

How does diabetes mellitus affect your feet?

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Introduction

Foot problems are a serious challenge for diabetics. The majority of lower leg amputations, such as the foot, relate to diabetes mellitus. Sadly, many of these amputations are the result of an injury or infection which could possibly have been avoided.

Controlling blood sugar levels is key to being a healthy diabetic. If diabetes mellitus is not well controlled, the high sugar level can lead to nerve damage in the feet and legs, resulting in the loss of sensation, also known as peripheral neuropathy.

Any trauma or injury to the foot, e.g. a tight shoe that causes blisters, may not be felt, and could lead to more severe problems, such as ulceration. Diabetes mellitus can also lead to restricted blood supply to the legs and feet. This causes thinning of the skin and tissue, and weakness of the muscles. Injuries may be slow to heal and become infected because of this, while immunity may be lowered.

Often, foot problems occur in people aged ≥ 40 years, or in those who have had diabetes mellitus for ≥ 10 years. Therefore, poor control of diabetes mellitus increases the risk of the development of foot problems, such as ulcers and infection.

Safe footwear must:

- Have leather uppers
- Fasten with laces, straps or Velcro®, to allow for swelling
- Not be slip-on shoes or sandals
- Have no seams on the inside where the material overlaps or is stitched, as this can cause friction and injury
- Have a low heel, to ensure that the person's weight is evenly spread over the sole of the foot

- Be broad across the toes to avoid the toes being pushed across one another
- Have a cushioned insole to absorb shock and reduce shearing force
- Fit the size and shape of the foot
- Be at least one centimetre longer than the longest toe
- Be bought in the afternoon, as by this time the feet would have swollen and this can then be taken into account.

Other criteria to bear in mind are as follows:

- Foot size must be measured for length and width every time shoes are bought
- New shoes should not be worn for longer than an hour a day, and should gradually be "worn in"
- Pressure-relieving insoles or padded socks with a high cotton or wool content should be worn in combination with extra deep shoes. Wearing them with ordinary shoes increases pressure and results in calluses or ulceration.

To heal a foot ulcer:

- Aim to have a healthy lifestyle. Eat well, follow an exercise programme and take your medication
- Control blood glucose, blood pressure, cholesterol and triglycerides
- Do not be overweight
- Stop smoking!
- Do not bear weight on the foot ulcer. Use a crutch or walking aid prescribed by your doctor
- Perform regular foot and ankle exercises to improve circulation
- Keep appointments with the nurse or doctor, and call them about any problems or anxiety experienced.

The “do’s” and “don’ts” for the foot “at risk”

Do:

- Exercise regularly. Walking briskly for 30 minutes every day is ideal
- Inspect your feet daily. Damaged skin can lead to infection. Check for cuts, scratches, swelling, inflammation or discolouration. If your vision is poor, ask someone else to do this for you. Clean any cut or scratch with soap and water, and apply a dressing. Get medical help immediately! You cannot afford to delay. Infection may result in serious consequences for your foot
- Examine your shoes and socks every day for foreign bodies, such as pebbles, thorns and nails, if you are unaware of them when you put on your shoes. They could damage your skin
- See your ophthalmologist annually, as early detection of retinal problems can prevent or limit loss of vision.
- Wash your feet daily, using lukewarm water and mild soap. Dry them gently, but thoroughly, especially inbetween your toes. Avoid soaking your feet
- Use a good moisturising cream on your feet up to twice a day to keep the skin soft and supple. (Diabetes mellitus may cause damage to the autonomic nervous system, resulting in the skin becoming dryer). Do not apply cream between your toes, or it may make the skin too moist, resulting in a fungal infection
- Change your socks daily. The best kinds of socks to wear are cotton running socks, as these are thick, absorb perspiration and provide extra protection
- Clip your nails straight across. Don’t cut or probe down the sides of your nails. File your nails with a nail file after cutting to remove any sharp or rough edges. A podiatrist should cut thick and brittle toenails as they may splinter and become ingrown
- Wear shoes which meet the “safe criteria” for appropriate footwear
- Consider having a foot scan pressure test (available from most orthotists). Early detection of high pressure

over bony prominences helps to ensure that preventive measures can be taken.

Don’t:

- Let your feet soak in standing water or foot spas. This will soften and weaken the skin, which is then more readily damaged
- Walk barefoot. It causes high pressure on the soles of the foot. Poor sensation also increases the risk of injury
- Wear shoes without socks. Socks prevent chafing, abrasions and absorb perspiration
- Use chemicals or plaster to remove corns and calluses as they may damage the surrounding normal tissue or cause an infection. Calluses must be removed layer by layer by a professional podiatrist
- Apply moisturising oil or cream between the toes
- Treat your own feet, e.g. do not clip your toe nails, if your vision is poor. Leave thick and/or ingrown nails for the podiatrist to manage
- Darn stockings with ladders or holes. They must be discarded. The darned area will be thicker than the rest and cause pressure
- Allow your feet near hot surfaces or substances, e.g. heaters, hot water bottles and fires. Owing to a loss of sensation, you may not be able to feel your foot getting hot or burnt. Always test the bath water temperature beforehand with your hand or wrist, not your foot, to avoid scalding. When you are in the bath, ensure that the hot tap is turned off properly, and not dripping on your foot
- Wear open sandals. Small stones may enter at the sides between the sole and the foot, causing trauma.

Bibliography

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