

# CARING FOR YOUR FEET

Do you have numbness in your feet? Do you get sharp pains in your legs after walking the distance of one bus-stop? If you do, you may be experiencing diabetes-related foot complications.

## HOW DOES DIABETES AFFECT YOUR FEET?

People with poorly controlled diabetes or have had diabetes for a long time are at risk of developing foot complications such as nerve damage and reduced blood flow in the feet. People with these foot complications are at a higher risk of developing a foot ulcer and if treatment is delayed, this can result in a lower leg amputation. Singapore has one of the highest rates of lower leg amputation in the world, with four amputation procedures in a day and about 85% of major amputations are preceded by foot ulcers.

## WHAT ARE DIABETIC FOOT COMPLICATIONS?

### Nerve damage (peripheral neuropathy)

People with nerve damage are at risk of developing foot ulcers as they have lost protective sensations in their feet. They are unable to feel if their toe is rubbing against the shoe that is too tight or if they have stepped on something sharp, leading to blisters or cuts. As they cannot feel pain, they may not notice these blisters or cuts and delay seeking treatment until an infection has occurred.

Signs and symptoms of nerve damage in the feet include:

- Numbness
- Pins and needles
- Tingling
- Burning pains, usually at night
- Changes to foot shape (Charcot foot deformity)

### Charcot foot deformity

Charcot foot deformity is a type of bone deformity and occurs in people with significant nerve damage. It starts when an injury to the foot goes unnoticed due to the lack of sensation. The person then continues to place pressure on the injured foot through walking and the injury could worsen, leading to bone fractures in the foot. With multiple bone fractures, the foot could collapse giving an appearance of a rocker bottom foot.

### Poor blood supply to the feet (peripheral arterial disease)

People with reduced blood supply to the feet have poor wound healing. As there are limited oxygen and nutrients going to the wound, the skin will start to die leading to gangrene. If badly infected, an amputation of the toe, foot or part of the leg is necessary to prevent the infection from spreading to the rest of the body.

Signs and symptoms of poor blood supply to the feet include:

- Leg cramps after walking for short distances
- Pain in feet at rest
- Coldness in feet
- Feet that appear shiny and reddish
- Absent hair growth
- Cuts that are slow to heal

## FOOT SCREENING

If you have diabetes, ensure that you get your feet checked at least once a year by the foot screening nurse, doctor or the podiatrist. A foot screening consists of checking the feeling and the pulses in your feet. Detecting foot complications early on is important in preventing foot ulcers and thus amputation

## HOW TO CARE FOR YOUR FEET?

Good foot care is necessary in preventing a foot ulcer from occurring. Here are some simple steps to take when taking care of your feet.

**1 Foot hygiene** Basic foot hygiene is the first step in maintaining good foot care. Clean feet help to keep the skin healthy and prevent infection. The following tips can help you maintain good foot hygiene.

- Wash your feet with soap in warm water twice daily.
- Ensure that the spaces between the toes are also cleaned as these areas trap dirt easily.
- After cleaning, use a towel to dry feet especially between the toes. If the spaces between the toes are not properly dried, this can lead to the skin being too wet, causing a break in the skin. This will allow fungus and bacteria to enter the skin, causing an infection.
- Use foot powder sparingly between the toes to help the skin stay dry.

**2 Daily inspection** Check your feet every day to detect problems early before they get worse. You may have foot problems but not feel any pain in your feet if you have lost sensation. If you are unable to reach your feet, use a mirror to aid you. If you have trouble with your eyesight, feel your feet for any abnormalities or ask someone else to help you look at your feet. It is important to check the top of the foot, the sole, around the heels, between the toes and around the toenails. Look out for:

- Cuts
- Blisters
- Abrasions
- Corns or calluses
- Ingrown toenails
- Swelling
- Changes in colour or shape

**3 Skin care** Dry skin cause itchiness and cracks easily, exposing the skin to fungal and bacterial infections. In the elderly, the skin is usually thin and fragile. A small scratch can cause an ulcer. Therefore, it is important to maintain skin moisture for the skin to be smooth, elastic and resilient. Do this by applying daily a cream that contains urea or white soft paraffin. Do not put cream between the toes as this can cause the skin to become too moist and lead to an infection.

Hard skin such as corns and calluses may form at certain areas of the foot if there is too much pressure against the skin. These corns and calluses can break down to form ulcers. Use a callus file to gently file away the hard skin after showering while the skin is still soft. Do not cut corns and calluses yourself or use corn pads as this can damage the skin and cause an infection. A podiatrist can help you remove the corns and calluses and give you advice on how to prevent the corns and calluses from recurring.

**4 Nail care** Improper nail care plus thickened toenails in the diabetic foot can cause an ingrown toenail to become infected. Here are some proper nail care techniques:

- Use clean nail clippers to trim toenails after shower, as they are softer.
- Trim nails straight across and not too short to prevent ingrown toenails.
- Do not cut down the corners of the nails. Use a nail file to gently file down any sharp corners.
- If the toenails are thick and difficult to cut, file down the nail first using a nail file.
- If you cannot see, feel or reach your feet, get a family member, friend or a podiatrist to help with toenail care.

**5 Footwear** Footwear is important to protect the feet, especially if you have nerve damage. Wear covered shoes when outdoors and wear soft cushioned slippers at home. Always wear socks with shoes for extra protection and to absorb moisture. Here are some tips on getting a good pair of shoes:

- Sport shoes or diabetic shoes are ideal as they provide good support, good cushioning, extra depth and width and laces or straps to secure the shoe to the foot.
- Correct sizing of the shoes is vital. Ensure that there is one thumb's width from the end of the shoe to the longest toe. The front of the shoe should also be as wide as the front of your foot.
- If you have any deformity in the toes, you may need extra wide or extra deep shoes.

If you have corns or calluses underneath your feet, you may need special diabetic insoles to redistribute pressure away from these areas to prevent an ulcer from forming.

**6 First Aid** If you notice an open lesion on your feet, it is important to immediately treat it to prevent it from getting worse.

- Clean the lesion thoroughly with a cleaning solution (normal saline) and dry it well.
- Apply an antiseptic solution (iodine) to the lesion and cover with a plaster.
- Change the dressings daily until the lesion is completely healed.
- Monitor for signs of infection such as redness, warmth, swelling, pus, pain and fever. See a doctor immediately if any of these signs appear.

*About the author: Toh Lynn Li is a principal podiatrist at The Sole Clinic. Formerly a senior podiatrist at National University Hospital, she focussed on diabetic and vascular-related foot ulcers and worked alongside vascular and orthopaedic surgeons with interests in limb salvage. Lynn is also an exco member of the Podiatry Association (Singapore).*