Cleaning Products
CONSUMER ACCESS TO CHEMICAL INFORMATION
Often, retail household cleaning products contain substances that are deemed hazardous. It is difficult to identify these substances because manufacturers are allowed to label these substances as confidential business information (CBI). The U.S. Environmental Protection Agency (EPA) has acknowledged that the inappropriate and excessive use of CBI claims has hidden important information from the public and even from EPA offices. Modifications to the chemical information reporting rule are ongoing. Visit the EPA website for more information on the agency’s efforts to increase transparency in chemical access (Increasing Transparency in TSCA available at http://www.epa.gov/oppt/existingchemicals/pubs/transparency.html).

CLEAN HOMES
A clean home reduces exposure to allergens, pesticides, consumer chemicals, and pest droppings and urine, and reduces shelter for pests. While it is important to keep your home clean to provide a healthy environment, cleaning product labels often display complex chemical terms. Additionally, commercial advertisements may exaggerate the performance of cleaning products. Therefore, to make informed decisions when comparing product performance and safety, consumers need to be familiar with the most common ingredients found in cleaning products.

This publication provides definitions of common ingredients and guidelines for selecting products for household use. Types of cleaning products include:

- Disinfectants and sanitizers,
- Abrasives,
- Acids,
- Alkalis,
- Bleaching agents,
- Detergents, and
- Spirit solvents.

DISINFECTANTS AND SANITIZERS
Disinfectants are more often used in clinics and hospitals than in household products. A disinfectant is a chemical that completely destroys all disease-causing organisms (pathogens). These include disease-causing strains of salmonella and staph bacteria. To be labeled as a disinfectant, the EPA stipulates that the product must destroy 99.999% of pathogens within 5 to 10 minutes. Disinfectants are applied directly to non-porous surfaces, such as diaper changing tables, countertops, door and cabinet handles, toilets, and other bathroom surfaces.

Disinfectants for Household Use
Liquid chlorine bleach is a common household disinfectant. For detailed information, refer to the Bleaching Agents section in this publication.

Quaternary ammonium compounds are generally referred to as quats. These are salt compounds used with a variety of additional ingredients to create a safe and effective disinfectant. They are effective in destroying a wide range of harmful bacteria, viruses, and fungi. Quats are economical and effectively control odors when used according to the manufacturer’s directions. They can be used on sensitive floor surfaces and will not damage floor finishes.

Pine oil cleaners are all-purpose cleaners made from a natural resin distilled from pine trees. The pine oils are combined with alcohols and quats to improve their disinfecting and cleaning properties. Pine Sol is an example of a pine oil cleaner/disinfectant.

When mixed in water, pine oil cleaners do not dissolve, but instead make a milky soap. Most people like the way they smell and the fact that they can clean and deodorize at the same time. Overall, they are good cleaners. Caution: These cleaners are highly flammable. They can be very dangerous if swallowed or if the fumes are inhaled. Use with adequate ventilation and follow all
labeled precautions. Do not use these products full-strength or leave them soaking on waxed or freshly painted surfaces.

The EPA provides a limited listing of 500 registered disinfectant products. It is updated periodically, yet it is not a complete listing. The list is available at http://www.epa.gov/oppad001/influenza-a-product-list.pdf

Sanitizers for Household Use
Sanitizers are commonly used in restaurants and household products. A sanitizer is a product that reduces germs on surfaces to levels considered safe by public health codes or regulations. By EPA standards, these products must destroy 99.999% of pathogens within 30 seconds. Many sanitizers are a formulation of a detergent and disinfectant. Sanitizers can be used on food contact surfaces, such as dishes, eating utensils, and cutting boards. Pacifiers and toys that children may place in their mouths can be sanitized for safety.

By killing bacteria, sanitizers also destroy odors. These products are used when cleaning tubs, showers, toilet bowls, bathroom sinks, and ceramic or plastic bathroom tile. They are also used in laundering and dishwashing products. Often, household products sold as disinfectants are also effective as sanitizers. Household products that are effective sanitizers include bleach and products formulated with quats, such as pine oil cleaners.

The EPA recommends that EPA-registered products be used whenever possible. Only a disinfectant or sanitizer with an EPA registration number on the label can make public health claims that they are effective in destroying germs.

ABRASIVES
Abrasives are rough or gritty. They clean surfaces by creating friction that lifts off hardened food particles, grease, tarnish, and stains. Anything that is rough to the touch can be considered an abrasive when used to remove spots or stains from a surface. Types of abrasives include physical, mineral, and chemical.

- Physical abrasives include sandpaper, plastic and nylon meshes, scrubbing pads, and steel wool.
- Mineral abrasives are composed of particles. Baking soda, powdered borax, and salt are all examples of mineral abrasives that are considered natural cleaners.
- Chemical abrasives are also composed of particles. A common chemical used in commercial products that contain bleach is sodium dichlorotriazinetrione. These cleaners are often referred to as scouring powders and are used to kill bacteria in addition to general surface cleaning.

In household cleaning products, mineral and chemical abrasives are available in powder and cream (or thick liquid) forms. Generally, the larger the particles used in the product, the harsher the cleaner. Calcium carbonate (or calcite) and silica are two types of minerals often found in these products. Calcium carbonate is the mildest of abrasives, with the finest abrasive found in the cream form.

Uses
Mild abrasives are appropriate for surfaces such as fiberglass, laminate, countertops, grout, tile, sinks, tubs, cookware, and glass.

Coarse or harsh abrasives can be used to clean outdoor stainless steel grills, oven baking racks, and cement. Usually sold for removing tough stains, harsh abrasives will cause damage to many surfaces. Regular use may scratch the shiny finishes of sinks, bathtubs, and kitchen appliances, making them dull and rough. When surfaces are damaged in this way, they soil faster and stain deeper. It will then be necessary to continue to use a harsh abrasive to remove embedded dirt and stains.

ACIDS
Acids are used to remove mineral deposits, rust stains, and hard water deposits. They can remove discoloration from some metals, such as aluminum, brass, bronze, and copper. Some acids are effective both in cleaning and disinfecting surfaces.

Acids range from very mild to very strong. Consumers must take care when choosing and using acids for cleaning. Acid-based disinfectant cleaners are very irritating to your eyes and skin and will burn your throat. When using toilet cleaners, it’s a good idea to wear latex dishwashing gloves to help protect your skin and safety goggles to help protect your eyes from splashes.

This section provides an overview of types of cleaning products that contain acids as well as best use practices. As always, read the manufacturer’s directions before using on any surface. Refer to Table 1 for examples of acids in household cleaners.
Uses

Very Mild Acids

Mildly acidic cleaners are used to dissolve hard water deposits, remove mild rust stains, and eliminate soap film from around the sink and on shower doors. They are useful in removing tarnish from brass and copper. Mildly acidic cleaning products include vinegar (acetic acid) and lemon juice (citric acid). Mild cleaners made from these acids are safe for use around children and pets. Other acids are often found in household cleaning products.

- Gluconic acid – organic compound with very low toxicity
- Hydroxyacetic (or glycolic) acid – a mild organic acid (stronger than vinegar)
- Levulinic acid – a non-toxic sugar-derived chemical used as a platform chemical in the production of a number of products

Acetic acid is the acid in clear white vinegar and is a natural all-purpose cleaning agent. It is best for general household cleaning on surfaces that can tolerate a strong, acidic product. Vinegar removes hard water deposits from glassware, rust stains from sinks, and tarnish from brass and copper. After using alkaline cleaners, acetic acid can be used as a mild deliming rinsing agent. Although vinegar is widely used as a disinfectant in household cleaning, the packaging cannot claim the product as a disinfectant because it is not registered with the EPA. Citric acid is a natural substance found in lemons, limes, oranges, and grapefruits. It is nontoxic, antibacterial, and antiseptic. It has much the same use as vinegar. In commercial products, citric acid is used to remove hard water buildup on dishes and glassware. It is also used as an acid spotter to remove coffee and tea stains, yellowing/browning discolorations, water stains, and urine or feces stains. Some commercial products that contain citric acid are water-based and may cause corrosion or rust on metals. Wash and dry the metal after cleaning to prevent rust.

Cream of tartar is a very mild acid salt. Made into a paste with water, it can be used to clean brass and copper, brighten aluminum, remove rust, and freshen coffee makers. Mix a small amount with vinegar to create a nonabrasive cleaner for use on grout, mold and mildew, oven tops, and cookware.

Phosphoric acid is a clear, colorless, odorless liquid. It is very mild, yet more acidic than vinegar or lemon juice. Commonly used for rust removal, it works quite well on most types of bathroom stains. In commercial products, phosphoric acid is found in tub, tile, sink, and toilet bowl cleaners.

Very Strong Acids

Strongly acidic cleaners are highly toxic. They may be corrosive, meaning they can eat away at metal surfaces or human tissue. Avoid getting them on your skin or in your eyes. Avoid getting them on other materials since the acids may have bleaching effects, eat through metals, or etch (scratch) surfaces and porcelain enamel. Always read the labels on the products you buy and follow the directions to ensure your own safety. See the Caution section (at the end of this ACIDS section) for more information on safe use.

Hydrochloric acid comes from a mixture of common table salt and sulfuric acid. Concentrated solutions of hydrochloric acid are extremely corrosive. Diluted solutions are commonly found in household cleaning products. Very dilute solutions are only mildly corrosive. When using hydrochloric acid, be careful to not let the cleaner come in contact with eyes and skin. Hydrochloric acid is used in toilet bowl cleaners to remove dirt and grime. It is used for cleaning mortar spills off new bricks, removing rust from metals and other surfaces, and etching floors before sealing them. This product eats cotton, rayon, and mortar and is very corrosive to metals. In commercial products, hydrochloric acid is also called muriatic acid and is used for cleaning concrete; the acid cleans the concrete by etching away the top layer.

Hydrofluoric acid is a commercial rust remover that will burn the skin. Keep this one away from glass windows or glass products. See the Caution section before using.

Oxalic acid is a bleaching agent that is an effective rust remover. It is poisonous and corrosive. Make sure to keep children and pets away while using this

<table>
<thead>
<tr>
<th>Product</th>
<th>Acid Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilet bowl cleaner</td>
<td>sodium bisulfate, oxalic acid, dilute hydrochloric acid, or dilute sulfuric acid</td>
</tr>
<tr>
<td>Rust removers</td>
<td>acetic, citric, gluconic, levulinic, hydrofluoric, hydroxyacetic (glycolic), or oxalic acids</td>
</tr>
<tr>
<td>Metal cleaners</td>
<td>citric or acetic acids</td>
</tr>
<tr>
<td>Hard water removers</td>
<td>levulinic, acetic, hydroxyacetic (glycolic), citric, or gluconic acids</td>
</tr>
<tr>
<td>Tarnish removers</td>
<td>levulinic, acetic, hydroxyacetic (glycolic), citric, or gluconic acids</td>
</tr>
</tbody>
</table>
product. Dispose of cloths and brushes used to apply oxalic acid. Otherwise, the acid could be transferred to kitchen utensils and dishes, from which this poisonous substance could be ingested. See the Caution section before using.

**Sodium bisulfate** (also known as sodium acid sulfate) can be found in toilet bowl cleaners. It is a compound made by combining sodium, hydrogen, sulfur, and oxygen ions. It is a poison and should be used with extreme caution. See the Caution section before using.

**Sodium hypochlorite** is a chemical used in bleaching solutions, disinfectants, water purifiers, and cleaning products. As a disinfectant, it attacks and destroys bacteria, viruses, and mold. It can be found in toilet bowl cleaners and tile and grout cleaners, among other products. Swallowing sodium hypochlorite can lead to poisoning. Breathing the fumes may also cause poisoning, especially if the product is mixed with ammonia.

**Sulfuric acid** is a strong drain cleaner and can be found in some toilet bowl cleaners. It also is a powerful oxidizer. However, it attacks nylon, vinyl, and most organic substances. It will burn the skin and emit dangerous fumes. Be sure to use it with caution. Store in a safe place away from other chemicals or heat, and definitely keep it away from children or pets. See the Caution section before using.

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**Caution**

Always read the labels on the products you buy and follow the directions to ensure your own safety. Oxalic acid, hydrochloric acid, sodium bisulfate, sodium hypochlorite, and sulfuric acid are all poisonous. They can also injure skin and eyes and damage clothing, leather, and some metals. Damage can occur when two or more different kinds of metals are treated together with acid. For this reason, avoid soaking a metal in a container made of another metal.

Never mix a toilet bowl cleaner with any other household or cleaning products. Doing so can result in poisonous gasses being released and cause very serious breathing problems. When cleaning your bathrooms, always be sure that the room has plenty of ventilation. Leave the door open, open a window, and use the exhaust fan, if you have one.

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**ALKALIS**

Alkaline cleaners are composed of alkali salts, such as sodium bicarbonate (baking soda), sodium carbonate (also known as washing soda or soda ash), sodium metasilicate, and trisodium phosphate (TSP). Along with their detergent properties, certain alkali salts have water-softening characteristics and are used in cleaning products for that purpose.

Cleaning products are available in soaps, detergents, and all-purpose cleaners. Alkalis help clean food spills, oils, grease, and everyday things that get dirty. They remove oily dirt without rubbing and vary in strength from mild to moderate to strong. Refer to Table 2 for examples of alkalis found in household cleaners.

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### Table 2. Examples of Alkalis in Household Cleaners

<table>
<thead>
<tr>
<th>Product</th>
<th>Alkali Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-purpose cleaners</td>
<td>Ammonium compounds, sodium bicarbonate (baking soda), sodium carbonate, sodium metasilicate, trisodium phosphate (TSP), sodium borate (borax)</td>
</tr>
<tr>
<td>Drain cleaners</td>
<td>Caustic soda/sodium hydroxide (lye)</td>
</tr>
<tr>
<td>Oven cleaners</td>
<td>Caustic soda/sodium hydroxide (lye), ammonia</td>
</tr>
<tr>
<td>Scouring powders</td>
<td>Alkali salts, sodium metasilicate, trisodium phosphate (TSP)</td>
</tr>
<tr>
<td>Window cleaners</td>
<td>Ammonia or ammonium compounds, sodium bicarbonate (baking soda)</td>
</tr>
</tbody>
</table>

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**Uses**

**Mild Alkalis**

For the most part, household cleaning chemicals listed in the mild alkali category are ones that contain sodium bicarbonate (baking soda). Mixed with water, this solution is used on areas that require a mild cleaning. It safely cleans glass, wall tile, and porcelain enamels. It also removes coffee and tea stains from china and plastic dishes. Mild alkalis are not corrosive. They are safe to use around children and pets.

