



Study Guide

**Consumer Decision Making
2025-2027**

Athletic Wear

ATHLETIC WEAR

4-H Consumer Decision Making
Study Guide



Activewear

The activewear industry has witnessed significant growth in recent years, reflecting the increasing importance of sports and fitness in people's lives. With a worldwide market size of 303.44 billion in 2021, this sector shows no signs of slowing down. What began as clothing specifically designed for athletic pursuits has evolved into a diverse range of garments suitable for various physical activities. Today, activewear encompasses attire for sports and exercise and everyday routines that incorporate fitness elements. This surge in demand demonstrates the changing preferences and lifestyles of consumers who seek both comfort and functionality in their clothing choices. As the market continues to expand, the activewear industry is ready to offer a wide array of options to cater to the evolving needs and preferences of individuals worldwide.

Activewear or Sportswear is any apparel, including shoes, worn for physical activity or participation in sports. The fabrics and materials used in activewear are engineered to achieve the desired attributes for a particular activity. When selecting activewear, it is important to consider the type of activity you will participate in, activity impact level, your body type and if you will be using it indoors or outdoors. The right active wear can enhance your training and performance.

Brand-name activewear, including Under Armor, Nike, and Adidas, is popular with teens and adults. Private-label brands available in department and discount stores might be made of similar materials but cost less than the national brands.

CLOTHING

The right clothing can enhance your training and performance. Fabric and fit are most important when choosing clothing for specific sports or activities. Choose activewear that contains cotton, cotton blends and moisture wicking fabrics that will assist with moisture absorbency, ventilation, and comfort.

FABRIC

Fabrics are designed for different purposes. Some fabrics pull sweat away from your skin and others absorb it. When it comes to workout clothes, some choices are better than others on your workout.

Fabrics with wicking characteristics:

Wicking fabrics are breathable synthetic fabrics that provide moisture control for an athlete's skin during a mid to high intensity workout. The fabric "wicks" the sweat away from your skin which can help it evaporate quickly and keep your body cool.

Wicking fabrics tend to be soft, lightweight, and stretchy, making them an excellent choice for activewear. This broad category of fabrics is used to make garments like t-shirts, running and cycling jerseys, socks, and polo style shirts for any physical activity where the goal is to keep your skin as cool and dry as possible.

Moisture wicking fabrics are used to make apparel for outdoor activities such as hiking, fishing, mountain biking, snow skiing and mountain climbing.

There are products marketed for their wicking. Several fabrics are known for their wicking properties. Here are some common fabrics that offer wicking:

Polyester: Polyester fabrics are widely used in athletic and outdoor apparel due to their excellent moisture-wicking properties. They quickly pull moisture away from the skin and allow it to evaporate, keeping you dry during physical activities.

Nylon: Nylon is another synthetic fabric that offers good wicking properties. It is often blended with other fibers to enhance its moisture-wicking capabilities.

Merino Wool: Merino wool is a natural fiber known for its exceptional moisture-wicking properties. It can absorb a significant amount of moisture while still feeling dry to the touch. Additionally, merino wool has the advantage of being odor resistant.

Bamboo: Bamboo fabric, derived from bamboo pulp, has gained popularity for its softness and moisture-wicking abilities. It absorbs moisture from the body and allows it to evaporate quickly, making it a comfortable choice for activewear and undergarments.

Microfiber: Microfiber fabrics are made from extremely fine synthetic fibers, usually polyester or nylon. They have a high surface area, which helps in efficient moisture transport and quick drying.

Synthetic Blends: Many moisture-wicking fabrics are blends of different synthetic fibers. For example, a polyester/spandex blend can provide both moisture-wicking properties and stretch for enhanced comfort during physical activities.

It is important to note that the specific construction and treatment of the fabric, such as the addition of moisture-wicking finishes or mesh panels, can also affect the wicking performance. When selecting clothing for activities that involve sweating or moisture exposure, look for garments labeled as "moisture-wicking," "quick-dry," or "performance fabric" to ensure optimal comfort.

Cotton: Lacks the wicking properties that are found in other fabrics but can still be a good choice when choosing activewear. Cotton is breathable, soft, comfortable, and natural fiber that works well for lighter workouts. Cotton also tends to be less expensive than synthetic activewear. However, cotton is very absorbent and is slow to dry. When wet, cotton holds the moisture next to your body.

FIT

Choose activewear that fits your body and your workout. For example, if you are running or biking, avoid wide-leg or loose pants/leggings. Likewise, for activities such as yoga or Pilates, choose stretchy, fitted fabrics. Additionally, avoid fabrics that could chafe or irritate your skin during repetitive movement.

Pay close attention to fit more than size because some workout clothes tend to run smaller and more from fitting than regular clothes.

COST

There are many factors to consider when shopping for activewear. You may be surprised at how much activewear costs. Paying the top dollar does not necessarily mean that you will get the best activewear for you. Be sure that whatever price you choose to pay for activewear it is the right activewear for you and that it meets the needs you desire.

ATHLETIC SHOES

With the many types of athletic shoes that are available, it can be hard to choose the right shoes for you. There are differences in design and variations in material and weight. The American Academy of Orthopedic Surgeons says that these differences have been developed to protect the areas of the feet that encounter the most stress in a particular athletic activity. Let's review some of the several types of sports shoes available.

Athletic shoes

Athletic shoes are grouped into the following categories: **running, training, and walking**; they include shoes for hiking, jogging, and exercise walking. These shoes should have a comfortable soft upper, good shock absorption, smooth tread, and a rocker sole design that encourages the natural roll of the foot during the walking motion.

Running Shoes

Running and walking shoes might look similar, but there are significant differences. Traditional running shoes provide extra cushioning, because landing can generate a force of 1½ to 3 times your body weight. They should also provide easy flexing at the ball of the foot and enough stability. The outsoles should be durable and provide good traction on pavement or dirt. Features of a good jogging shoe should include cushioning, flexibility, control, and stability in the heel counter area, lightness, and good traction.

Be aware that longer distances typically call for more support. A shoe worn to run sprints is typically a lightweight minimalist shoe worn for its quick feedback and responsiveness. While a marathon shoe has much more cushioning and support for the longer runs. As a rule of thumb an increase in distance and or time on your feet calls for more cushion and support. Nurses typically wear marathon shoes as they must be on their feet all day moving around.

Cross-Trainers

Cross-trainers are all-purpose shoes that bridge walking shoes and sport-specific shoes like tennis or basketball shoes. They can be a money-saving alternative to several pairs of specialized shoes for people who pursue a variety of activities, but they don't provide the same flexibility or cushioning for running or other high-impact sports. A good cross trainer should have flexibility in the forefoot that you need for running, in addition to stability on the inside and outside of the shoe for the control needed for aerobics and tennis.

Walking Shoes

These are best for people who walk for fitness or who want casual shoes for everyday walking. They should provide enough cushioning to be comfortable. And their flexible soles, designed for the relatively low impact of walking, allow the foot to roll easily from heel to toe. Walking shoes should flex easily at the ball of the foot, which helps feet to push forward.

Sport Specific Shoes

Court sport shoes

Include shoes for tennis, basketball, and volleyball. Most court sports require the body to move forward, backward, and side-to-side. As a result, most athletic shoes used for court sports are subjected to heavy abuse. The key to finding a good court shoe is the sole. Another key factor is grip. A shoe worn for tennis must grip onto the clay surface while a basketball shoe must grip onto a hardwood court. You should ask a coach or shoe salesperson to help you select the best type of shoe for your sport.

Field sport shoes

Include shoes for soccer, football, and baseball. These shoes are cleated, studded, or spiked. The spike and stud formations vary from sport to sport, but they generally are replaceable or detachable cleats, spikes, or studs affixed into nylon soles. Soccer cleats are lightweight allowing the user to reach maximum speed and agility. Football and baseball cleats are heavier weight allowing the user to grip onto the turf/dirt field. Football and baseball cleats also have more spikes than soccer cleats allowing them to maintain a better grip

Track and field sport shoes

Are very specific to the sport. The needs of the individual are most important when picking the shoe. For example, foot types, gait patterns, and training styles should always be considered. It is always best to ask a coach about the type of shoe that should be selected for the event in which you are participating. Proper fitting sports shoes can enhance performance and prevent injuries.

Follow these specially designed fitting facts when purchasing a new pair of athletic shoes:

- Try on athletic shoes after a workout or run and at the end of the day. Your feet will be at their largest.
- Wear the same type of sock that you will wear for that sport.
- When the shoe is on your foot, you should be able to freely wiggle all your toes. There should be a thumb's width from the tip of the toe to the end of the shoe.
- The shoes should be comfortable as soon as you try them on. There is no break-in period. If they are not comfortable in the store, they will not be comfortable when you are exercising.
- Walk or run a few steps in the shoes. They should be comfortable. The heel of the shoe should not slip off the foot as you walk or run.
- Always re-lace the shoes you are trying on. You should lace through each top eyelet as you crisscross the lacing pattern to ensure a snugger fit and decrease slippage. Do not tie the laces too tight as this may cause injury to the nerves or tendons on the top of the foot and ankle.
- There should be a firm grip of the shoe to your heel. Your heel should not slip as you walk or run.

Athletic Shoe Features

Like other products, it is important to know the different parts and features of the shoe. This way you can appropriately identify the parts of the shoe and feel confident in knowing what you are purchasing.

The Sole

Three layers comprise the sole. The bottom layer, or outsole, is generally made of carbon rubber for durability. It is segmented for flexibility and grooved or patterned for traction. The squishy middle layer, or midsole, provides most of the cushioning. It is usually made of shock-absorbing foam and might incorporate gel or air sacs and plastic torsion supports. The layer directly underfoot, the insole or sock liner, provides some additional shock absorption and arch support. It is removable and washable in many running and walking shoes.

