Warts, ringworm and impetigo are embarrassing and scratchy skin conditions kids (and adults) can sidestep by taking the dermatologist-recommended precautions suggested here.

Just reading the words "contagious skin diseases" can make you feel itchy all over. Pools, locker rooms, contact sports and pets all offer opportunities for your kids to catch "icky" skin conditions—such as warts, ringworm and impetigo—you'd rather they didn't bring home. Although usually harmless, these skin diseases can be uncomfortable,
and can also trigger feelings of self-consciousness.

"Kids are embarrassed about warts on their hands or face, not wanting to be teased at school," says Yale Medicine dermatologist Christopher G. Bunick, MD, Ph.D. "Similarly, the thought of a fungal infection on the skin, like with ringworm, makes many parents shudder with uneasiness. And they're genuinely scared about the spread of any bacterial skin infection like impetigo."

Should your child or you (yes, adults can get them, too) develop a cluster of bumps or a suspicious, scratchy rash, you may be looking for reliable medical information and some reassurance. Below, our dermatologists discuss three commonly passed-along skin diseases, how to avoid them and what treatments can clear them up.

**Warts**

Warts (common, plantar, and flat) are harmless, small, abnormal flesh-colored growths on the surface of the skin that are caused by the human papillomavirus (HPV)—but don't worry, these aren't the strains linked to cancer.

"The reason people don't like warts is they're unsightly," says Yale Medicine's Richard Antaya, MD, director of Pediatric Dermatology. "They can also be painful when they appear on the soles of the feet or stick out of the elbow or the ankle. Then warts get caught on things and bleed or get ripped off while playing contact sports like football," he explains.

Prevention: This is a conundrum. "We don't know precisely how you get warts," says Dr. Antaya, who studies the condition, "but we do know that one way of getting a wart is through a break in the skin. It can be a microscopic crack that allows the virus to get into the epidermis itself,
allowing an entryway."

He advises covering cuts, as a precaution, and suggests that you instruct your kids to avoid going barefoot in locker rooms and pools. (There is research, Dr. Antaya says, showing that people with plantar warts were more likely to have used locker rooms at public pools.)

If your child does develop a wart, it's important to take measures to prevent it from spreading. "Don't bite them, or they can spread to your mouth," says Dr. Antaya. He also suggests not disturbing flat warts, which as the name suggests, are not round and mounded like other warts. "They can be spread by nicks or cuts," he says. "If you have a flat wart on your leg, stop shaving there."

Treatment: A wart will often clear up on its own without any treatment, but studies have demonstrated that only one third of children who have a wart will be free of all warts within two years. Warts are less likely to occur as children get older and their bodies learn to fight off the virus that causes them.

For some children, though, warts can be very difficult to treat, says Dr. Antaya. "We have different treatments for warts because no single treatment works for everyone—each person's immune system works differently, and every wart is different," he says.

Often a combination of these typical treatment methods may be needed to remove warts:

- Over-the-counter salicylic acid products that are available in drugstores are sometimes recommended.
- In the dermatologist's office, a wart can be frozen off with liquid nitrogen (cryotherapy) or treated with topical acid (squaric acid).
- There are also immunotherapy treatments dermatologists inject
in the skin below the warts to trigger an immune response that fights off the virus.

With some of these methods, there's a risk of making matters worse, though. "When you use mechanisms like freezing a wart or using acid to cause destruction, the problem can spread," says Dr. Antaya, "causing a 'ring wart'—a giant circle of warts that form when you've damaged the surrounding skin, allowing the virus and wart to spread."

To find a better treatment method, doctors at Yale are currently researching a new, painless heat-patch therapy for warts. In a clinical trial, Dr. Antaya will apply a specially created heat patch to the skin—it's thought that the heat stimulates wart cells to self-destruct (apoptosis), causing the body to "turn off" the DNA and kill the affected cells. "When you heat up the skin involving the wart, the body says, 'Wait a minute: these cells need to die,' and certain chemicals are released to help kill the cells infected with the wart virus," Dr. Antaya explains.

For more information about joining the clinical trial using heat patches to treat warts in children and young adults ages 5 to 25 call 475-228-6052.

**Ringworm**

Relax: Ringworm is not as icky as it sounds. The term describes a slowly expanding, red circular rash with flakiness at the edges. Affected skin can feel irritated and has a burning sensation.