**Moderate Alkalis**

**Ammonia** is a strong, colorless gas. When the gas is dissolved in water it is called liquid ammonia.

Ammonia is added to a number of household and commercial cleaners to boost their alkalinity and grease-cutting ability. It dries clear and usually won’t streak. Ammonia also is found in glass cleaners and in cleaners used for shiny surfaces, like wax cleaners. Too much of it can ruin or damage some surfaces, so use it with caution.
An effective cleaning agent, ammonia’s odor is the main deterrent to its use. Never mix ammonia with chlorine and bleach products because this can release a highly toxic gas. For that matter, never mix any kind of chemicals since this can cause an unstable reaction and perhaps fumes, fire, or volatility (explosions).

- **Household ammonia**—containing 5 to 10% ammonia gas in water—cleans kitchen range burners, ovens, windows, and mirrors.

- **Sudsy ammonia** has soap or detergent added. Sudsy ammonia cleans garbage pails, kitchen range burners, and sinks.

**Borax**, also known as sodium borate, is a natural mineral compound. In the home, borax is used as a natural laundry booster; multipurpose cleaner for woodwork, walls, sinks, and carpets; deodorizer; and disinfectant. Borax is not flammable. It is not reactive and so can be mixed with most other cleaning agents, including chlorine bleach. It dissolves best in warm water. Borax is toxic if swallowed in large doses, and medical attention should be sought immediately if this occurs.

**Strong Alkalis**
A cleaner that fits in the strong alkali category destroys bacteria and dissolves proteins.

Cleaning products such as oven cleaner, lye, and drain cleaners are strong alkalis. They are highly corrosive and cause chemical burns on the skin and in the lungs when inhaled.

**Lye** (also known as caustic soda or sodium hydroxide) is sometimes found in drain and oven cleaners. These types of cleaners are used to unclog sink drains or in the bathroom. They should not be stored in the kitchen or bathroom cabinets. Lye emits dangerous fumes and can cause skin burns—and in some cases blindness—if the fumes come in contact with your eyes. Products with lye can cause death if swallowed. Wear gloves and safety goggles when using these products. Also, make sure that there is good ventilation in the room when these cleaners are used.

**Sodium carbonate** (also known as washing soda or soda ash) is used as a building block for powdered detergents and washing soda. It is used to remove fat from drains, greasy burners, and pans. This type of cleaner is slightly corrosive and will burn skin and corrode aluminum products.

**Sodium metasilicate** is mixed with water to form a cleaning solution. It makes a highly effective cleaner that can remove dirt and marks from walls in preparation for painting, and can attack stubborn soils on siding when cleaning the exterior of a home.

**Caution:** Sodium metasilicate is highly alkaline. Dust from the powder can irritate the nose, eyes, and lungs. Prolonged exposure can cause skin irritation. Wear protective gloves, eye protection, and long-sleeved shirts and pants while using this product. Wear a dust mask while mixing the powder with water if dust irritates nasal passages.

Store the compound in original containers in a dry location. Sodium metasilicate is highly poisonous when ingested. Store it out of reach of children or pets.

**Trisodium phosphate (TSP)** is not commonly found in products because most phosphates have been phased out of cleaning products due to environmental concerns. Products that do contain TSP are banned or restricted use in many states.

**Caution**
Most alkalis are toxic (poisonous), some are corrosive, and others irritate skin and eyes. Lye can burn skin severely. Alkalis remove oil from skin, so wear gloves. They also take oil from linoleum and oil-based paints and often result in cracking or peeling. They can darken aluminum. Damage to surfaces can be prevented by using a mildly alkaline solution and by rinsing well to remove all the cleaner.

**BLEACHING AGENTS**
Bleaching agents are chemicals used to remove stains. Many bleaching agents can be used as disinfectants. If a product contains a bleaching agent, the product information label may state contains bleach, bleaches as it cleans, or chlorinated.

Bleaching agents may not list the term bleach on the product label. Therefore, it is important for consumers to recognize other names for bleach. Table 3 provides a list of possible chemical bleaching agents that may appear on product labels.

### Table 3. Chemical Bleaching Agents Found on Product Labels

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Use In Cleaning Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium hypochlorite</td>
<td>Solid bleach used in sanitizing.</td>
</tr>
<tr>
<td>Hydrogen peroxide</td>
<td>Bleaching textiles and fur.</td>
</tr>
<tr>
<td>Sodium carbonate peroxide (or, sodium percarbonate)</td>
<td>Oxygen-based bleaching agent. Releases hydrogen peroxide when dissolved in water. Whitens, brightens, and removes dirt and stains from surfaces and fabrics.</td>
</tr>
<tr>
<td>Sodium dichloroisocyanurate</td>
<td>Sanitizing and dishwashing agents.</td>
</tr>
<tr>
<td>Sodium hypochlorite</td>
<td>Household laundering and sanitizing.</td>
</tr>
<tr>
<td>Sodium perborate</td>
<td>Milder bleach for laundering and replacement for phosphates in detergents.</td>
</tr>
</tbody>
</table>
Chlorine bleach is one of the most widely available and affordable disinfectants on earth. Liquid chlorine bleach (Figure 1) is an alkaline solution of sodium hypochlorite dissolved in water. It is a base and is especially good at removing stains and dyes from textiles. Additionally, chlorine bleaches are used for controlling mold and mildew and for disinfecting surfaces.

**Figure 1. A bottle of commercially available liquid chlorine bleach.**

Chlorine bleach is one of the most widely available and affordable disinfectants on earth. Liquid chlorine bleach (Figure 1) is an alkaline solution of sodium hypochlorite dissolved in water. It is a base and is especially good at removing stains and dyes from textiles. Additionally, chlorine bleaches are used for controlling mold and mildew and for disinfecting surfaces.

**Caution**

Chlorine bleach is a strong corrosive material. Inhaling the fumes will irritate the eyes, skin, and respiratory tract. Never mix bleach with toilet bowl cleaners or rust remover because a poisonous gas is produced. Never mix bleach and ammonia because this produces a dangerous chemical compound that could result in fire.

Consumers should be aware that chlorine bleach can dull shiny finishes on sinks, bathtubs, and other porcelain enamel faces. Since it is an alkali, bleach will darken aluminum and make linoleum brittle.

**DETERGENTS**

Detergents are an ingredient found in many home cleaning products. A detergent is a chemical substance used to break up and remove grease and grime. Soap is an example of one kind of detergent. The most important ingredients in detergents are chemicals called surfactants—a word made from bits of the words “surface active agents.” Since water does not clean effectively alone, detergents help loosen dirt. The surfactants in the detergents are used to bond water to dirt and grease. They help water to get a hold of the grime, break it up, and wash it away.

Builders enhance the detergent’s efficiency. Phosphates are a type of builder commonly found in detergent products. Trisodium phosphate (TSP) and disodium phosphate are rarely used these days due to bans enacted for environmental reasons. Most phosphates in use today, referred to as complex or condensed phosphates, have a lower alkalinity than the banned phosphates. If a complex phosphate builder has been added, the detergent will remove oily dirt better. When a builder is present, the product is labeled heavy duty or all-purpose.

Some laundry detergents may be used for house cleaning jobs. The safety of a laundry detergent depends on the brand and the additional chemicals it may contain. Check the product label carefully. Liquid dishwashing detergent is safe for use around children and pets.

**SPIRIT SOLVENTS**

Solvents are cleaning chemicals that dissolve grease, oil, and oily dirt. The ingredients in solvents include (but are not limited to) acetones, denatured alcohols, and mineral spirits. Cleaners that contain solvents include spot removers, rug cleaners, sanitizers, drain cleaners, and all-purpose cleaners. Examples of spirit solvents are paint thinners, turpentine, and kerosene.

Many waxes and polishes for furniture and floors and floor wax removers contain spirit solvents. Spirit solvent floor wax removers are safe and effective for use on wood, wood composite, cork, magnesite, linoleum, concrete, and stone floors. They are used for removing wax, oil, and grease. These products are non-flammable. **Note:** Spirit solvent floor waxes are not to be used on asphalt, thermoplastic tiles, PVC (vinyl), or rubber floors because the solvents will damage these types of floors.

Not all floor waxes contain spirit solvents. Some are water-emulsion waxes that will damage wood and cork products. Water-emulsion waxes can be recognized by the product label statement *Keep from Freezing.*
SAFE HANDLING OF CLEANING PRODUCTS
Most cleaning products used in homes today are considered safe when used according to the manufacturer’s instructions. Regulations require that all hazardous substances be labeled with the statement Keep Out of the Reach of Children (Figure 2). Not all products are hazardous, but when directions are not followed some of these products become dangerous—and some are more dangerous than others.

The most frequent misuse is accidental swallowing by curious children (Figure 3). Therefore, never transfer cleaners into soft drink bottles or other containers that may seem harmless to children. Keep cleaning products in the original packaging. Buy products in childproof containers and store them in cabinets with childproof latches.

Many household cleaners are stored under the kitchen sink in cabinets that are not locked. This is the worst place to store household cleaners. If this is the only place where you can store cleaning products, put safety latches (Figure 4) on the cabinets and drawers. The best practice is to put these products in a place that children cannot reach. Also, if possible, keep children and pets out of areas where cleaning products being used.

Keep products, such as strong acids and alkalis, directed away from skin and eyes when in use. Wear protective clothing, including gloves, safety goggles, and an apron. Immediately wash off any products that you splash or spill on your skin.

Products containing flammable liquids should never be used near open flames, including pilot lights on kitchen ranges or gas clothes dryers, furnaces, or lit cigarettes. Do not leave aerosol (pressurized) containers on a kitchen range, radiator, or furnace; in direct sunlight; or near other heat sources. Never puncture aerosol containers. Before discarding this type of container,
hold the valve open until all the contents and gas have escaped.

Never discard an empty aerosol container in a fire or incinerator because some gas usually remains. This is true even in an apparently empty can. Heat causes the gas to expand, which may lead to an explosion.

**Accidents - What To Do**

If an accident occurs while you are using a hazardous substance, refer to the product label for the appropriate first aid procedures. Follow the directions carefully. If it is necessary to take a child or adult to the hospital or a physician’s office because of an accident, be sure to bring along the container of the product that caused the injury. The information on the label will help the physician give prompt and proper treatment.

If no other person is close by and you are hurt or starting to feel sick, then do the following.

- **Household chemical splashed in the eyes.** Rinse out your eyes for 15 to 20 minutes in the shower or under a faucet. Then call your poison control center at 1-800-222-1222. You can also call 911 or your local emergency ambulance number.

- **Household chemical splashed on the skin.** Take off the wet clothing and rinse the skin for 15 to 20 minutes in the shower or under a faucet. Then call your poison control center at 1-800-222-1222.

You can also call 911 or your local emergency ambulance number.

- **Household chemical swallowed.** First, drink a half glass of water. Then call your poison control center at 1-800-222-1222. You can also call 911 or your local emergency ambulance number.

- **Poisonous gas inhaled.** Quickly get to fresh air. If any other person is around, they should not breathe the fumes. If you can, open all the doors and windows wide. If not, stay in the fresh air. Call your poison control center at 1-800-222-1222. You can also call 911 or your local emergency ambulance number.

Be prepared for any emergency in your home. Keep your local emergency number, local ambulance number, and the local poison control center telephone numbers on or next to your phone. All poison control centers now have the same telephone number—it doesn’t matter which state you live in. The number is 1-800-222-1222.


**Figure 4. A childproof safety latch on a cabinet door.**

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Jeans
JEANS

An estimated 450 million pairs of jeans are purchased every year, making them a staple of the American wardrobe. Indeed, jeans are the most widely produced piece of apparel in the U.S. Jeans have long been a cyclical market being driven in the main by factors such as employment conditions, productivity, fashion trends, lifestyle factors, and celebrity endorsements. Manufacturers and retailers are constantly challenged to maintain the market by staying on top of fads, changing tastes and consumer desires for different styles of jeans.

Every brand and every style of jeans will fit a little differently, but knowing what to look for will help narrow down the selection to just those jeans that will look great on you. The type of fabric, the cut of the jean and the details can all affect how jeans fit.

Denim is denim is denim -- or is it?

You may have thought that all blue jeans were cut from the same cloth, but this isn’t so. Variations in the weave, the fibers and the finishes all create differences.

Weave

• All denim is cotton twill -- a weave that has a slight diagonal to it, but that’s where the similarities end. Some denim is a left-hand twill (the diagonal on the dark side runs from lower right to the upper left), which has a very soft feel. A few types of denim have broken twill (the diagonal line changes directions). All other denim is a right-hand twill (the diagonal on the dark side runs from the lower left to the upper right), which is the most common and has a durable feel.

The cotton

• The quality of the cotton the denim is made of will affect the look and feel of the jeans. Fine cotton fabric is made from longer stands of the fiber, giving the jean fabric a softer feeling and a smoother look. High-quality cotton also lasts longer because there are fewer small fibers to rub off -- this is often what you are paying for when you buy premium jeans.

Dyes and finishes

• Most jeans are made of denim that was dyed before it was woven into cloth (this is also called “yarn-dyed”); other jeans are dyed after they have been constructed into jeans. Jeans dyed after construction may have a more saturated color, but it may also fade faster. Blue jeans are dyed with the familiar indigo blue, but there are new innovations in denim dyes all the time. For example, some manufacturers layer the indigo dye with a yellow sulphur dye to gives jeans an aged, dirty-on-purpose look.
• After the pants are constructed, many manufacturers put the jeans through finishing processes. A few terms you may see in product descriptions are:
  • Stonewashed: Jeans are washed with chemicals or actual stones -- usually pumice stones -- to lighten and soften the denim. Occasionally, you may even find a few small pumice stones in the pockets when you first put on your new stonewashed jeans.
  • Sandblasted: To give new jeans a broken-in appearance, the jeans are blasted with sand in areas where wear would occur naturally. This can sometimes lighten the denim, and lighter areas will draw attention to that body part. If you buy sandblasted jeans, make sure the light area is on a part you want to emphasize.
  • Whiskered: Crease lines, called whiskers, are created across the lap to look like the jeans have been sat in many times. Whiskers are printed on, sanded on or created with lasers. They are horizontal lines, so if you are worried about your legs looking too heavy, choose jeans with subtle whiskers or none at all.