The Upper

This is the body of the shoe, the part above the sole. The toe box—the forward part of the upper—should be roomy enough to let your toes spread and leave a half-inch space ahead of your longest toe. The heel counter at the rear should keep your heel from slipping excessively. These days, the uppers on most running shoes are made of synthetics, though some walking shoes still use leather. The more your feet sweat, the more you will appreciate the breathability of mesh. But if you plan to be outside in the cold weather, a less porous material will provide a little more protection.

Lacing

Fabric, plastic, or metal speed-lacing loops make tightening easier. Extra top eyelets provide a snug fit at the ankle. Flat laces are less likely to loosen or come untied than round ones.

Style

If you are on your feet a lot all day long, you might want shoes that combine the comfort and support of a walking shoe with something dressy enough for the office. Unfortunately, the dressier walking shoes tested in the past did not perform as well, overall, as the ones that look like sneakers.

Reflectors

If you jog or walk at dawn or dusk, reflective tabs on the uppers can provide extra safety by reflecting cars' headlights. The reflector should be as big as possible, especially if you will be outside at dusk or dawn.

Heel to Drop

Also known as the Shoe Offset, Heel differential, or HTD. The HTD refers to the height difference between the heel and the forefoot of an athletic shoe. It is measured from the base of the heel and the middle point of the forefoot. It is measured in millimeters in running shoes. In general, a 0mm drop is called natural or barefoot running. Low drop shoes are common for trail running. The most common drop range for most running shoes is 10-12mm. A shoe with a higher drop will be easier on the lower leg, foot, ankle, Achilles, and calf while directing more stress to the knees and hips. A lower-drop shoe will typically spare the knees but put more stress on the lower leg.

Low Drop-Trail Running	1-4mm
Mid Drop- Minimalist Running	5-8mm
High Drop-Running/ Long Distance	8+mm

Pricing

In addition to being overwhelmed by all the choices of athletic shoes, you may be surprised at how much they cost. Slick ads and television commercials tout technological features, the latest gimmicks, and shoes named after sports celebrities. Paying more than \$100 does not necessarily get you a better shoe. Good quality shoes may be pricey, but don't overlook the less expensive shoes because they can outperform their costlier brandmates. Be sure that whatever price you decide to pay for the shoes, it's because the shoe has the features that meet your needs—not because it is a certain brand or has a sports celebrity's name on it.

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Beverage Appliances

Brewing Coffee

BREWING COFFEE

4-H Consumer Decision Making
Study Guide



Brewing Coffee

Coffee is always changing and evolving – whether by roast profile, seasonality, or geography, there’s always something new, different, and exciting to taste. For many people, they cannot start their day until they have had their first cup of coffee. Making coffee at home has benefits – like using beans you like, adding flavoring if desired, and lets you use your favorite mug. It also saves you money!

When choosing a coffee maker for home, there are a variety of things to consider.

- **Convenience:** When choosing a coffee maker, it is important to consider how you want your coffee experience in the mornings. Some may want a more of a hands-off experience that can be made in minutes by pushing a button. And others may want to have a more hands-on experience that can turn the brewing experience into a morning ritual and allow for more control over the end result.
- **Type of Coffee:** It’s important to decide on the type of coffee that you are wanting to make with the coffee maker. If you prefer an iced coffee over hot coffee, then you want to look for a coffee maker that can make a cold cup of coffee. Some coffee makers have multiple functions – like brew over ice or are a hybrid machine that includes multiple kinds of coffee.
- **Brew size:** Determining how much coffee you are wanting to make in the coffee maker will also help you decide the kind to purchase. If you don’t drink a lot of coffee, then a single cup coffee maker may be what you are looking to get. Counter space may also be part of your consideration.
- **Extra Features:** Some coffee machines have added features, including programming time to brew, keep warm or auto shut off. Higher end machines might include features like milk frothing and bean grinding.
 - **Programmable settings:** Do you want to just set your coffee up to brew and leave it? As we previously mentioned, some coffee makers will let you determine the settings in advance based on what you like and automate it for future use. From the amount of coffee brewed to the time in which it gets brewed, programmable settings can come in handy for a wide variety of situations.
 - **Built-in grinder:** Do you prefer your coffee grounds fresh? Depending on who you ask, freshly ground beans produce a better tasting cup of coffee. Having a grinder ensures that you are always using the freshest ground beans. Of course, you can always buy a coffee grinder separately, but having one that is built into your coffee maker adds convenience and helps you save counter space.
 - **Automatic shutoff:** We have all experienced that early morning rush and forgot something important while running out of the house. With the auto-shutoff feature, you can ensure that your coffee pot gets turned off and is not running all day long. This allows you to focus on what is truly important for your day, all while you have a cup of coffee in hand.
 - **Multiple warmers:** For offices or commercial settings where making multiple pots at a time is often convenient, a coffee maker that has multiple warmers to keep each pot hot is worth considering.
 - **Water filter:** Some high-end coffee makers will come with a water filter to help ensure that the flavor comes out just right. This is one of the more popular features that people consider when it comes to buying a coffee maker.

- **Size and height considerations:** Factor in counter space when choosing your model. If you plan to put your coffee maker on your kitchen countertop, be sure to measure the height available in your space. Many of the coffee makers require additional space above them to allow room for pouring water into the reservoir. Another factor is how much space are you willing to dedicate to a coffee machine.
- **Temperature feature:** The ideal brewing temperature for a pot of coffee is 196°F to 205°F, therefore if you're really into (good-tasting) coffee, you will want to make sure that you buy a machine that can brew at high heat. Hint: Most top-of-the-line machines will list their brewing temps on the box or online.
- **Price consideration:** When it comes to price, there is a notable range of several hundred dollars between the most and least expensive models.

Types of Coffee Makers

Drip coffee makers can come in a variety of shapes and sizes, but when you hear someone talk about making a pot of coffee (e.g., several cups at once), they are usually going to be using a coffee brewer. Their simplicity makes them easy to use, durable and capable of quenching a caffeine thirst for a large family of coffee drinkers, or the college student studying for exams.

Parts of the Drip Coffee Maker

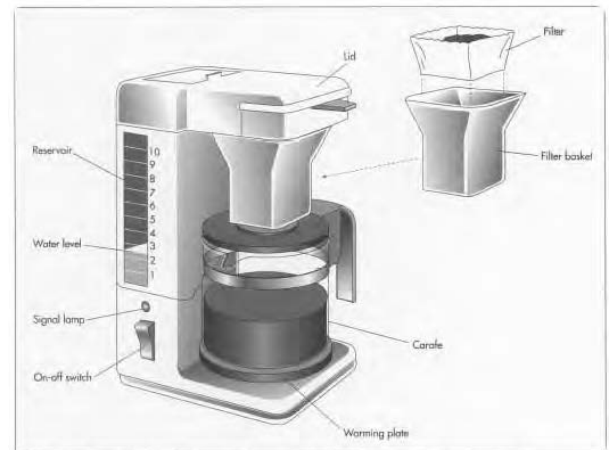
There is a **reservoir** that holds the water when you pour it into the pot at the start of the coffee-making cycle. Then the water flows through the one-way valve, into the aluminum tube in the heating element, and then partially up through the tube.

In the **shower head**, water arrives here from the hot-water tube and is sprayed over the coffee grounds. In some coffee makers, the water comes out of the hose onto a perforated plastic disc, called the drip area, and simply falls through the holes into the coffee grounds. The hot water flows through the ground coffee beans, picking up their oil essence on the way down into the coffee pot. This coffee oil, released during the roasting process, is called **caffeol**.

The **filter basket** holds the filter and the desired amount of coffee grounds. At the bottom of the filter basket there is a hole, which allows the water to drain through into the **carafe**.

The **carafe**, which is usually glass or insulated, holds the coffee on the warmer to keep the coffee at a desired temperature.

On the base of the coffee maker is the **heating element**. This component is comprised of an aluminum extrusion with two parts: a resistive heating element and a tube for water to flow through. When you turn on the switch, the resistive heating element starts heating the aluminum tube and eventually the water in the tube boils.



In an automatic drip coffee maker, a measured amount of cold water is poured into a reservoir. Inside the reservoir, a heating element heats the water to boiling. The steam rises through a tube and condenses. The condensed water is distributed over the ground coffee in the filter through a device like a shower head. The water flows through the filter, infusing with the coffee, and falls into a

<http://www.madehow.com/Volume-3/Automatic-Drip-Coffee-Maker.html>

The resistive heating element and the aluminum tube heat the water. The heating element has two jobs: When you first put the water in the coffee maker, the heating element heats it. Once the coffee is made, the heating element keeps the coffee warm.

Benefits:

- Extremely easy to use
- Affordable to buy and use on a daily basis
- Very convenient, as it makes a whole pot of coffee at once
- Lots of options for different models, shapes, sizes and brands
- Offers easy flexibility in brewing the best-tasting coffee for your taste buds

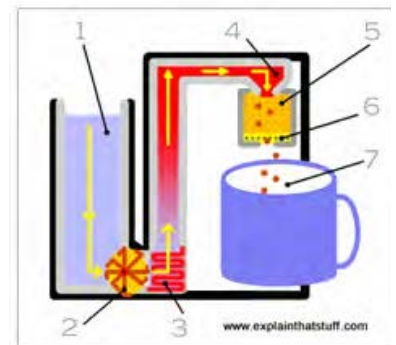
To Keep in Mind:

- Only makes basic coffee. Nothing fancy, and likely will not be satisfactory for those that prefer espresso drinks.
- Makes a lot at once. While a benefit, there may be instances where you end up wasting a lot of coffee.

