buzzing alarm, allowing a sleeper to awaken to music or news radio rather than harsh noise. Most also offer a "snooze button", a large button on the top that stops the alarm and sets it to ring again at a short time later, typically anywhere between five and 10 minutes. Some alarm clocks also have a "sleep" button, which turns the radio on for a set amount of time (usually around one hour). This is useful for people who like to fall asleep with the radio on.

Newer digital clock radios often use a battery backup to maintain the time in the event of a power outage. Without this feature, digital clocks will reset themselves incorrectly when power is restored, causing them to fail to trigger the alarm.

## Computer alarms

Alarm clock software programs have been developed for personal computers. A PC acting as an alarm clock may allow an unlimited number of alarm times, personalized tones, online features (such as news and weather reports), and even features for insomniacs. These programs generally have more features than the standard bedside alarm clock.

While PCs allow features and flexibility ideal for office reminders, most people still prefer the simplicity and bedside convenience that an ordinary alarm clock offers for morning waking.

## Other Alarm Options

There are several other alarm clock options to be found on other devices. Most digital watches have alarm options as well as cell phones, MP3 players, PDAs, and other personal electronic devices. Many newer stereos and TVs have options where you can set them to turn on at certain times.

## **Travel Alarm Clocks**

Whether vacationing, heading out on a business trip, or traveling for other reasons, travel alarm clocks will ensure you have the means to effectively manage your time without relying on wake-up calls. Portable, easy to read, and easy to set, travel alarm clocks can wake you with familiar sounds, which is a soothing and comforting experience while traveling.

Most travel alarm clocks differ from regular alarm clocks because they are battery operated and smaller in size than the traditional clocks (most plug into an outlet). They generally have all the features of a regular alarm clock including a snooze option. Some have other features like a dual time display where you can set one display to show the time at home and one to show the time where you are or a thermometer display.

Some travel alarm clocks come in large pocket watch-like cases that flip open, while others resemble mini stereos with speakers that rotate outward. Small travel alarm clocks can look similar to cell phones while others are LED-type clocks. Styling is extremely varied but the common feature of all is that they fold into their own protective carrying cases.

## **History**

An early prototype of the alarm clock was invented by the Greeks around 250 BC. The Greeks built a water clock where the raising waters would both keep time and eventually hit a mechanical bird that triggered an alarming whistle.

The first mechanical alarm clock on record was invented by Levi Hutchins of Concord, New Hampshire, in 1787. However, the ringing bell alarm on his clock could ring only at 4 am. On October 24, 1876 a mechanical wind-up alarm clock that could be set for any time was patented (#183,725) by Seth E Thomas.<sup>1</sup>

Other sources point to there being earlier versions of mechanical alarm clocks in Germany and England before 1787, but the names of the inventors aren't on record.

## **Alarm Clock Terminology**

Ascending Alarm: This type of alarm is a beeping sound. It starts off soft and gradually gets louder.

Atomic Clock: The time on these clocks are corrected on a regular basis by a signal from a regional station. In the United States, the signal is transmitted from Fort Collins, Colorado. Clocks with this feature contain a chip that is specific to the region. Clocks made for the US market will not function correctly in Europe.

Battery Back-up: This is a feature of many electric clocks. When a charged battery is installed, the time and alarm settings will be saved during a power outage. Because of the low battery voltage, not all clock functions will be maintained. You should read the clock description to see if this is clarified. Battery back-up is not intended for long-term use of an electric clock.

Battery-Operated Alarm Clock: This term is the same as "quartz clock". The clock has a battery-operated quartz movement. Battery clocks will make a ticking sound that will vary from clock to clock.

Beeping Alarm or Beep Alarm: This has an electronic beeping sound.

Countdown Timer: This feature is often utilized to keep people on schedule and on time. If you are limited to a certain amount of time, simply set your countdown timer, and it will notify you when it is time to move on to your next task.

Day Clock: At some point in the process of returning to consciousness, it is always pleasant to know what day it is. If you own an alarm clock, then you rely on some form of scheduling, so a day clock feature is an ideal way to get a quick bead on what's headed your way in the coming day.

Dual Alarms: This means that two alarms can be set for one day. For example, if one spouse must get up at 7:00 and the other at 7:30, each alarm time can be set.

Insta-Set: This technology was designed by Equity Time USA. Insta-Set clocks have a miniature battery installed in the circuitry of the clock. When the clock is plugged in, the clock refers to the time that was preset at the factory. It never has to be set by the consumer. The battery installed at the factory has an approximate life of three years. After that time, the battery must be replaced.

L.C.D. - Short for **Liquid Crystal Display**, a type of display used in digital watches, clocks and many portable computers. LCD displays utilize two sheets of polarizing material with a liquid crystal solution between them. An electric current passed through the liquid causes the crystals to align so that light cannot pass through them. Each crystal, therefore, is like a shutter, either allowing light to pass through or blocking the light. This type of a display usually requires a dial light to read in the dark.

L.E.D. - Abbreviation of **Light Emitting Diode**, an electronic device that lights up when electricity is passed through it. LEDs are usually red. They are good for displaying numerical images because they can be relatively small, and they do not burn out. Used on digital display clocks.

Lighted Dial: This description means that the clock has a light bulb behind or to the side of the dial to light it up at night. The light can be "continuous" (on all the time), or "on demand" (push a button for the light).

Luminous, or luminous material: The clock description may say it has "luminous" hands, numbers and/or hour dots. This means that a luminous material has been applied that will glow for a limited time in the dark. The amount of time it glows depends on the intensity of the light the material is exposed to during the day. Luminous material does not "produce" light and should not be confused with the term "lighted dial". Regardless of illumination method, every alarm clock should have some way for it to be read in the wee hours of the morning.

Mechanical Clock or Movement: The clock winds up. The spring, when fully wound, will run for 24-36 hours. Wind up clocks will make a ticking sound. The loudness will vary from model to model.

Multiple Alarms: Alarm clocks that offer multiple alarms give you variety of sounds to wake up to. With its own sound and time, each alarm helps to keep multiple parties on schedule without having to be reset.

Music features: For those that like to be wakened by the chatter of morning radio or the tunes from their favorite CDs, music features add versatility to any alarm clock.

Nightvision: This is a patented technology developed by Equity Time USA. It is a low-light "glow" of the dial for night viewing. This technology does not use a light bulb.

Nite-Glo: This is a patented technology developed by Wehrle, which is similar to the Equity Nightvision. It is a low-light "glow" of the dial for night viewing. This technology does not use a light bulb.

Projection: A projection feature allows the user to display information on a wall or ceiling. This can be helpful when the face of the alarm clock is either too small or not well lit for checking time in the dark.

Repeating Alarm: This feature is found on some wind-up alarm clocks. It simply means that the alarm will sound for a time, then stop, then sound again, and repeat the process until the spring winds completely down.

Quartz Clock or Quartz Movement: This term is the same as "battery clock". The clock has a battery-operated quartz movement. Battery clocks will make a ticking sound that will vary from clock to clock.

Snooze Alarm or Snooze Function: The snooze button may be pushed to silence and alarm for a pre-determined length of time, usually between 5 to 10 minutes. The time varies from clock to clock and may be customized on some models. Once the time passes, the alarm will sound again. Some clocks will limit the number of times the snooze may be activated on one setting. This helps prevent you from over-sleeping.

Strobe Light: High-intensity flashing light

Thermometer: Many alarm clocks have weather features incorporated into their display functions. Remote sensors are used to relay the information and can be placed anywhere within range of the alarm clock. This gives the user accurate temperature readings right at their fingertips.

Basically, it's up to you to decide what you want in an alarm clock. Clocks range from expensive models with loads of features to models with just the basics. Select an alarm clock that meets your needs and budget and most importantly, will wake you up!

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## **All fluids are not created equal....**

As consumers become more conscious about the significant role that food plays in keeping them healthy, they often search for products that promote wellness and provide prevention against diseases. Functional food products are becoming increasingly popular due to this perception by consumers. The beverage industry has not wasted much time in capitalizing upon this consumer trend and has responded to this demand by creating health-promoting functional beverages which fit neatly into the healthiness-on-the-go market. According to Beverage Marketing Corporation, functional beverage sales in the U.S. have tripled over the past five years, with sales in 2007 totaling \$9.8 billion. Ready-to-drink noncarbonated beverages showed a 13% growth while soft drinks reported a 3% decline during this same period.

### **Functional Beverages**

A functional beverage can be defined as a drink product that satisfies thirst, is non-alcoholic, is ready-to-drink and includes in its formulation non-traditional ingredients, such as herbs, vitamins, minerals, amino acids or additional fruit/vegetable raw ingredients, depending on the purpose it is designed for.

Sports and performance drinks, energy drinks, ready-to-drink teas, enhanced fruit drinks, soy beverages, and enhanced water, among others, are some of the product segments under the functional beverages umbrella in the market place. Popular ingredients in functional beverages include caffeine, green tea, yerba maté, vitamin C, schizandra, açai, ginger, cranberry extracts, and ginkgo biloba.

