



Skin Cancer Prevention and Early Detection

Skin cancer is the most common cancer in the United States. In fact, more skin cancers are diagnosed in the US each year than all other cancers combined. The number of skin cancer cases has been going up over the past few decades.

The good news is that you can do a lot to protect yourself and your family from skin cancer, or catch it early so that it can be treated effectively. Most skin cancers are caused by too much exposure to ultraviolet (UV) rays. Most of this exposure comes from the sun, but some may come from man-made sources, such as indoor tanning beds and sun lamps.

You don't need any x-rays or blood tests to find skin cancer early – just your eyes and a mirror. If you have skin cancer, finding it early is the best way to make sure it can be treated with success.

What is skin cancer?

Skin cancer starts in the cells of the skin. Some other types of cancer start in other parts of the body and can spread to the skin, but these are not skin cancers.

There are 3 main types of skin cancers:

- Basal cell skin cancers (basal cell carcinomas)
- Squamous cell skin cancers (squamous cell carcinomas)
- Melanomas

Basal and squamous cell cancers

Basal and squamous cell skin cancers are by far the most common cancers of the skin. Both are found mainly on parts of the body exposed to the sun, such as the head and neck. These cancers are strongly related to a person's sun exposure.

Basal and squamous cell cancers are much less likely than melanomas to spread to other parts of the body and become life threatening. Still, it's important to find and treat them early. If left alone, they can grow larger and invade nearby tissues and organs, causing scarring, deformity, or even loss of function in some parts of the body. Some of these cancers (especially squamous cell cancers) can spread if not treated, and in some cases they can even be fatal.

These cancers are discussed in more detail in *Skin Cancer: Basal and Squamous Cell*.

Melanomas

Melanomas are cancers that develop from melanocytes, the cells that make the brown pigment that gives skin its color. Melanocytes can also form benign (non-cancerous) growths called *moles*. (Your doctor might call the mole a *nevus*.)

Melanomas can occur anywhere on the body, but are more likely to start in certain areas. The trunk (chest and back) is the most common place in men. In women, the legs are the most common site. The neck and face are other common places for melanoma to start.

Melanomas are not as common as basal cell and squamous cell skin cancers, but they can be far more serious. Like basal cell and squamous cell cancers, melanoma is almost always curable in its early stages. But if left alone, melanoma is much more likely to spread to other parts of the body, where it can be very hard to treat.

Melanomas are discussed in more detail in *Melanoma Skin Cancer*.

Other skin cancers

There are many other types of skin cancers as well, but they are much less common:

- Merkel cell carcinoma
- Kaposi sarcoma
- Cutaneous (skin) lymphoma
- Skin adnexal tumors (tumors that start in hair follicles or sweat and oil glands)
- Various types of sarcomas

Together, these types account for less than 1% of all skin cancers.

It's important for doctors to tell the types of skin cancer apart, because they are treated differently. It's also important for you to know what skin cancers look like. This can help you find them at the earliest possible stage, when they are cured most easily.

What is ultraviolet (UV) radiation?

Exposure to ultraviolet (UV) radiation is a major risk factor for most skin cancers. Sunlight is the main source of UV rays. Tanning lamps and beds are also sources of UV rays. People who get a lot of UV exposure from these sources are at greater risk for skin cancer.

Even though UV rays make up only a very small portion of the sun's rays, they are the main cause of the sun's damaging effects on the skin. UV rays damage the DNA of skin cells. Skin cancers start when this damage affects the DNA of genes that control skin cell growth.

There are 3 main types of UV rays:

- **UVA rays** age skin cells and can damage their DNA. These rays are linked to long-term skin damage such as wrinkles, but they are also thought to play a role in some skin cancers. Most tanning beds give off large amounts of UVA, which has been found to increase skin cancer risk.
- **UVB rays** have slightly more energy than UVA rays. They can damage skin cells' DNA directly, and are the main rays that cause sunburns. They are also thought to cause most skin cancers.
- **UVC rays** have more energy than the other types of UV rays, but they don't get through our atmosphere and are not in sunlight. They are not normally a cause of skin cancer.

Both UVA and UVB rays can damage skin and cause skin cancer. UVB rays are a more potent cause of at least some skin cancers, but based on what's known today, there are *no* safe UV rays.