Single-serve pod coffee machines have gained popularity due to their efficiency and ease in using. They rely on grounds held inside “pods” or “capsules,” which are usually produced by the same company that makes the machine. These force water through a small packet, either a hard-shelled capsule (also called pods) or a soft packet resembling a tea bag. Some brewers accept an adapter that takes your favorite loose grounds. Pod machines are more expensive to operate than other types because you need to buy special coffee refills. With plastic pods, there is also a lot of unrecyclable waste.

Parts of the **single-serve pod coffee** machine:

1. The **water reservoir** is what holds the water when you pour it into the pot at the start of the coffee-making cycle.
2. The **pump** at the bottom of the machine sucks the water and pumps it through the machine.
3. The water heats up to the perfect temperature as it flows up past the **heating element**.
4. The water is pumped through a narrow **needle sprayer** to increase its pressure.
5. The hot, high-pressure water pumps through the ground coffee in the **pod**, releasing the flavor.
6. A piece of **filter paper** at the bottom of the pod stops the coffee grounds from falling through into the coffee.
7. Coffee drips through into your **personal coffee cup**.



Benefits:

- Extremely easy to use and clean
- This type of coffee maker is usually very affordable
- Coffee pods come in many flavors
- Less waste of coffee if you only want to drink one cup at a time
- Great for offices, as co-workers can brew coffee precisely to their taste Will also brew tea or other hot beverages (cider pods, hot chocolate pods, etc.)

To Keep in Mind:

- Buying individual pods will get expensive over time
- Not great for the environment, because constant use and disposal of K-cups will produce a lot of plastic trash over time

French Press coffee makers have a smaller footprint as they don't take up as much space and can be stored in a cabinet when they aren't being used. French presses brew coffee by pouring hot water over coffee grounds, then plunging the grounds to filter them out. They don't use a paper filter so more of the oils inside the coffee bean are in the brew. The oils are what gives the coffee its taste. With a French Press you are in control of the water temperature and brewing time. This gives the user more freedom to experiment to find the kind of coffee they prefer. These type of coffee makers are simple to use and don't require a lot of skill to get a great result.



<https://thedarkestroast.com/how-to-use-a-french-press/>

Benefits:

- Don't require electricity to brew a cup of coffee.
- Coffee can be made anywhere with hot water
- Brewing method yields a rich and delicious tasting coffee
- Compact and portable which makes it easy to travel with, if desired
- Easy to use

To Keep in Mind:

- Can be more time consuming than other methods
- In most French Press models, the coffee grounds are in the bottom when you will have to empty out and clean. Compared with other kinds of coffee makers that have a filter to make removing the grounds easier.
- Sometimes coffee grounds will end up in the bottom of the cup.

Espresso Machines open the various options of craft coffee at home. You get to explore coffees from any roaster you want and decide on your favorites. Espresso machines can range from inexpensive models to high-end models, so it is a matter of what you are looking to purchase. There are machines that are dedicated to making espresso, but there are also hybrid machines that can brew both regular coffee as well as espresso. While the hybrid models aren't usually the best espresso machines, the advantage is that you don't need two separate machines for your coffee needs.

With an espresso machine, you can enjoy a straightforward shot of espresso or create your favorite drinks, like cappuccinos, lattes, and macchiatos. These machines typically control the pressure of the brew but allow you to control the amount of water you brew with, among a few other factors depending on the model.

When purchasing an espresso machine, you want to consider budget, types of espresso drinks, frequency and quantity of drinks, kitchen space and grinder selection.

Budget: Home espresso machines are an investment that can save you money in the long run. If you enjoy these types of specialty coffee drinks, a home espresso machine can give you that specialty drink at a lower cost.

Types of espresso drinks: The type of espresso machine you may purchase will depend on the types of drinks you enjoy. If you prefer large milk drinks, then you may want to purchase an espresso machine that has a dual boiler or heat exchanger machine whereas if you just prefer straight espresso then a single boiler machine would work.

- In a *single boiler machine*, the boiler has one heating element with two thermostats. One thermostat is set for a temperature range that is ideal for brewing coffee. The other is set at a temperature meant to boil water and produce steam.
 - Benefits
 - Relatively low cost
 - To keep in mind:
 - You cannot pull shots and steam milk at the same time.
 - You'll always have to wait for the water to come to the correct temperature when changing from espresso to steaming and vice versa
- *Heat Exchanger Machine*. Instead of using a boiler to heat water for both brewing and steaming, the water in the boiler is only used to make steam. An additional water line is run from the pump and connects to a copper tube, or heat exchanger. This passes through the body of the boiler. The steaming water in the steam boiler heats the water in the heat exchanger without bringing it to a boil. In an heat exchanger machine, the brew water will never come in direct contact with the boiler water
 - Benefits:
 - The brew water is separate from the steam boiler
 - The machine is able to steam milk and pull shots simultaneously
 - To keep in mind:
 - The temperature of the brew water is hard to control
 - The brew water in the exchange coil can overheat if left too long
 - Requires a cooling flush. It is important to bleed or purge a small amount of water immediately before brewing an espresso, a practice called temperature surfing.
- *Thermoblock Machine*. A thermoblock is a thick piece of metal with a small coil machined into it. The whole block is heated by a built-in heating element. Small bursts of water are sent from the pump through the coil. These bursts are rapidly heated to past boiling, turning them into steam. There is a separate brew boiler, but since the steam and brew water are heated separately, the machine is able to do both at the same time.
 - Benefits:
 - Less expensive
 - Can brew and steam simultaneously
 - More temperature control of brew water
 - To keep in mind:
 - Not recommended for producing lots of drinks or large milk drinks
- The *Dual Boiler machine* has a pump that sends the water to two separate boilers. One heats water to boiling and the other heats water to brew temperature. Most dual boiler machines feature a digital temperature controller, so temperatures for both boilers can be carefully controlled.
 - Benefits:
 - Can brew and steam simultaneously
 - Precise temperature control
 - Most consistent brew and steam temperatures

- To keep in mind:
 - More expensive than other options

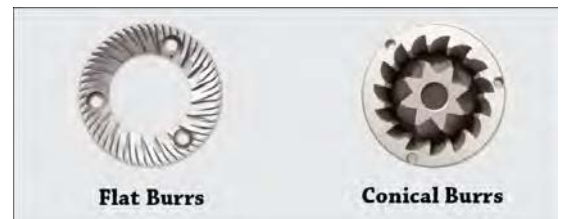
Frequency: How often will you use the espresso machine? Will it be a single morning cup of coffee or will you want multiple cups throughout the day? If you are single cup drinker, purchasing a single boiler would meet your needs whereas if you drink multiple cups in a day, you may want to get a larger dual boiler machine.

Space: Figuring out how much space the machine will take on your counter is essential to figuring out what kinds of machine to purchase. Making sure that the cabinet clearance for an espresso machine is important as some have a top filling reservoir.

Grinder Selection: The most important part of getting an espresso machine is choosing the right grinder. The espresso grinder is what determines how we unlock the flavor hidden within the beans. The criteria for selecting a grinder is simple – uniform particle size without excess heat or static.

There are three elements of a grinder that will determine the best outcome for a grinder: burr size, burr shape and motor power.

- **Burr Size** is what is used to explain the difference between grinders. The larger the burr size, the more cutting area available. A greater diameter burr means that for any quantity of beans, there will be fewer rotations of the burr set to grind them thoroughly, which leads to a faster dose of ground coffee. The more rapid the dose, the less chance for static electricity to build between the grinds, which leads to clumping, uneven distribution and channeling.
- **Burr Shape** often goes hand in hands with burr size, as conical burr grinders have far more cutting surface than a flat burr for the same given diameter. Burr shape is a personal preference. Conical burr grinders can create more “fines” than flat burr grinders. “Fines” are smaller coffee particles that dissolve more quickly in the cup, bringing out the lighter, more floral flavors. The flat burr grinders tend to have a more uniform particle size which allows the coffee particles to extract at a more consistent rate. This absorption allows for a more balanced, traditional type of espresso.
- **Motor Size** will determine the power of the grinder. The bigger the motor means it will have more power and make better espresso.



<https://clivecoffee.com/blogs/learn/what-makes-a-grinder-great>

Cold Brew Coffee, or cold brew, is coffee made by steeping ground coffee in water for several hours (usually 12 to 18 hours) then straining out the grounds and chilling it before serving it as-is, over ice, or diluted with water. Like other coffee, additional add-ins like milk, cream flavoring, and sugar are used.

There are two brewing methods for cold brew coffee.

- The first style is called immersion brewing. Immersion is the process of placing coffee grounds in water and letting them steep for a period of time. Coffee solubles are slowly extracted by the water over 12 to 24 hours and then the grounds are filtered out to create the coffee.

- The second is a drip process that also takes several hours. The drip process separates the cold water from the coffee grounds completely. This technique requires a cold drip apparatus or drip tower that allows the iced water to slowly drip over freshly ground coffee. The ground coffee absorbs the water, which then drops into a separate container at the bottom of the tower. Cold drip coffee is usually served over ice as an espresso-sized shot.

Cold brew coffee is not done in the refrigerator. Cold temperatures actually slow down the extraction process. If done in the refrigerator, it will taste weak by comparison with one that is steeped for the same amount of time at room temperature.