Enhanced waters are also surging in popularity, with a number of formulations labeled with catchy names and slogans with images of health and tranquility. Soft drinks are even branching into the functional market with vitamin-enriched colas.

But consumers should think twice before sipping drinks that promise to "enlighten your senses" or "sharpen your mind." While some functional beverages may provide hydration, many may not address the major health issues today such as obesity, heart disease, and cancer. Most people do not benefit from low levels of vitamins and minerals found in many of these beverages. Typically functional beverages do not capitalize on recognized short fall nutrients like calcium, potassium, folate, and vitamin D but add B vitamins and vitamin C because they are water soluble and can be added without significantly changing the taste.

Functional beverages are often very expensive, usually double that of soft drinks or bottled water. These beverages also add extra calories to one's diet. For example, one popular energy drink contains 130 calories and 34 g carbohydrates in an 8.3-ounce serving – this is higher than colas. Other products contain ingredients that have not been sufficiently studied for health benefits, safety, and dosage. Caffeine content can also be high in these products. Caffeine content of caffeinated energy drinks ranged from 0 – 141 mg/serving. An average 8-ounce cup of coffee contains 133 mg of caffeine.

The Food and Drug Administration (FDA), which regulates the claims food and drink makers can put on their labels, does not require companies to seek approval for claims before the products reach store shelves. Specific health claims of links between a product and disease or about how a nutrient affects functions of the body are supposed to be

backed by scientific evidence. However, the FDA cannot get involved until after the product is available to consumers and questionable claims have been made. The FDA is currently reviewing its regulation of functional foods.

The point of drinking any fluid is to rehydrate the body. Tennis players can lose as much as two quarts of water an hour, and a professional football player working out in August can lose a quart and a half. Water works best to replace those fluids, but sometimes athletes want more.

## **WATER**

Water has historically been considered the best choice of fluids for athletes. Research has shown that during 1 hour of cycling in the heat, high water intake (1.3 Liters or 5 ½ cups) improved performance 6.5% more than lower water intake (200ml or about ¾ cup). However, adding carbohydrates (6-8%) to the 1.3 Liters of water improved performance another 6.3%. Water is a good fluid replacement during exercise for the majority of athletes, especially those who compete in events of short duration (less than 1 hour of intense exercise at a time) where they can replace fluids during the event. Refillable water bottles and jugs are available, making water a relatively inexpensive beverage choice. Commercially bottled water in individual servings is also available, which is a little more costly but might be more convenient, depending upon the situation. When choosing between bottle or tap water both are safe and equal in nutrition, but tap water may have more fluoride. Cooling water (to about 50-59 degrees F) improves the taste to many people and water of this temperature may get out to the muscles of the body faster, cooling the body more quickly.

## **100% FRUIT JUICE**

100% fruit juice is very nutritious. It provides the same vitamins and minerals naturally found in fruit, although juice is a little lower in fiber. 100% fruit juice is a nutritious beverage choice. However, because of the high amount of naturally present sugar (usually about 12% carbohydrate, or 29 grams per 8 oz.), it may cause stomach distress and impair exercise performance. If used as a fluid replacement for an athlete, juice should be diluted (half water, half juice). 100% fruit juice is often available in single serving containers. Labels should be read to insure that the product is 100% juice. Juice should be diluted for young children also.

## **FRUIT JUICE BEVERAGES**

Fruit juice beverages, fruit juice drinks, fruit punch and fruit “ades” are not the same as 100% fruit juice. These fruit drinks usually contain water, calorie-containing sweeteners, colors and flavoring. Some fruit juice (often as little as 10%) is usually added along with vitamin C. Label claims, such as “Made with real fruit juice,” should be investigated to determine how much fruit juice is actually in the product. Fruit juice beverages are usually less expensive than 100% fruit juice. They may be sold as powdered drink mixes or as ready-to-drink products. Carbohydrate content is generally the same as fruit juice, about 12% (29 grams per 8oz.), which is an amount high enough so that it may cause stomach distress and impair exercise performance. If used as a fluid replacement for athletes, fruit juice beverages should be diluted (half water, half juice).

## **SODAS**

Sodas are carbonated soft drinks (nonalcoholic beverages) made from water, sweeteners, flavorings, colors, acids and carbon dioxide. The calorie-containing sweeteners most often used are sugar and high fructose corn syrup. The non-nutritive sweeteners on the market today used in soft drinks, with table top version listed in parentheses, include aspartame (Equal or Nutrasweet), sucralose (Splenda), acesulfame potassium (Sunette) and saccharin (Sweet'n Low). All of these non-nutritive sweeteners have been approved by the Food and Drug Administration (FDA). Caffeine, a stimulant, is present in some sodas and must be listed as an ingredient if it is added. It is naturally present in the cola nut, which is what colas are made from.

Although sodas are popular, they have no nutritional value except for providing fluid and energy from carbohydrates when it is used as the sweetener (generally sucrose and high fructose corn syrup). The calories that soda provides are considered empty calories because few, if any vitamins or minerals are present. Soda manufacturers have begun trying to increase the nutritional value of some products by adding vitamins and minerals. The carbohydrate content of sodas, which contain caloric sweeteners, is about the same as fruit juice, about 10-12% (38 grams per 12oz.). This is an amount high enough to potentially cause stomach distress and impair exercise performance for the athlete. Diet soft drinks contain little, if any, carbohydrates. However, stomach discomfort due to the carbonation in sodas could result.

## **SPORTS DRINKS**

Sports drinks are made of water, mineral salts (mainly sodium and potassium) and calorie-containing sweeteners (usually sugar or high fructose corn syrup). They have approximately 50-75 calories, 80-110mg of sodium, and 30-45mg of potassium per 8 oz. serving. Sports drinks generally do not contain vitamins or protein. Gatorades and PowerAde are two common sports drinks, although other brands, including generic and store brands, may be available. They are packaged in ready-to-drink, single serving bottles ranging from 8 to 32 ounces and ready-to-mix powder. The carbohydrate content is usually 6-8% (14-18 grams carbohydrate per 8 oz.) an amount that studies have shown is well tolerated in the heat and improves endurance when physical activity is for an hour or more. A recent study showed that consuming 1.3 Liters (about 5 ½ cups) of water alone improved performance during one hour of cycling, but when 79 grams of carbohydrate were added, performance improved even more.

## **TEA**

Sweet tea contains about the same amount of sugar as soda. Regular sweet tea and diet sweet tea are available in single serving bottles and cans and in larger containers ready-to-drink. Tea bags and tea leaves are available for those who like to brew their own tea and powdered tea mixes, with and without sweetener, are also popular. A caffeine-like stimulant is naturally present in tea, so it should be assumed that the product has caffeine unless it is labeled as "decaffeinated." In the South, sweet tea typically contains at least as much sugar as soda, about 10-12% carbohydrate (38 grams per 12 oz.). This is an amount high enough to potentially cause stomach distress and impair exercise performance for the athlete.

Unsweetened tea or tea sweetened with non-nutritive sweeteners does not contain carbohydrates. Regular and decaffeinated tea contains natural antioxidants called flavonoids. However, tea is not a substitute for fruits or vegetables, which provide a wider range of antioxidants, along with vitamins and minerals. The potential health benefits of tea are the focus of many scientific studies. However, it is too early to draw any conclusions about tea's contributions to health.

### **FLAVORED WATER**

Flavored waters or fitness waters are relatively new to the marketplace. Dasani Flavored water, Sam's Choice Clear American, Propel, Fruit20 and others are available in various fruit flavors. Most flavored waters contain one or more non-nutritive sweeteners such as sucralose (Splenda), aspartame (NutriSweet or Equal), and acesulfame potassium (Sunette). Sometimes sucrose (table sugar) is also in the sweetening blend, in which case the product will have some calories from carbohydrates. Some brands also have vitamins and minerals added. In general, flavored waters provide an additional category of beverage choices with the benefits of plain water.

### **MILK**

Like all beverages milk is a source of water. Milk is approximately 89% water. It is also one of the best sources of calcium in the American diet. Along with water, milk supplies us with many essential nutrients; including calcium, vitamin D, Vitamin A, Protein, Potassium, Riboflavin, Vitamin B<sub>12</sub>, Phosphorus, and Niacin. Fat and calorie content differ between the various types of milk from skim to whole, but the other nutrients are about the same. MyPyramid, suggest 3 cups of milk or low-fat dairy product for every person each day. The protein and calcium in dairy products is especially important for the athlete as they work to build strong muscles and bones.

### **Hydration Before, During and After Exercise in the Heat**

It is important for athletes to make sure they drink plenty of fluids, beginning several days before an event. The extra water is not stored in the body, but it enables the body to be fully hydrated at the start of the event. According to an article in The Physician and Sports Medicine, drinking about 2 cups (16 oz.) of fluid 2 hours before an event may help keep athletes from becoming dehydrated. However, those participating in sports where a great deal of running is involved may find this uncomfortable, so it should be practiced in training sessions.

