



Cracked Heels: stop them in their tracks

Cracked heels are most often caused by a lack of moisture in the skin. Fissures generally occur on the back of the heel and usually affect both feet. For most people cracked heels are a cosmetic problem only, however, fissures can become problematic if they deepen and cause pain, and in some cases infection will develop. Topical products, e.g. urea-based creams, are used to both prevent and treat cracked heels.

Cracked heels generally occur as a result of dry skin on the feet. This is often accompanied by hyperkeratosis (thickened skin) and callus formation around the edges of the heel, which is yellow or dark brown in colour.¹ When weight is applied to the fat pad in the heel, it expands sideways and creates fissures in the skin, which has become less elastic and more prone to cracking due to decreased moisture. Initially, small fissures can appear over the surface of the heel or callus and these may become larger and deeper resulting in pain and bleeding. Pain is typically worse on weightbearing and alleviated by rest. People with larger, deeper heel fissures have an increased risk of infection which may progress to cellulitis and ulceration, especially in those with additional risk factors such as diabetes.¹

Risk factors include dry skin and systemic conditions

There are a number of predisposing factors which make heel fissures more likely to occur. These include the presence of abnormally dry skin, corns or calluses, prolonged standing (especially on hard surfaces), excess body weight, going barefoot or regularly wearing sandals or open-backed shoes.¹

Underlying systemic conditions can also be associated with the development of cracked heels, and include:¹

1. Atopic dermatitis – a family history of asthma, eczema or allergic rhinitis can be particularly useful in diagnosing atopic dermatitis (especially in infants)
2. Juvenile plantar dermatosis – characterised by dry, shiny, glazed skin on the sole of the foot due primarily to friction. It is most commonly seen in children who are atopic, particularly boys aged four to eight years.²
3. Psoriasis, particularly palmoplantar psoriasis – tends to be a chronic, recurrent condition
4. Other forms of palmoplantar keratoderma – which can either be hereditary or acquired and described as localised or diffuse thickening of the skin on the palms and soles
5. Any systemic condition that can cause dry skin, e.g. hypothyroidism or diabetes

Topical treatments can be used for both prevention and management

Preventing and treating dry skin to avoid cracked heels is preferable, but patients usually present for treatment after heel fissures have developed. There are a wide range of emollients available that can be used to both prevent and treat dry skin and cracked heels. Formulations that have water-retaining (humectant) and keratolytic properties are the most effective.¹

Urea-based products: The most commonly used product is 10% urea cream. It is fully subsidised on the Pharmaceutical Schedule (as HealthE cream) and also available for general sale (Nutraplus, Aquacare).³ A 10% urea + 5% lactic acid cream

(Calmurid – general sale) can also be considered. For people with severe fissures it may be necessary to use a product with a higher urea content, e.g. Eulactol 25% (fully subsidised) or Neat Feet Heel Balm 26% (general sale – other similar products are also available).⁴ It has been reported that a 25% urea cream improves pain, dryness, appearance of the skin, skin scaling and desquamation scores after four weeks in patients with heel fissures.⁵

N.B. Urea products can cause discomfort and stinging when applied to broken skin if the dermal layer is exposed.

Salicylic acid-based products: Salicylic acid is keratolytic (skin exfoliant) and has been shown to reduce hyperkeratosis, fissures and pain when applied to heels as a 6% cream.⁶ There is a wide range of proprietary “cracked heel” products that contain salicylic acid available for purchase in New Zealand, usually together with urea. Salicylic acid is subsidised if prescribed in a dermatological base, e.g. white soft paraffin, urea cream 10% (HealthE cream). The salicylic acid product should be applied to the thickened, dry heel skin; it may cause a stinging sensation if applied to fissures or other broken skin if the dermal layer is exposed.

Alpha-hydroxy acids: Are a group of organic carboxylic compounds found in milk, fruit, sugar cane and other natural products, and include glycolic, citric and lactic acids. These compounds are found in a number of general sale products, e.g. QV Feet Heel Balm, and help exfoliate the skin and reduce keratinisation.

Saccharide isomerate: This compound is also known as pentavitin. It is a key ingredient of Ellgy Heel Balm which is available for purchase at pharmacies. Pentavitin is a moisturising agent which contains natural carbohydrates found in the stratum corneum. It is not easily washed off and results in long-lasting moisturisation.

Other treatment options

Topical creams and balms are sometimes insufficient in patients with deeply cracked heels and other treatment options may be required, along with referral to a podiatrist for severe cases. Some options that can be suggested to patients include:¹

1. Using a pumice stone to debride the hard, thickened skin (after softening it with a keratolytic emollient). Electronic machines for removing scaled skin are also available. In severe cases, it may be necessary for the clinician to debride the skin using a scalpel or razor blade. Patients should be advised against using a blade

at home as there is a risk of injury, which can result in infection.

2. Treating the fissures with a liquid, gel or spray bandage or tissue glue, e.g. cyanoacrylate liquid skin protectant. This has been shown to reduce pain and aid healing.⁷
3. Applying adhesive tape to close over the fissure and support the underlying tissue
4. Using an orthotic device, e.g. insoles, heel pads, along with appropriate enclosed footwear to redistribute bodyweight and provide more support for the heel

Complications

Most patients with cracked heels will be successfully treated with the methods listed above. In some patients, especially those with deeper, larger heel fissures, infection can develop which may be localised or result in cellulitis. If cellulitis occurs, management includes debridement of dead tissue, elevation of the feet and oral antibiotic treatment, e.g. flucloxacillin. People with diabetes are more prone to infection and if they have neuropathy or impaired vascular supply, heel fissures can result in a foot ulcer.

There are many “home remedies” and alternative treatments that people may try to treat dry skin on the feet and to heal fissures. Ask the patient if they are using any other treatments in addition to standard care, and ensure that the treatments are not causing harm, e.g. home remedies that dry, rather than hydrate, the skin or cause skin damage.

References

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