Benefits:

- Easy to make
- Stays fresh for several days
- Less acidic and tastes less bitter than conventionally brewed coffee
- The strength can be adjusted between a concentrated or diluted brew
- The immersion method can be done with a jar you have at home or you can buy a special cold coffee brewer

To keep in mind:

- Long steeping time
- Need to plan ahead of time for your coffee

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Carry-On Luggage

CARRY ON LUGGAGE

4-H Consumer Decision Making
Study Guide



Carry-on Luggage and Personal Item Bags

Heading out on a trip? Looking to purchase luggage that meets all airline guidelines? There are lots of items to choose from. With high demands on luggage comes higher competition, which means innovation, creativity and lots of choices. To ensure that you get from point A to point B smoothly, choosing the best carry-on luggage will make travel less stressful. Be prepared by knowing the airline guidelines and be knowledgeable of available options.

Carry-on bags are convenient for air travel because it avoids the cost and hassle of checking a bag. The golden rule is that the bag must either fit under the seat or in the overhead bin. For domestic flights, your carry-on can be no larger than 22 inches high by 14 inches wide by 9 inches deep. (The maximum linear size is 45 inches, but none of the dimensions can exceed the measurements above.)

Measure the height of your luggage from the floor to the top of the handle in its lowered position — but even rule-abiding luggage is not a guarantee that your bags will not be relegated to the plane's underbelly, because the flight crew can impose further restrictions even after boarding has begun. Most airlines do not have a weight limit for carry-on luggage, and if they do most do not actually weigh carry-on bags. The exception is for small commuter planes.



Figure 1. Airline carry-on rules
Consumerreports.com



Figure 2 Sample Personal Item
<https://thewirecutter.com/guides/best-personal-item-carry-ons/>

Personal item bags must fit underneath the seat in front of you on the plane. This type of bag can include a backpack, laptop bag, tote bag, brief case or camera bag. But to get the most out your personal item, it is beneficial to buy a bag specifically for this purpose. For U.S. domestic flights, the measurement rules range from 18 X 8 X 14 inches to 17 X 9 X 10 inches, but there is no standard size for these bags. The size also varies based on the location of the seat on the same aircraft. A growing number of airlines offer a lowest-class base-price that only includes one personal item. A few items that are important when looking to purchase a personal item bag for air travel includes durability, organization and multiple carrying options.

When purchasing a new carry-on or personal item, it would be beneficial to look at one of the sites that includes the sizes and limits for multiple airlines. One such site is:
<https://www.smartertravel.com/personal-item-vs-carry-on/>.

Comparing Transportation Security Administration (TSA) vs. the Airlines

The airline will determine how large or heavy bags may be to be able to board a flight. TSA does not enforce any rules regarding luggage size and weight; therefore, just because it makes it through security does not mean it will make it on the plane. The job of TSA is to screen the contents of the luggage, not to approve or reject the luggage itself. All checked bags are subject to screening and TSA agent may be required to cut off any non-TSA-approved locks. TSA has collaborated with many companies to make travel locks that can be opened by a TSA master key. At TSA security check points, passengers are required to remove any electronic device larger than a cellphone from their carry-on. TSA encourages travelers to pack their electronics in

security-checkpoint-friendly bags or cases. These bags have dedicated compartments that hold laptops or tablets, which zip open to lay flat on the X-ray conveyor belt. These compartments do not have metal zippers or pockets that block the scanner's view of the items within.

The Anatomy of a Bag

Every bag comes with its own pros and cons. Take time prior to purchasing a bag to determine what your needs are and find the best travel bag that meets those needs.

Soft-Sided or Hard-Sided

Soft-Sided luggage is usually made of a woven nylon fabric, such as Cordura or ballistic nylon, which are designed for maximum durability and abrasion resistant. If you select a suitcase made from ripstop nylon, or "parachute" material, make sure that it is a high-denier fabric, which means that it is heavier.

Pros: Lightweight and can conform into tight spaces

Cons: Not as protective as hard-sided suitcases and is vulnerable to ripping

Hard-Sided Luggage

Hard-sided luggage is made from high-tech plastics, such as ABS (acrylonitrile-butadiene-styrene) and polycarbonate, which are lightweight and durable. ABS is the lighter of the two, but polycarbonate is more durable. Hard-sided luggage is usually designed like a clamshell, which features a 50/50 split, allowing you to pack an equal amount on each side.

Pros: Protects breakable contents and can be stacked

Cons: Scratch and scuff easily; No outside pockets

Pro/Con: Limited amount of space; Helps avoid overpacking

Wheels or No Wheels?

No Wheels

There are a few occasions where "no wheels" luggage proves to be the best choice.

Pros: Ensures maximum interior space and traveling to locations where wheels are difficult to manage due to uneven surfaces

Cons: Can be heavy and burdensome to carry

Two-wheel luggage

These are called "rollers" since they utilize the same type of wheels that are found on in-line skates, which only roll forward and backward, not side-to-side. This requires the suitcase to be rolled behind you as you pull it.

Pros: Wheels are recessed, which protects them — two-wheelers are better for clearing curbs.

Cons: Can be hard to drag a two-wheel bag in a crowded space. Recessed wheels take up interior storage space.

Four-Wheel Luggage

These have wheels that swivel 360 degrees and are known as “spinners.” They can either be pushed or pulled.

Pros: Easy to navigate in tight spaces. Large or heavy suitcases are easier to manage on four wheels and are ergonomically better for shoulders when maneuvering them.

Cons: External mounted wheels are more likely to break off. According to experts, the wheels attached with screws are more secure than those with rivets. Carry-ons with spinners may have less room inside since the maximum allowable dimensions includes the wheels.

Zipper

There are two types of zippers: chain and coil. The chain zipper, which slides on two sets of interlocking teeth, can be made of metal or plastic. A chain zipper is much stronger than a coil zipper, which has slides on two parallel coils that is usually made of polyester. A “YKKK” zipper is widely believed in the industry to be the most reliable zipper on the market.

Handles

For maximum comfort, look for an adjustable-length and soft-grip handle. Many travelers use the two-post handle system because of its ability to piggyback a smaller bag.

Compartments

The number, size, and configuration of compartments can be an important consideration.

Weight

Consider the weight of your empty suitcase. For airline travel, most of the weight you lug around should be your belongings and not the bag.

Smart Features

Luggage now includes built-in electronics to help you stay connected. Some of the new “connected” suitcases help you know where it is, how much it weighs, and control who can access it by virtue of such functions as location tracking, built-in digital scales, digital locks and fingerprint recognition. (Federal airline safety rules prohibit lithium-ion batteries in checked bags, so you need to look for a bag that has the option to remove them or “pop-out” batteries. Pack the battery in your carry-on with the terminal contacts covered to prevent short circuits.)

Locks

For domestic travel within the United States, luggage locks have to be TSA-compliant, which means that security agents can use a universal master key to open your lock without breaking it. If you are buying an aftermarket lock, check the packaging to see if it is TSA-compliant.

Shopping Tips

Measure it Yourself

Measure the dimensions yourself and make sure that they account for all parts of the bag, including wheels, outer pouches and handles. Do not trust the labels or tags that proclaim, “official carry-on size luggage.”

Check the Interior Capacity

Many manufacturers do not disclose the interior volume. Look for features that maximize the interior space if that is what you need.

- Squared edges vs. curved corners
- Integrated outer compartments
- No wheels or handles (this opens every inch of interior space)

Warranty

If you want to keep your bag for a long time, get one with a manufacturer’s warranty. A lifetime warranty to repair or replace the bag is, of course, the best option.

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Dental Products

Toothbrushes and Dental Floss

2023

Dental Products

FCS CONSUMER DECISION MAKING STUDY GUIDE



TOOTHBRUSHES AND FLOSS

Brushing your teeth is a vital part of a daily routine that our parents teach us from a young age. But there's one lesson many of us have yet to learn from our parents or dentists: how to choose the right toothbrush.

Have you ever stopped to think about how to choose the best toothbrush? It is such an everyday item that most people have not. They either use the toothbrush their dentist provided or select one based on color or price. Every store has many different toothbrush options, and it can be overwhelming. It is essential to consider the most important factors before choosing a toothbrush to ensure good dental health.

While brushing correctly daily is the most important consideration, your toothbrush matters. New toothbrushes have been shown to remove 30% more plaque than older ones. Dentists recommend purchasing a new toothbrush or replacing the brush head on an electric toothbrush every three months or when the bristles show wear to maintain good oral hygiene and dental care. Always look for specific features best suited to your unique dental needs and dentist recommendations.

Manual or Electric: Which One Should I Use?

Manual toothbrushes have been on the market for years, but electric toothbrushes are increasing in popularity. The good news is it doesn't matter which type of toothbrush you use; as long as you brush your teeth effectively twice a day for two minutes using fluoride toothpaste, the effect on your oral health is the same.

Electric and manual toothbrushes each have multiple benefits. As long as the American Dental Association (ADA) has placed the seal of approval on the toothbrush, it is safe and effective.

Electric Toothbrushes

Electric toothbrushes can be powered by a rechargeable or removable battery that, when turned on, has rotating, moving, or vibrating bristles that clean the plaque as you move the toothbrush across your teeth and gum line. The vibrations allow for micro-movements as you move the brush through the mouth.

Electric toothbrushes clean teeth and gums much better than manual toothbrushes, according to a study by the



Oral Health Foundation. Scientists found that people who use an electric toothbrush have healthier gums, less tooth decay, and keep their teeth longer than those who use a manual toothbrush. The following factors should be considered if you are considering an electric toothbrush.

Types of Electric Toothbrushes:



- **Oscillating rotary toothbrushes.** These toothbrushes have small circular heads that rotate back and forth to clean each tooth. Some models combine this rotating feature with vibrating and pulsing to help dislodge more plaque. Studies have indicated that oscillating toothbrushes are the most effective at removing plaque.
- **Sonic toothbrushes.** Sonic toothbrushes have vibrating brush heads that move bristles side-to-side at high speeds. To be classified as a sonic toothbrush, the vibration has to be fast enough to produce an audible hum. Sonic toothbrushes today offer frequencies up to over 50,000 movements per minute.
- **Ultrasonic toothbrushes.** Instead of relying on physical motion to clean your teeth, ultrasonic

toothbrushes use a high frequency of vibration called ultrasound to remove plaque and food debris.