Drinking fluids during exercise in the heat reduces dehydration, body temperature and strain on the heart. It can also increase performance. The amount needed varies because of individual differences. General recommendations range from 5-10 oz. of fluid every 15-20 minutes during heavy exercise. If the exercise is for longer than one hour, fluid with 6-8% carbohydrates may be beneficial for endurance. In addition, ultra endurance athletes (events lasting 4 hours or more) should consume food or fluid containing carbohydrates, sodium and other electrolytes during and after the event. The amount of fluid which individuals should replace after exercise varies a great deal from person to person. The best way to determine individual fluid replacement needs is to weigh before and after exercise, keeping everything else the same (clothing, shoes, etc.) Replace every pound lost with 1 pint (16 oz. or 2 cups) of fluid (a pint, a pound). Research indicates that sodium is important for fluid restoration after exercise. Most

physically active people do not need to replace the minerals lost in sweat immediately. A meal eaten within a few hours of competition can replace these minerals soon enough for most people.

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## ***Energy Drinks 101***

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Updated from UC Davis materials*

### ***What are energy drinks?***

The term “energy drinks” refers to beverages that contain caffeine in combination with other ingredients such as taurine, guarana, and B vitamins, and that claims to provide energy or other benefit to those who drink the product. This term was created by beverage companies and is not recognized by the United States Food and Drug Administration (FDA) or the United States Department of Agriculture (USDA).

### ***Is there evidence that these energy drinks increase energy?***

There is limited evidence that consumption of energy drinks can significantly improve physical and mental performance, driving ability when tired or decrease mental fatigue during long periods of concentration. Unfortunately, it is not clear if these improvements are due to the caffeine, other herbal ingredients, or a combination of both.

### ***Can consumption of energy drinks harm you?***

The caffeine content of a single serving of energy drink (8 to 12 fl oz) can range from 72 to 150 mg. The problem is that many of these products contain more than one serving so the caffeine content may be as high as 294 mg per bottle. In comparison, the caffeine content, per serving (8 fl oz.), of brewed coffee, tea, and cola beverages ranges between 134-240 mg, 48-175 mg, and 22-46 mg respectively. Most adults can safely consume up to 400 mg caffeine daily. Women of childbearing age should limit their daily consumption of caffeine to a maximum of 300 mg per day and children should limit their consumption to 5.5 mg/pound of body weight. Adolescents should limit caffeine consumption. Intakes greater than 100 mg/day has been associated with elevated blood pressure. Based on this information, consumption of energy drinks by pregnant or nursing women, adolescents, and children is not recommended.

Caution is warranted even for healthy adults who choose to consume energy beverages. Consumption of a single energy beverage may not lead to excessive caffeine intake; however, consumption of two or more beverages in a single day can. Other stimulants such as guarana, ginseng, yerba mate, kola nut, green tea extract, and bitter orange are often added to energy beverages and can enhance the effects of caffeine. Guarana, in particular, contains caffeine (1g of guarana is nearly equal to 40 mg caffeine) and may substantially increase the total caffeine in an energy drink. Adverse effects associated with caffeine consumption in amounts of 400 mg or more include nervousness, irritability, sleeplessness, increased urination, abnormal heart rhythms (arrhythmia), decreased bone levels, and stomach upset.

Furthermore, it should be noted that energy drinks contain added sugar. According to the USDA Dietary Guidelines, sugar should be limited in the normal daily diet

***What is the caffeine and sugar content of energy drinks?***

Drink	Serving (fluid oz.)	Servings per container	Sugar per serving (g)	Caffeine per serving (mg)	Calorie
Diet Rockstar Energy Drink™	8	2	0 g	80	10
Full Throttle™	8	2	29 g	72	111
Go Girl Sugar Free™	12	1	0 g	150	3
Lo-Carb Monster XXL™	8	3	3 g	80	10
Monster Energy Assault™	8	2	27 g	80	100
Monster Energy XXL™	8	3	27 g	80	100
Red Bull Sugar Free™	8.3	1	0 g	80	10
Red Bull™	8.3	1	27 g	80	110
Rockstar Energy Drink™	8	2	30 g	80	130
Rockstar Juiced™	8	2	21 g	80	90
Wired 294 Caffeine™	8	2	26 g	147	100

*Note: This table does not include amounts of other stimulants found in energy drinks that can enhance the effects of caffeine.*

**There are many unusual ingredients in energy drinks. What do they claim to do?**

Ingredient	Found In	Functional Claims
Carnitine	Monster™, Rockstar™, Full Throttle™	Improves endurance, increases fat metabolism, protects against heart disease
Glucuronolactone	GoGirl Sugar Free™, Red Bull™, Monster™	Promotes excretion of toxins and protects against cancer
Guaana	Inositol™, Rockstar™, Full Throttle™	Increases energy, enhances physical performance and promotes weight loss
Inositol	GoGirl Sugar Free™, Red Bull™, Monster™, Rockstar™, Wired B <sub>12</sub> Rush™	Decreases triglyceride and cholesterol levels, lowers risk of heart disease
Panax Ginseng	Monster™, Rockstar™	Speeds illness recovery; improves mental and physical performance; controls blood glucose, and lowers blood pressure
Super Citramax	GoGirl Sugar Free™	Suppresses appetite, resulting in weight loss
Taurine	GoGirl Sugar™, Red Bull™, Monster™, Rockstar™, Full Throttle™	Lowers risk of diabetes, epilepsy, and high blood pressure
Yohimbine HCL	VPX Redline™	Promotes weight loss

***Is there scientific evidence to support these claims?***

Ingredient	Scientific Evidence
Carnitine	There is no clinical evidence that carnitine use is effective for increased endurance or weight loss, but it may protect against heart disease.
Glucuronolactone	Scientific evidence does not exist to support claims regarding glucuronolactone.
Guaana	A major component of guarana is caffeine. Caffeine consumption has been associated with increased energy, enhancement of physical performance, and suppressed appetite.
Inositol	Scientific evidence does not exist to support claims regarding inositol.
Panax Ginseng	Scientific evidence does not exist to support claims regarding panax ginseng.
Super Citramax	There is scientific evidence that use of this supplement decreases food consumption.
Taurine	Clinical evidence is insufficient to show that taurine is effective in treating diabetes or epilepsy, but it may lower blood pressure.
Yohimbine HCL	Currently no evidence exists to support the claim that use of Yohimbine HCL leads to weight loss .

***Is consumption of these ingredients safe?***

Ingredient	Safety
Carnitine	Insufficient data exists to establish the safety of carnitine use.
Glucuronolactone	Insufficient data exists to establish the safety of glucuronolactone use at the concentrations found in energy drinks.
Guaana	This substance is generally regarded as safe (GRAS) by the Food and Drug Administration Center for Food Safety and Applied Nutrition (FDA CFSAN).
Inositol	Inositol is generally regarded as safe (GRAS) by the Food and Drug Administration.
Panax Ginseng	Insufficient data exists to establish the safety of panax ginseng use.
Super Citramax	Insufficient data exists to establish the safety of super citramax use.
Taurine	Insufficient data exists to establish the safety of taurine use.
Yohimbine HCL	Approved for use by the FDA to treat hypertension, but over the counter use is not recommended.

***Should energy drinks be consumed before or during exercise?***

Caffeine is known to increase endurance and its use was banned by the International Olympic Committee. Red Bull was banned in Norway, Uruguay, and Denmark, as the result of an 18-year-old athlete who died hours after drinking four cans prior to an event in 2000. Although the FDA limits the caffeine content in soft drinks to 71 mg per 12 ounce can, energy drinks are designated as dietary supplements, and are not limited in their caffeine content.

***Should children and adolescents consume energy drinks?***

A recent survey of 78 youth (11-18 years) found that 42.3 percent of participants consumed energy drinks. The effects of ingredients found in energy drinks has raised concern for children and adolescents. In adolescents, caffeine consumption has been associated with an increase in blood pressure. Based on the limited data regarding safety, it is not recommended that children or adolescents consume energy drinks.

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## Athletic Socks

Georgia 4-H Cotton Boll and Consumer  
Jamboree 2005

### **The importance of socks**

Athletic socks are an essential component of footwear for any athlete. Socks provide protection from contact with shoes in order to reduce skin irritation. They also absorb moisture to keep feet dry and act as a cushion to the feet along with keeping them warm. For the athlete, good socks make the difference between success and failure. However, socks are also vital in preventing injury and enhancing performance. Shockingly, the importance of socks was not recognized through scientific research until the 1980s. A good pair of socks is particularly important for diabetics and those with arthritis.

### **Fibers**

The ability for a sock to do its job in protecting the feet has a lot to do with its fiber composition. It is important to understand the characteristics of the fibers of a sock in order to pick one correctly.

Hydrophobic fibers are those that repel moisture. Hydrophilic fibers are those that absorb moisture. Cotton fiber retains 3 times more moisture than acrylic and 14 more times than CoolMax®. When exposed to ambient air, cotton retains moisture 10 times more than acrylic. Hydrophilic rankings in descending order: cotton, wool, acrylic, CoolMax®, and polypropylene.