You may be relieved to know that "it is not a worm," says Amanda Zubek, MD, Ph.D., medical director of Yale Medicine Dermatology in Middlebury. "It often—but not always—appears in a ring shape, but it's actually due to a fungus. It's a pretty common problem. We see a lot of it."
There are various different types of ringworm, caused by about 30 different species of fungi. It can appear anywhere on the body. Ringworm on the scalp is called tinea capitis; on the groin, it's called tinea cruris; on the feet, it's commonly known as athlete's foot (tinea pedis); and when it affects the nails, it's referred to as onychomycosis. The good news, though, is that none of these conditions is dangerous, she says.

Prevention: Completely protecting your child (or yourself) is impossible, but it's a good idea to know how ringworm can be transmitted and what steps you can take to reduce the likelihood of transmission:

- Have your pet checked. Snuggling with or petting cats and dogs is one way to get ringworm. "Cats and dogs don't necessarily have a rash, but could still be carrying it," Dr. Zubek says. It's a good idea to have your vet check and treat your pet for ringworm, especially if anyone in your family develops it. Treating the animal will help prevent infection or reinfection.
- Keep feet covered. Having an open cut gives fungi a pathway into the skin, so it's important to keep any small cuts covered. Flip flops should be worn to help prevent picking up ringworm poolside or from locker room floors, which are moist, damp places where fungi likes to grow.
- Don't share combs, brushes or hats. Doing so may be a way to catch ringworm of the scalp, which, if untreated, can cause bald patches to appear.
- Avoid close contact with affected people. Because it's contagious, avoid touching an active ringworm infection if a family member gets one. "It doesn't mean you can't touch the person at all, just try to avoid touching the affected part," says Dr. Zubek. If your child plays close-contact sports like wrestling, inquire about league policies on contagious skin problems (leagues often do not allow participation during flare-ups of
ringworm, herpes simplex or impetigo).

Treatment: Topical antifungal medications are often prescribed when ringworm affects the scalp, groin or feet. If the ringworm is more widespread on the body or scalp, or if nails are affected, then oral antifungal medications are often required to clear the infection (the skin tissue around the nail is usually too thick for creams and liquids to fully penetrate).

See a dermatologist first to confirm that your child's rash is, in fact, ringworm—it can be easily confused with the dry skin conditions eczema and psoriasis or occasionally with molluscum contagiosum, another bumpy-looking, contagious skin condition. Your child's dermatologist may take a skin sample to determine whether a fungus is the cause of the rash.

After diagnosis, it's a good idea to toss (or thoroughly clean) brushes and combs exposed to scalp ringworm. To prevent reinfection of athlete's foot, Dr. Zubek advises treating shoes and socks with an anti-fungal spray or with an "ozone light," which uses ultraviolet C (UVC) light to kill fungi and prevent recurrence.

**Impetigo**

Impetigo is a scratchy, scabby, superficial contagious skin infection caused by either Staphylococcus aureus or Streptococcus bacteria. The affected areas easily break open, revealing raw, yellow-crusted sores.

"Impetigo is highly contagious, and spreads by direct person-to-person contact, or by contact with infected towels, bed sheets or clothes," says Yale Medicine dermatologist Ilya Lim, MD. "It is much more common in children; adults usually get the infection through contact with affected children."
An open pathway such as a cut, scratch or a tiny crack in the skin can provide the point of entry for the bacteria. But impetigo can also get through unbroken skin just through skin-to-skin contact. This is often how children, as well as athletes who participate in contact sports like wrestling and football, acquire it.

The condition spreads easily, both on other areas of your child's body or to other people. If the infection progresses, bullous (blistering) impetigo with fluid-filled blisters can develop. If the infection persists longer still, the next stage of the disease is ecthyma. This form of "deep impetigo" causes painful blisters and crusted sores with ulcers underneath.

Prevention: "Impetigo is more contagious than warts or ringworm," Dr. Lim says. "Extra caution should be taken in terms of not sharing clothing or linens and practicing frequent hand-washing when a household member is affected." Using lots of hand sanitizer and showering or bathing daily (after matches or games in particular) is recommended.

Treatment: If you suspect your child has a skin infection that could be impetigo, see a dermatologist. Mild cases can be treated with topical antibiotics. More severe cases require prescription oral antibiotics.

In the end, if you think your child may be showing symptoms of any "icky" skin issue such as warts, ringworm or impetigo, see a dermatologist before the condition has a chance to spread.

"All three conditions are very common," says Dr. Bunick. "While they can undoubtedly scare parents, remember to take a deep breath and know these conditions are treatable."

Provided by Yale University