Ultrasound generates waves at a frequency beyond human hearing, and existing ultrasonic toothbrushes use operating frequencies from 20 kHz up to 10 MHz, according to Dentistry Journal. Though ultrasonic brushes can break up plaque without movement, most models also provide a sonic vibration to remove plaque and food debris remnants further.

Things to Consider Before Purchasing:

1 Cost

Electric toothbrushes are more expensive than manual ones and range in price from \$25 for a model with replaceable batteries to more than \$250 for a model with rechargeable lithium-ion batteries, multiple brushing modes, Bluetooth connectivity, and other features. In addition to the initial expense of an electric toothbrush, you will need to replace the removable toothbrush head as often as you replace your manual toothbrush.

Toothbrush heads range in price from \$5 to \$30, depending on the brand and number in the pack. Not all stores carry the same brand, so you might have issues finding the head to match your toothbrush, especially when you travel.

2 Bristle Stiffness

When a toothbrush is labeled "extra soft," "soft," "medium," or "hard," this relates to bristle stiffness. The ADA advises brushing with soft bristles because stiff bristles can damage and remove enamel and root surfaces.

3 Timer

If you're thinking about an electric toothbrush, one feature to consider is a 2-minute timer. According to the ADA, most people brush for an average of only 45 seconds, so a timer may encourage you to brush longer. Many newer toothbrushes include a timer to help you make sure that you are brushing your teeth as long as you should be.

You probably know that you should brush your teeth for at least 2 minutes, but did you know that the average time most people brush their teeth is less than a minute? This could be a massive advantage if you are one of those people. Some brushes will buzz and beep every 30 seconds to remind you to spend equal time brushing all quadrants of your mouth.

4 Cleaning Modes

Toothbrushes are equipped with a variety of modes that meet every need. Modes will vary per toothbrush, with the default mode being Clean. Other brushing modes that may be found on electric toothbrushes are:

- **Deep Clean:** allows extra time to work on trouble spots
- **Whitening:** works to remove surface stains
- **Polish:** smooths the surface layer of your teeth
- **Gum Care:** Cleans and massages your gums. Best for those with sore, inflamed, or bleeding gums.
- **Sensitive:** gentle vibrations perfect for sensitive teeth
- **Tongue Care:** cleans the tongue

The extra modes allow for customization of your brushing experience to best suit your needs. It is better to have a toothbrush with one cleaning mode that you use regularly and correctly than to have a brush with multiple modes you may not use. The evidence that extra modes significantly benefit dental health care is limited.



5 Pressure Sensor

Placing too much pressure on your teeth doesn't help remove more plaque; instead, you are probably harming your teeth and irritating your gums. A pressure sensor will let you know you are using too much pressure and will use a light indicator, buzzer, or beeper as an indicator. Some models will even slow the rotating speed if you brush too hard.

6 Range of Motion

Older adults, especially those with arthritis, might not have the dexterity to maneuver a manual toothbrush, but an electric toothbrush will do the work for them and have a more oversized handle, making them much easier to hold.

Kids often have an easier time using an electric toothbrush as well. Some toothbrushes, designed explicitly for kids, will play music or connect to timer apps to encourage longer brushing sessions.

An electric toothbrush can also be a plus for anyone with braces. Since the brush head moves faster, it's easier to dislodge any trapped food or bacteria without any complicated maneuvers. Brush heads may be purchased that are designed specifically for people with braces.

7 Battery Life

The life of an electric toothbrush depends on how often it's used and the type of battery in the toothbrush.

- **Alkaline Batteries:** Depending on the battery, these should last 4-6 weeks.
- **NiMH Rechargeable Batteries:** Can last up to two weeks on a full charge.
- **Lithium-Ion Batteries:** Full charge can last more than two weeks.

Using your electric toothbrush twice a day for 2 minutes each, the rechargeable battery will last about three years before it will need replacing. If you use it once daily for the same amount of time, the battery should last about five years before needing replacement. So, the average life span is between three to five years before they stop working or require a replacement.

Some brushes will last longer, depending on the care and use of the toothbrush. Keeping the toothbrush off the charging stand at night and only charging when the battery light indicates will save electricity and maximize operational life.

Most electric toothbrushes offer a one to a two-year warranty. In most cases, the battery

is covered as part of the warranty, but check the specific terms for your toothbrush.

Choosing an electric toothbrush comes down to one factor: likability. The best toothbrush for you is the one you're most likely to use. If you like your toothbrush, you're more likely to brush for two minutes and clean all the tooth surfaces, as dental professionals recommend. Before purchasing an electric toothbrush, factor in your oral health, lifestyle, and budget, and if you're still unsure, consult your dental professional for recommendations.

Manual Toothbrush



A manual toothbrush is a hand-held brush made of hard plastic with bristles for cleaning the gums and between teeth. A manual toothbrush has no moving parts and is not powered by anything. When purchasing a manual toothbrush, there are two factors to consider. The first is a personal preference. The best manual toothbrush is the one you will regularly use that does not harm your teeth or gums. The second factor to consider is which toothbrush removes germs and bacteria effectively. If the toothbrush is the wrong size or has damaging bristles, it will do more harm to your teeth than good. Not all manual brushes are created the same. Ensure that the brand and type you buy will help your oral health.

Some Things To Look For Are:

Cost

Manual toothbrushes are less expensive than electric ones and more portable. It is easy to bring a manual toothbrush to the office, carry one in your purse, or for traveling. The average manual toothbrush costs less than \$10 and is widely available at most pharmacies or grocery stores. A manual toothbrush should be replaced every three months, when the bristles show wear, or when you have been ill.

Size

A toothbrush with a smaller head will help clean hard-to-reach back teeth. A standard-size toothbrush with a 1/2 to a 1-inch head works best for most people, but those with a larger mouth might prefer a larger head for a better fit.

The toothbrush should have an ergonomic handle long enough to hold it comfortably in your hand. If you have dexterity issues, a thicker handle will make brushing your teeth easier.

Bristles

The American Dental Association (ADA) recommends soft-bristle toothbrushes with angled or multi-layer bristles, allowing the toothbrush to lift plaque and bacteria off the tooth without harming your teeth. Medium and hard bristles can damage your teeth and gums while brushing, and this is especially true if you brush too hard, leading to abrasion, loss of enamel, and gum irritation.

Once you figure out the type of bristles you are working with, there are a few other questions you want to answer before making a decision:

- Are you focusing on polishing and whitening the teeth?
- Do you have sensitive teeth and gums?
- Are you looking for an eco-friendly option?
- Do you wear braces or other orthodontic appliances?
- Do you need a Tongue and Cheek Cleaner on the toothbrush?
- Do you want a bristle indicator to know when the toothbrush should be replaced?

Flossing

Dental floss is a cord of thin filaments that removes food and plaque between teeth or places a toothbrush cannot reach. The American Dental Association recommends flossing daily to prevent cavities, tooth decay, and gum disease.

How often should you floss? Taking your time and flossing correctly is more important than flossing often. Dentists recommend flossing at least once a day. Flossing after every meal removes any debris stuck between your teeth and prevents plaque buildup. There is no such thing as too much flossing - unless you do it incorrectly and apply too much pressure, which can damage your gums.

There are many types of dental floss, and there is no one right floss that will suit everyone. Some people have more than one type of dental floss for different scenarios. Let's explore some common types of dental floss to enable you to choose the right kind.



Types of Dental Floss

- **Unwaxed floss** is one of the most common floss types used. It's constructed of a nylon material crafted by twisting multiple strands together. Unwaxed floss comes with no artificial flavoring, which means that this type of floss is free from chemicals. This floss is perfect for those with small gaps between their teeth, as unwaxed floss is much thinner
- **Waxed floss** is constructed similarly to unwaxed floss, with a waxed layer applied. This waxed layer strengthens the floss, so it doesn't shred or break on the user. In addition, it allows the floss to glide better between teeth than unwaxed floss. Due to the added layer of wax to this type of dental floss, it's thicker than unwaxed floss. This makes it more challenging to get into small gaps. The waxy nature of the floss also makes it harder to grip for the average user.
- **Flavored and Unflavored:** Any floss may be flavored. Flavored floss can make the process of cleaning between your teeth more enjoyable. With flavors ranging from cinnamon, mint, and peppermint to coconut and strawberry, it can make your breath smell fresher and cleaner and incentivize kids to floss their teeth. Choosing a flavored or unflavored floss is a personal preference based on an individual needs.
- **PTFE Floss (Polytetrafluorethylene Floss):** PTFE floss is made from the same material as Gore-Tech fabric. The floss is very strong, slippery, and will not shred. People with very tight spaces between their teeth prefer this floss. This floss does have Teflon in it and has caused health concerns, so dentists do not recommend extended use of this product.
- **Dental Tape:** Similar to regular dental floss but thicker. Dental tape is perfect for people with wide gaps between teeth, requiring thicker floss. This floss is not ideal for most people because it can be challenging to get between teeth.
- **Biodegradable and natural floss:** Patients can opt for locally manufactured all-natural flosses made from biodegradable silk or other raw materials. Products with threads infused in tea tree oil or other natural antimicrobial oils exist.
- **Superfloss:** The floss is used by patients with traditional braces, bonded wire retainers, and bridges. Each piece of Superfloss has three different parts—a stiff end for easy threading, a thicker spongy section, and a "regular" floss section. The threader allows the user to easily maneuver the floss under bridges and other dental fixtures to remove debris.