Also important is the wicking gradient. Moisture from the feet can far exceed its absorption capacity. In order to minimize moisture accumulation on the skin's surface, the sock needs a wicking gradient to the shoe. A wicking gradient occurs when the shoe upper is breathable (nylon mesh) so that ambient air can evaporate the water vapor. Most common is a shoe liner that contains hydrophilic fibers that draw moisture from the sock material. Socks that are extremely hydrophobic (polypropylene) repel water so effectively that wicking cannot occur. The mechanical structure of the fiber and the compressibility of the fiber determines the overall wicking capacity. The fibers that wick moisture the best are (best to worst): CoolMax®, acrylic, polypropylene, wool, cotton.

Studies were done on runners to compare synthetic fiber socks and cotton socks. The study found that when cotton fiber socks are wet, they stretch and lose their shape inside

the shoe, which leads to bunching and wrinkling. Also found after multiple wash-wear cycles, cotton fiber socks became abrasive causing irritation on the skin surface.

Also important is the fiber's thermal-insulation quality. A synthetic fiber composed of hollow core material, Thermax, has shown to insulate affectively. Preferable among the outdoor industry are natural wool fiber socks due to their ability to maintain heat even while wet. However, 100% wool fiber socks tend to be more abrasive than a wool-synthetic blend.

Some studies have found that acrylic fibers show superiority in protecting against blisters when compared to cotton fibers. Friction blisters that occurred while wearing acrylic fiber sock were smaller and of less severity and occurrence. In order to reduce blisters, the military issues a sock that is 50% cotton and 50% wool cushion-sole sock. In a study, the use of a CoolMax® liner significantly reduced the occurrence of blisters. In another study, synthetic fiber socks outperformed standard wool socks when protecting against blisters.

An overview of common athletic sock fibers are listed below:

- Cotton: durable, absorbent, and easily machine washed and dried. It does not have static electricity. To maintain shape at the top and to stay in place, all styles need ribbing at the top and/or a stretch yarn around the top.
- Wool: warm and absorbent. It never feels clammy. The high absorbency keeps the foot feeling dry. Wool does not lose its insulating quality when wet. Thus, it is an excellent choice for outdoor winter wear. In addition, it is cushiony and spongy. Lambswool and cashmere are luxury animal hair fibers that are grounded with wool.
- Nylon: strong and resistant to abrasion. This makes it a good fiber for reinforcing heels and toes. Blended with cotton or wool, it adds strength and durability. Textured for extra stretch, it makes a good support sock to ease muscle strain and give support to a person who walks or stands for long periods of time. Nylon is relatively non-absorbent. It is subject to static electricity. In hot weather it is clammy to wear, especially for the person whose feet perspire heavily. It dries fast after laundering.
- Acrylic: provides bulk without weight and is a warm fiber. It is used widely in sport socks and winter fashion socks for women. However, it is not absorbent, thus it dries fast and is subject to static electricity. Blended with cotton it adds warmth and durability. Blended with wool, it reduces cost without reducing warmth.
- Spandex: fibers have elasticity giving great stretch and recovery. Blended with other fibers it increases stretch and recovery and provides leg support. As a separate yarn, it appears around the top of many sport socks.
- Olefin: polypropylene in particular, is the latest fiber to be used in socks. Sport socks made of olefin wick moisture away from the feet, keeping them dry. Olefin is not absorbent, thus dries quickly when laundered. It has less static buildup than nylon, polyester or wool. Socks made of 100% olefin are intended to be layered

under socks made of an absorbent fiber such as cotton or wool. Olefin is also used as the inner part of the socks, with cotton or wool on the outside. Olefin yarns may be the inner surface of a smooth knit or may form the terry loops on the inside surface.

- CoolMax® - Coolmax® is a registered trademark of INVISTA for certified performance fabrics containing proprietary fibers from INVISTA and may contain other companion fibers, such as cotton, polyester, rayon and LYCRA®.

### **Other things to look for:**

Yarn: ply is the number of single yarns twisted together to make a longer yarn. Socks made of two-ply or three-ply yarn will have longer wear than socks made of single ply yarn of the same fiber content.

Finishes: finishes may be applied to yarn or the finished socks. An antistatic finish will insure that static electricity does not cause your clothing to cling to the socks. Antibacterial finishes retard the growth of bacteria and fungi. These finishes help prevent athlete's foot and other irritations as well as reduce odor.

Construction and quality: socks are knitted. Check to see that they have enough stretch to be easily put on but spring back into shape at the ankle and at the top. Rib kits have more stretch than plain knit. Tops of socks are often ribbed.

Reinforced heels and toes give longer wear. Nylon is often used for this. In many socks, the yarn in the heel and toe area look different. Make sure the reinforced area in the heel comes far enough up the back of the heel to reinforce the spot where yours socks usually wear thin.

Cushioned soles add comfort, which is an advantage for hiking and active sports. The cushioned area has extra loops like those in terry cloth on the inside.

Tops of socks should snap back into shape so they fit snugly, but not so tight they restrict circulation. Ribbed knit construction is ideal. Elastic threads give an additional staying power.

Socks should be easily washed and dried. They should not shrink or stretch out of shape. On cotton socks, look for the words "shrinkage controlled" and "mercerized." On wool socks look for "machine washable." Line drying will further reduce the possibility of shrinking. Olefin will shrink and fuse in a hot dryer.

Color: most athletic socks avoid fashion trends. Colors and patterns remain pretty basic. Usually athletic socks are white with an occasional embroidered logo or colored heels, toes, or toe stitching.

### **Design, construction, and fiber suggestions:**

Design:

**Over the calf:** Baseball, Basketball, Outdoor (including liners) Ski, Snowboard, Soccer  
**Mid-calf:** Skating  
**Slouch:** Aerobics  
**Crew:** Running, Golf, Tennis, Racquetball, Hiking

Construction:

**Thin or Thin Double Layer Outdoor(liners)** , Cycling, Running (racing), Skiing  
**Padded or Thick Double-Layer** Jogging, Skiing, Hiking, Tennis, Basketball

Fibers:

**Acrylic:** Golf, Tennis, Hiking  
**Acrylic/Wool:** Outdoor-Cold  
**Acrylic/Thermax®:** Outdoor-Cool  
**Acrylic/CoolMax®:** Outdoor-Warm  
**CoolMax®:** Running, Cycling, Liners  
**MicroSafe®:** Therapeutic Hosiery, i.e., Diabetes

Size:

Women's shoe size	Men's Shoe Size	Sock Size
4-6	-	S (7-9)
6.5-10	5-8.5	M (8.5-11)
10.5-13	9-12.5	L (10-13)
-	13-16	XL (13-15)

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Prepared by: Cheryl R. Varnadoe, Extension 4-H Specialist

Sources:

Consumer Reports

[www.aapsm.org](http://www.aapsm.org)

FACS student Rachel Wilson.

## SUNGLASSES

Georgia 4-H Cotton Boll & Consumer Jamboree 2007

Sunglasses are a part of fashion and fad. But they are also important to the health of eyes. Most sunglasses will protect eyes adequately, although some styles do not include protective features. Nothing, including sunglasses, offers protection against the harm caused by looking directly into the sun.

### What Sunglasses Do

Besides fashion, sunglasses serve other purposes. They can offer protection and comfort for eyes.

Eyes are bombarded with light rays of all wavelengths—from the sun and from artificial light. Much of the concern over eye health involves the shorter wave lengths, called ultraviolet (UV) light. UV light is further divided into two categories—shorter wavelengths are called UVB, and longer wavelengths are called UVA. Again, shorter (UVB) have been found to cause more eye damage than the longer rays (UVA).

The main protection offered by sunglasses is filtering out these UV rays. How dark the lenses are does not determine how well UV light is filtered out. Blocking UV rays is often accomplished by adding chemicals to the lenses or adding special coatings.

Sunglasses can also be useful in another way. Working or playing in bright light can tire eyes quickly. Wearing sunglasses while working in bright sunlight will provide comfort and keep eyes from tiring out as quickly.

Sunglasses also provide some protection from dust and particles in the air. Sunglasses may serve to keep dirt from getting into the wearer's eyes or becoming uncomfortable. This is especially true for people who wear contact lenses.

### Labeling

The number one feature to look for in a pair of sunglasses is how well they filter out UV rays. The American National Standards institute (ANSI), in cooperation with the U.S. Food and Drug Administration and the Sunglasses Association of America, has set up a voluntary labeling system for sunglasses. Manufacturers may choose whether or not they wish to use the labeling system.

Recommended standards include:

- Sunglasses must block 99% of UVB light. A UVB-blocking sunglass is adequate to protect eyes in moderately bright sunlight like that found in low-altitude urban areas. (The protection percentage is usually labeled on the glasses.)

- A UV-blocking sunglass blocks 99% of UVA and UVB. A UV-blocking sunglass is adequate protection in very bright sunlight like that found in low-altitude snow areas and beaches. Such sunglasses should block 60 to 90% of visible light to adequately reduce glare and increase visual comfort. The lenses should allow you to recognize traffic signals accurately.
- To protect eyes during prolonged daily use in extremely bright sunlight, like high-elevation snow areas and sand beaches near the equator, a UV-blocking sunglass should block 92 to 97% of visible light and have side shields. Goggles are also acceptable. Side shields are needed in extremely bright sunlight to prevent UV rays and light from being reflected into the eyes. These sunglasses limit a driver's ability to accurately recognize traffic signals. Side shields should not be worn when driving because they can affect peripheral vision.
- The only medical claims allowed on sunglasses are that they prevent cataracts and photo keratitis.
- The FDA recommends you look for sunglasses with lenses that block 99-100% of UVA and UBA radiation. The label should read either UV 400 or 100% UV protection.