The strength of the UV rays reaching the ground depends on a number of factors, such as:

- **Time of day:** UV rays are strongest between 10 am and 4 pm.
- **Season of the year:** UV rays are stronger during spring and summer months. This is less of a factor near the equator.
- **Distance from the equator (latitude):** UV exposure goes down as you get further from the equator.
- **Altitude:** More UV rays reach the ground at higher elevations.
- **Cloud cover:** The effect of clouds can vary. Sometimes cloud cover blocks some UV from the sun and lowers UV exposure, while some types of clouds can reflect UV and can increase UV exposure. What is important to know is that UV rays can get through, even on a cloudy day.
- **Reflection off surfaces:** UV rays can bounce off surfaces like water, sand, snow, pavement, or grass, leading to an increase in UV exposure.

The amount of UV exposure a person gets depends on the strength of the rays, the length of time the skin is exposed, and whether the skin is protected with clothing or sunscreen.

People who live in areas with year-round, bright sunlight have a higher risk of skin cancer. Spending a lot of time outdoors for work or recreation without protective clothing and sunscreen increases your risk.

The pattern of exposure may also be important. For example, frequent sunburns in childhood may increase the risk for some types of skin cancer many years or even decades later.

Skin cancers are one result of getting too much sun, but there are other effects as well. Sunburn and tanning are the short-term results of too much exposure to UV rays, and are signs of skin damage. Long-term exposure can cause early skin aging, wrinkles, loss of skin elasticity, dark patches (lentigos, sometimes called *age spots* or *liver spots*), and pre-cancerous skin changes (such as dry, scaly, rough patches called *actinic keratosis*).

The sun's UV rays increase a person's risk of cataracts and certain other eye problems, too. They can also suppress the skin's immune system. Darker-skinned people are generally less likely to get skin cancer than light-skinned people, but they can still get cataracts and immune suppression.

The UV Index

As noted above, the amount of UV light reaching the ground in any given place depends on a number of factors, including the time of day, time of year, elevation, and cloud cover. To help people better understand the strength of UV light in their area on a given day, the National Weather Service and the Environmental Protection Agency (EPA) have developed the UV Index. It gives people an idea of how strong the UV light is in their area, on a scale from 1 to 11+. A higher number means greater risk of exposure to UV rays and a higher chance of sunburn and skin damage that could ultimately lead to skin cancer.

The UV Index is given daily for regions throughout the country. Many newspaper, television, online, and smartphone weather forecasts include the projected UV Index. Further information about the UV Index, as well as your local UV Index forecast, can be found on the EPA's website at www.epa.gov/sunwise/uvindex.html. Smartphone apps are available from the EPA at www.epa.gov/enviro/mobile. As with any forecast, local changes in cloud cover and other factors could change the actual UV levels experienced.

Are some people more likely to get skin damage from the sun?

Everyone's skin and eyes can be affected by the sun and other forms of ultraviolet (UV) rays. People with light skin are much more likely to have sun damage, but darker-skinned people, including people of any ethnicity, can also be affected.

For some people, the skin tans when it absorbs UV rays. The tan is caused by an increase in the activity and number of melanocytes, the cells that make the pigment melanin. Melanin helps block out damaging UV rays up to a point, which is why people with naturally darker skin are less likely to get sunburned, while people with lighter skin are more likely to burn. Sunburns can increase your risk of skin cancer, including melanoma. But UV exposure can raise skin cancer risk even without causing sunburn.

Aside from skin tone, other factors can also affect your risk of damage from UV light. You need to be especially careful in the sun if you:

- Had skin cancer before
- Have a family history of skin cancer, especially melanoma
- Have many moles, irregular moles, or large moles
- Have freckles and burn before tanning
- Have fair skin, blue or green eyes, or blond, red, or light brown hair
- Live or vacation at high altitudes (the strength of UV rays increases the higher up you are)
- Live or vacation in tropical or subtropical climates
- Work indoors all week and then get intense sun exposure on weekends
- Spend a lot of time outdoors

- Have certain autoimmune diseases, such as systemic lupus erythematosus (SLE, or “lupus”)
- Have certain inherited conditions that increase your risk of skin cancer, such as xeroderma pigmentosum (XP) or nevoid basal cell carcinoma syndrome (Gorlin syndrome).
- Have a medical condition that weakens your immune system, such as infection with HIV (the virus that causes AIDS)
- Have had an organ transplant
- Take medicines that lower or suppress your immune system
- Take medicines that make your skin more sensitive to sunlight

Ask your doctor, nurse, or pharmacist if you are taking any medicines that could increase your sensitivity to sunlight.