Stretch

• Many people love stretch jeans, and for women with more curves, stretch denim can be very flattering. Women with flat rear ends will want to avoid stretch jeans, however, because the stretch will just emphasize the lack of curves.
What makes jeans fit differently?

Legs
- **Boot cut:** Boot cut jeans flare slightly at the bottom. The slight flare -- not a bell-bottom flare -- balances out large hips and heavy derrieres.
- **Wide leg:** With a fitted waist, wide leg jeans can be a stylish alternative to your other jeans.
- **Straight leg:** Straight leg jeans are not as baggy as wide leg jeans, but they share the same stovepipe shape that lacks any flare at the ankle. The straight line of straight leg jeans gives a long, lean look to your legs.
- **Skinny:** Skinny jeans are slim-fitting jeans that are narrow all the way to the ankle. These are the perfect jeans to wear tucked into a pair of boots because they don’t have extra fabric around the ankles.
- **Boy cut:** With slim hips that sit a little higher and with straight legs. Because of the relaxed fit, these jeans can be the perfect casual jeans, or you can cuff them to your calf and dress them up.

Rise
- The rise is the length from the crotch to the waistband. A standard rise is about 30 inches, while low-rise jeans -- also called hipsters, hip-huggers or low-cut jeans -- have about a 20-inch rise. Low-rise jeans can elongate a short torso, but on a long torso, they can be a bit too revealing in the back.

Seat
- As long as the seat of your jeans fits well and is flattering, a tailor can fix just about everything else. Even if you prefer other pants with a loose fit in the seat, choose jeans with a snug seat. The center seam gives definition to your curves. Back pockets make or break a backside.

Understand the Washes of Jeans
- Jeans come in a number of distinct cuts and washes. Figure out which are right for you before selecting the perfect pair of jeans.
  - **Stonewashed jeans:** have a lighter, more broken-in appearance.
  - **Dark jeans:** The deep indigo color of dark jeans make them the ideal jeans for a night out on the town.
  - **Distressed jeans:** Holes, shredding, and crinkles create the highly worn appearance of distressed jeans.

What does a consumer look for?

Seams
- Flat fell seams have two rows of stitching and are enclosed on both the outside and inside of the jeans. Seams of this type leave no open seam allowances to unravel during wear and laundering. Make certain the seams are neatly constructed and firmly stitched. Where seams are not flat fell, they should be serged (overcast with thread) to cover the raw edge and reduce raveling. Seams that join at the crotch and in the back should meet accurately for smooth contour, comfort, and durability of the garment.

Waistband
- A waistband made of two or more layers of fabric will reduce stretching in the waist area. If the jeans have no waistband, look for interfacing (an extra layer of firm fabric sewn into the waist seam for stability).

Reinforcements
- Look for thread bar tacks or rivets at places of stress like corners of pockets, belt loops and the bottom of the zipper placket.

Zipper
- The zipper will be more durable if the fabric on both sides has been turned under and stitched. Because denim fabric is so heavy, a metal zipper offers more durability than a nylon zipper.

Select the Right Jeans for Your Body Type
With so many designer jeans on the market, it’s important to do your homework and select the right pair of jeans for your body type.
- **Slim body types:** Slimmer body types look great in a variety of jeans. Look for jeans that run straight from the hips through the knee, with a slight flare at the leg opening. Low-rise jeans with a high back and lower front are another good choice. Or, if you’re looking for a snug fit, choose jeans that are tight around the waist and backside.
• Curvy body types: If you have great curves to accentuate, choose jeans that run straight from the hips through the knee with a slight or more generous flare at the leg opening. A wide boot-cut silhouette is also flattering.

• Athletic body types: If you have athletic legs and narrow hips, consider a low-rise jean with a contoured waistband. Legs that taper out to a graceful and generous boot cut are also flattering—but without giving you the retro bell-bottom look. Or, to give the appearance of wider hips and a fuller backside, choose a cigarette-style jean.

• Full-figured body types: Choose a traditional five-pocket-style jean that isn’t too snug and has a little give. Many jeans woven with spandex stretch nicely to your frame. Remember also that a slight flare at the leg opening, such as a boot cut, will help to balance a wider or fuller figure, as well as make your legs look longer. Always opt for jeans in darker shades, as they’ll have a naturally slimming effect.

Caring for your jeans - Here are a few ideas for denim care:

• Cold wash will keep the color darker, longer. Cold will also prevent shrinkage.

• Warm water will shrink jeans, but may get our tough stains. BEWARE: don’t wash jeans with whites unless you want to turn all your clothes blue!

• Air dry jeans for the least shrinkage and the least fading.

• Use a warm iron to get out wrinkles.

• Turn jeans inside out, to preserve the dark color.

• To keep white denim looking brand new wash in warm or hot water. Pre-treat stains and re-wash if stains are still visible before the drying cycle.

• Wash and dry your denim before hemming or altering.

• Consider dry cleaning very expensive jeans. The process will remove dirt but won’t affect the wash as much as a machine.
Fast Food
FAST FOOD MEALS

Fast foods are quick and easy substitutes for home cooking, and a reality with the busy schedules many families maintain. However, fast foods are almost always high in calories, fat, sugar, and salt.

Fast food used to mean fried food. However, today there are many more healthy alternatives available at fast food restaurants. Some restaurants still use hydrogenated vegetable oils for frying. These oils contain trans fats, which increase your risk for heart disease. Some cities have banned or are trying to ban the use of these fats. Now, many restaurants are preparing foods using other types of fat.

Even with these changes, it is hard to eat healthy when you eat out often. Many foods are still cooked with a lot of fat, and many fast-food restaurants do not offer any lower-fat foods. Large portions also make it easy to overeat, and few restaurants offer many fresh fruits and vegetables.

Before heading out, it is important to know your personal calorie limit. Staying within yours can help you get to or maintain a healthy weight. Most adolescents need 1800 (girls) to 2200 (boys) calories; however, knowing how many calories one needs is based upon age, sex, height, weight, and activity level. When choosing what to eat and drink, it’s important to get the right mix – enough nutrients, but not too many calories.

In general, eat at places that offer salads, soups, and vegetables. Select a fast-food restaurant that you know offers a variety of food selections that fit in your healthy eating plan. Along with that, the following tips can help you make healthier selections when dining at fast-food restaurants.

Check and compare nutrition information. Knowing the amount of calories, fat, and salt in fast foods can help you eat healthier. Many restaurants now offer information about their food. This information is much like the nutrition labels on the food that you buy. If it is not posted in the restaurant, ask an employee for a copy.

Have it your way. Remember you don’t have to settle for what comes with your sandwich or meal – not even at fast-food restaurants. Ask for healthier options and substitutions. Adding bacon, cheese, or mayonnaise will increase the fat and calories. Ask for vegetables instead, such as lettuce or spinach, and tomatoes. With pizza, get less cheese. Also pick low-fat toppings, such as vegetables. You can also dab the pizza with a paper napkin to get rid of a lot of the fat from the cheese.

Keep portion sizes small. If the fast-food restaurant offers several sandwich sizes, pick the smallest. Bypass hamburgers with two or three beef patties, which can pack close to 800 calories and 40 grams of fat. Choose instead a regular- or children’s-sized hamburger, which has about 250-300 calories. Ask for extra lettuce, tomatoes, and onions, and omit the cheese and sauce. If a smaller portion is not available, split an item to reduce calories and fat. You can always take some of your food home, and it is okay if you leave extra food on your plate.

Skip the large serving of french fries or onion rings and ask for a small serving instead. This switch alone saves 200 to 300 calories. Or, ask if you can substitute a salad or fruit for the fries.

Strive to make half your plate fruits and vegetables. Take advantage of the healthy side dishes offered at many fast-food restaurants. For example, instead of french fries choose a side salad with low-fat dressing or a baked potato, or add a fruit bowl or a fruit and yogurt option to your meal. Other healthy choices include apple or orange slices, corn on the cob, steamed rice, or baked potato chips.

When choosing an entrée salad, go with grilled chicken, shrimp, or vegetables with fat-free or low-fat dressing on the side, rather than regular salad dressing, which can have 100 to 200 calories per packet. Vinegar or lemon juice are also healthier substitutes for salad dressing. Watch out for high-calorie salads, such as those with deep fried shells or those topped with breaded chicken or other fried toppings. Also skip extras, such as cheese, bacon bits and croutons, which...
quickly increase your calorie count. If you forgo the dressing, you can find salads for around 300 calories at most fast food chains.

Opt for grilled items. Fried and breaded foods, such as crispy chicken sandwiches and breaded fish fillets, are high in fat and calories. Select grilled or roasted lean meats – such as turkey or chicken meat, lean ham, or lean roast beef. Look for meat, chicken, and fish that are roasted, grilled, baked, or broiled. Avoid meats that are breaded or fried. If the dish you order comes with a heavy sauce, ask for it on the side and use just a small amount.

Go for whole grains. Select whole-grain breads or bagels. Croissants and biscuits have a lot of fat. People who eat whole grains as part of a healthy diet have a reduced risk of some chronic diseases.

Slow down on sodium. Americans have a taste for salt, but salt plays a role in high blood pressure. Everyone, including kids, should reduce their sodium intake to less than 2,300 milligrams of sodium a day (about 1 tsp of salt). Adults age 51 and older, African Americans of any age, and individuals with high blood pressure, diabetes, or chronic kidney disease should further reduce their sodium intake to 1,500 mg a day.

When eating at a fast food restaurant, pay attention to condiments. Foods like soy sauce, ketchup, pickles, olives, salad dressings, and seasoning packets are high in sodium. Choose low-sodium soy sauce and ketchup. Have a carrot or celery stick instead of olives or pickles. Use only a sprinkling of flavoring packets instead of the entire packet.

Watch what you drink. What you drink is as important as what you eat. Teenagers often drink more carbonated and caffeinated beverages and eat more fast foods. This, along with peer pressure related to eating and exercise, make teenagers particularly vulnerable to becoming sedentary, overweight, and obese. An obese teenager has a greater than 70% risk of becoming an obese adult.

Many beverages are high in calories, contain added sugars and offer little or no nutrients, while others may provide nutrients but too much fat and too many calories. For example, a large regular soda (32 ounces) has about 300 calories. Instead, order diet soda, water, unsweetened iced tea, sparkling water or mineral water. Also, skip the shakes and other ice cream drinks. Large shakes can contain more than 800 calories and all of your saturated fat allotment for the day.

Drink water. This is a better choice over sugary drinks. Regular soda, energy or sports drinks, and other sweet drinks usually contain a lot of added sugar, which provides more calories than needed. Water is usually easy on the wallet. You can save money by drinking water from the tap when eating out. When water just won’t do, enjoy the beverage of your choice, but just cut back, avoiding the supersized option.

Don’t forget dairy. Many fast food restaurants offer milk as an option for kids’ meals, but you can request it! Dairy products provide calcium, vitamin D, potassium, protein, and other nutrients needed for good health throughout life. When you choose milk or milk alternatives, select low-fat or fat-free milk or fortified soymilk. Each type of milk offers the same key nutrients such as calcium, vitamin D, and potassium, but the number of calories are very different. Older children, teens, and adults need 3 cups of milk per day, while children 4 to 8 years old need 2 ½ cups, and children 2 to 3 years old need 2 cups.

The American Heart Association recommends some examples of healthier alternatives to common fast food picks.

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<td>Danish</td>
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<td>Jumbo cheeseburger</td>
<td>Grilled chicken, sliced meats or even a regular 2 oz. hamburger on a bun with lettuce, tomato and onion</td>
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<tr>
<td>Fried chicken or tacos</td>
<td>Grilled chicken or salad bar (but watch out for the high-calorie dressing and ingredients)</td>
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<tr>
<td>French fries</td>
<td>Baked potato with vegetables or low-fat or fat-free sour cream topping</td>
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</table>
Potato chips  Pretzels, baked potato chips
Milkshake  Juice or low-fat or fat-free milk or a diet soft drink (Limit beverages that are high in calories but low in nutrients, such as soft drinks.)

References
American Heart Association www.heart.org/HEARTORG/GettingHEalthy?nuritionCenter/DiningOut/Tips-for-Eating-Fast-Food_UCM_308412_Article.jsp

Choose My Plate Nutrition Education Series http://www.choosemyplate.gov/healthy-eating-tips/ten-tips.html
- Choose My Plate
- Make Half Your Grains Whole
- Salt and Sodium
- Make Better Beverage choices
- Enjoy Your Food, But Eat Less

Choose My Plate – Calories: How Many Can I Have?

Mayo Clinic
www.mayoclinic.com/health/fast-food/MY01268

National Institutes of Health – Medline Plus

US Department of Health & Human Services - Office on Women’s Health
www.girlshealth.gov/nutrition/fsatfood/fastfood_tips.cfm –

Checking Accounts
As you walk down streets of any major city or small town you are bound to pass a bank or two or three. With so many banks offering different options, including internet banks, it is hard to choose which one you should use. For the most part all banks will offer basic checking accounts. They will also offer saving accounts, long-term savings, certificates of deposit and many different types of loan options; house, car, small business loans, etc.

The big difference between each banks' basic accounts are the features: benefits, transaction limits, balance limits, etc. Every bank will do something a little different to try to attract your business.

**THINGS TO CONSIDER WHEN CHOOSING A CHECKING ACCOUNT:**

1.) Convenience: bank location, disability access and services, hours.
2.) Interest: does it pay interest on the balance.
3.) Electronic services: Internet banking, Automated Teller machines, Free online bill payment, electronic bank statements, etc.
4.) Pricing: account charges, fees for checks, services, or problems.
5.) Other useful services: such as a link-up with savings, other checking accounts, charge cards, financial counseling
6.) Personal relationship: courtesy, customer support.
7.) Bank is FDIC (Federal Deposit Insurance Corporation) insured

**WHAT TO LOOK FOR:**

**Account and check fees:**
Some banks charge a base monthly fee on all accounts; others charge for each check; still others have no charge up to a certain number of transactions. (such as 10 checks per month) and charge heavily after that. If you write a lot of checks, a monthly fee and no per-check charge is for you.