- **Disposable Flossers:** Floss picks hold the floss for you, so you only have to use one hand. Most also have a dental pick at the opposite end. Floss picks are convenient and comfortable but are not as effective as regular floss because they do not allow you to reach all angles and clean your teeth effectively. Disposable flossers are ideal for people with limited dexterity who have difficulty manipulating the floss around the teeth.
- **Water Flossers** - Water flossers are hand-held cleaning devices that shoot thin streams of water between your teeth or gums. The water is pressurized, making removing plaque and food buildup easy. A water flosser is easy to use and does not have any waste. It works well for individuals with dental work in the mouth and those with difficulty flossing. According to research published by Dentistry Journal, a water flosser's pulsation motion can reduce gum inflammation and bleeding while cleaning this area gently. A water flosser is challenging outside the home because it relies on electricity and water.

American Dental Association (ADA)

Whichever dental products you purchase, look for the ADA seal. The American Dental Association Seal of Acceptance, has been the leading mark of dental product safety and efficacy for 90 years. A dental product earns the ADA Seal when the manufacturer provides scientific evidence demonstrating safety and effectiveness in removing plaque and reducing gingivitis.

Ultimately, the best dental products are the ones you'll use regularly and adequately. All dental products are useless if you don't use them, so pick the ones that work best for you. Contact a professional with any questions or concerns about dental products or your dental health.



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Fast Food

Fast Food



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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.

Instead of...	Try...
Danish	Small bagel
Jumbo cheeseburger	Grilled chicken, sliced meats or even a regular 2 oz. hamburger on a bun with lettuce, tomato and onion
Fried chicken or tacos	Grilled chicken or salad bar (but watch out for the high-calorie dressing and ingredients)
French fries	Baked potato with vegetables or low-fat or fat-free sour cream topping

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.)

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- Make Half Your Grains Whole
- Salt and Sodium
- Make Better Beverage choices
- Enjoy Your Food, But Eat Less

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Fast Food Mobile Apps

Cost is a consideration when buying fast food and many these restaurants frequently offer specials, combos, or reduced price menus. Many fast food restaurants have mobile apps and offer deals exclusively through these apps. By consumers simply downloading an app to their devices, they can easily save money at their favorite restaurants. Consumers should be alert though of tactics that create target coupons for their favorite menu items to entice them to order more often and that apps collect user data. Be aware of the privacy policies of each app. Increasingly, loyalty programs and reward points are being used by more fast food mobile apps. These programs often offer exclusive discounts or even free menu items. These fast food deals may last for a limited time, so make sure you check the app's current promotions before you order. Here are some examples of offers that may be available to consumers through apps:

Restaurant	Sample Offer
Burger King	\$2 Whopper Wednesdays
Chick-fil-A	Chick-fil-A One members earn points for purchases.
Domino's Pizza	Any large specialty pizza for \$12.99
McDonald's	Free breakfast biscuit with minimum purchase of \$1
Popeye's	Free regular side, small drink or apple pie with email sign-up
Sonic	Half-off drinks and Slushies for app orders
Wendy's	\$2 off any Premium Combo

These apps often allow consumers to place orders ahead of time and can reduce the amount of time that people have to wait on their food. Consumers must be aware of additional fees that can be added to their meal cost by opting for delivery verses in-person pick-up. Fast food apps can offer their own delivery service in select markets, and many restaurants work with third-party food delivery apps like Postmates, UberEats, DoorDash, and Grubhub. When ordering fast food for delivery through third-party apps, consumers must also be aware of delays that may occur during delivery that could have impacts on the taste and quality of their meals as well as food safety if the food is not transported in a method that keeps it at the ideal temperature.

Skincare: Sunscreen

Skincare: Sunscreen



2025-2027 Edition By:
Cheryl Varnadoe

SUNSCREEN OVERVIEW

Sunscreen is one of the most important tools we have to protect our skin from the sun, yet nearly one third of Americans never use it. Too much sun exposure can cause sunburn, premature aging, wrinkles, and in many cases, skin cancer.

When used as directed, sunscreen can:

- Decrease your risk of skin cancers and skin precancers. Studies show that regular daily use of SPF 30 sunscreen, when used as directed, can reduce your risk of developing squamous cell carcinoma (SCC) by about 40 percent, and lower your melanoma risk by 50 percent.
- Help prevent premature skin aging caused by the sun, including wrinkles, sagging and age spots.

Unfortunately, many people think that a tan is a healthy look. But what these people do not know is that a tan is actually like a giant scab that your skin creates to try to protect itself from more sun damage.

It is impossible to completely avoid the sun, of course, but you can take precautions to ensure that you are protecting yourself from its harmful rays.

Know the 6 W's of Sunscreen:

WHO: Everyone under the sun except babies under six months old

WHICH: Broad spectrum SPF 15 or higher; Dermatologists recommend SPF 30

WHEN: Every day, 30 minutes prior to going outdoors. Reapply sunscreen at least every two hours, and more often if you're sweating or swimming.

WHERE: All exposed skin

WHAT: Apply one ounce (about two tablespoons) to your entire body for each application

WHY: Reduces your risk of skin damage and skin cancer

SUNSCREEN OVERVIEW (CONT.)

In addition, consumers should engage in sun protective behaviors, such as wearing protective clothing; wearing sunglasses and a hat that provides adequate shade; avoiding the sun during the hours of 10:00 AM and 3:00 PM and finding shade whenever possible during these periods of peak sunlight.

Consumers should also use adequate protection and appropriate precautions with sunlamps and tanning beds/booths. Both are sources of UV radiation that have been linked to skin cancer, skin burns, premature skin aging, and both short-term and long-term eye damage.

Sunscreen should not be used on babies under six months of age. Staying out of the sun, using shaded structures and sun-protective clothing are the best ways to safeguard infants.

Parents of infants and toddlers 6 months and older may apply a broad-spectrum, water-resistant sunscreen with an SPF of 30 or higher to all skin not covered by clothing, according to the instructions on the product label. When outdoors, sunscreen should be reapplied approximately every two hours, or as often as the label says. Sunscreens that use the ingredients zinc oxide or titanium dioxide, or special sunscreens made for infants or toddlers, may cause less irritation to their sensitive skin.



CHOOSING THE RIGHT SUNSCREEN: WHAT MAKES THE SUN HARMFUL?

The sun itself is not what harms our skin. It is the ultraviolet (UV) radiation that the sun gives off that actually causes the damage. There are three types of UV rays. They are UVA, UVB, and UVC.

- **UVA** rays penetrate deepest into your skin, reaching the new skin that lies far beneath the surface and are linked to long-term skin damage such as wrinkles. UVA damages your skin, resulting in a tan. It is the primary radiation used in tanning beds. It causes almost all forms of skin aging, including wrinkles. UVA damages the collagen and elastin in the skin and generates free radicals.
- **UVB** rays are responsible for most of the damage that your skin incurs from the sun, causing sunburn and most skin cancers. UVB damages the DNA in skin cells and causes DNA mutations that can eventually lead to melanoma and other types of skin cancer. UVB radiation from the sun can also cause cataracts. Cataracts happen when proteins in your eye lens get damaged. The proteins start to collect pigments that cloud your vision.
- **UVC** rays do not reach the earth's surface because they are blocked by the ozone layer; humans are only exposed to UVC radiation from artificial sources such as a lamp or lasers.



HOW SUNSCREEN WORKS

Sunscreen includes active ingredients that help prevent the sun's UV radiation from reaching your skin. Here's how the two types of sunscreen work for you:

- 1) Physical (mineral) sunscreen ingredients (including the minerals titanium dioxide and zinc oxide) reflect and scatter the rays (like a shield) before they penetrate your skin.
- 2) Chemical sunscreen ingredients (like avobenzone and octisalate) absorb UV rays (like a sponge) before they can damage your skin.



The U.S. Food and Drug Administration (FDA) has approved 20 human-made chemicals or natural sun blocking agents for use in sunscreens. The most common chemicals that protect you from UVB rays include: cinnamates, patamates, or benzophenones like oxybenzone and Dioxybenzone. The chemicals that protect you from UVA rays are titanium dioxide and zinc oxide. A good sunscreen will contain agents that block both types of radiation.

SUN PROTECTION FACTOR (SPF)

The sun protection factor (SPF) value indicates the level of sunburn protection provided by the sunscreen product. All sunscreens must be tested to measure the amount of UV radiation exposure it takes to cause sunburn when using the sunscreen compared to how much UV exposure it takes to cause a sunburn when not using the sunscreen. The product is then labeled with the appropriate SPF value.

Sunscreens are made in a wide range of SPFs. Higher SPF values (up to 50) provide greater sunburn protection. Because SPF values are determined from a test that measures protection against sunburn, SPF values primarily indicate a sunscreen's UVB protection. According to the FDA and the EPA, to get the most protection out of sunscreen you should choose a broad-spectrum sunscreen with an SPF of at least 15.

Some people incorrectly believe that SPF relates to the time of solar exposure. For example, some people believe that, if they normally get sunburned in one hour, then an SPF 15 sunscreen allows them to stay in the sun for 15 hours (e.g., 15 times longer) without getting sunburned. This is not true because SPF is not directly related to the time of solar exposure but to amount of solar exposure. The amount of solar exposure we experience depends on many factors.

For example, the sun is stronger in the middle of the day compared to early morning and early evening hours. That means your risk of sunburn is higher at midday. Solar intensity is also impacted by your geographic location, with greater solar intensity occurring at lower latitudes. Because of this, someone who is closer to the equator may experience greater solar exposure than someone who is farther from the equator but spends the same amount of time in the sun.