How do I protect myself from UV rays?

People who get a lot of exposure to ultraviolet (UV) rays are at greater risk for skin cancer.

Sunlight is the main source of UV rays, but you don’t have to avoid the sun completely. And it would be unwise to stay inside if it would keep you from being active, because physical activity is important for good health. But getting too much sun can be harmful. There are some steps you can take to limit your exposure to UV rays.

Some people think about sun protection only when they spend a day at the lake, beach, or pool. But sun exposure adds up day after day, and it happens every time you are in the sun.

Simply staying in the shade is one of the best ways to limit your UV exposure. If you are going to be in the sun, “Slip! Slop! Slap!® and Wrap” is a catchphrase that can help you remember some of the key steps you can take to protect yourself from UV rays:

- Slip on a shirt.
- Slop on sunscreen.
- Slap on a hat.
- Wrap on sunglasses to protect the eyes and skin around them.

Seek shade

An obvious but very important way to limit your exposure to UV light is to avoid being outdoors in direct sunlight too long. This is particularly important between the hours of 10 am and 4 pm, when UV light is strongest. If you are unsure how strong the sun’s rays are, use the shadow test: if your shadow is shorter than you are, the sun’s rays are the strongest, and it’s important to protect yourself.

UV rays reach the ground all year, even on cloudy or hazy days, but the strength of UV rays can change based on the time of year and other factors. UV rays become more intense in the spring, even before temperatures get warmer. People in some areas may get sunburned when the weather

is still cool because they may not think about protecting themselves if it's not hot out. Be especially careful on the beach or in areas with snow because sand, water, and snow reflect sunlight, increasing the amount of UV radiation you get. UV rays can also reach below the water's surface, so you can still get a burn even if you're in the water and feeling cool.

Some UV rays can also pass through windows. Typical car, home, and office windows block most UVB rays but a smaller portion of UVA rays, so even if you don't feel you're getting burned your skin may still get some damage. Tinted windows help block more UVA rays, but this depends on the type of tinting. (If you do have your car windows tinted, check local laws, as some states regulate this.) UV radiation that comes through windows probably doesn't pose a great risk to most people unless they spend long periods of time close to a window that gets direct sunlight.

If you plan to be outdoors, you may want to check the UV Index for your area. The UV Index usually can be found in local newspaper, TV, radio, and online forecasts. It's also on the EPA's website at www.epa.gov/sunwise/uvindex.html and in many smartphone apps (see www.epa.gov/enviro/mobile).

Protect your skin with clothing

When you are out in the sun, wear clothing to cover as much skin as possible. Clothes provide different levels of UV protection. Long-sleeved shirts, long pants, or long skirts cover the most skin and are the most protective. Dark colors generally provide more protection than light colors. A tightly woven fabric protects better than loosely woven clothing. Dry fabric is generally more protective than wet fabric.

Be aware that covering up doesn't block out all UV rays. If you can see light through a fabric, UV rays can get through, too.

Some companies now make clothing that's lightweight, comfortable, and protects against UV exposure even when wet. It tends to be more tightly woven, and some have special coatings to help absorb UV rays. These sun-protective clothes may have a label listing the UV protection factor (UPF) value (the level of protection the garment provides from the sun's UV rays, on a scale from 15 to 50+). The higher the UPF, the higher the protection from UV rays.

Newer products, which are used like laundry detergents in a washing machine, can increase the UPF value of clothes you already own. They add a layer of UV protection to your clothes without changing the color or texture. This can be useful, but it's not exactly clear how much it adds to protecting you from UV rays, so it's still important to follow the other steps listed here.

Use sunscreen

Sunscreen is a product that you put on your skin to protect it from the sun's UV rays. But it's important to know that sunscreen is just a filter – it does not block all UV rays. Sunscreen should not be used as a way to prolong your time in the sun. Even with proper sunscreen use, some UV rays get through, which is why using other forms of sun protection is also important.

Sunscreens are available in many forms – lotions, creams, ointments, gels, sprays, wipes, and lip balms, to name a few.

Some cosmetics, such as moisturizers, lipsticks, and foundations, are considered sunscreen products if they have sunscreen. Some makeup contains sunscreen, but you have to check the label – makeup, including lipstick, without sunscreen does not provide sun protection.

Read the labels

When choosing a sunscreen product, be sure to read the label. Sunscreens with broad spectrum protection (against both UVA and UVB rays) and with sun protection factor (SPF) values of 30 or higher are recommended.