**Check Processing:**
Some banks put a “hold” on deposits that are personal checks, with a longer hold for out-of-state checks; others give you instant access to part of any deposit (for example, the first $100) but encumber some of your account balance until the check clears.

**Interest accounts:** You can make money on some checking accounts that earn interest on balances over a certain amount. Often these accounts offer other services like free safe deposit boxes, and traveler’s or cashier’s checks for maintaining minimum balances. These accounts sometimes cost more to maintain if your balance is below the minimum.
**Fees for services and problems:**
Some accounts provide you with overdraft protection or can be linked to a savings account for this purpose. Some have very steep fees for “bounced” checks (from you or written to you); others waive these charges if the problem is infrequent.

**Checks as records:** One advantage of using checks is that you have an automatic receipt (a canceled check) to record a transaction. Some banks send checks back with your monthly statement. Another option is to use checkbooks that have make carbon copies of the checks as you write them. Others copy them into a computer database, and destroy the originals. You may have to apply and pay a fee to get a copy or view them over the internet. Now, some banks offer this service for free, however, so shop around if this is important to you.

**SHOULD YOU CONSIDER ELECTRONIC BANKING?**
Electronic banking services can be especially useful for people on the go as well as disabled persons. Electronic banking includes: automatic deposit and bill paying, funds transfers, ATM/debit card services, telephone services, and personal computer / Internet access.

For people who do not like to carry cash or credit cards or for people with limited physical mobility, electronic banking can be a valuable asset in taking control of your money and your life.
- **Automatic deposit and bill paying:** Many employers will deposit your paycheck or benefits check directly into your account. It is convenient with less risk of loss. Many banks will also automatically debit your account for bills each month. Some banks charge fees and others offer this service for free. Compare banks to see what is offered.
- **Telephone services:** Most banks allow you to authorize certain transactions and access account information over the phone. Account information is usually free but fees sometimes are charged for transactions. You can access your account from anywhere with a touch-tone or cell phone. It is important to monitor your account, especially if you use electronic services for many of your transactions. You need to know if a specific bill was paid or if your check was deposited or to be sure your balance will cover a check.
- **ATM/debit cards:** The “Automated Teller Machine: (ATM) is another easy way to complete simple banking transactions such as deposits and withdrawals. ATM machines are usually conveniently located outside banks, shopping malls, supermarkets and convenience stores. They allow 24-hour access to your account so the possibility also exists for overspending and impulse buying.

**THE PERSONAL BANKING RELATIONSHIP:**
A personal relationship should definitely exist between you and the bank you choose. Once you have narrowed down your choices by the services that are offered, and the fees that are charged, a visit to the bank will tell you what else the bank offers. Talk to bank officers and get to know the tellers. Determine whether or not staff members go out of their way to help you work out problems. Does the staff ignore you, tolerate you, or welcome you? Are bank officers willing and able to advise you? Trust yourself as you choose a bank. You are the consumer, and you are in charge.
CHECK OUT THE CHECKING ACCOUNT

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Prepared By: Cheryl R. Varnadoe, Extension 4-H Specialist, Georgia 4-H, May 2013
Wearable Technology
What is Wearable Technology?
Wearable technology describes any electronic device that consumers can wear on their body. “Wearables” have currently grown to include items ranging from pedometers, watches, glasses, etc... Wearables can meet a variety of needs for consumers: fitness trackers, fashionable accessories, communication devices, sources for additional news and social media, etc.

How Does Wearable Technology Work?
Wearable gear in the form of watches, eyeglasses, and more, integrates the form and function of multiple devices. Most of these work in a similar manner. Multiple sensors capture changes in position, temperature, etc. and translate them into data. Then, microprocessors extract, transform, and load data to a transmittable format. Finally, transmitters wirelessly send data to cloud storage for further processing and reporting.

A Variety of Applications (& Apps)
Driven by the healthcare industry, the corporate sector, and consumer demand, the wide array and number of applications ranging from health and fitness monitoring to employee monitoring and safety will increase very quickly. According to PricewaterhouseCoopers, over 80 percent of consumers believe that an important benefit of wearable technology is its potential to make healthcare more convenient. Moreover, 68 percent said in exchange for lower health insurance costs, they would be willing to wear employer-provided wearables that streamed anonymous data to an information pool.

What are some different types of wearable tech?
Pedometers, fitness trackers, smart watches, smart glasses, and action cameras are all popular wearables. Pedometers are some of the original technology in this industry. While their main feature is only to track movements and steps, pedometers have historically been the most widely available and mass produced type of wearable technology. Fitness tracking wristbands are a more modern and complex device that built upon the success of pedometers. They measure and record data related to the wearer’s physical state and performance, such as heart rate, speed and distance traveled, sleep patterns, and more. Smart watches primarily tell time while also displaying information supplied by the wearer’s smartphone, such as email, SMS, call info, and media controls. Some smart watches also make and receive calls, take pictures, play games, and provide some of the features of a fitness tracker. Smart glasses can allow users to search the web, see maps, send messages, take photos, and play music, among many other features. Consumers need to make sure the glasses are both light and comfortable, and see if they come with either regular or sunglasses-style lenses. Rugged action cameras mount to a helmet, chest harness, or to the sporting equipment itself, capturing video under strenuous, adventurous conditions.
How can wearable tech help improve your health?
Fitness trackers gather in-depth information about wearers' physical activity that they would not otherwise know, helping them monitor their progress towards or away from their health, fitness, and athletic goals. Some fitness wearables sync with apps that help users stick to healthier eating and sleeping habits as well.

What are some important features to look for in an activity tracker?
A heart rate monitor, timer, GPS tracker, and convenient connectivity features are some basic essentials to consider. Although most fitness trackers monitor steps taken, the advanced models take speed and altitude into account. Accelerometers are small motion sensors inside wearables that detect the orientation of the device. By analyzing motion and GPS information, the device can assess if the user is sitting, standing, or running. Additionally, the accelerometers can be used to interact with apps and/or games. An attractive interface and automatic charting of performance data are both helpful. For example, some trackers convert physical activity to calories burned. A long-lasting battery is another advantage, as is a waterproof design for use while swimming.

The Future for Wearables
The future for wearables is very bright. The potential to help people get and stay healthy using wearables is huge. The other opportunity is for monitoring people with long-term chronic diseases, so that they may be medicated appropriately. We have only begun to see the power of wearables.

What Are the Risks?
There are three main categories of risks the wearable tech companies and consumers face:
1. Cyber risks. The data transmitted via wearables must be properly secured; otherwise, companies are at risk of class action lawsuits, costly fines, and injury to their reputation.
2. Bodily injury risks. Malfunctioning devices can cause injuries, illnesses, and even death to wearers or patients. Manufacturers of defective devices may even face product liability lawsuits.
3. Technology errors and omissions risks. Companies can be held liable for economic losses from the failure of their devices to work as intended.

What Consumers Must Do
Make sure that any wearable device you wear already has a good track record. Keep your own information protected by using strong passwords and changing them regularly. Ask the question, "Do I need another device (i.e.- a mobile phone) to make my wearable device have full functionality? Since the price of wearables can vary depending on the type of device, consumers must be aware of what features they most need in relation to the price for those features. The same goes for battery life. Consumers must look for a wearable that has enough battery life to meet their needs. They may consider: the type of charger needed, the length of time to a full charge, and if the device is still useable with a minimal or empty charge.
Bicycles
The bicycle has been around in various forms since the early 1800’s. Today’s bicycles are based on a design introduced in England in 1885. Bicycles are a study in physical science and physics. The main distinguishing feature of a boy’s bike is the metal bar connecting the handlebars to the saddle, which bicycles for girls usually do not have. The frame style of girls’ bicycles dates to the earliest years of bicycle design, when step-through frames accommodated the long skirts and dresses that women wore in the late 19th and early 20th century.

When selecting a bicycle you will need to think about how you will be using the bicycle. No matter which bicycle you choose, you still need to think about the things you need to be safe on your bicycle. Bicycles come in many shapes and sizes and everyone should be able to find a bicycle for their needs. Bicycles can be purchased used for a few dollars or you can spend thousands of dollars on a special built bicycle for racing.

Usually the more expensive bikes are made from lightweight expensive metals, like titanium and super strength steel or they have frames made with carbon fibers. These bikes usually weight less than 18 pounds.

**Bike Parts:**

The frame is the main part of a bike. It is a triangular shape, is very sturdy and can be found on all bikes. The top of the seat post is very important— the seat, or saddle, that you sit on. The crank is what you make go round and round when your feet are on the pedals. The chain and the chain rings are part of the system that helps transfer the energy from you to
make the bike go forward. The fork is what the front wheel is connected to. The rim is the outermost part of the wheel where the tire is. The spokes keep the wheel round. The valve stem is the part of the tube where you attach a pump to put air in the tire. Brakes are used when you want to stop. Lastly, the reflectors on the front (white), rear (red) and in your wheels are the part of the bike that help make you more visible to others.

**Saddles or Seats:** Seats come in a variety of shapes and sizes. Some are springy and wide while others are hard and narrow. Some have two little pads, one for each cheek and without the front part of the saddle.

**Wheels:** The bigger the wheel, the faster you go and the harder it is to turn the wheel. The smaller the wheel the slower you go, making it easier to push the pedal with one revolution of your leg. In one revolution of a small wheel, you go a short distance, but it is easier. In one revolution of a large wheel you go a further distance but it’s harder to push because you are covering more ground. The smaller the wheel the closer to the ground and more stable you are. The larger the wheel the faster you will go and the higher up you will sit.

**Handlebars:** The handlebars are what you use to steer the bike. If adjusted correctly, you should not have to stretch too far to put your hands on the handlebars. Your elbows should be slightly bent and you should be comfortable.

**Gears and Shifting:** A gear is part of a bicycle that helps with speed and ease of pedaling. The more gears you have the easier ride you will have while pedaling up and down hills and in rough areas like trails. Using bicycle gears allows you to pedal with the same amount of effort whether you are riding uphill, downhill or on the flat.

Old-fashioned bicycles had the pedals attached directly to the front of wheel. The wheel would be able to make one revolution only when the bicyclist’s feet on the pedals would make one revolution. Inventors then designed a bicycle with a big front wheel so the bicyclist could go a longer distance with each pedal revolution and coast. The bigger the front wheel, the further one could go per revolution. Next, they designed a bike with the pedals connected to the rear wheel by a chain. This new design allowed the bicycle with smaller wheels to travel farther with one revolution of the pedal. Today, all bicycles have at least one gear, providing for more efficient riding.

Gearing uses basic math ratios. For bicycle gears, the ratio is the number of teeth in the front divided by the number of teeth in the rear cog that is engaged. The ratio would be front teeth:rear teeth. A larger ratio indicates the pedal requires more force to turn. So, a ratio of 40:8 is harder to turn than 30:15. So in general, the “high gear” combination of the larger ring in the front and the smaller ring in the back makes it hard to pedal. The “low gear” combination of the smaller ring in the front and the larger ring in the back makes it easier to pedal.

There may be duplicate gears. If your front chain wheel has three rings and your rear cassette has eight rings, you have 24 gears. Yet, you will notice that some gears feel similar even in different combination of front and rear.
**Shift Levers:**
The Left shift lever controls the front derailleur and which chain ring your chain is on. It is not used as much as the rear derailleur. You will need to pay more attention when shifting with the front derailleur.

The Right shifter controls the rear derailleur. This is the fine tuning of the gear range. It is used most often to adjust to minor terrain changes. Two or three shifts down is equal to one shift down on the front derailleur.

Modern **Front and Rear Derailleurs** typically consist of a moveable chain-guide that is operated remotely by a cable attached to a shifter mounted on the down tube, handlebar stem, or handlebar. When a rider operates the lever while pedaling, the change in cable tension moves the chain-guide from side to side, "derailing" the chain onto different sprockets.

**Chain Rings:** Bicycles come with two or three chain rings. Three rings are for mountain biking and touring. These are low, medium, and high range or low and high for road bikes with two chain rings. The small ring is low gear for climbs, the middle ring for flat stretches and the big ring for descents. Bicycles today are available with as many as ten cogs on the rear and three chain rings up front.

**Pedaling:** Pedal at about 90 revolutions per minute both while climbing and descending. 90 rpm’s are faster than you think. Shift into an easier gear before you need it, before climbing instead of during one. You should use the same pedal force and cadence to climb as you do to descent.

**Brakes:** The brakes on a bicycle are the part that stops or slows the wheels. There are many types of brakes to choose from when purchasing a bicycle.

**Coaster brakes** are a type of brake that works by pedaling backward. This is a good brake for the beginning rider or the trick rider.

**Handbrakes** are engaged by a grip on the handlebars that engages the brakes. There are 4 types of hand brakes:
- Caliper brake move calipers inward toward the rim. A caliper brakes moves both sides of the caliper to the rim in one motion. Never pull the front brake without the back brake to avoid a head over heels crash. They don’t work as well as others when they get wet.
- Cantilever brakes have two separate arms one on each side of the rim. Cantilever brakes require less hand force to stop the bicycle than a caliper brake. One style is called the “V” brake or Shimano brake system.
- Hydraulic Disc brakes are a closed system of hoses and reservoirs containing a special hydraulic fluid to operate the brakes. A plunger pushes fluid into the caliper where pads push on the rotor and stop the bike. Advantages: system is closed to water, dirt and debris. There is a good feel at the lever and gripping power at the wheel. Disadvantages: Disc brakes must be inspected on a regular basis. Air bubbles in the system can cause the brakes to fail.
Drum Brakes are less common. They work by applying friction from a pad in an enclosed drum. The drum is a part of the wheel. Do not touch the hub of the wheel until it cools off. Drum brakes generate a lot of heat.