SUN PROTECTION FACTOR (SPF) (CONT.)

It is also important to remember that high-number SPFs last the same amount of time as low-number SPFs. A high-number SPF does not allow you to spend additional time outdoors without reapplication. As many individuals only apply about 20–50% of the amount of sunscreen needed to achieve the amount of SPF on the label, application of high-SPF sunscreens helps to compensate for this under-application. Sunscreen should be reapplied approximately every two hours when outdoors, even on cloudy days, and after swimming or sweating.

BROAD SPECTRUM

Broad spectrum sunscreens help protect against both forms of UV radiation - UVA and UVB. However, not all sunscreens are broad spectrum, so it is important to look for this description on the label. A sunscreen product's SPF value is primarily an indicator of the level of protection that product provides against UVB radiation, but broad-spectrum sunscreens also protect against UVA radiation. Broad spectrum Sunscreen provides protection against both by providing a chemical barrier that absorbs or reflects UV radiation before it can damage the skin.

The US Environmental Protection Agency (EPA) and the FDA recommend at least an SPF of 15. Dermatologists recommend an SPF of 30.

Sunscreens that are not broad spectrum or that lack an SPF of at least 15 must carry the following warning on their Drug Facts label:

Skin Cancer/Skin Aging Alert: Spending time in the sun increases your risk of skin cancer and early skin aging. This product has been shown only to help prevent sunburn, not skin cancer or early skin aging.

STORING YOUR SUNSCREEN

To keep your sunscreen in good condition and maintain its effectiveness, the FDA recommends you not expose sunscreen containers to direct sun. Protect the sunscreen by wrapping the containers in towels or keeping them in the shade while outside in the heat for long periods of time.

This is why sunscreen labels must say: "Protect the product in this container from excessive heat and direct sun."

Keep unused sunscreen in a safe place that is away from sun and heat.

CHECK EXPIRATION DATES

FDA regulations require all nonprescription drugs to have an expiration date unless the manufacturer's stability testing has shown that the product will remain stable for at least three years. That means a sunscreen product that doesn't have an expiration date should be considered expired three years after purchase.

To make sure that your sunscreen is providing the sun protection promised in its labeling, the FDA recommends that you:

- 1) Do not use sunscreen products that have passed their expiration date (if there is one listed).
- 2) Do not use sunscreen products that have no expiration date and were not purchased within the last three years.
- 3) Discard expired sunscreens because they may not be safe and effective anymore. If you do not know how old your sunscreen is, discard it.

WHAT TYPE SHOULD YOU USE?

The best type of sunscreen is the one you will use again and again. Just make sure it offers broad-spectrum (UVA and UVB) protection, has an SPF of 30 or higher, and is water resistant.

The kind of sunscreen you use is a matter of personal choice and may vary depending on the area of the body to be protected. Available sunscreen options include lotions, creams, gels, oils, butters, pastes / ointments, wax sticks, and sprays.

Creams are best for dry skin and applying on the face.

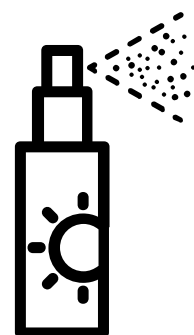
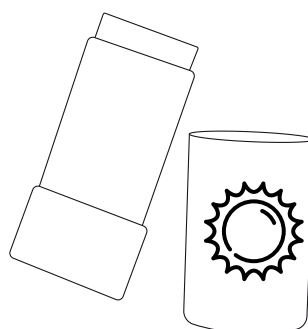
Gels are good for oily complexions and hairy areas.

Sticks are good to use around the eyes.

Sprays are sometimes preferred by parents since they are easy to apply to a child's skin. However, the challenge in using sprays is that it is difficult to know if you have used enough sunscreen to protect all sun-exposed areas of the body.

To evenly cover the skin and use spray sunscreen safely, follow these tips:

- 1) Spray until your (or your child's) skin glistens, then rub the sunscreen into the skin to get even coverage.
- 2) Do not apply spray sunscreen near heat or close to an open flame.
- 3) Avoid inhaling spray sunscreen by never spraying it around or near the face or mouth and not spraying it into the wind.



WHAT TYPE SHOULD YOU USE?

Tinted sunscreens add protection against visible light, in addition to the sun's UVA and UVB rays. Research has shown visible light can worsen dark spots caused by the sun. Tinted sunscreen that matches with your skin tone can also help you avoid the white residue or "cast" that some sunscreens leave on your skin.

Dermatologists don't recommend sunscreen with insect repellent. Purchase and apply each product separately, as sunscreens need to be applied generously and often; however, insect repellent should be used sparingly and much less frequently. Some moisturizers and cosmetics have SPF. While these products are convenient, remember that sunscreen needs to be reapplied approximately every two hours when you're outdoors.

In addition, keep in mind that while some sunscreens are water resistant, no sunscreen is "waterproof" or "sweatproof." Sunscreen manufacturers are not allowed to use these terms, as they would be misleading. When using a water-resistant sunscreen, you should reapply it after swimming or sweating.

The directions for using sunscreen products can vary according to their forms. Always read the label before using a sunscreen product.

Other factors to consider:

- Your skin cancer risk factors: Your skin type and family history will determine the level of protection needed for you.
- Photosensitivity: No matter your skin type, certain medications and disorders make your skin highly sensitive to the sun, raising your protection requirements.
- Skin conditions: You can choose from sunscreens for dry skin, oily skin, acne-prone skin and sensitive skin.

CHOOSING THE RIGHT SUNSCREEN--COST

Sunscreens can vary in price from a few cents per ounce for generic brands to a few dollars per ounce for designer brands. Studies show that the price of sunscreen is not related to its effectiveness. However, for some high-risk individuals who are especially sensitive to the sun's rays, cost may make a difference.

Often, the sunscreen's cost suggests a special way that the product was made. For example, a sunscreen made especially for young children may cost more than regular sunscreen, but the difference in price is worth it when you figure that the baby's sunscreen was created with a special formula that won't burn if it gets in the baby's eyes.

For most people though, any sunscreen that contains an FDA-approved sun blocking agent will provide adequate protection. Your best bet is to try out several different products and find the one that works best for you.

CHOOSING AND USING THE RIGHT SUNSCREEN

Putting it on- Sunscreen works best when it is applied about 30 minutes before you head out into the sun. The best way to apply sunscreen is to smooth it in lightly with your fingertips and then allow it to dry before you put on clothes so that it does not have a chance to rub off. Many sunscreens will stain clothing, so it is a good idea to let the sunscreen dry completely before dressing.

Water resistance- There are two water-resistance categories for sunscreen: "water-resistant" and "very water-resistant." Water-resistant sunscreens are those that retain their labeled SPF after being worn in the water for 40 minutes. Very water-resistant sunscreens retain their labeled SPF after 80 minutes in the water. It is important to note that no sunscreen is truly "waterproof," and claims to that effect are false.

CHOOSING AND USING THE RIGHT SUNSCREEN (CONT.)

Keeping it on- For the best protection, you should reapply sunscreen whenever you come out of the water or every 30 minutes if you are sweating heavily. If you are involved in normal activities, reapplying sunscreen every one to two hours should be sufficient.

Cover all areas- When you are applying sunscreen, it is important to cover those hard-to-reach areas. Be sure to apply sunscreen to your eyelids, lips, ears, neck, feet, and hands. However, you should be careful when you are applying sunscreen around your eyes to make sure that you don't get any in your eyes.

Choosing a sunscreen that is thicker (like a cream) is a better bet on your face because it is easier to control. It should take about 1-ounce of sunscreen to cover your entire body. This means that a 6-ounce bottle of sunscreen should last for only six applications. Because it can be hard to remember where you have already applied sunscreen, the sunscreens that have added color but dry clear are helpful, especially with children. Sunscreens with added color can also be more fun for kids to wear, so they might not mind getting slathered in it as much. However, before you purchase a sunscreen with added color, make sure it has all of the other requirements of a good sunscreen.

Skin reactions- The first sunscreens relied on a chemical called para-aminobenzoic acid or PABA. This product caused skin irritation for many people, so sunscreens have changed to milder chemicals. A PABA-free sunscreen is an especially good choice for those with sensitive skin. Additionally, fragrances added to sunscreens can cause allergic reactions in some people who use them. There are fragrance-free alternatives that protect just as well.

CHOOSING AND USING THE RIGHT SUNSCREEN (CONT.)

Safety concerns- There have been past incidents in which people applying and wearing sunscreen spray near open flames caught fire and, as a result, suffered significant burns that required medical treatment. Although the specific products reported to have been used in these incidents were voluntarily recalled from the market and are no longer on store shelves, there are many other sunscreen spray products which still do contain flammable ingredients, like alcohol.

Flammable products are required to have a label warning indicating that they are flammable and should not be used near an open flame.

To stay safe while using sunscreen sprays, do the following:

- When you choose a sunscreen, think about where you'll be using it. If you'll be anywhere near a flame source, avoid any product with a flammability warning, and choose another non-flammable sunscreen product instead. This recommendation is particularly important when it comes to choosing a product for children, since they are frequently active and may be near flame sources.
- While applying and wearing sunscreen products labeled as flammable, avoid open flames.

Using these sunscreen tips, along with other protective measures, makes a difference in how well you can protect yourself and your family from sunburn, skin cancer, early skin aging and other risks of overexposure to the sun.

Sources: EPA, FDA, American Academy of Dermatology Association, Kenvue

Water Bottles

2024 Consumer Decision Making Study Guide

Junior and Senior

Water Bottles

Water bottles are made from a variety of materials and can vary greatly in shape and size. There is sure to be a water bottle to fit the needs of every consumer.