Sun protection factor (SPF): The SPF number is the level of protection the sunscreen provides against UVB rays, which are the main cause of sunburn. A higher SPF number means more UVB protection (although it says nothing about UVA protection). For example, when applying an SPF 30 sunscreen correctly, you get the equivalent of 1 minute of UVB rays for each 30 minutes you spend in the sun. So, 1 hour in the sun wearing SPF 30 sunscreen is the same as spending 2 minutes totally unprotected. People often do not apply enough sunscreen, so they get less actual protection.

Sunscreens labeled with SPFs as high as 100+ are available. Higher numbers do mean more protection, but many people don't understand the SPF scale. SPF 15 sunscreens filter out about 93% of UVB rays, while SPF 30 sunscreens filter out about 97%, SPF 50 sunscreens about 98%, and SPF 100 about 99%. The higher you go, the smaller the difference becomes. No sunscreen protects you completely.

Sunscreens with an SPF lower than 15 must now include a warning on the label stating that the product has been shown only to help prevent sunburn, not skin cancer or early skin aging.

Broad spectrum sunscreen: Sunscreen products can only be labeled "broad spectrum" if they have been tested and shown to protect against both UVA and UVB rays. Some of the chemicals in sunscreens that help protect against UVA rays include avobenzone (Parsol 1789), ecamsule, zinc oxide, and titanium dioxide.

Only broad spectrum sunscreen products with an SPF of 15 or higher can state that they help protect against skin cancer and early skin aging if used as directed with other sun protection measures.

Water resistant sunscreen: Sunscreens are no longer allowed to be labeled as "waterproof" or "sweatproof" because these terms can be misleading. Sunscreens can claim to be "water resistant," but they have to state whether they protect the skin for 40 or 80 minutes of swimming or sweating, based on testing.

Expiration dates: Check the expiration date on the sunscreen to be sure it's still effective. Most sunscreen products are good for at least 2 to 3 years, but you may need to shake the bottle to remix the sunscreen ingredients. Sunscreens that have been exposed to heat for long periods, such as if they were kept in a glove box or car trunk through the summer, may be less effective.

Be sure to apply the sunscreen properly

Always follow the label directions. Most recommend applying sunscreen generously. When putting it on, pay close attention to your face, ears, neck, arms, and any other areas not covered by clothing. If you're going to wear insect repellent or makeup, put the sunscreen on first.

Ideally, about 1 ounce of sunscreen (about a shot glass or palmful) should be used to cover the arms, legs, neck, and face of the average adult. Sunscreen needs to be reapplied at least every 2 hours to maintain protection. Sunscreens can wash off when you sweat or swim and then wipe off with a towel, so they might need to be reapplied more often. Be sure to read the label. And don't forget your lips; lip balm with sunscreen is also available.

Some sunscreen products can irritate your skin. Many products claim to be hypoallergenic or dermatologist tested, but the only way to know for sure if a product will irritate your skin is to try it. One common recommendation is to apply a small amount to the soft skin on the inside of your elbow every day for 3 days. If your skin does not turn red or become itchy, the product is probably OK for you.

Sunless tanning products, such as bronzers and extenders (described in the section "What about tanning pills and other tanning products?"), give skin a tan or golden color. But unlike sunscreens, these products provide very little protection from UV damage.

Wear a hat

A hat with at least a 2- to 3-inch brim all around is ideal because it protects areas that are often exposed to intense sun, such as the ears, eyes, forehead, nose, and scalp. A dark, non-reflective underside to the brim can also help lower the amount of UV rays reaching the face from reflective surfaces such as water. A shade cap (which looks like a baseball cap with about 7 inches of fabric draping down the sides and back) also is good, and will provide more protection for the neck. These are often sold in sports and outdoor supply stores. If you don't have a shade cap (or another good hat) available, you can make one by wearing a large handkerchief or bandana under a baseball cap.

A baseball cap protects the front and top of the head but not the neck or the ears, where skin cancers commonly develop. Straw hats are not as protective as hats made of tightly woven fabric.

Wear sunglasses that block UV rays

UV-blocking sunglasses are important for protecting the delicate skin around the eyes, as well as the eyes themselves. Research has shown that long hours in the sun without protecting your eyes increase your chances of developing certain eye diseases.