There are many styles of bicycles,

<table>
<thead>
<tr>
<th>Mountain Bikes</th>
<th>Trail Bicycles or Light Duty Mountain Bikes</th>
<th>Road/Distance bicycles</th>
<th>BMX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain Bikes are designed for &quot;off road&quot; riding. They also work great on paved and rocky trails because of their toughness. The big, knobby tires on mountain bikes give you good traction so you do not slip. On paved roads, the tires will make lots of noise. The handlebars are upright and straight so you can sit upright. They usually have a 26 inch tire and the frame sizes vary to match the size of the rider. Some mountain bikes have shock absorbing suspensions, lockouts, and disc brakes. They usually have 21 to 27 speeds to help along the trail.</td>
<td>Trail Bicycles or Light Duty Mountain Bikes are good for trails and roads. These bicycles are ideal for fun and family riding. The tires for kids trail bikes are 20-inches and 24-inches and for adults, 26-inches. Trail bikes have 21 – 24 gears. Their frames are not strong enough for mountain biking. The handle bars are upright.</td>
<td>Road/Distance bicycles are designed for use on roads and smooth trails. They are popular for commuting and exercising. They typically have a 27-inch tire. They are built for speed with narrow smooth high-pressure tires for a highly efficient ride. The handlebars are bent and the rider leans lower while riding to keep air from slowing the bike down. There can be many speeds. Road bicycles can be purchased with an aluminum frame which is lighter than steel.</td>
<td>BMX is often considered a stunt bicycle and needs a stronger lightweight bicycle frame for racing. The tires are usually 20-inch and are knobby. They are one-speed bikes with a short wheel and are mostly used for general purpose and dirt riding. BMX bikes have a single handbrake for the rear wheel. They have a light weight guard, kickstand and front and back wheel pegs.</td>
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</table>
BMX jumping bicycles are just like the regular BMX bike, but the frames and axels are heavy duty to make jumping safer. They have 48 spoke wheels. BMX jumpers need additional safety gear such as a full face helmet, shin pads, gloves, elbow and knee pads and wrist guards.

Free style or trick bicycles have handlebars that can spin around. The frame has pegs for the rider to stand on while performing tricks. They feature handbrakes for each wheel. The tires are 20" and have many spokes (48) to make the wheels strong. The tires on trick bikes are smooth. These bikes have only one speed.

Comfort bikes have 26 inch wheels and 7 to 24 gears. They are similar to mountain/trail bikes but are shorter from the seat to the handlebars (wheelbase) for more upright riding. Shock absorbing seat posts provide more riding comfort along with shock absorbing handlebar stems or telescoping shock absorbing front forks. They have wider softer saddles (seats) and wide pedals. They are ideal for comfortable recreational trails or commuting. Any bike can be used as a commuter bike, however with some adaptation. Commuter bikes also have a bell or horn, fenders, durable wheels and tires, lights and panniers.

Children’s bicycles have smaller wheels (less than 20-inches) and either coaster brakes or handbrakes. The handlebars are straight or bent. Children’s bikes have only one speed.

Recumbent bicycles are specially designed bicycles with 20 – 24 inch wheels and 21-100 gears which allow the rider to sit in a reclining positions with the feet forward. The seats are more like lounge chairs with less leaning forward. These bicycles sit low to the ground. They are made by specialty manufacturers and are very expensive. Recumbent bikes are available in a variety of shapes and sizes and from two to four wheels. People with back and neck problems like this type of bike.

Tandem Bikes or bicycles built for two are designed for on or off road as well as recumbent riding. Tandem refers to the in-line position of the riders. Because of the extra weight and stresses, tandem wheels may use a higher spoke count, sturdier rims, higher pressure tires, and a stronger freewheel.
Safety: make sure that the bicycle fits you now and it isn’t something that you will grow into. Be sure to follow the rules of the road, stopping at stop signs. Pay attention to those around you. You don’t want to hit someone and you don’t want a car to hit you.

Safety Gear: Remember professional bicyclists always wear safety gear. If you are just learning or are stunt riding you need knee and elbow pads and wrist guards too. Make sure you also wear good shoes. Flip-flops are not a good choice of shoes for bicycling because they do not protect your feet. Always wear a properly fitted bicycle helmet. It will protect your head from unwanted bumps and accidents on your bicycle.

Make sure your helmet fits properly and the pads hold it in place. Then get the side straps up under your ears. You should be able to put two fingers between the chinstrap and your chin. (see photo) In the last picture, you can see how a bicycle helmet should fit to protect all parts of your head.

Accessories: Your bicycle may have a light, a basket, a bell, a water bottle holder or any other item that will meet your needs as a bicyclist. Choose what you need, what you enjoy, and what you can afford.

The NDSU Extension Service does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names.

References:
Bicycle glossary www.sheldonbrown.com
League of American Bicyclists www.bikeleague.org
4-H CCS Bicycle Project for age 5
Consumer Reports www.consumerreports.org
Wikipedia www.wikipedia.com

This publication was revised by Brenda Bishop, New Mexico State University Quay County Extension Service Program Director in 2016 from North Dakota State University publications: 2007 Consumer Choices Study Guide Junior and Senior Bicycles and 2016 4-H Consumer Choices Study Guide Beginner Bicycles. Used with permission.

Originally publication was compiled and written by Julie Hudson-Schenfisch, NDSU 4-H Consumer Choices Coordinator 2006
Updated 2012 by Gail Slinde, Ward County Extension Agent and LoAyne Voigt, Renville County Extension Agent Reviewed and updated in 2015 by Linda Haug
Family Cruises
Cruises have become increasingly popular vacation choices. Cruises were the vacation spot for over 11 million people in 2013, and they contributed 21.21 billion dollars to the travel industry in the United States. There are currently 185 ships in the North American cruise industry. Families have plenty of options and can choose one that best meets their needs based on a variety of factors.

**What is the focus and purpose of the cruise?**
Even if all cruise lines may seem very similar at first, many focus on different experiences for different clients. These include spa, gourmet, mass appeal food and entertainment, physical activity, and families with young kids and/or teens.

Another consideration is the purpose of the cruise. Are you a member of a Type-A family that runs on rechargeable batteries and works off a checklist of vacation experiences? Will you be having a family reunion or another celebration on the trip? Would you like more activities or more down time? Would you like varied activities for each age group? These questions can help you narrow down what you are really looking for.

**Length of Cruise and Price:**
Part of picking the cruise is the time you want to spend away. Short cruises generally last from about three to seven days. Longer tours are usually those in Europe or the Mediterranean, which last from one to two weeks.

The length of the cruise, destination, the cruise theme and available activities all influence the cost of the cruise. Everything often comes down to the price for the average consumer. In many cases, cruises can be an extremely affordable travel option for multi-destination travel. However, prices can vary immensely. Check to see what is included in the price before booking. Often times, certain restaurants, events or off-ship excursions are left out of the price. However, some lines do offer all inclusive rates.

Another important consideration in price is room location: ocean view vs. interior. Those on a budget can save by booking an interior room. Size of the room is also important. Staterooms are the bedrooms of the ship. They are usually very small, as most people are only in their rooms to sleep. There are four types of staterooms: outside, inside, balcony and suites. Outside staterooms have windows or portholes that allow ocean views. Inside staterooms are the smallest, cheapest, and do not
have windows. Balconies allow guests to step outside on their own deck. Suites are the most expensive cabins, as they are larger, have separate living and sleeping areas, and are customized for guests.

When booking a cruise, always try to get the best room available in your budget. Picking a lower deck room on the outside or with a balcony will help you avoid seasickness, as the ship tends to rock less. Also try to book a room away from noisy common areas.

**Specifics for Family Cruises:**
Cruising has become hugely popular with families. The number of children onboard is growing steadily, and more than 2 million kids younger than 15 sailed on cruise lines in 2013, according to the Cruise Lines International Association. Yet, despite the great strides made by cruise lines in accommodating children onboard, choosing the best cruise for your family is still complicated. Where once it was a struggle to find ships that were kid-friendly, there are now many options including children’s activities, kids clubs, and much more on the newer ships.

Despite the advancements, some ships are still better for infants than others, and ditto for teens. Not all itineraries are created equal, either. Ships vary greatly, not just from line to line but within fleets, making some better than others in terms of onboard activities. Most recommend cruise lines’ newer ships because the facilities were designed for families from the outset, not just adapted.

Onboard programs and facilities for families continue to expand. Here are a few criteria to look for:

**Attention and space for babies, toddlers and small children:** Some lines allow tots as young as three months onboard, but most lines start at six to twelve months of age. Facilities may include nurseries for sailors up to three years old and water themed areas especially for youngsters still in diapers. Other options include family dining and whimsical decorations. Most family cruises do offer Kid’s Clubs for half or whole days as well as a wide variety of nighttime activities that allow parents and other family members to enjoy other events on their own.

**Attention and space for teens and tweens:** While many lines previously grouped all teens (ages 13 to 17) together, most new ships are giving tweens (ages 12 to 14) their own facilities. Teens-only programs incorporate a range of shipwide options, from spa treatments to shore excursions, and most programs allow them to come and go freely.

**Ships are catering to multigenerational families:** In addition to creating better spaces just for kids, lines are paying more attention to adults-only and quiet areas in an effort to please extended families. There’s a good reason for that. Multigenerational cruising continues to be a major draw, and lines can’t do enough to keep up.
- **Family staterooms and suites are within reach of more families.** Many cruise lines feature family accommodations. These cabins sleep five or six passengers.

"Megaship" has taken on a new meaning. Bigger ships offer more space, more activities and some pretty amazing features that would have seemed unthinkable several years ago. Where rock walls and miniature golf once seemed an extravagance, kids now have access to bowling alleys, elaborate water parks with massive slides, ropes courses, bumper cars, surfing simulators and outdoor movies.

- **Entertainment has been taken to a new level with themed cruises:** Families can opt special “themed” cruises during which they’ll get to meet characters and experience special events that go along with the cruise theme.

- **More outdoor spaces on newer ships are ideal for families:** Newer ships have more outdoor casual dining options, and outdoor play areas are being added to all of the kids clubs on may lines.

- **Dining options, food choices and times for families are increasing:** When you’re traveling with kids and teens, set dining times and show times can be tough. Ships are accommodating families with more flexible dining times, and special menus for tykes and teens that are offered in a variety of dining venues. This is a huge improvement over the “one buffet fits all” on many cruise ships. Check the meal plan carefully and make sure you know which meals and dining locations are covered in your cruise cost as well as those that may cost extra.

- **Check other family reviews and ratings:** Searching review and travel rating sites for comments from families who have sailed before you can often yield valuable information and tips that can assist you in narrowing down your choices.

By considering these options, your family can select the perfect cruise that fits their needs as well as the available budget. Bon Voyage!

Written by Cheryl R. Varnadoe, Extension 4-H Specialist, University of Georgia, Cooperative Extension 4-H, 2015

Appreciation to UGA Student, Aysha Babb.
References: CruiseCritic.Com, AARP Magazine
Toys
**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:

<table>
<thead>
<tr>
<th><strong>Acceptable Toys</strong></th>
<th><strong>Unacceptable Toys</strong></th>
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<tbody>
<tr>
<td><strong>Are safe.</strong> 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.</td>
<td><strong>Are dangerous.</strong> 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.</td>
</tr>
<tr>
<td><strong>Are durable.</strong> Toys are mauled, hugged, dropped, stood on, chewed on, washed and dried. They need to stand up to all this normal wear and tear.</td>
<td><strong>Are poorly constructed.</strong> Do not have proper labeling.</td>
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<tr>
<td><strong>Work like they’re supposed to.</strong> Nothing causes loss of interest as readily as a toy that fails to perform. It often results in frustration, anger and discouragement.</td>
<td><strong>Cause anger or frustration by not working properly.</strong></td>
</tr>
<tr>
<td><strong>Are appropriate for the child’s age.</strong> Toys should suit the physical, mental, and emotional abilities of the child. For example, an infant cannot 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.</td>
<td><strong>Are too mature for a particular child related to their physical, mental, and emotional abilities.</strong></td>
</tr>
<tr>
<td><strong>Stimulate creativity.</strong> The toy can be used in several ways and leaves room for imagining and learning.</td>
<td><strong>Have only one purpose and can be used only one way.</strong> Foster values the parents do not have. Cost too much.</td>
</tr>
<tr>
<td><strong>Capture the child’s interest and are fun.</strong> Children are drawn to appropriate toys and play with them spontaneously. Toys should reflect the child’s interests.</td>
<td><strong>Appear to contribute to misbehavior.</strong> They may stimulate too much excitement, aggression, or dangerous play.</td>
</tr>
<tr>
<td><strong>Involve interaction with others.</strong> Encourages or even requires others like friends, siblings, or adults to play along with.</td>
<td><strong>Offer little chance of interaction.</strong> 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.</td>
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<tr>
<td><strong>Can be kept clean easy.</strong></td>
<td><strong>Cannot be cleaned with soap and water.</strong></td>
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Toys, 1
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:

\[\text{WARNING: CHOKING HAZARD-with a description of the actual hazard} \]
\[\text{Not for children under 3 yrs or} \]
\[\text{Adult Supervision Required} \]

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.