### Types of Lenses

**Plain lenses:** Uniformly tinted throughout the lens and come in lots of different colors. The darkness of the lens has nothing to do with how well it blocks UV light, but it will make a difference in how much visible light gets seen. This may be important for eye comfort during prolonged time in bright sunlight.

**Blue Blockers:** Block blue light and usually have amber lenses. Researchers are still unsure whether or not blue light is harmful, but these are popular among skiers, hunter, boaters and pilots.

**Single gradient lenses:** Tinted darker at the top than at the bottom. They may be useful for tasks like driving, where the road is bright but the dashboard is dark. They are not useful for places like a beach, where light is reflected up from the sand. The difference in tint causes lighting to change as the wearer's head moves, which may be annoying to some wearers.

**Double gradient lenses:** Tinted darker at the top and bottom, but lighter at the center. These are designed for sports such as sailing, skiing, and tennis, where light comes in from above and is also reflected from below, but the center of vision has less light coming in. They are not appropriate for driving, since they darken visibility of the dashboard controls. Like single gradient lenses, the difference in tint may be annoying to wearers.

**Polarized lenses and Anti-Reflective Coating Lenses:** Specifically designed to reduce reflected glare, such as sunlight bouncing off water or pavement. This makes them especially suited to water spots and driving.

**Photochromatic lenses:** Darken and lighten in response to the amount of available light. Photochromatic lenses darken more quickly than they lighten. They also do not darken as quickly in how weather as in cold. They will not darken much while driving, since the car shades out much of the direct UV light to which the lenses respond. Lenses that start out with a dark tint will be darker when they change tint. Some wearers may be bothered by the length of time the lenses take to change. In additions, some lenses “wear out” and fail to darken or lighten after a period of time.

**Flash lenses and Mirror-Coated lenses:** Have a mirror like finish on one side of the lens. It may be silver, colored, or iridescent. The coatings add more to appearance than usefulness and can scratch easily.

### Color

Lens color can be a dye in the lens or a coating on the lens. Color on coated lenses is more likely than dyed lenses to scratch and wear off. Coated lenses can be protected by the manufacturer through use of scratch-resistant layers. Overall, dyed lenses retain color longer.

Darkness of a lens determines how much visible light will be let in. For everyday wear, a medium to light lens is usually sufficient. The main point is to match the amount of tint to the purpose for which the glasses will be used.

The color you choose is a matter of personal taste, but there are a few important color-related benefits to consider.

- Gray lens tints reduce brightness, but do not distort color.
- Brown and amber tints reduce glare, including the glare created by the blue frequency in sunlight, which can make things appear hazy. Brown and amber tints distort colors more than gray tints do.
- Yellow lens tints reduce the haze from blue light better than browns, so they really sharpen up the view, but they cause more color distortion.
- Green tinted lenses reduce glare and help filter out some of the blue light. They provide good contrast between objects.
- Rose colored lenses might be a good choice if you participate in water sports or other outdoor activities, because they provide good contrast for objects viewed against blue or green backgrounds.

### Lens Materials

Sunglasses lens materials differ quite a bit. Some are heavier than others and some types are more durable. Three materials are commonly used for sunglass lenses:

- Polycarbonate, which is a durable lightweight plastic.
- CR-39, which is a plastic used mostly in prescription-grade lenses.
- Glass, which is durable but much heavier to wear.

Impact-resistant: The Food and Drug Administration requires all sunglasses to withstand an impact test without fracturing but not to be shatter-resistant.

### Frames

Frames should be sturdy and comfortable. When choosing a pair of sunglasses, be sure to try them on. Check to see that the frames have not been bent out of shape in transport or storage. Be sure that the frames are not designed so that they block side vision either around the lenses or at the temples. The frames should be long enough to fit comfortably over the ears. They should be wide enough not to press on the temples. If glasses with identical frames are already broken on the shelf, that indicates that the frame will not be sturdy enough to last under normal conditions.

As with color, the main criterion for choosing frame style is wearer preference. As long as style is comfortable and does not block vision, preference is the deciding factor.

### Cost

With sunglasses, price bears little relation to performance. Effective, reliable, high quality sunglasses can be found among even inexpensive pairs.

### Kids Need Sunglasses, Too

Children are more vulnerable than adults to the potentially eye-harming effects of the sun's ultraviolet (UV) radiation. And they spend more time outdoors. The more UV exposure, the greater the eventual risk of cataracts (clouding of the lens) and macular degeneration (breakdown of the central part of the retina).

That doesn't mean you need to obsess about shielding kids from the sun or worry about the occasional, inevitable lapses. But you should try to take some sensible precautions.

Encourage kids to wear sunglasses when they're outdoors, even on cloudy days. Look for pairs that say they can block 99 to 100 percent of UVA and UVB rays, or "absorbs up to 400 nm of UV radiation." Letting children choose their own sunglasses—and setting an example by wearing a pair yourself—boosts the likelihood that they'll wear them. Wraparound styles protect the eyes from all angles.

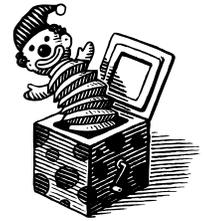
Written and Compiled by: Cheryl Varnadoe, UGA 4-H Faculty, 2007

References: Alaboutvision.com, Consumer Reports, About.com, With appreciation to Dr. Joyce Cavanagh, Extension Family Economics Specialists, Texas Cooperative Extension for use of some of her materials included in "Sunglasses" 1997 Consumer Decision Making.



# TOYS

Toys bring a great deal of joy to children, and they also can be valuable learning tools. Exploring, pretending, and sharing are just a few of the important skills children develop when they play. Toys don't have to be expensive. A variety of toys for children exist. Some of them are safe and some of them are dangerous. How do you know which is which? The main idea is to pick the right toy for a particular child at the right time.



Here are a few helpful suggestions related to purchasing toys in general:

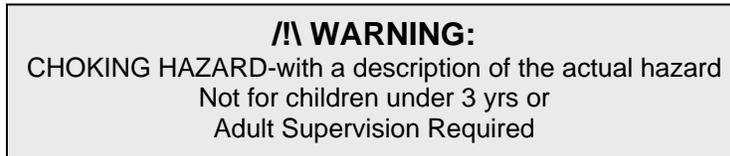
Acceptable Toys
<b>Are safe.</b> Any toy can be unsafe if given to the wrong child, to a child at the wrong age, or when it is misused. A child's safety depends on the types of toys selected, the way they are maintained, and the amount of safe handling taught and practiced in the home.
<b>Are durable.</b> Toys are mauled, hugged, dropped, stood on, chewed on, washed and dried. They need to stand up to all this normal wear and tear.
<b>Work like they're supposed to.</b> Nothing causes loss of interest as readily as a toy that fails to perform. It often results in frustration, anger and discouragement.
<b>Are appropriate for the child's age.</b> Toys should suit the physical, mental, and emotional abilities of the child. For example, an infant can not play with a two-wheeled bicycle; a school-aged child does not need a mobile for a crib. Many toys can be used by children at different stages, like blocks and modeling dough.
<b>Stimulate creativity.</b> The toy can be used in several ways and leaves room for imagining and learning.
<b>Capture the child's interest and are fun.</b> Children are drawn to appropriate toys and play with them spontaneously. Toys should reflect the child's interests.
<b>Involve interaction with others.</b> Encourages or even requires others like friends, siblings, or adults to play along with.
<b>Can be kept clean easy.</b>

Unacceptable Toys
<b>Are dangerous.</b> Unsafe toys have sharp corners, edges, and protrusions; are flammable; have easily lost or broken parts; toxic paint; might give an electrical shock; use glass instead of plastic in toy vehicle windows; have detachable parts that can be put into mouth, ears, nose; have fluffy trimmings that can be pulled off and swallowed; or are stuffed with toxic or unclean materials.
<b>Are poorly constructed. Do not have proper labeling.</b>
<b>Cause anger or frustration by not working properly.</b>
<b>Are too mature for a particular child related to their physical, mental, and emotional abilities.</b>
<b>Have only one purpose and can be used only one way. Foster values the parents do not have. Cost too much.</b>
<b>Appear to contribute to misbehavior.</b> They may stimulate too much excitement, aggression, or dangerous play.
<b>Offer little chance of interaction.</b> Wind-up or automated toys do not allow the child to be in control. The child merely becomes a passive observer of the toy's repetitive actions. These toys are often easily broken and irreparable, dangerous and expensive.
<b>Cannot be cleaned with soap and water.</b>

## New Mexico 4-H Consumer Decision Making Classes R-2006

### Read the Label

The U.S. Consumer Product Safety Commission requires toy manufacturers to meet stringent safety standards and to label certain toys that could be a hazard for younger children. Look for labels that give age recommendations and use that information as a guide. Labels on toys that state "not recommended for children under three ... contains small parts," are labeled that way because they may pose a choking hazard to children under three. Toys should be developmentally appropriate to suit the skills, abilities and interests of the child. Effective January 1, 1995 products that are manufactured in or imported into the United States must comply with the Child Safety Protection Act. Look for this symbol on toy packaging:



When purchasing art materials and supplies, including crayons and paint sets, look for the designation "**ASTM D-4236.**" This means the product has been reviewed by a toxicologist and, if necessary, labeled with cautionary information.