The ideal sunglasses should block 99% to 100% of UVA and UVB rays. Before you buy, check the label to make sure they do. Labels that say "UV absorption up to 400 nm" or "Meets ANSI UV Requirements" mean the glasses block at least 99% of UV rays. Those labeled "cosmetic" block about 70% of UV rays. If there is no label, don't assume the sunglasses provide any UV protection.

Darker glasses are not necessarily better because UV protection comes from an invisible chemical in or applied to the lenses, not from the color or darkness of the lenses. Look for an ANSI label.

Large-framed and wraparound sunglasses are more likely to protect your eyes from light coming in from different angles. Children need smaller versions of real, protective adult sunglasses – not toy sunglasses.

Ideally, all types of eyewear, including prescription glasses and contact lenses, should protect against UV rays. Some contact lenses are now made to block most UV rays. But because they

don't cover the whole eye and surrounding areas, they are not sufficient eye protection when used alone.

Avoid tanning beds and sun lamps

Many people believe the UV rays of tanning beds are harmless. This is not true. Tanning lamps give out UVA and usually UVB rays as well. Both UVA and UVB rays can cause long-term skin damage, and can contribute to skin cancer. Tanning bed use has been linked with an increased risk of melanoma, especially if it's started before a person is 30. Most skin doctors and health organizations recommend not using tanning beds and sun lamps.

If you want a tan, one option is to use a sunless tanning lotion, which can provide a darker look without the danger. (See the section "What about tanning pills and other tanning products?")

Small UV lamps are also used in nail salons (or at home) to dry some types of nail polish. These lamps give off UVA rays. The amount given off is much lower than from tanning beds, and the risk of skin cancer from these lamps is thought to be low. Still, to be safe, some expert groups recommend applying sunscreen to the hands before using one of these lamps.

Protect children from the sun

Children need special attention. They tend to spend more time outdoors, can burn more easily, and may not be aware of the dangers. Parents and other caregivers should protect children from excess sun exposure by using the steps above. It's important, particularly in sunnier parts of the world, to cover your children as fully as is reasonable. You should develop the habit of using sunscreen on exposed skin for yourself and your children whenever you go outdoors and may be exposed to large amounts of sunlight. Children need to be taught about the dangers of too much sun exposure as they become more independent. If you or your child burns easily, be extra careful to cover up, limit exposure, and apply sunscreen.

Babies younger than 6 months should be kept out of direct sunlight and protected from the sun using hats and protective clothing. Sunscreen may be used on small areas of exposed skin only if adequate clothing and shade are not available.

A word about sun exposure and vitamin D

Doctors are learning that vitamin D has many health benefits. It might even help lower the risk for some cancers. Your skin makes vitamin D naturally when you are in the sun. How much vitamin D you make depends on many things, including how old you are, how dark your skin is, and how strong the sunlight is where you live.

At this time, doctors aren't sure what the optimal level of vitamin D is. A lot of research is being done in this area. Whenever possible, it's better to get vitamin D from your diet or vitamin supplements rather than from sun exposure because dietary sources and vitamin supplements do not increase skin cancer risk, and are typically more reliable ways to get the amount you need.

What about tanning pills and other tanning products?

Several products claim to give a tan without exposing a person to ultraviolet (UV) radiation. Some may be safe and effective, but others might not work, and some could even be harmful.

Tanning pills and accelerators

Tanning pills contain color additives similar to beta-carotene, the substance that gives carrots their orange color. Once swallowed, the additives are deposited throughout the body, especially the skin, turning it an orange-like color. Although the US Food and Drug Administration (FDA) has approved some of these additives for coloring food, they are not approved for use in tanning agents. They may be harmful at the high levels that are used in tanning pills. The main ingredient in most sunless tanning pills, canthaxanthin, can show up in your eyes as yellow crystals, which may cause injury and impair vision. There have also been reports of liver and skin problems.

Tanning accelerators, such as lotions or pills that contain the amino acid tyrosine or its derivatives, do not work and may be dangerous. Marketers say these products stimulate the body's own tanning process, but most evidence suggests they don't work. The FDA considers them unapproved new drugs that have not been shown to be safe and effective.

No tanning pills have been approved by the FDA.

Bronzers and extenders

Two other sunless tanning products, bronzers and extenders, are considered cosmetics for use on the skin. They are not thought to be harmful when used properly.

Bronzers, made from color additives approved by the FDA for cosmetic use, stain the skin for a short time when applied and can be washed off with soap and water.