Toys, 2
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.
<table>
<thead>
<tr>
<th>Age</th>
<th>Toys to Choose</th>
<th>Toys to Avoid</th>
<th>Age</th>
<th>Toys to Choose</th>
<th>Toys to Avoid</th>
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</thead>
<tbody>
<tr>
<td>Newborn to 1 year</td>
<td>• Brightly colored objects</td>
<td>• Toys with parts smaller than 1 ¼ inch</td>
<td>2 to 3 years</td>
<td>• Play dough</td>
<td>• Toys with sharp edges</td>
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<td></td>
<td>• Pictures within view but out of reach</td>
<td>• Toys with sharp edges</td>
<td>Explorative Age</td>
<td>• Large crayons</td>
<td>• Toys with removable parts</td>
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<td></td>
<td>• Mobiles that have objects attached with cords less</td>
<td>• Toys with detachable small parts</td>
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<td>• Pegboards with large pieces</td>
<td>• Small objects such as beads, coins, or marbles</td>
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<td></td>
<td>than 12 inches long</td>
<td>• Toys with toxic paint</td>
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<td>• Low rocking horses</td>
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<td></td>
<td>• Unbreakable toys that rattle or squeak</td>
<td>• Toys with cords more than 12 inches long</td>
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<td>• Sandbox toys</td>
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<td></td>
<td>• Washable dolls or animals with embroidered eyes</td>
<td>• Stuffed animals with glass or button eyes</td>
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<td>• Soft balls or different sizes</td>
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<td>• Stacking ring cones</td>
<td>• Balloons</td>
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<td>• Cars or wagons to push</td>
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<td>• Tapes or CDs with gentle music</td>
<td>• Flammable items</td>
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<td>• Simple musical instruments</td>
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<td></td>
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<td>• Simple dress-up items like hats, scarves, and shoes</td>
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<td>• Sturdy riding toys</td>
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<td>• Books that rhyme</td>
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<td>• Toys with sharp edges</td>
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<td>• Toys with removable parts</td>
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<td>• Small objects such as beads, coins, or marbles</td>
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<td>• Electronic toys</td>
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<td>• Tricycles with seats more than 12 inches high</td>
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<td>• Riding toys</td>
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<td>• Flammable items</td>
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<td>1 to 2 years</td>
<td>• Push and pull toys</td>
<td>• Small toys that can be swallowed</td>
<td>3 to 4 years</td>
<td>• Dolls with simple clothes</td>
<td>• Electronic toys</td>
</tr>
<tr>
<td>Investigative Age</td>
<td>• Books with cloth or stiff pasteboard pages</td>
<td>• Toys with small removable parts</td>
<td></td>
<td>• Balls, any size</td>
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<tr>
<td></td>
<td>• Nonglass mirrors</td>
<td>• Stuffed animals with glass or button eyes</td>
<td></td>
<td>• Non-electrical trucks, trains</td>
<td></td>
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<tr>
<td></td>
<td>• Take-apart toys with large pieces</td>
<td>• Toys with sharp edges</td>
<td></td>
<td>• Building blocks</td>
<td></td>
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<tr>
<td></td>
<td>• Blocks-foam, plastic, or cardboard</td>
<td>• Flammable items</td>
<td></td>
<td>• Toy telephone</td>
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<tr>
<td></td>
<td>• Nested boxes or cups</td>
<td></td>
<td></td>
<td>• Dress-up clothes</td>
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<tr>
<td></td>
<td>• Musical and chime toys</td>
<td></td>
<td></td>
<td>• Sturdy tea sets</td>
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<tr>
<td></td>
<td>• Floating tub toys</td>
<td></td>
<td></td>
<td>• Plastic interlocking blocks</td>
<td></td>
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<tr>
<td></td>
<td>• Pounding and stacking toys</td>
<td></td>
<td></td>
<td>• Blunt scissors</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Play dough</td>
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<td></td>
<td></td>
<td>• Washable markers, large crayons</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Sewing cards</td>
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<td></td>
<td></td>
<td>• Simple board games</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Books</td>
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Toys, 4
<table>
<thead>
<tr>
<th>Age</th>
<th>Toys to Choose</th>
<th>Toys to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 to 5 years</td>
<td>• Building blocks</td>
<td>• Toxic or oil based paint sets</td>
</tr>
<tr>
<td></td>
<td>• Simple construction sets</td>
<td>• Flammable costumes or ones that can be easily tripped over</td>
</tr>
<tr>
<td></td>
<td>• Modeling clay</td>
<td>• Kites made of aluminized polyester film</td>
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<tr>
<td></td>
<td>• Nonelectrical trains, battery operated toys</td>
<td>• Electronic toys (unless battery operated)</td>
</tr>
<tr>
<td></td>
<td>• Puppets and puppet theater</td>
<td>• Shooting toys and darts with pointed tips</td>
</tr>
<tr>
<td></td>
<td>• Finger paints</td>
<td>• Fireworks of any kind</td>
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<tr>
<td></td>
<td>• Stencils</td>
<td>• Hobby materials</td>
</tr>
<tr>
<td></td>
<td>• Board and card games</td>
<td>• Arts and crafts materials</td>
</tr>
<tr>
<td></td>
<td>• Simple musical instruments</td>
<td>• Musical instruments</td>
</tr>
<tr>
<td></td>
<td>• Small sports equipment</td>
<td>• Sports equipment</td>
</tr>
<tr>
<td></td>
<td>• Books</td>
<td>• Camping equipment</td>
</tr>
<tr>
<td></td>
<td>• Bicycles with 20 inch wheels and training wheels</td>
<td>• Construction sets</td>
</tr>
<tr>
<td></td>
<td>• Enjoy painting and drawing</td>
<td>• Sled, roller skates</td>
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<tr>
<td></td>
<td>• Enjoy building</td>
<td>• Sewing materials</td>
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<tr>
<td></td>
<td>• Are energetic and active in their play</td>
<td>• Simple camera</td>
</tr>
<tr>
<td></td>
<td>• Enjoy activities with a finished product</td>
<td>• Printing and stamp sets</td>
</tr>
<tr>
<td></td>
<td>• Develop keen interest in sports</td>
<td>• Paints, colored pencils</td>
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<tr>
<td></td>
<td>• Better understanding of rules and enjoy playing with others</td>
<td>• Sketch pad</td>
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<tr>
<td></td>
<td>• Kites made of aluminized polyester film</td>
<td>• Kites</td>
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<tr>
<td></td>
<td>• Shooting toys and toys with loud noises like cap guns</td>
<td>• Battery powered electronic toys</td>
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<tr>
<td></td>
<td>• Fireworks of any kind</td>
<td>• Jigsaw puzzles</td>
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<tr>
<td></td>
<td>• Bikes or skateboards without helmets</td>
<td>• Dominoes</td>
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<tr>
<td></td>
<td>• Arrows</td>
<td>• Board games</td>
</tr>
<tr>
<td></td>
<td>• Hobby materials</td>
<td>• Simple toy sets</td>
</tr>
<tr>
<td></td>
<td>• Enjoy many of the same types of toys as younger children with more complex</td>
<td>• Dolls</td>
</tr>
<tr>
<td></td>
<td>• Can learn math and problem solving skills through card and board games</td>
<td>• Web Resources for More Information on Selecting Toys</td>
</tr>
<tr>
<td>8 to 12 years</td>
<td>• Enjoy active and social toys</td>
<td>• Toys to Choose</td>
</tr>
<tr>
<td>Specialization of Tastes and Skills</td>
<td>• Enjoy many of the same types of toys as younger children with more</td>
<td>• Construction sets</td>
</tr>
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<td></td>
<td>• Can learn math and problem solving skills through card and board games</td>
<td>• Sled, roller skates</td>
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<td></td>
<td>• Enjoy active and social toys</td>
<td>• Sewing materials</td>
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<tr>
<td></td>
<td>• Hobby materials</td>
<td>• Simple camera</td>
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<tr>
<td></td>
<td>• Arts and crafts materials</td>
<td>• Printing and stamp sets</td>
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<tr>
<td></td>
<td>• Musical instruments</td>
<td>• Paints, colored pencils</td>
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<td></td>
<td>• Sports equipment</td>
<td>• Sketch pad</td>
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<td></td>
<td>• Camping equipment</td>
<td>• Kites</td>
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<tr>
<td></td>
<td>• Construction sets</td>
<td>• Battery powered electronic toys</td>
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<tr>
<td></td>
<td>• Electronic trains</td>
<td>• Jigsaw puzzles</td>
</tr>
<tr>
<td></td>
<td>• Bicycles (26 inch wheels for children age 10 and older)</td>
<td>• Dominoes</td>
</tr>
<tr>
<td></td>
<td>• Enjoy many of the same types of toys as younger children with more complex</td>
<td>• Board games</td>
</tr>
<tr>
<td></td>
<td>• Can learn math and problem solving skills through card and board games</td>
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<tr>
<td></td>
<td>• Enjoy active and social toys</td>
<td>• Dolls</td>
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</tbody>
</table>

Web Resources for More Information on Selecting Toys


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Understanding Children – Toys, by Lesia Oesterreich, Iowa State University, University Extension
Buying Age Appropriate Toys, The Nebline, University of Nebraska, Cooperative Extension
US Consumer Product Safety Commission,
  • Child Safety Protection Act Fact Sheet
  • The Dangers of Electric Toys
  • Toy Safety Shopping Tips

Turner, 2006
Backpacks
OUTDOOR BACKPACKS

The following is a general guide for which pack sizes (measured in liters) typically work well for backpackers during warm-weather hikes of varying lengths. Colder-weather trips usually require a larger pack, while ultralight backpackers may choose to go smaller than the recommendations here. (For more information, see our Expert Advice article on Ultralight Backpacking.)

<table>
<thead>
<tr>
<th>Length of trip</th>
<th>Pack capacity (liters)</th>
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<tbody>
<tr>
<td>Weekend (1–3 nights)</td>
<td>35–50</td>
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<tr>
<td>Multiday (3–5 nights)</td>
<td>50–80</td>
</tr>
<tr>
<td>Extended (5+ nights)</td>
<td>70+</td>
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</tbody>
</table>

Weekend (1–3 nights; 35–50 liters)

Efficient packers using newer, less-bulky gear can really keep things light on 1- to 3-night trips by using a pack in this range. Be aware that packing light requires self-discipline and careful planning. If you can pull it off, though, the light-on-your-feet rewards are fantastic.

Multiday (3–5 nights; 50–80 liters)

These are the most popular backpacking packs sold at REI, and they’re an excellent choice for warm-weather trips lasting 3 or more days. 50–80 liter packs are also used for backcountry skiing, for day trips, overnights and sometimes 2-night trips.

Extended-trip (5+ nights; 70 liters or larger)

Extended trips of 5 days or more usually call for packs of 70 liters or larger. These are also usually the preferred choice for:

- Winter treks lasting more than 1 night. Larger packs can more comfortably accommodate extra clothing, a warmer sleeping bag and a 4-season tent (which typically includes extra poles).
- Adults taking young children backpacking. Mom and Dad wind up carrying a lot of kids’ gear to make the experience enjoyable for their young ones.

Climbing Packs

REI also carries packs designed primarily as climbing packs. Most have modest capacities that are appropriate only for day trips or overnights. Common features include:

- The ability to strip down the pack to its minimal weight (removing the lid, framesheet and possibly the hipbelt) for use during a summit push.
- A narrower, sleeker, sometimes higher profile than a usual packbag, permitting unencumbered arm movement.
- Several lash-on points for external tool attachment.
- A daisy chain—a length of webbing stitched to the outside of a pack—to provide multiple gear loops for attaching a helmet or tools.
- A reinforced crampon patch (to prevent crampon points from gouging holes in the packbag).
- Gear loops on the hipbelt or low on the pack body, useful as clip-on points for gear or possibly as attachment points for skis.
- Shop REI's selection of backpacks.

Backpack Fit

Once you’ve chosen the type of backpack you want, the next step is to work with an REI sales specialist to expertly fit you to your pack.

The right fit is one that offers:
• A size appropriate for your torso length (not your overall height).
• A comfortably snug grip on your hips.

If you’re unable to work with a fit specialist in a store, you can enlist a friend and follow the directions provided in the REI Expert Advice article on Finding Your Torso and Hip Size.

**Torso Length**

Some packs are available in multiple sizes, from extra small to large, which fit a range of torso lengths. These ranges vary by manufacturer and by gender. Check the product specs tab for size details of a specific pack.

Other packs may feature an adjustable suspension, which can be modified to fit your torso, especially if you’re in between sizes. The drawback: An adjustable harness adds a little weight to a pack.

**Waist Size**

The majority of a backpack's weight, 80% or more, should be supported by your hips.

Backpack hipbelts usually accommodate a wide range of hip sizes, from the mid-20 inches to the mid-40 inches.

People with narrow waists sometimes find they cannot make a standard hipbelt tight enough and need a smaller size. Some packs offer interchangeable hipbelts, making it possible to swap out one size for another.

**Women-Specific Backpacks**

These are engineered specifically to conform to the female frame. Torso dimensions are generally shorter and narrower than men’s packs. And hipbelts and shoulder straps are contoured with the female form in mind.

**Youth-Specific Backpacks**

These typically offer smaller capacities and include an adjustable suspension to accommodate a child’s growth. Women’s backpacks, with their smaller frame sizes, often work well for young backpackers of either gender. So do small versions of some men’s packs.

**Additional Backpack Fit Adjustments**

**Load lifter straps**

Are stitched into the top of the shoulder straps, and they connect to the top of the pack frame. Ideally, they will form a 45° angle between your shoulder straps and the pack. Kept snug (but not too tight), they prevent the upper portion of a pack from pulling away from your body, which would cause the pack to sag on your lumbar region.

**Sternum strap**

This mid-chest strap allows you to connect your shoulder straps, which can boost your stability. It can be useful to do so when traveling on uneven cross-country terrain where an awkward move could cause your pack to shift abruptly and throw you off-balance.

For tips on pack loading, see the REI Expert Advice article on How to Load a Backpack.

**Backpack Frame Type**

**Internal-frame backpacks**

The majority of packs sold at REI today are body-hugging internal frame packs that are designed to keep a hiker stable on uneven, off-trail terrain. They may incorporate a variety of load-support technologies that all function to
transfer the load to the hips.

**External-frame backpacks**
An external-frame pack may be an appropriate choice if you’re carrying a heavy, irregular load. Toting an inflatable kayak to the lake or heading out to the backcountry with surveying tools? An external frame pack will serve you best. External frame packs also offer good ventilation and lots of gear organization options.

**Frameless backpacks**
Ultralight devotees who like to hike fast and light might choose a frameless pack or a climbing pack where the frame is removable for weight savings.

**Backpack Features**

**Main compartment access:**
- Top-loading openings are pretty standard. Items not needed until the end of the day go deep inside.
- Some packs also offer a zippered front panel that folds open exposing the full interior of the pack, or a side zipper, which also makes it easier to reach items deeper in your pack.

**Sleeping bag compartment**
- This is a zippered stash spot near the bottom of a pack. It’s a useful feature if you don’t want to use a stuff sack for your sleeping bag. Alternately, this space can hold other gear that you’d like to reach easily.
- Top lid: Many packs offer a zippered top lid where most backpackers store quick-access items: sunscreen, insect repellent, camera, snacks, map. Some lids detach from the main pack and convert into a hipbelt pack for day trips.

**Pockets**

**Typical offerings:**
- Elasticized side pockets: They lie flat when empty, but stretch out to hold a water bottle, tent poles or other loose objects.
- Hipbelt pockets: These accommodate small items you want to reach quickly—a smartphone, snacks, packets of energy gel, etc.
- Shovel pockets: These are basically flaps stitched onto the front of a packbag with a buckle closure at the top. Originally intended to hold a snow shovel, they now pop up on many 3-season packs, serving as stash spots for a map, jacket or other loose, lightweight items.
- Front pocket(s): Sometimes added to the exterior of a shovel pocket, these can hold smaller, less bulky items.

**Ventilation**
This can be a drawback of internal-frame designs. Much of the pack rides on your back, cutting airflow and accelerating sweaty-back syndrome. Designers have addressed this in a variety of ways—ventilation “chimneys” built into back panels, for example.