When purchasing electronic toys, look for the Underwriter's Laboratories (**UL**) seal. This means the toy has been tested for safety. The labeling requirements specify that certain precautionary information shall be listed on labels on children's electrical products. The labeling is designed to help buyers choose the right toy for the right age and to warn the user of potential hazards. The package of every such product must carry a cautionary message and a minimum age recommendation. No item with a heating element may be recommended for children under 8 years of age. There are some hobby items, such as wood burning kits, that reach very high temperatures and have been exempted from certain maximum surface temperature regulations. These items cannot be recommended for, and should be kept out of reach of, children under 12 years of age.

Certain areas of electronic products also must be labeled:

- accessible surfaces that exceed certain specified temperatures must carry a warning of the danger
- toys with replaceable electric lights must carry a warning of the maximum safe wattage for a replacement bulb and a notice to disconnect the plug before changing the bulb
- products with non-replaceable lights will be so marked
- products not designed to be immersed in water must carry a notice to that effect.

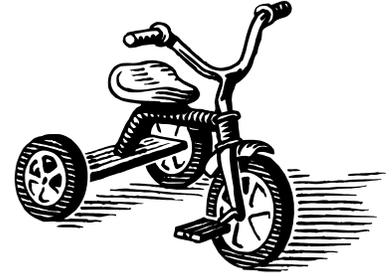
### Storing and Caring for Toys

Toy safety involves choosing the right toy, checking it regularly for damage, and storing it safely. One of the greatest dangers in toy storage is the toy chest with a free-falling lid. Children are injured when the lid falls on their head, neck, or arms. Upright lids in trunks and footlockers pose this kind of hazard. Open chests or bins, chests with lightweight removable lids, or chests with sliding doors or panels do not present the hazard of a falling lid. Low, open shelves where toys can be reached easily and put away are a safer alternative and are often preferred by children. Caring properly for toys will extend their usefulness and avoid accidents and injuries. Don't leave indoor toys outdoors overnight. Rain or dew could damage them, making them unsafe. Store toys in a special closet or shelf so they won't be tripped over or broken. Train toddlers to put their toys away. Throw away broken toys; they are hazardous.

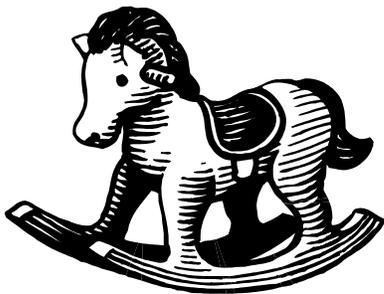


## Think Toy Safety

More than 120,000 children are taken to hospital emergency rooms each year for treatment of toy-related injuries. Evaluate toys for your children from the standpoint of safety. The following are some guidelines:



- Choose toys appropriate to the child's age. Some toys intended for children more than 3 years old may contain small parts, which could present a choking hazard for infants and toddlers.
- Toddlers should never play with any object that is smaller than a half dollar.
- Think BIG when selecting toys, especially for children under age three. Big toys without small parts can be enjoyed by youngsters of different ages. Keep toys intended for older children, such as games with small pieces, marbles, or small balls, away from younger children.
- Keep uninflated balloons out of reach for children under age 6, and discard pieces of broken balloons because of the choking hazard.
- Explain and show your child the proper use of safety equipment such as bicycle helmets. Studies show that helmets can reduce severe injuries from a fall.
- Check all toys periodically for breakage and potential hazards. Damaged toys can be dangerous and should be repaired or thrown away immediately.
- Store toys safely. Teach children to put toys away so they are not tripping hazards. Periodically check toy boxes and shelves for safety. Visit the Web sites listed on page 5 for more information.
- Some toys require adult supervision. Supervise children when playing with pull toys with long cords; they could strangle a child. Check toys with moving parts for safety. Make sure the child is mature enough for the toy.
- Follow instructions carefully and supervise children using any electronic toys. Failure to follow manufactures instructions may result in injury.
- Give outdoor play equipment and toys such as gym sets, skates and bikes to children who are old enough to use them safely.
- Teach children not to use bicycles, tricycles, or sleds where there is traffic, and to use them carefully in areas where other children play.
- Have children take off roller skates or in-line skates before crossing the street. They should always wear a helmet and other safety gear.



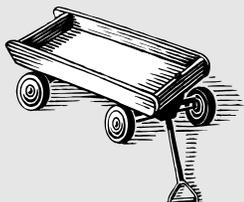
## Age Appropriate Toys

There are many toys to choose from, but most can be grouped into specific developmental categories: physical or muscle; sensory (sight, sound, hearing, touch); social; and intellectual or creative development. Finding age appropriate toys for children enables them to grow and develop at a level suitable for them. Refer to the table on the next two pages for information on which toys are best for which ages.

## New Mexico 4-H Consumer Decision Making Classes R-2006

Age	Toys to Choose	Toys to Avoid	Age	Toys to Choose	Toys to Avoid
<b>Newborn to 1 year</b>  <b>Age of Awareness</b>  <ul style="list-style-type: none"> <li>• Need toys with bright colors and texture</li> <li>• Toys should be washable, unbreakable, and large enough so they won't be swallowed.</li> <li>• Enjoy toys to look at, feel, chew on, and drop.</li> </ul>	<ul style="list-style-type: none"> <li>• Brightly colored objects</li> <li>• Pictures within view but out of reach</li> <li>• Mobiles that have objects attached with cords less than 12 inches long</li> <li>• Unbreakable toys that rattle or squeak</li> <li>• Washable dolls or animals with embroidered eyes</li> <li>• Stacking ring cones</li> <li>• Tapes or CDs with gentle music</li> </ul>	<ul style="list-style-type: none"> <li>• Toys with parts smaller than 1 ¼ inch</li> <li>• Toys with sharp edges</li> <li>• Toys with detachable small parts</li> <li>• Toys with toxic paint</li> <li>• Toys with cords more than 12 inches long</li> <li>• Stuffed animals with glass or button eyes</li> <li>• Balloons</li> <li>• Flammable items</li> </ul>	<b>2 to 3 years</b>  <b>Explorative Age</b>  <ul style="list-style-type: none"> <li>• need "hands on" toys that require little coordination</li> </ul> <div style="text-align: center;">  </div>	<ul style="list-style-type: none"> <li>• Play dough</li> <li>• Large crayons</li> <li>• Pegboards with large pieces</li> <li>• Low rocking horses</li> <li>• Sandbox toys</li> <li>• Soft balls or different sizes</li> <li>• Cars or wagons to push</li> <li>• Simple musical instruments</li> <li>• Simple dress-up items like hats, scarves, and shoes</li> <li>• Sturdy riding toys</li> <li>• Books that rhyme</li> </ul>	<ul style="list-style-type: none"> <li>• Toys with sharp edges</li> <li>• Toys with removable parts</li> <li>• Small objects such as beads, coins, or marbles</li> <li>• Electronic toys</li> <li>• Tricycles with seats more than 12 inches high</li> <li>• Riding toys</li> <li>• Flammable items</li> </ul>
<b>1 to 2 years</b>  <b>Investigative Age</b>  Along with the items listed for infants, this age group also enjoys any item that can be <ul style="list-style-type: none"> <li>• stacked</li> <li>• poured</li> <li>• opened</li> <li>• closed</li> <li>• pushed</li> <li>• pulled</li> </ul>	<ul style="list-style-type: none"> <li>• Push and pull toys</li> <li>• Books with cloth or stiff pasteboard pages</li> <li>• Nonglass mirrors</li> <li>• Take-apart toys with large pieces</li> <li>• Blocks-foam, plastic, or cardboard</li> <li>• Nested boxes or cups</li> <li>• Musical and chime toys</li> <li>• Floating tub toys</li> <li>• Pounding and stacking toys</li> </ul>	<ul style="list-style-type: none"> <li>• Small toys that can be swallowed</li> <li>• Toys with small removable parts</li> <li>• Stuffed animals with glass or button eyes</li> <li>• Toys with sharp edges</li> <li>• Flammable items</li> </ul>	<b>3 to 4 years</b>  <b>Imitative Age</b>  <ul style="list-style-type: none"> <li>• Learn by doing</li> <li>• Becoming more social</li> <li>• Enjoy realistic toys</li> </ul>	<ul style="list-style-type: none"> <li>• Dolls with simple cloths</li> <li>• Balls, any size</li> <li>• Non-electrical trucks, trains</li> <li>• Building blocks</li> <li>• Toy telephone</li> <li>• Dress-up clothes</li> <li>• Sturdy tea sets</li> <li>• Plastic interlocking blocks</li> <li>• Blunt scissors</li> <li>• Play dough</li> <li>• Washable markers, large crayons</li> <li>• Sewing cards</li> <li>• Simple board games</li> <li>• Books</li> </ul>	<ul style="list-style-type: none"> <li>• Electronic toys</li> <li>• Flammable costumes</li> <li>• Toys with sharp edges or small, removable parts</li> <li>• Riding toys used in hilly or inclined driveways</li> <li>• Heavy toys</li> </ul>