Extenders (also known as *sunless tanners* or *self-tanners*) are applied to the skin as lotions or creams, where they interact with proteins on the surface of the skin to produce a darker color. Like a tan, the color tends to wear off after a few days. The only FDA-approved color additive for extenders is dihydroxyacetone (DHA).

Applying these products by hand can sometimes lead to uneven coloring, so some tanning salons have begun to offer whole body sprays in tanning booths. A concern here is that DHA is approved for external use only and should not be inhaled or sprayed in or on the mouth, eyes, or nose. People who choose to get a DHA spray tan should make sure to protect these areas.

These products can give skin a darker color (although in some people it may have a slight orange tinge), but they don't offer much protection from the damaging effects of UV radiation. Even if they contain sunscreen, it would only be effective for a couple of hours. You should read the label carefully to determine whether or not a product provides any protection, but in most cases it's safest to continue to use sunscreen and wear protective clothing when going outside.

Skin exams

Most skin cancers can be found early with skin exams. Regular exams by your doctor and checking your own skin frequently can help find cancers early, when they are easier to treat.

Regular skin exams are especially important for people who are at higher risk of skin cancer, such as people with reduced immunity, people who have had skin cancer before, and people with a strong family history of skin cancer. Talk to your doctor about how often you should have your skin examined.

Get your skin checked by your doctor

Your doctor should check your skin carefully as part of a routine cancer-related check-up. They should be willing to discuss any concerns you might have about this exam.

Check your own skin

It's important to check your own skin, preferably once a month. A skin self-exam is best done in a well-lit room in front of a full-length mirror. You can use a hand-held mirror to look at areas that are hard to see, such as the backs of your thighs. A spouse or close friend or family member may be able to help you with these exams, especially for those hard-to-see areas like your back or scalp.

The first time you examine your skin, spend time carefully going over the entire surface. Learn the pattern of moles, blemishes, freckles, and other marks on your skin so that you'll notice any changes next time. Be sure to show your doctor any areas that concern you.

Follow these step-by-step instructions to examine your skin:

Face the mirror

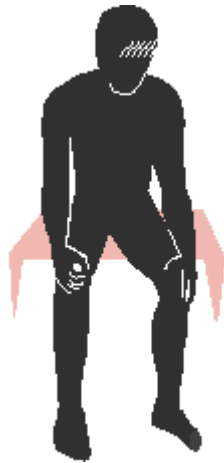


Check your face, ears, neck, chest, and belly.
Women will need to lift their breasts to check the skin underneath.

Check your underarm areas, both sides of your arms, the tops and palms of your hands, in between your fingers, and your fingernails.



Sit down



Check the front of your thighs, shins, tops of your feet, in between your toes, and your toenails.

Now use a hand mirror to look at the bottoms of your feet, your calves, and the backs of your thighs, first checking one leg and then the other.





Use the hand mirror to check your buttocks, genital area, lower and upper back, and the back of the neck and ears. Or it may be easier to look at your back in the wall mirror using a hand mirror.

Use a comb or hair dryer to part your hair so that you can check your scalp.



The best time to do this simple monthly exam is after a bath or shower. Check any moles, blemishes, or birthmarks from the top of your head to your toes. If you look at your skin regularly, you will know what's normal for you.

What should I look for on a skin self-exam?

Skin cancers can show up in many shapes and sizes. Be sure to show your doctor any areas that concern you, especially if they have just appeared or have changed recently.

Basal and squamous cell cancers

Basal cell cancers and squamous cell cancers are most often found in areas that get exposed to a lot of sun, such as the head, neck, and arms, but they can develop anywhere on the body. Look for new growths, spots, bumps, patches, or sores that don't heal after several weeks. Shaving cuts that don't heal in few days sometimes turn out to be skin cancers, which often bleed easily. (They are not caused by shaving.)

Basal cell carcinomas can appear in a number of different ways:

- Flat, firm, pale or yellow areas, similar to a scar
- Raised reddish patches that might be itchy
- Small, pink or red, translucent, shiny, pearly bumps, which might have blue, brown, or black areas
- Pink growths with raised edges and a lower area in their center, which might contain abnormal blood vessels

- Open sores (which may have oozing or crusted areas) that don't heal, or that heal and then come back

Squamous cell carcinomas can appear as:

- Rough or scaly red patches, which might crust or bleed
- Raised growths or lumps, sometimes with a lower area in the center
- Open sores (which may have oozing or crusted areas) that don't heal, or that heal and then come back
- Wart-like growths

Both of these types of skin cancer may develop as a flat area showing only slight changes from normal skin.