A few packs have engineered a suspended mesh back panel, sometimes called “tension-mesh suspension.” This is a trampoline-like design where the frame-supported packbag rides along a few inches away from your back, which instead rests against the highly breathable mesh.

**Padding**
If you’re using a lightweight pack with a fairly minimalistic hipbelt and lumbar pad, you can encounter sore spots on your hips and lower back. If this is the case for you, consider using a cushier hipbelt.

**Attachment points**
If you frequently travel with an ice axe or trekking poles, look for tool loops that allow you to attach them to the exterior of the pack. Rare is the pack that does not offer at least a pair of tool loops.
Backpack Accessories

Raincover
Pack fabric interiors are usually treated with a waterproof coating. Yet packs have seams and zippers where water can seep through, and the fabric’s exterior absorbs some water weight during a downpour.

The solution is a raincover, which could be a plastic garbage bag (cheap but clumsy) to a more customized packcover. If you expect rain on your trip, this is a good item to carry. An alternative: bundling gear internally in waterproof “dry” stuff sacks. Lightweight dry sacks can be a better option in windy conditions; strong gusts have the potential to abruptly peel a cover right off a pack.

Hydration reservoir
Nearly all packs offer an internal sleeve into which you can slip a hydration reservoir (almost always sold separately) plus 1 or 2 “hose portals” through which you can slip the sip tube.

Reference:
Formal Wear Rental and Purchase
Oh my gosh! It’s time for the biggest dance of the year at school. What will I wear?!?!?

Almost everyone has had a similar thought when a special event is about to happen. The selection of formal wear is associated with exciting times in our lives. We might be headed to a formal dance, a special party, a family wedding, or a number of other occasions that require formal attire. In addition to being exciting, it can also be overwhelming or scary...especially for the first time participant.

Formal wear or other special clothing can be either rented or purchased. Some rules are the same for both options, but others are different. So, how do you decide what to wear?

**Costs of Renting vs Buying**

In some situations, this decision is the easiest one to make. If you are part of a wedding party where everyone wearing tuxedos or dresses needs to look alike, then it is probably best to rent if that option is available. However, you can shop around for the best price for renting the same dress or tux or suit as many retailers carry the same or similar items. On other occasions, if you simply do not have enough money to purchase what you want, then renting may be your best option. Keep in mind, however, that buying an outfit does not mean that you have to buy something new. Thrift stores, garage sales, resale stores, outlet stores and other similar sources are available as well.

One way to determine whether to rent or buy is to consider the cost per wearing formula. It says that you divide the cost of the outfit by the number of times you will wear it to determine the cost per wearing.

For example, if you need a jacket that costs about $100, list the number of times you will be able to wear that jacket. If you see that you will wear it three times in the coming year before you outgrow it or become tired of it, then your cost of wearing that jacket is $100 divided by three...or about $33.33 per occasion. Compare that amount with the cost of renting a similar jacket. If it costs $25.00 per event to rent the jacket, then obviously it is less expensive to rent.

However, if you know that you can wear the jacket ten times before outgrowing it, getting tired of it, or having it go out of style, then you would divide $100 by 10. And, when compared with the $25.00 rental fee, that $10.00 per wearing makes it less costly to purchase the jacket.

If you plan to wear the jacket multiple times, you will probably want to include other costs such as dry cleaning in your total cost.
**Other Considerations for Renting vs Buying**

In addition to cost, there are other things to consider when making your decision to rent or buy formal wear.

**Style**

If making a purchase, you want to be sure that it can be worn for more than one occasion. You may even want to purchase something that is adaptable for different seasons of the year. For example, the fabric should not be too light for cool weather or too heavy for warm weather. If the outfit is sleeveless, it should have a jacket that can be worn with it during cooler months of the year. You may also want to consider colors that are neutral so your garment will be appropriate for any season or event. And, you will probably want something that is not too trendy so that it doesn’t go out of style before you have the chance to wear it again.

On the other hand, rented formal wear can be perfectly customized for the special event. You are not limited by the season of the year, the color or the latest style.

**Quality**

When buying a garment, quality is definitely a concern. If you are investing your money in an item, then you want something that will maintain its value for several wearing’s and be appropriate for several different occasions. It is important that your item will look good and last for as long as you plan to use it. Learning to judge quality in clothing and accessories will help you get the most for your money.

On the other hand, a rented garment only needs to hold up for the time you plan to wear it. Of course, you want something that is not damaged or flawed, but you don’t need to worry as much about overall quality and durability when renting an outfit.

**Budgeting Your Expenses**

Whether renting or purchasing clothing, one of the most important variables is how much money is budgeted for the item. Remember, a formal outfit includes more than just the tuxedo or the dress. You must also have shoes, jewelry and other accessories. You may even want to include extras such as flowers, meals, transportation and so forth in your costs.

In terms of budget, you should expect to pay anywhere between $50 for a conventional tuxedo rental to $200 for top-notch designer formalwear rental. For ladies, prices range greatly depending on the website or company you rent from.

By planning ahead for special events, you won’t be caught off-guard -- or left with empty pockets -- when the time comes. If you start by having a budget in advance of the occasion, you can set a goal for how much money you need and put aside some money at regular intervals to meet that goal. Planning ahead will also give you more opportunity to shop around for the right outfit, do some comparison shopping, take advantage of sales, and check out other available options.

**Making Payments**

The method you choose to pay for a rented or purchased outfit also makes a difference in the total
cost. If you plan ahead and start saving your money, you should be able to pay cash for your purchases or rented items. This payment method is the least expensive because it does not require any additional fees or finance charges. If you pay cash, be sure you get a receipt marked paid and keep it in a safe place. You will need that receipt in case you need to return or exchange the item, or in case there is a problem when you return the rented item.

You can also use a debit card, checks or money orders to pay for an item. These payment methods are basically the same as paying cash. Checks and money orders can be mailed while debit cards can be used to pay online on secured websites.

If you shop early and put your selections on layaway or reserve, there are probably no additional fees added to your bill. However, if you take the item out of the store before you have finished paying, you generally have additional finance charges.

Most people will choose to use a credit card if they don’t have enough money to pay cash at the time of purchase. If you use this method of payment, then be prepared to pay interest on your purchase unless you pay the bill in full when it arrives. These additional finance charges need to be part of your cost comparison formula in order to have an accurate accounting of your total expenses.

Regardless of the payment option selected, be sure you understand all of the conditions. In some cases, you will lose the money you have paid on a layaway if you fail to complete your purchase by a certain date or if you decide to change your mind about the item selected. Some merchants may require payment in cash, down payments, or deposits to place things in layaway or hold them in reserve. Just be sure that you ask questions and understand the agreements you are making before finalizing the transaction.

**Purchasing Formal Wear**

As with any other item you purchase, high price does not necessarily equal high quality. The following are criteria to use when judging the overall quality of an item:

**Fabric**

Testing the fabric in several small ways will help you determine the quality of the garment. For example, if you crush a corner of the fabric in your hand for about 30 seconds, how does it look when you release it? It the wrinkles remain, then it will wrinkle as you wear it.

Stretch a small length of fabric against a ruler and release it. It should return to its original length. If not, then it is likely to bag on you as you wear it.

Check the color of the fabric to be sure the dye is even. There should be no dark or light streaks in the color. And, if the item is a two-piece, be sure that they are perfectly matched colors.

Hold the fabric up to the light and examine it for flaws in the weave or snags in the knit.

Rub two pieces of the fabric together briskly. Watch for small balls or pills that may form. If you see them, it indicates that the fabric will pill when washed or worn.

**Construction**
Look at the seams inside the garment. If the material ravel easily, the seams should be finished in some way to keep them from raveling. Seams on curves should be firmly stitched and there should be no loose or hanging threads.

The material along the seams should not pucker or buckle. Thread used in the sewing should be a suitable color that is not easily seen.

Plaids, stripes, checks and other patterns should be matched at the seams, whenever possible.

Buttons should be securely attached and buttonholes should not be ragged. Buttons receiving regular use should fit easily into their buttonholes.

Zippers should be sewn securely in the garment, and the material along the zipper should not be puckered or buckled. The zipper should operate smoothly and remain closed at the top when slight pressure is applied.

Check lapels and collars. Seams connecting the under collar with the top should not be visible. The lapel should lay flat and not curl.

Hems should be a uniformed width around the bottom of the garment. They should lay flat hanging smoothly and evenly.

Expensive dress and men’s jackets will probably have a lining or partial lining. They should be sewn smoothly and should not pucker. Lining fabric is lightweight, but it should be firm and resist raveling. If a stretch garment is lined, be sure the lining also stretches.

**Merchants**

Another consideration when buying a garment is where to make the purchase. Can you shop at discount stores, special sales, resale stores, garage sales, thrift stores or outlet stores? If so, you may be able to save money on your purchase. If making an expensive purchase, however, it is important to buy from a reputable company in case you have problems with the item. Be sure to check their return policies and other procedures that will affect your transaction.

**Renting Formal Wear**

Renting formal wear is different than buying, so you have different criteria to consider when choosing this option.

**Accessories**

If you plan to buy accessories to go with your rented outfit, be sure that you will be able to wear them with other items you already own. Otherwise, you may spend a lot of money on something that is worn only once.

**Getting your choice**

Check with the companies in your area or the websites you have chosen to rent from to be certain
that you can reserve the particular formal wear you want. Prom and wedding season is hectic and the popular styles and sizes will likely be flying off the shelves. Be sure to find out that it will be available at the time you need it, in the color you want and in the style you choose. Don’t wait until the last minute. Ask if you will be wearing the exact same garment you try on in the store or if they have several of the same kind. You want to be sure you know what you are getting when you place your order. If renting from an online store, ask if they send two size choices to be certain one garment will fit properly.

You will probably want to pick up the item or receive the items in the mail as early as possible in case there are problems with your order or changes that need to be make. Be certain to look the garment over for damages, missing buttons, missing pieces and other potential flaws. Remember, rental clothes have been previously worn and laundered, so they may have more wear and tear than your clothes at home.

**Contracts**

Read the contract carefully and ask any questions you may have before signing it or agreeing to it. Be sure you know your rights and responsibilities when renting formal wear. Find out about deposits, alteration fees, and return deadlines. Determine if you need to have the item cleaned before returning it or if cleaning charges are included in the rental fee. Find out when the items need to be returned. Keep in mind, there may be additional fees for late returns. And, be sure you understand who pays for damages and your maximum out of pocket expenses for them. You are agreeing to a legal contract when you rent formal wear, and it is important that you read all the fine print and accept all the liabilities before you make the transaction.

Special events are meant to be fun times. Selecting the right outfit to wear will help you have the confidence you need to put your best foot forward.

Prepared by:
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Selecting Healthy Snacks
Snacks can help us meet the nutritional needs that may otherwise go unmet if only consuming three meals per day. Nutrient intake can be improved by including healthy snacks as part of your daily schedule. Learning about proper nutrition and how to read a nutrition facts label can help you make healthy snacking choices.

**Key Terms**
- **Cost per Serving** – The cost of one serving of a food item. The cost per serving can be determined by dividing the total cost of a food package by the number of servings indicated on the nutrition facts label.
  \[
  \text{Total cost / Total Number of Servings} = \text{Cost per Serving}
  \]
- **Daily Values (DVs)** – The amount of a nutrient needed daily as determined by the Food and Drug Administration.
- **Fiber** – the part of plant foods that cannot be digested. Fiber is beneficial because it reduces the risk of coronary heart disease, reduces constipation and promotes a full feeling.
- **Food Group** – The basic food groups are grains, fruits, vegetables, dairy, and protein.
- **Nutrients** – Substances the body needs to grow and function. The six classes of nutrients are: carbohydrates, protein, fats, water, vitamins and minerals. Carbohydrates, protein and fats are the only three nutrients that provide calories.
- **Nutrient-Dense Foods** – Those that provide substantial amounts of vitamins and minerals and relatively fewer calories.
- **Portion Size** – the amount of food eaten at one time.
- **Serving Size** – A standardized amount of a food, such as a cup or an ounce, used in providing dietary guidance or in making comparisons among similar foods.
- **Whole Grains** – Foods made from the entire grain seed, usually called the kernel, which consists of the bran, germ and endosperm. Nutrients found in whole grains offer protective health benefits such as reducing constipation, aiding in weight management and reducing the risk of heart disease.

**Reading Labels When Making Snack Choices**
To know what you’re getting from your snack, be sure to read the nutrition facts label. Try these tips to make smart food choices quickly and easily.
- Keep these low: calories, saturated fats, trans fat, cholesterol and sodium
- Get enough of these: potassium, fiber, vitamins A and C, calcium and iron
- Check for added sugars using the ingredient list.
- Use the % Daily Value (DV) column when possible: 5% DV or less is low, 20% DV or more is high

Additional items to look for on a Nutrition Facts Label include:
- **Serving size**: Look at the serving size and the number of servings per package. Then, determine how many servings you are actually consuming. If you double the servings you eat, you double the calories and nutrients. Remember, the serving size provided on the nutrition facts label is not a recommended amount to eat; it’s a way to let you know the calories and nutrients in a certain amount of food.

**Calories**: 2,000 calories is the value used as a general reference on the food label. However, the amount of calories you need each day depends on your age, gender, activity level and whether you are trying to gain, maintain or lose weight. Be sure to look at the serving size and how many servings you are actually consuming. If you double the servings you eat, you double the calories.

You can easily consume your calories on a few high-calorie food items, but you most likely will not get the vitamins and nutrients your body needs. Instead, choose nutrient-rich foods that are packed with vitamins, minerals, fiber and other nutrients but are lower in calories.
Look at the calories on the label and compare them with what nutrients you are also getting to
decide whether the food is worth eating. When one serving of a single food items contains 400 or
more calories, it is high; 40 calories is low.

Food packages also contain information about the amount of calories in the food, including various
claims, such as:
  • Calorie free – means there is less than 5 calories per serving.
  • Low calorie – means there is 40 calories or less per serving.
  • Reduced calorie or lower in calories – means there is at least 25 percent fewer calories than
the regular version.
  • Light or lite – means there is half the fat or a third of the calories of the regular version.

Remember that calories come from both food and beverages, so make your calories count!

