CONDITION

Calluses and corns

Learn how calluses and corns form, how they differ from warts, which treatments may help, and when foot changes need medical care.

WHAT IT IS
Areas of thickened skin from pressure or rubbing

BODY SYSTEM
Skin

MAIN SYMPTOMS
Thick rough skin, tenderness or pain, reduced sensitivity, cracking or bleeding

WHAT CAUSES IT
Repeated pressure and friction

HOW IT IS DIAGNOSED
Clinical skin examination

MAIN TREATMENT
Pressure relief and gradual skin reduction

CAN IT BE CURED?
Sometimes - may return if pressure continues

IS IT AN EMERGENCY?
Sometimes - rapidly spreading redness with fever

LONG-TERM OUTLOOK
Usually harmless but may recur

Overview

Calluses and corns are areas of thickened skin caused by repeated pressure or rubbing. The extra skin is the body's way of protecting tissue underneath. They most often develop on the feet, but calluses can also form on the hands or other areas exposed to repeated friction.

A callus is usually a broad, flat area of thick skin. Foot calluses commonly appear beneath the heel or the ball of the foot. Hand calluses may form from tools, sports equipment, musical instruments, or manual work.

A corn is smaller and more focused. It often has a firm central core that presses into deeper skin and can be painful. Hard corns commonly form on the tops or outer surfaces of toes. Softer, pale corns may develop between toes, where moisture keeps the skin from becoming hard.

Calluses and corns are not contagious and are not caused by a virus. Many are harmless, but they can become painful if pressure continues. They matter more in people with diabetes, reduced circulation, or loss of feeling in the feet because a small skin injury may go unnoticed and develop into an ulcer or infection.

Symptoms

Calluses usually cause a patch of skin that is:

A corn is usually round and clearly defined. It may have a hard center surrounded by irritated skin. Direct pressure can cause a sharp or aching pain, especially when the corn rubs against a shoe.

Soft corns between the toes may look pale, rubbery, or moist. The skin can become sore because of pressure from neighboring toes and trapped moisture.

Some calluses and corns crack. A crack may sting or bleed, particularly if the skin is dry or pressure continues. Redness, drainage, warmth, swelling, or increasing pain is not typical of a simple callus and may point to skin breakdown or infection.

Corns can sometimes be confused with plantar warts. A wart is a skin growth caused by human papillomavirus. Warts may interrupt the normal skin lines and can contain tiny dark dots from clotted blood vessels. Calluses usually preserve skin lines, although the difference is not always easy to see at home.

- Thick, rough, or waxy
- Yellowish, gray, or similar in color to nearby skin
- Less sensitive to light touch than surrounding skin
- Broad and less clearly defined than a corn
- Tender or uncomfortable when standing, walking, or gripping an object

Causes and risk factors

Repeated pressure and friction cause the outer layer of skin to produce more keratin, a tough protective protein. If the pressure continues, this thickened layer may build into a callus or concentrated corn.

Common causes on the feet include:

Foot shape can also concentrate pressure. Bunions, hammertoes, prominent joints, flat feet,

high arches, and differences in leg or foot alignment may cause part of the foot to rub against a shoe or bear more weight. A corn can form over a bony prominence, while a callus may form beneath an area carrying extra pressure.

Hand calluses may result from repetitive gripping or rubbing during weightlifting, rowing, gardening, construction work, racquet sports, or playing a stringed instrument. Protective gloves and changes in technique may reduce friction, although some activity-related callus may remain.

Age-related changes can reduce the natural padding under the feet, making pressure points more noticeable. A previous foot injury or surgery may also change how weight is distributed.

Diabetes, peripheral neuropathy, and peripheral artery disease do not directly cause every callus or corn. However, they increase the importance of professional foot care. Peripheral neuropathy means damaged nerves that reduce feeling. Peripheral artery disease means narrowed arteries that reduce blood flow, often to the legs and feet. Either condition can make it harder to notice or heal a wound beneath thick skin.

- Shoes that are too tight, narrow, loose, or shallow around the toes
- High heels, which shift more body weight onto the front of the foot
- Socks that bunch, have thick seams, or do not reduce rubbing
- Wearing shoes without socks when the shoe material rubs the skin
- Long periods of standing, walking, running, or other weight-bearing activity
- An uneven walking pattern that places extra pressure on one area

Diagnosis

A clinician can usually identify a callus or corn by examining its location, shape, and texture. They may ask about footwear, work, exercise, pain, previous foot problems, diabetes, circulation, and changes in sensation.

The examination may include checking how you stand and walk, looking for toe or foot deformities, and inspecting shoes for pressure points. The clinician may also check pulses, skin temperature, and sensation if circulation or nerve problems are possible.