Actinic keratosis, also known as *solar keratosis*, is a skin condition that can sometimes progress to squamous cell cancer (although most of them do not).

Actinic keratoses are caused by too much sun exposure. They are usually small (less than ¼ inch across), rough or scaly spots that may be pink-red or flesh-colored. Usually they start on the face, ears, backs of the hands, and arms, but they can occur on other sun-exposed areas of skin. People with one actinic keratosis usually develop many more.

Some can grow into squamous cell cancers, while others may stay the same or even go away on their own. But it can be hard sometimes even for doctors to tell them apart from true skin cancers. These areas should be looked at by a doctor, who can help decide if they should be treated.

Moles and melanomas

Normal moles

A normal mole is usually an evenly colored brown, tan, or black spot on the skin. It can be either flat or raised. It can be round or oval. Moles are generally less than 6 millimeters (about ¼ inch) across (about the width of a pencil eraser). Some moles can be present at birth, but most appear during childhood or young adulthood. New moles that appear later in life should be checked by a doctor.

Once a mole has developed, it will usually stay the same size, shape, and color for many years. Some moles may fade away with age.

Most people have moles, and almost all moles are harmless. But it's important to notice changes in a mole – such as in its size, shape, or color – because this may be a sign that melanoma is developing.

Possible signs and symptoms of melanoma

The most important warning sign for melanoma is a new spot on the skin or a spot that's changing in size, shape, or color. Another important sign is a spot that looks different from all of the other spots on your skin. If you have any of these warning signs, have your skin checked by a doctor.

The **ABCDE rule** is another guide to the usual signs of melanoma. Be on the lookout and tell your doctor about spots that have any of the following features:

- **A is for Asymmetry:** One half of a mole or birthmark does not match the other.
- **B is for Border:** The edges are irregular, ragged, notched, or blurred.
- **C is for Color:** The color is not the same all over and may include shades of brown or black, or sometimes with patches of pink, red, white, or blue.
- **D is for Diameter:** The spot is larger than 6 millimeters across (about ¼ inch – the size of a pencil eraser), although melanomas can sometimes be smaller than this.
- **E is for Evolving:** The mole is changing in size, shape, or color.

Some melanomas do not fit the rules described above, so it's important to tell your doctor about any changes or new spots on the skin, or growths that look different from the rest of your moles.

Other warning signs are:

- A sore that does not heal
- Spread of pigment from the border of a spot into surrounding skin
- Redness or a new swelling beyond the border
- Change in sensation – itchiness, tenderness, or pain
- Change in the surface of a mole – scaliness, oozing, bleeding, or the appearance of a bump or nodule

To see some examples of skin cancers and other skin conditions, visit our [Skin Cancer Image Gallery](#).

What if I find something suspicious on a skin exam?

Be sure to show your doctor any area that concerns you. If your doctor suspects you might have skin cancer, he or she will do exams and tests to find out. If you can't see your doctor right away, you might want to take good close-up photos of the area so your doctor can see if the area is changing when you do get an appointment.

Medical history and physical exam

Usually the doctor's first step is to take your medical history. The doctor will ask when the mark first appeared, if it has changed in size or appearance, and if it's causing any symptoms (such as pain, itching, or bleeding). You might also be asked about past exposures to causes of skin cancer (including sunburns and tanning practices) and if you or anyone in your family has had skin cancer.

During your physical exam, your doctor will note the size, shape, color, and texture of the area in question, and if it is bleeding, oozing, or crusting. The rest of your body may be checked for moles and other spots that could be related to skin cancer.

The doctor may also feel the lymph nodes (bean-sized collections of immune system cells) under the skin near the suspicious area. Some skin cancers spread to lymph nodes. When this happens, the affected lymph nodes may become larger and firmer than usual.

If you are being seen by your primary doctor and skin cancer is suspected, you may be referred to a dermatologist, a doctor who specializes in skin diseases, who will look at the area more closely.

Along with a standard physical exam, many dermatologists use *dermoscopy* (also known as *epiluminescence microscopy [ELM]*, *surface microscopy*, or *dermatoscopy*) to see spots on the skin more clearly. The doctor uses a dermatoscope, which is a special magnifying lens and light source held near the skin. Sometimes the doctor will use a thin layer of alcohol or oil with this instrument. The doctor may take a digital photo of the spot.