## New Mexico 4-H Consumer Decision Making Classes R-2006

Age	Toys to Choose	Toys to Avoid	Age	Toys to Choose	Toys to Avoid
<p><b>4 to 5 years</b></p> <p><b>Beginning of Creative Age</b></p> <ul style="list-style-type: none"> <li>• Enjoy painting and drawing</li> <li>• Enjoy building</li> <li>• Are energetic and active in their play</li> </ul>	<ul style="list-style-type: none"> <li>• Building blocks</li> <li>• Simple construction sets</li> <li>• Modeling clay</li> <li>• Nonelectrical trains, battery operated toys</li> <li>• Puppets and puppet theater</li> <li>• Finger paints</li> <li>• Stencils</li> <li>• Board and card games</li> <li>• Simple musical instruments</li> <li>• Small sports equipment</li> <li>• Books</li> <li>• Bicycles with 20 inch wheels and training wheels</li> </ul>	<ul style="list-style-type: none"> <li>• Toxic or oil based paint sets</li> <li>• Flammable costumes or ones that can be easily tripped over</li> <li>• Kites made of aluminized polyester film</li> <li>• Electronic toys (unless battery operated)</li> <li>• Shooting toys and darts with pointed tips</li> <li>• Fireworks of any kind</li> </ul>	<p><b>6 to 8 years</b></p> <p><b>Beginning of Dexterity Age</b></p> <ul style="list-style-type: none"> <li>• Enjoy activities with a finished product</li> <li>• Develop keen interest in sports</li> <li>• Better understanding of rules and enjoy playing with others</li> </ul>	<ul style="list-style-type: none"> <li>• Construction sets</li> <li>• Sled, roller skates</li> <li>• Sewing materials</li> <li>• Simple camera</li> <li>• Printing and stamp sets</li> <li>• Paints, colored pencils</li> <li>• Sketch pad</li> <li>• Kites</li> <li>• Battery powered electronic toys</li> <li>• Jigsaw puzzles</li> <li>• Dominoes</li> <li>• Board games</li> <li>• Simple toy sets</li> <li>• Dolls</li> </ul>	<ul style="list-style-type: none"> <li>• Kites made of aluminized polyester film</li> <li>• Shooting toys and toys with loud noises like cap guns</li> <li>• Fireworks of any kind</li> <li>• Sharp-edged tools</li> <li>• Electronic toys that plug in</li> <li>• Bikes or skateboards without helmets</li> </ul>
<p><b>8 to 12 years</b></p> <p><b>Specialization of Tastes and Skills</b></p> <ul style="list-style-type: none"> <li>• Enjoy many of the same types of toys as younger children with more complex activities</li> <li>• Can learn math and problem solving skills through card and board games</li> <li>• Enjoy active and social toys</li> </ul>	<ul style="list-style-type: none"> <li>• Hobby materials</li> <li>• Arts and crafts materials</li> <li>• Musical instruments</li> <li>• Sports equipment</li> <li>• Camping equipment</li> <li>• Construction sets</li> <li>• Electronic trains</li> <li>• Bicycles (26 inch wheels for children age 10 and older)</li> </ul>	<ul style="list-style-type: none"> <li>• Fireworks of any kind</li> <li>• Air rifles</li> <li>• Chemistry sets</li> <li>• Darts</li> <li>• Skateboards</li> <li>• Arrows</li> </ul>	<p style="text-align: center;"><b>Web Resources for More Information on Selecting Toys</b></p> <p>American Academy of Pediatrics <a href="http://www.aap.org/">http://www.aap.org/</a></p> <p style="text-align: center;"><b>Toy Manufacturers of America</b> <a href="http://www.toy-tma.org/consumer/parents/safety/4toysafety.html">http://www.toy-tma.org/consumer/parents/safety/4toysafety.html</a></p> <p style="text-align: center;"><b>U.S. Consumer Product Safety Commission</b> <a href="http://www.cpsc.gov">http://www.cpsc.gov</a></p> <p><b>References</b></p> <p><i>Understanding Children – Toys</i>, by Lesia Oesterreich, Iowa State University, University Extension</p> <p><i>Buying Age Appropriate Toys</i>, The Nebline, University of Nebraska, Cooperative Extension</p> <p>US Consumer Product Safety Commission,</p> <ul style="list-style-type: none"> <li>• <i>Child Safety Protection Act Fact Sheet</i></li> <li>• <i>The Dangers of Electric Toys</i></li> <li>• <i>Toy Safety Shopping Tips</i></li> </ul>		
					

Turner, 2006

# Yogurt

## What is Yogurt?

Yogurt is a cultured dairy product that can be made from whole, lowfat or skim milk, including reconstituted nonfat dry milk powder. The Food and Drug Administration (FDA) describes yogurt as a food produced by culturing one or more of the basic ingredients (cream, milk, partially skimmed milk, skim milk, or the reconstituted versions of these ingredients may be used along or in combination) and any of the optional dairy ingredients with a characterizing bacteria (live and active) culture that contains the lactic acid-producing bacteria (*Lactobacillus bulgaricus* and *Streptococcus thermophilus*). Yogurt is made by inoculating certain bacteria (starter culture), usually *Streptococcus thermophilus* and *Lactobacillus bulgaricus*, into milk. After inoculation, the milk is incubated at approximately 110°F ± 5°F until firm; the milk is coagulated by bacteria-produced lactic acid. Yogurts may have additional cultures, sweeteners, flavorings, color additives, stabilizers and emulsifiers and preservatives add to it. Yogurts may be heat-treated after culturing to extend the shelf life of the food. Most yogurts in the United States is made from cow's milk, any type of milk can be used. In other countries, yogurt is made from the milk of water buffalo, yak, goat, horses and sheep.

Because of yogurt's is made with live and active cultures, it has become a healthy lifestyle favorite. Yogurt comes in many flavors and varieties which appeals to everyone's taste buds.

## Health Benefits

Yogurt is a nutrient-dense food that meets a wide variety of nutritional needs at for everyone. Yogurt is a good source of protein-an average 8-ounce serving contains between 8 and 10 grams of protein, or 16 to 20 percent of the Daily Recommended Value (DRV). Because yogurt is cultured the amount of protein often exceeds liquid milk. Yogurt is also an excellent source of calcium. Yogurt may contain up to 35 percent of the Recommended Daily Intake (RDI) for calcium. Yogurt is low in fat and high in certain minerals and essential vitamins, including riboflavin B2, Vitamin B12, phosphorus and potassium.

The words "live and active cultures" refer to the living organisms—*Lactobacillus bulgaricus* and *Streptococcus thermophilus*—which convert pasteurized milk to yogurt during fermentation. Researchers are currently exploring how live and active culture yogurt may have a beneficial effect on the immune system, the potential to lower cholesterol, and how it may combat certain types of cancer-causing compounds, particularly in the digestive tract.

## Health Benefits of eating yogurt:

- ❖ May help reduce osteoporosis risk
- ❖ Yogurt can be eaten by people who are lactose intolerant
- ❖ Diets rich in calcium may help reduce hypertension
- ❖ May enhance the immune system of certain individuals
- ❖ Versatile and convenient –use as a substitute for mayonnaise, sour cream and cream cheese to lower calories
- ❖ May reduce the risk of colon cancer
- ❖ Excellent source of calcium
- ❖ Yogurt is considered a meat alternative because of high protein content
- ❖ Large variety of flavors and styles that can be used to reduce calories

## Protein

An average eight-ounce serving of live and active culture contains approximately 20 percent of the Daily Value for protein.

Recommended Dietary Allowances (RDA) of Protein for Children

Age Group (years)	RDA (g/day)
1-3	13g
4-8	19g
9-13	34g
14-18	52 g (boys), 46g (girls)
Source: Food and Nutrition Board, Institute of Medicine of the National Academy of Science	

## Calcium

Calcium is needed at every stage of life and yogurt with its live and active cultures are a great source. Calcium is critical for bone growth, development, and maintenance at every age and stage of life. Toddlers have an increased need for dietary calcium to support growth and skeletal development that takes place rapidly in the early years of life. Calcium needs continue into the teenage years and is particularly crucial for adolescent girls who need to stock their calcium supplies to prevent osteoporosis later in life. The need for calcium increases as the body matures. Adults achieve their peak bone mass at age 35 and after that bone loss begins to take place. Calcium intake is critical in helping reduce bone loss, especially for postmenopausal women.

Yogurt is rich in calcium, high in protein, tolerated by lactose-sensitive children and adults, convenient, versatile and tasty.