**Sugars:** The 2015 Dietary Guidelines for Americans recommends consuming less than 10 percent
of calories per day from added sugars. Since sugars contribute calories with few, if any, nutrients,
one should look for foods and beverages low in added sugars. The Nutrition Facts label lists how
many grams of sugar the food contains, but does not list added sugars separately. The amount
listed includes sugars that are naturally present in foods and sugars added to the food during
processing or preparation. Although the body's response to sugars does not depend on whether
they are naturally present in food or added to foods, sugars found naturally in foods are part of the
food's total package of nutrients and other healthful components. In contrast, many foods that
contain added sugars often supply calories, but few or no essential nutrients and no dietary fiber.

High sugar snacks can serve as a quick energy boost but are followed by a drop in blood sugar,
which can cause you to feel hungry and tired. Read the ingredient list and make sure that added
sugars are not one of the first few ingredients. Some names for added sugars (caloric sweeteners)
include sucrose, glucose, high fructose corn syrup, corn syrup, corn sweetener, honey, dextrose,
fruit juice concentrates, lactose, maltose, malt syrup, molasses, maple syrup and fructose. These
added sugars provide calories but few or no vitamins and minerals.

The food package can also provide guidance. Sometimes the label will say “sugar-free” or “no added
sugars.” Even with these claims, it is important to read the Nutrition Facts label.

**Fats:** Look for foods low in saturated fats, trans fats and cholesterol to help reduce the risk of heart
disease. Most of the fats you eat should be polyunsaturated and monounsaturated fats. The Dietary
Guidelines for Americans (2015) suggest that a healthy eating pattern limits saturated fats and
trans fats. The guidelines also recommend that less than 10 percent of calories per day come from
saturated fats. Foods that are high in fats are usually high in calories.

Many food packages also contain various claims regarding the amount of fat in the food. Some
eamples of these claims are “fat free,” “low saturated fat” or “light.”

**Sodium:** Sodium is an essential nutrient and is needed by the body in relatively small quantities,
provided that substantial sweating does not occur. Reducing sodium intake can reduce one’s blood
pressure. Keeping blood pressure in normal range reduces an individual’s risk of cardiovascular
disease, congestive heart failure, and kidney disease.

The Dietary Guidelines for Americans (2015) recommends consuming less than 2,300 milligrams
(mg) of sodium per day. Most of the sodium people eat comes from processed foods, not from the
salt shaker. Take a look at the sodium content on the Nutrition Facts label, using it to make
selections that are lower in sodium. Use the % DV to determine the levels of sodium in the food
product – 5% DV or less is low and 20% DV or more is considered high.
Claims on the food packaging, such as “low sodium,” can also be used to quickly identify foods that contain less salt. However, such claims should still prompt a look at the Nutrition Facts label.

**Protein-Packed Snacks**
The idea of eating more protein has gained popularity in recent years. Some people may think the way to build body muscle is to eat high-protein diets and use protein powders, supplements and shakes. However, most of us get what we need from the foods we eat. Protein is in many foods that you eat, including snacks, and plays a key role in our bodies. They function as building blocks for bones, muscles, cartilage, skin, and blood. They are also building blocks for enzymes, hormones, and vitamins. They help build and repair all body tissue, build blood, and form antibodies to fight infection. Proteins are also digested more slowly and, therefore, act as longer lasting fuel.

Proteins are one of three nutrients that provide calories, supplying food energy at 4 calories per gram. To keep calories in check, it’s good to have higher-protein foods in place of other foods. For example, choose a glass of skim or low-fat milk instead of drinking a sweetened beverage and you’ll take in 8 extra grams of protein. You can add lean protein at any meal, but research has shown that adding it to your breakfast may be especially helpful. Lean protein incorporated into meals and snacks is also an easy strategy for working a hunger-fighting food into your diet.

The Dietary Guidelines for Americans recommends eating a variety of protein foods, including seafood, lean meats and poultry, eggs, legumes, and nuts, seeds, and soy products. While meat, in general, is a good source of protein, it can be high in fat. That’s why it is always good to check the Nutrition Facts Label for the saturated fat, trans fat, cholesterol, and sodium content of packaged foods. Processed meats have added sodium, so it’s best to choose lean turkey, roast beef, ham or low-fat luncheon meats. Eating peanuts and certain tree nuts (i.e. walnuts, almonds, and pistachios) may reduce the risk of heart disease when consumed as part of a diet that is nutritionally adequate and within calorie needs. Because nuts and seeds are high in calories, eat them in small portions and use them to replace other protein foods, like some meat or poultry, rather than adding them to what you already eat. In addition, choose unsalted nuts and seeds to help reduce sodium intakes.

**Energy/Power Bars**
A variety of what is referred to as sports bars, energy bars or power bars are offered at grocery stores and in vending machines. Marketing for these bars often leads many people to believe they can work wonders with some purported benefits including burning of fat, buildup of muscle, and improved athletic performance. In terms of nutritional benefits, it depends on the benefits you are looking for.

All energy bars provide energy because energy refers to calories. Energy bars were actually first developed for endurance athletes who had difficulty taking in enough calories to sustain them during their athletic endeavors. It’s true that they are a quick and convenient form of energy or calories. However, will these bars energize you? Probably not. If one has not eaten in a while and is feeling slightly fatigued, one of these bars may help take away that sluggishness, but so would a slice of whole wheat toast and a cup of skim milk or juice. However, if one is exhausted due to lack of sleep, for example, an energy bar won’t provide any more pep.
On the nutrition side of things, some energy bars contain over 400 calories (more than many candy bars) and up to ten grams of fat. For many people, this may be more than they need or want to take in before exercising. Many energy bars do contain added vitamins, minerals, amino acids, and other important substances, but they are not meal replacements. They do not contain natural fibers, phytochemicals, and high quality protein found in less-processed foods.

For a fraction of the cost, and just as convenient to eat, one might consider some other snacking options, such as:

<table>
<thead>
<tr>
<th>Granola bars</th>
<th>Bananas</th>
<th>Oranges</th>
<th>Carrot sticks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juice</td>
<td>Skim milk</td>
<td>Low-fat yogurt</td>
<td>Whole grain crackers</td>
</tr>
<tr>
<td>Graham crackers</td>
<td>Mini-bagels</td>
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Energy bars are not a replacement for a healthy lifestyle; it’s still important to eat a balanced diet, sleep, manage stress, and be physically active in order to achieve optimum performance. So rather than banking on bars, it’s important to be a smart consumer and consider your caloric needs, choose to eat a balanced diet, read energy bar labels carefully (checking for calories, fat and sugar content and think how they fit in with your overall diet).

**Nutritious Snacking Tips**

- Choose foods high in nutrients and low in fat.
- Eat snacks that include at least two food groups. For example, pair apple slices with cheese or a mini bagel with peanut butter.
- Plan ahead! Plan and pack snacks for when you are on the go so you can avoid less healthful snack choices such as chips and soda.
- Incorporate fruits and vegetables into your snacking plans.
- Aim for whole grain snacks, as at least half of your grains should be whole.
- Remember that calories come from both food and beverages. So, consider for overall, daily caloric needs when choosing snacks. Water and milk are your best beverage choices at snack time.

**References**

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Disaster Preparedness
We all see them on TV, natural disasters such as tornados, floods, fires, and hurricanes, which devastate small towns and parts of urban areas. You might have a matter of days or hours to prepare for such events, but other times they strike out of the blue. We don’t think that it will ever happen to us, in our town or our city — think again. These events are becoming more and more common, proving that no part of the country is immune to natural disasters. The Federal Emergency Management Agency educates and empowers Americans to take some simple steps to prepare for and respond to potential emergencies, including natural disasters.

One way to be prepared is to be equipped with the proper supplies that you may need in the event of an emergency or disaster. You can purchase emergency preparedness kits, or you can assemble one of your own.

The following is a list of some basic items that every emergency supply kit should include:

- Water: one gallon per person, per day (3-day supply for evacuation, 2-week supply for home)
- Food: non-perishable, easy-to-prepare items (3-day for evacuation, 2-week supply for home)
- Flashlight and extra batteries
- Battery-powered or hand crank radio (NAOO Weather Radio, if possible)
- First Aid Kit
- Medications (7-day supply) and medical items
- Sanitation and personal hygiene items
- Copies of personal documents (medication list and pertinent medical information, proof of address, deed/lease to home, passports, birth certificates, insurance policies)
- Cell phone with chargers
- Family and emergency contact information
- Extra cash
- Emergency blanket
- Whistle
- Dust mask (to help filter contaminated air)
- Plastic sheeting and duct tape (to shelter-in-place)
- Manual can opener
- Blankets or sleeping bags

Try to assemble your kit or purchase your kit well in advance of an emergency. Be sure it's ready to use. In a disaster situation, you may need to get your emergency supply kit quickly, whether you are sheltering at home or evacuating.

- Once you have gathered your supplies, pack the items in easy-to-carry containers.
- Clearly label the containers and store them where you can reach them easily.
- Remember that certain items, like medications and paper documents, need to be kept in waterproof containers.

Some additional information and related items found in the emergency kit include:

**Water**

Having an ample supply of clean water is a top priority in an emergency. Your supply kit should include a three-day supply of water, which is a gallon of water per person, per day. A normally active person
needs to drink at least two quarts of water each day. Water will also be needed for food preparation and hygiene.

To prepare the safest and most reliable emergency supply of water, it is recommended that you purchase commercially bottled water. Keep bottled water in its original container, and do not open it until you need to use it. Store bottled water in the original sealed container, and observe the expiration or “use by” date.

Fill your own containers of water. Use food-grade water storage containers, such as those found at surplus or camping supply stores. If you cannot buy this type of container, you can use 2-liter plastic soda bottles. Always completely clean your containers before storing the water. Do not use the following for water storage: Containers that have ever held anything poisonous, containers that can break easily (like those made of glass), containers without a tight seal, and milk jug-like containers (that can be hard to clean and are made of plastics that break down overtime).

Store all water in a cool, dark place in your home, office, and car. Replace water every six months.

**Food**

You will need at least a 3-day supply of food per family member, including pets. You may want to store more than this amount. Remember, it is better to have extra food that you can share than to run out of food during an emergency. Choose foods that last a long time, do not need to be refrigerated, and are easy to make. Also, try to pick items that are high in calories and nutrition.

Examples of suggested emergency food supplies:

- Ready-to-eat canned meats, fruits and vegetables
- Canned juices, milk, soup (if powdered, store extra water)
- Staples: sugar, salt, pepper
- High energy foods: peanut butter, jelly, crackers, granola bars, trail mix
- Foods for infants, elderly persons or persons on special diets (for example, diabetics or those with allergies)
- Comfort/stress foods: cookies, hard candy, sweetened cereals, lollipops, instant coffee, tea bags
- Vitamins

Make sure you have a manual can opener and disposable utensils.

**First Aid kits**

In any emergency, a family member or you may suffer an injury. If you have these basic first aid supplies you are better prepared to help your loved ones when they are hurt. Choose one that allows you to treat a range of problems, from small cuts or burns to ones that require major bandaging. We also suggest you get familiar with how to use the kit before you need to.

Knowing how to treat minor injuries can make a difference in an emergency. You may consider taking a first aid class, but simply having the following things can help you stop bleeding, prevent infection, and assist in decontamination:

- Two pairs of Latex, or other, sterile gloves (if you are allergic to Latex)
- Sterile dressings to stop bleeding
- Cleansing agent/soap and antibiotic towelettes
- Antibiotic ointment
- Burn ointment
- Adhesive bandages in a variety of sizes
- Eye wash solution to flush the eyes (or as a general decontaminant)
- Thermometer
- Prescription medications you take every day (such as insulin, heart medicine, and asthma inhalers. You should periodically rotate medicines to account for expiration dates)
- Prescribed medical supplies (such as glucose and blood pressure monitoring equipment and supplies)
- Non-prescription drugs:
  - Aspirin or non-aspirin pain reliever
  - Anti-diarrhea medication
  - Antacid
  - Laxative

Other first aid supplies:
- Scissors
- Tweezers
- Tube of petroleum jelly or other lubricant

**Battery Operated and Hand Crank Radios**

Because power outages frequently accompany emergency situations, choosing a reliable radio that does not require electricity is critical to the safety and welfare of your family’s emergency plan. Emergency radios should have the following features:

- Hand crank to charge a built-in battery,
- Easy enough for a young child to crank,
- Solar panel that can generate power during the day,
- At least a half-hour of play time,
- Equipped with a flashlight (which will use up the charge much more quickly), and
- Lightweight.

Some criteria for choosing an emergency radio include one that is:

- Easy to operate,
- Has an effective range,
- Inexpensive, and
- Readily available.

Added features available in emergency radios include:

- Four-way charging: AC/DC wall adapter, solar cell, self-contained hand generator and automobile charger;
- Ability to reach local and national news and weather reports;
- Ability to pick up weak signals; and
- Multi-band radio channels: AM/FM/SW (both short wave and broad bands that receive hundreds of channels worldwide may be helpful during emergencies).
According to Consumer Reports Magazine, important criteria for comparing emergency radios include:

- Price,
- Length of radio play (in minutes),
- Crank time (in minutes),
- Weight,

NOAA Weather Radio

NOAA Weather Radio is a service of the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce. Continuous weather information is broadcasted 24 hours a day, seven days a week, and originates from local National Weather Service offices around the country. When appropriate, other natural disasters and national emergencies are broadcasted as well.

NOAA Weather Radio provides up-to-the-second information on severe weather, such as severe thunderstorms, tornadoes, and flash floods. Many weather radio receivers are equipped with a tone alert feature that will sound an alarm when severe weather warnings are issued.

Weather band radios can be purchased from many retail outlets, including electronics, department, sporting goods, and boat and marine accessory stores. When purchasing a radio, consider one with a battery backup, which is crucial since power outages often occur during storms.

Keep it Fresh

Check the expiration dates on food, water, medicine, and batteries at least two times per year. It's extremely important that all items in your kit are functional at the time of an emergency.

- Store your kit in a convenient place known to all family members. Keep a smaller version of the Family Emergency Kit in the trunk of your car.
- Keep items in air-tight plastic bags.
- Change your stored water supply every six months so it stays fresh.
- Rotate your stored food every six months.
- Re-evaluate your kit and family needs at least once a year. Replace batteries, update clothes, etc.
- Ask your physician or pharmacist about storing prescription medications.

Resources