When used by an experienced dermatologist, this test can improve the accuracy of finding skin cancers early. It can often help tell whether a spot on the skin is likely to be benign (not cancer) without doing a biopsy.

Skin biopsy

If the doctor thinks that a suspicious area might be skin cancer, a sample of skin from that area will be removed and looked at under a microscope. This is called a *skin biopsy*. There are many ways to do a skin biopsy. The doctor will choose one based on the suspected type of skin cancer, where it is on the body, the size of the affected area, and other factors. For more detailed information on skin biopsies, see our documents *Melanoma Skin Cancer* or *Skin Cancer: Basal and Squamous Cell*.

If a spot is found to be cancer or a pre-cancer, your doctor may want to do more tests or treat it. If the spot is small and localized, a more extensive biopsy (to remove more tissue) or some type of surgery may be all that's needed. For cancers that might be more widespread (especially melanomas), imaging tests might be done to see if the cancer has spread, and treatment such as immunotherapy, targeted therapy, chemotherapy, or radiation might be needed. Again, to learn more, see our skin cancer information.

Additional resources

More information from your American Cancer Society

Here is more information you might find helpful. You also can order free copies of our documents from our toll-free number, 1-800-227-2345, or read them on our website, www.cancer.org.

Melanoma Skin Cancer (also in Spanish)

Skin Cancer: Basal and Squamous Cell (also in Spanish)

Ultraviolet (UV) Radiation

Why You Should Know About Melanoma (also in Spanish)

Skin Cancer Image Gallery

A Parent's Guide to Skin Protection (also in Spanish)

Sun Basics: Skin Protection Made Simple (brochure for children aged 8 to 14)

National organizations and websites*

Along with the American Cancer Society, other sources of information and support include:

American Academy of Dermatology (AAD)

Toll-free number: 1-888-462-3376 (1-888-462-DERM)

Website: www.aad.org

Spot Skin Cancer website: www.aad.org/spot-skin-cancer

For information on melanoma, a skin cancer risk assessment, a locator for free skin cancer screenings, and a dermatologist locator

Environmental Protection Agency (EPA)

Website: www.epa.gov/sunwise

Has free sun safety information and a UV Index app that you can check using your zip code

Melanoma Research Foundation

Toll-free number: 1-877-673-6460

Website: www.melanoma.org

For more on melanoma and chat rooms, patient stories, and bulletin boards – all to support and educate anyone affected by melanoma

National Cancer Institute

Toll-free number: 1-800-422-6237 (1-800-4-CANCER)

TTY: 1-800-332-8615

Website: www.cancer.gov

Offers accurate, up-to-date information about cancer to patients, their families, and the general public

Skin Cancer Foundation

Toll-free number: 1-800-754-6490 (1-800-SKIN-490)

Website: www.skincancer.org

Has pictures and descriptions of skin cancers, information and educational materials, and newsletters

**Inclusion on this list does not imply endorsement by the American Cancer Society.*

No matter who you are, we can help. Contact us anytime, day or night, for information and support. Call us at **1-800-227-2345** or visit www.cancer.org.

References

American Academy of Pediatrics. Policy statement – Ultraviolet radiation: A hazard to children and adolescents. *Pediatrics*. 2011;127:588-597.

American Cancer Society. *Cancer Facts & Figures 2015*. Atlanta, Ga: American Cancer Society; 2015.

El Ghissassi, Baan R, Straif K, et al. A review of human carcinogens--part D: Radiation. *Lancet Oncol*. 2009;10:751-752.

Food and Drug Administration. FDA Sheds Light on Sunscreens. 2013. Accessed at www.fda.gov/ForConsumers/ConsumerUpdates/ucm258416.htm on December 30, 2014.

Food and Drug Administration. Sunless Tanners and Bronzers. 2014. Accessed at www.fda.gov/cosmetics/productsingredients/products/ucm134064.htm on October 8, 2013.

Food and Drug Administration. Tanning Products. 2013. Accessed at www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/Tanning/ucm116434.htm on December 30, 2014.

Naylor MF, Rigel DS. Current concepts in sunscreens and usage. In: Rigel DS, Friedman RJ, Dzubow LM, Reintgen DS, Bystryn JC, Marks R, eds. *Cancer of the Skin*. Philadelphia, Pa: Elsevier Saunders; 2005:71-83.

Last Medical Review: 3/19/2015

Last Revised: 3/20/2015

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For additional assistance please contact your American Cancer Society
1-800-227-2345 or www.cancer.org