## Dietary Reference Intake:

Age Groups (years)	Adequate Intake (mg/day)
1-3	500 mg
4-8	800 mg
9-18	1300 mg
19-50	1000 mg
51+	1200 mg

Source: Food and Nutrition Board, Institute of Medicine of the National Academy of Sciences

Calcium is an essential part of any balanced diet and is found in a wide variety of foods, most people just don't get enough calcium each day. Use the chart below to ensure that you are meeting your daily calcium quota.

### Quick-Read Equivalency Chart

Food	Serving Size	Calcium (mg)
Live & Active Culture Yogurt (plain)	One cup	450 mg
Calcium-fortified Orange Juice	One cup	300 mg
Milk, (nonfat)	One cup	300 mg
Chocolate milk 1%	One cup	285 mg
Swiss Cheese	One ounce	270 mg
Cheddar cheese	One ounce	205 mg
Salmon (edible with bones)	3 ounces	180 mg
Frozen yogurt	1/2 cup	155 mg
Turnip greens, cooked	1/2 cup	125 mg
Dried figs	3	80 mg
Broccoli, cooked	1/2 cup	35 mg

Source: The Food Processor. Esha Research 7.0, 1998

### Yogurt Varieties

Yogurt products come in a wide variety of flavors, forms and textures. Here are the common terms associated with yogurt products available today. Some of the definitions were established by the Food and Drug Administration (FDA), while others were determined by the manufacturers.

**Lowfat and nonfat:** There are three types of yogurt: regular yogurt, lowfat yogurt and nonfat yogurt. Yogurt made from whole milk has at least 3.25 percent milk fat. Lowfat yogurt is made from lowfat milk or part-skimmed milk and has between 2 and 0.5

percent milk fat. Nonfat yogurt is made from skim milk and contains less than 0.5 percent milk fat.

**Lite (light) yogurt:** 1/3 less calories or 50% reduction in fat than regular yogurt.

**Swiss or custard:** Fruit and yogurt are mixed together for individual servings. To ensure firmness or body, a stabilizer, such as gelatin, may be added. These products are also referred to as “blended” yogurt.

**Frozen yogurt:** Frozen yogurt is a non-standardized food and, therefore, is not subject to Federal composition standards, as is the case for “yogurt”. In order to qualify for National Yogurt Association’s (NYA) Live and Cultures seal, frozen yogurt must be a product made by fermenting pasteurized milk (can include skim milk and powdered skim milk, plus other ingredients), using traditional yogurt cultures, until the proper acidity is reached. Many manufacturers, according to their unique recipes, will then mix this (the “yogurt” component) with a pasteurized ice cream mix of milk, cream, and sugar, plus stabilizers or other ingredients needed for desired consistency. This frozen yogurt base mix can then be blended with fruit or other ingredients and then frozen. The freezing process does not kill any significant amount of the cultures—in fact, during the freezing process the cultures go into a dormant state, but when eaten and returned to a warm temperature within the body, they again become active and are capable of providing all the benefits of cultures in a refrigerated yogurt product.

Not all products terms “frozen yogurt” actually contain live and active cultures. Some so-called “frozen yogurts” use heat-treated yogurt, which kills the live and active cultures, or they may simply add in cultures to the mix along with acidifiers, and skip the fermentation step all together. To make sure that a frozen yogurt contains yogurt produced by traditional fermentation and has a significant amount of live and active cultures, look for the NYA Live & Active Cultures seal.

**Contains active yogurt cultures:** Yogurt labeled with this phrase contains the live and active bacteria thought to provide yogurt with its many desirable healthful properties. Look for the NYA Live & Active Cultures seal to ensure that the yogurt you buy contains a significant amount of live and active cultures

**Heat-treated:** Yogurt labeled with this phrase has been heated after culturing, thereby killing the beneficial live and active yogurt cultures.

**Liquid or drinkable yogurt:** Fruit and yogurt are blended into a drinkable liquid.

**Made with active cultures:** FDA regulations require that all yogurts be made with active cultures. Only those that are *not* heat-treated, however, retain live and active cultures when they reach consumers.

**Sundae or fruit-on-the-bottom:** Fruit is on the bottom, so that turn upside down, it looks like a sundae. Consumers can mix the fruit and yogurt together to make it smooth and creamy.

**Buttermilk:** Buttermilk is reminiscent of yogurt because it made by adding a lactic acid bacteria culture to pasteurized whole milk (skim milk or nonfat milk can also be used). The old-fashioned way to make buttermilk was from the left over liquid from churning butter from cream, i.e., milk from the butter or buttermilk. After the addition of the culture, the milk is left to ferment for 12 to 24 hours at a low temperature. It is usually labeled cultured buttermilk and may be salted or unsalted. Buttermilk is slightly thicker in texture than regular milk but not as heavy as cream.

**European-Style yogurt or stirred curd method:** Yogurt in which the yogurt is cooked in a large vat instead of in individual cups. The curds are stirred in the vat, before they are poured into the cups, resulting in a smoother, creamier yogurt.

**French yogurt or French-style yogurt:** Is the same as custard-style yogurt.

**Greek yogurt:** Greek yogurt is a thicker, creamier version of the regular variety. Greek yogurt is strained to remove the excess whey from the yogurt which in turns gives it a thicker and creamier texture. In Greece, yogurt is made with sheep's or goat's milk.

**Yogurt cheese:** Yogurt that has been drained and pressed into a soft cheese form. The consistency of the yogurt cheese will be similar to soft cream cheese. It can be used as a base for dips and spreads, as a topping for baked potatoes. It is a great alternative for regular mayonnaise, sour cream or cream cheese.

**Smoothie:** There are many types of smoothies that contain yogurt or frozen yogurt. These smoothies usually use yogurt as the base and mix in various fruits into the consistency of a milkshake with healthier benefits.

**Liquid Yogurt or Yogurt Smoothie:** Yogurt that has been thinned to make it drinkable and blended with fruit, fruit juice or other flavorings.

**Kefir:** is similar to a drinking-style yogurt, but it contains beneficial yeast as well as friendly 'probiotic' bacteria found in yogurt. Kefir can be made from any type of milk, cow, goat or sheep, coconut, rice or soy. The curd size of kefir is smaller than yogurt which makes it easier to digest. Kefir is rich in Vitamin B12, and Vitamin K. It is an excellent source of biotin, a B vitamin which aids the body's assimilation of other B vitamins, such as folic acid, pantothenic acid, and B12.

**Yogurt drinks:** A "yogurt drink", according to Federal Standards of Identity, must meet the requirements for yogurt (the white mass –yogurt portion). It must contain a minimum of 8.25 percent milk solids not fat and 3.25 percent milkfat prior to the addition

of other ingredients. It also must be fermented with *Streptococcus thermophilus* and *Lactobocillus bulgaricus*. The processes of yogurt beverages closely resemble that used for stirred-style yogurt. Yogurt drinks usually pass through a homogenizer to reduce the particle size. This assures complete hydrocolloid distribution and stabilizes the protein suspension. Flavor may be added immediately prior to homogenization or the white mass may be homogenized and then flavored.

## **Costs**

When looking at costs, you will need to decide whether to buy single-size cartons or larger cartons. Larger cartons are generally cheaper when you compare the price per ounce.

32-ounce store brand nonfat @\$1.66 = \$.05 per ounce

6-ounce store brand flavored nonfat @ \$.60 = \$.10 per ounce

Package of eight 2.25-ounce name brand portable yogurt treats (18 ounces) @\$2.95 = \$.16 per ounce.

Fruit-flavored varieties may cost more and include jam-like fruit that adds extra sugar. The sweetened fruit replaces some of the yogurt in the carton so you get less of the calcium-rich yogurt. Buy plain or vanilla yogurt and add your own fruit to it.

## **Other things to consider:**

Serving size, calories, fat content and price.

## **Resources Used:**

National Yogurt Association: <http://aboutyogurt.com/index.asp>

Iowa State University Extension: Spend Smart. Eat Smart. Milk, Cheese, and Yogurt: <http://www.extension.iastate.edu/Publications/PM2066AX.pdf>

Food and Drug Administration: <http://www.fda.gov/>

Making yogurt drinkable, Dairy Foods, June, 2004, by Bob Roberts: [http://findarticles.com/p/articles/mi\\_m3301/is\\_6\\_105/ai\\_n6081210/](http://findarticles.com/p/articles/mi_m3301/is_6_105/ai_n6081210/)

What is buttermilk? Does buttermilk contain butter: <http://homecooking.about.com/od/cookingfaqs/f/faqbuttermilk.htm>

Nutritional Content of Kefir: <http://www.kefir.net/nutrit.htm>

Yogurt Cheese: <http://lowfatcooking.about.com/od/quicktips/qt/yogcheese.htm>

How to Make Yogurt Smoothie: [http://www.ehow.com/how\\_4536718\\_make-yogurt-smoothie.html](http://www.ehow.com/how_4536718_make-yogurt-smoothie.html)

What is Greek Yogurt? [http://www.cookthink.com/reference/257/What\\_is\\_Greek\\_yogurt](http://www.cookthink.com/reference/257/What_is_Greek_yogurt)