Sometimes a clinician gently removes a small amount of thick surface skin. This can help distinguish a corn from a wart or reveal bleeding, drainage, or an ulcer hidden underneath. This procedure should be performed with appropriate sterile equipment, especially when a person has diabetes or reduced circulation.

Imaging is not routinely needed. An X-ray may be considered when a painful bony prominence, arthritis, previous injury, or structural foot problem may be creating repeated pressure. A skin sample is rarely necessary unless the diagnosis remains uncertain or the area has unusual features.

A new growth that changes color, bleeds without clear friction, does not heal, or looks different from a typical callus should be evaluated rather than repeatedly treated at home.

Treatment and management

Treatment focuses on relieving pressure and gradually reducing excess skin. Removing thick skin without addressing the source of pressure often provides only temporary relief.

Better-fitting footwear may be enough for a mild foot callus or corn. Shoes should provide adequate width and depth around the toes, without allowing the foot to slide. A wide toe box can reduce rubbing over bunions or hammertoes. A footwear specialist or podiatrist can help assess difficult pressure points.

Nonmedicated cushioning may protect the area. Options include soft insoles, toe sleeves, or pads positioned around-not directly on top of-a painful corn. Poorly placed padding can increase pressure, so it should be checked regularly.

For uncomplicated thick skin, soaking the area in warm water can soften it. Gentle use of a pumice stone or foot file may then remove a small amount of dead surface skin. Do not file until the skin is sore, raw, or bleeding. Moisturizer can help reduce dryness and cracking.

Do not cut, shave, or dig out a corn or callus with a razor, knife, nail tool, or other sharp object. This can cause bleeding, infection, and damage to healthy tissue. A corn's central core is compacted skin, not a root that must be pulled out.

Over-the-counter corn removers often contain salicylic acid, which breaks down thickened skin. It can also injure normal skin if it spreads beyond the intended area. Ask a clinician or pharmacist whether such a product is appropriate before using it, and follow its label. People with diabetes, poor circulation, reduced foot sensation, fragile skin, or a history of foot ulcers should not self-treat with medicated corn-removal products unless a healthcare professional specifically advises it.

A podiatrist or other trained clinician can carefully trim thickened skin. This is sometimes called debridement , meaning removal of dead or excess tissue. Debridement may reduce pain, but the callus or corn can return if pressure continues.

Custom or noncustom shoe inserts, called orthotics, may redistribute weight when foot structure or walking mechanics are contributing. A clinician can help determine whether an

insert is likely to help. Physical therapy or changes in activity technique may be useful in selected cases.

Surgery is rarely needed solely for a callus or corn. It may be considered when a significant bone or toe deformity repeatedly causes painful pressure despite appropriate footwear, padding, and other care. Surgery has its own risks and does not guarantee that thickened skin will not return.

For hand calluses, management may include padded gloves, grip adjustments, tool modifications, rest from the triggering activity, and regular moisturizing. Some protective thickening may be useful, so complete removal is not always necessary.

Complications

Most calluses and corns do not cause serious problems. Ongoing pressure can still lead to:

Ulcers and infections are more concerning in people with diabetes, poor circulation, or reduced sensation. Thick callus can hide a wound, and reduced feeling may prevent a person from noticing pain. Poor blood flow can slow healing.

Changing the way you walk to avoid pain may also place extra stress on the ankle, knee, hip, or the other foot.

- Persistent pain that changes walking or limits activity
- Cracking, bleeding, or inflammation
- A blister or fluid-filled sac beneath thick skin
- Skin ulceration, meaning an open sore
- Bacterial infection
- Recurrence after treatment

Follow up

Arrange routine medical or podiatry care if a callus or corn is painful, keeps returning, interferes with walking, or does not improve after pressure is reduced. Evaluation is also appropriate if you are unsure whether the area is a corn, callus, wart, or another skin condition.

People with diabetes, peripheral artery disease, neuropathy, previous foot ulcers, or a weakened immune system should seek professional advice early rather than attempting to cut, file, or chemically remove thick skin. Regular foot checks may be recommended based on

the person's overall risk.

Check the area after changing footwear or using padding. Improvement should include less pressure, less tenderness, and no new skin breakdown. If a clinician trims the area or recommends an insert, follow-up may be needed to see whether pressure has been adequately relieved.

Seek prompt medical care for:

Seek emergency care if rapidly spreading redness occurs with fever, confusion, faintness, rapid breathing, or severe illness. Black or blue tissue, a cold foot, or sudden severe foot pain also requires emergency assessment because these signs can indicate critically reduced blood flow or serious tissue injury.

- An open sore, blister, or bleeding beneath the thick skin
- Pus, bad-smelling drainage, increasing warmth, or swelling
- Redness that is spreading
- New numbness or a clear change in skin color
- Increasing pain, especially in a person with diabetes or poor circulation

Sources

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