Materials

Plastic

- **Versatility:** Plastic water bottles come in limitless shapes, colors, and textures.
- **Weight:** Plastic is a lightweight material compared to other options.
- **Affordable:** Plastic water bottles are generally inexpensive.
- **Health and Safety Concerns:** Plastic water bottles that are a hard plastic labeled with the number 7 have BPA (Bisphenol A). BPA is a widely used chemical that is found in polycarbonate plastics, epoxy resin, food storage containers, and eye wear. It has been linked to all kinds of health issues like obesity and infertility. This is worsened when the bottle with BPA sits in the sun or has a hot beverage inside.
- **Bad for the Environment:** While plastic water bottles are designed for more than single-use plastic bottles, they tend to wear out quickly compared to other materials. They will then go into the landfills.
- **Durability:** Plastic water bottles make denting and breaking nearly impossible.
- **Taste:** With time, plastic water bottles will take on the taste of liquids stored in the bottle.
- **Smell:** Plastic bottles often have scents that attach to their chemical bonds, causing the bottle to smell over time.
- **Insulation:** Plastic bottles do not hold cold very well and will lose their temperature quickly.
- **Washing:** Generally, hard plastic water bottles are dishwasher safe.



Recycled Plastic

- Potentially have more health dangers than regular plastic water bottles, due to PET plastic (Polyethylene Terephthalate).
- Polyethylene Terephthalate (PET) is a strong synthetic fiber made from ethylene glycol and terephthalic acid. It is commonly used in carbonated drink beverage bottles. It is the most common type of plastic that is recycled.

- Eco-Friendly: The ability to melt the plastic back to original form and reuse allows plastic to stay out of landfills.
- Recycled plastic material has the same characteristics as regular plastic water bottles.

Glass

- Washing: Glass bottles are generally safe to put in the dishwasher.
- Color: Glass can come in clear and a variety of colors to be able to track the amount of water you take in.
- Taste: Glass water bottles have no impact on the taste of water or drink.
- Smell: Glass water bottles have no smell associated with them.
- Insulation: They do not provide any insulation, so your beverage will not remain cold or hot.
- Durability: Glass can shatter easily when you drop it.
- Weight: Glass water bottles are among the heaviest. They are great for those who do not travel with their bottle during the day.



Single-Walled Stainless Steel

- Weight: Second to plastic, this is the lightest bottle option. Great for backpacking.
- Durability: Will not break when you drop them. Often will dent upon dropping, but will still hold liquids.
- Health risks: No known health risks.
- Affordable: Considering their lifespan, stainless steel is a great option.
- Taste: Single-walled stainless steel water bottles have no impact on the taste of water or drink.
- Smell: There is no smell associated with single-walled stainless steel.
- Transfers Heat: Because it is single-walled, hot beverages will be conducted easily and may injure your hand.
- Insulation: Cold drinks will lose their temperature quickly because they are single-walled and will take on the outside temperature.
- Washing: Single-walled stainless steel is dishwasher safe.



Insulated Stainless Steel

- **Insulation:** Because of the insulation, typically a double-wall, they maintain the temperature of the contents, both hot and cold.
- **Durability:** The double-wall gives an added layer of protection against dents, and the risk of breaking is virtually non-existent.
- **Portable:** Because the insulation prevents heat transfer, condensation will not form on the bottle. This ensures your hands will not get burned or chilled when you hold your bottle. They are not as heavy, so they can be carried easily.
- **Taste:** Insulated stainless steel water bottles have no impact on the taste of water or drink.
- **Smell:** There is no smell associated with insulated stainless steel.
- **Health Risks:** Because it is stainless steel, they pose no known health risks.
- **Color:** They come in a variety of colors and finishes (matte, opaque, or shiny).
- **Affordability:** Can be affordable, especially considering their lifespan and durability.
- **Weight:** They are heavier than plastic, but lighter than glass.
- **Washing:** If they are vacuum insulated, you can only hand wash them.



Aluminum

- **Weight:** Aluminum is very light weight, so it is a great alternative to plastic.
- **Affordable:** Aluminum is a cheap material to produce.
- **Health Risks:** Aluminum bottles require a lining because the aluminum can emit toxic chemicals. The linings are often made of plastics or resins, which can contain BPA.
- **Taste:** Traces of the flavors of your drinks can cling to the lining of the bottle affecting the taste.
- **Smell:** The water bottles may take on the smell of liquids over time.
- **Insulation:** Not well insulated. Cold water will lose temperature quickly.
- **Durability:** Aluminum dents easier than stainless steel. However, it will not break if you drop it.
- **Washing:** Not dishwasher safe and will need to be hand washed.



Silicone

- **Weight:** Silicone is a light material, so it is easy to carry around.
- **Durability:** Silicone is a resistant material. It won't break upon dropping. It can be punctured with sharp materials.
- **Washing:** They are dishwasher safe and can withstand high temperatures. This makes them easy to clean.

- **Health Risks:** Silicone water bottles are made without harmful chemicals that are used in plastic water bottles. It is a non-porous material that prevents bacteria and mold growth.
- **Environmentally Friendly:** They are reusable and long-lasting.
- **Insulation:** Does not keep cold well. Silicone keeps heat longer.
- **Taste:** Silicone can have a slight plastic taste when first purchased, but a proper wash before using can eliminate it. Flavored drinks may also cling to the material and affect taste if not washed properly.
- **Smell:** Silicone can have a slight plastic smell when first purchased. A proper wash before use can eliminate it.
- **Discoloration:** They may show discoloration or staining over time.
- **Collapsible and easy to store.**



Sizes

Small

- **Size Range: 5-16 ounces**
- 6-8 ounces: Best for long-distance runners so they can easily lift a water bottle from their waist and take a drink.
- 16 ounces: Great for home, travel, work, and short hikes. Can easily clip onto a backpack or slide into a cup holder without adding much weight.

Medium

- **Size Range: 17-24 ounces**
- 20 ounces: Easy to clean and light weight. Commonly used for home, travel, work, picnics, and average length hikes.

Large

- **Size Range: 25+ ounces**
- 32 ounces: Meets half daily water consumption needs. Common for fitness and athletic training, day trips, and longer hikes.
- 40 ounces: Commonly used for fitness and athletic training, day trips, longer hikes, family activities, and camping.

Shape

Width: Aside from the volume the bottle can hold (refer to size section), the exterior width of the bottle is important. Ensure it fits your space, your hand, backpack sleeve, waistband loop, or cup holder.

Height: Some bottles may be too tall to fit in coffee machines or water dispensers, so you will need to consider the uses before choosing a bottle.

Interior Angles: The shape of the bottle relates to the ease of cleaning. If a bottle has sharp corners, it can be more difficult to clean.

Mouth

Mouth refers to the opening at the top of the bottle.

Wide-Mouth

- Wide enough to fit ice cubes.
- Easy to clean.

Narrow-Mouth

- Difficult to reach inside to clean.
- Reduced likelihood of water splashing.

Handle Types

No Handle: No handle attached to the water bottle at all.

Bottle Handle: Handles are built into the water bottle and are rigid and cannot change.

Cap Handle: This handle is attached/built into the cap of the water bottle. These can be rigid or soft. You can switch out caps for another one with a different handle.

Cap Types

There are a variety of types of caps available for water bottles. Each type has its own advantages and disadvantages, and you need to choose the one that best fits your needs and preferences.

Screw-On Cap

- Cap screws on firmly in place, minimizing the amount of possible leakage.
- Must open the cap each time to take a drink.
- Water can easily spill or splash out if you are moving while opening the cap.

Push-Pull Cap

- Push to close and pull to open the cap of the bottle.
- Opens to a spout within the bottle.
- Common in sports bottles.



Flip-Top Cap

- Hinged lid that flips open with a push button or by pulling it up.
- Opens to reveal straw or spout.

Straw Cap

- Cap has a straw built in that extends into the water bottle.
- Straw can flip up or can be permanently up.

Cleaning

Water bottles should be washed daily and deep cleaned once a week. Water bottles should be cleaned regularly if you are sick, if the water bottle was left outside, or on the ground at the gym.



Daily Cleaning Method

Materials Needed: warm water, dish soap, bottle brush

- Step 1: remove the water bottle cap
- Step 2: add a squirt of dish soap into the water bottle
- Step 3: fill the water bottle with warm water
- Step 4: add the cap back on and shake the water bottle
- Step 5: remove the cap again and scrub the bottle with the brush
- Step 6: scrub the cap with warm water and dish soap using the brush
- Step 7: rinse the cap and water bottle with warm water and set out to dry

Deep Cleaning Method

Materials Needed: vinegar, cool water, paper towel/dishcloth

- Step 1: remove the water bottle cap
- Step 2: fill the bottle halfway with vinegar
- Step 3: fill the rest of the bottle with cool water and allow it to sit overnight
- Step 4: empty and rinse the bottle with warm water
- Step 5: dry the bottle with a paper towel or dishcloth

For an extra clean, if the water bottle is dishwasher safe, place the water bottle in the dishwasher for a cleaning cycle

Storage

Storing water bottles of many different sizes can be tricky. There are many options depending on your needs. Listed below are a few different options.

Adjustable Cabinet Organizer

- Great for all size water bottles.
- Available in multiple shelf options to fit your needs.

Over-the-Door Hanging Organizer

- Great when shelf space is unavailable.
- Best for small and medium size water bottles.
- Can be stored on any door.

Slim Storage Cart

- Best for small and medium size water bottles.
- Utilizes space that otherwise might not be used.

Under-Shelf Hanging Basket

- Great for all size water bottles.
- Able to be stored in many places.

