

Diabetes and the foot

Foot complications associated with diabetes are becoming more prevalent. It is important to understand the signs and symptoms of foot complications, and educate patients of good care, in order to prevent hospitalisation, ongoing morbidity and risk of amputation.

Peripheral neuropathy and/or peripheral arterial disease (PAD) are causative factors in diabetic foot ulcers (DFUs), which can be complicated by acute or chronic infection of soft tissue or bone. DFUs can be difficult to manage due to a host of issues including plantar pressures, patient compliance and complex medical histories, which may prevent 'gold standard' treatment.

- **Peripheral neuropathy** can be a common side effect for patients with diabetes. This can cause loss of protective sensation and paraesthesias. Injuries can go unnoticed and untreated for some time if the patient is unable to feel the problem, causing DFUs.
- **PAD** can cause a number of issues in the foot. A patient with PAD will have delayed wound healing (or no wound healing), leading to higher risks of infection. Severe PAD can cause pain in those with loss of protective sensation. PAD can lead to DFUs and amputations of digits and limbs.
- **Increased plantar pressures** from foot deformities, such as HAV (bunions), claw or hammer toes and arthritis, are a leading cause of plantar DFUs. Sites that are prone to callous and corns are areas that are more likely to break down to a pressure ulcer.
- **Inappropriate footwear** is a high cause of DFUs. Most pressure ulcers will begin as blisters, and poorly fitting footwear can easily cause damage to a neuropathic foot. Footwear education is extremely important to prevent injury.
- **Charcot's neuroarthropathy (CN)** is a rare condition that, when in its active phase, occurs in clients with good arterial supply, but who also have peripheral neuropathy. Symptoms of acute CN include a red, hot, swollen foot. Pain can also be reported. When not managed appropriately, non-reversible deformity of the foot will occur. Patients with acute CN should be referred to a high risk foot clinic immediately for management. In chronic presentation, the classic rockerbottom foot type is seen, showing collapse of soft tissue and joints of the foot.

Contributing comorbidities:

- **Diabetic retinopathy:** Those with reduced vision are at higher risk of foot complications, as it is more difficult to identify and manage foot problems.
- **Reduced immune response:** Those patients who have had diabetes for longer periods, who may have poorly controlled BGLs or brittle diabetes, will have a higher risk of immune complications. This can make the management of DFUs, and infections, quite difficult, and can cause secondary chronic conditions to complicate their health further.
- **Cardiovascular disease:** those with diabetes are at higher risk of cardiovascular disease, and suffer heart attack and stroke. These issues can further complicate the management of diabetic foot ulcers, and can be fatal in their own right. Arterial disease of the abdomen and upper leg can affect the lower limb, eventually causing PAD.
- **Renal disease:** diabetes is one of the highest causes of chronic renal disease, and dialysis. Not only does it affect wound healing, but the patient's general health can deteriorate markedly. Medication needs to be strongly monitored to ensure it doesn't cause further damage to the kidneys.
- **Depression:** patients with diabetes — and indeed any chronic disease — are more prone to depression than the general population. This can cause many issues, not only for the patient's mental health, but also in compliance to managing their general health and associated complications.

It is important that patients with diabetes are well educated to prevent or manage complications to the foot. It is recommended that any patient with diabetes is assessed by a podiatrist on an annual basis.



This resource has been provided by an Australian Podiatry Association (APodA) member podiatrist as part of Foot Health Month 2014

Celebrating Foot Health Month – October 2014

Diabetes and podiatry



Have you heard that many people with diabetes end up in hospital because of foot problems? In fact, it is the leading complication of diabetes and the most common cause of hospitalisation for people with diabetes in Australia. Of course, not all foot problems will require a hospital stay as they can vary from minor foot complaints to wounds that don't heal. Serious complications can often be avoided by careful self-management and through regular checkups. Unfortunately, loss of sensation in the feet means that many simple injuries to the foot, such as cuts, corns and calluses, can go unnoticed. If untreated,

these injuries may not heal due to lack of blood supply and infection. Severe infection can be a medical emergency and sometimes requires amputation of the infected part of the foot.

Below are some tips on self-managing your foot care if you have diabetes:

1. People with high blood glucose levels are at increased risk of infection, meaning even small cuts or abrasions can result in a severe infection. Getting your levels under control and keeping them as near to normal as possible can prevent further damage to your feet.
2. Good foot hygiene is very important. Wash your feet daily with a mild soap and warm water. Dry your feet carefully (especially between your toes!) and check for any cracks in your skin or bleeding.
3. Keep nails trimmed! Cut straight across using nail clippers and avoid cutting down into the side of the nail. Use a nail file or disposable emery board to smooth sharp nail edges.
4. Prevent or treat dry skin conditions by applying moisturiser daily. Put moisturiser everywhere on your feet, except between your toes – there's enough moisture there already!
5. Wear comfortable socks without tight elastised cuffs or bulky seams, and supportive, closed-toe shoes that fit well. If you have lost feeling in your feet, your shoes could cause problems. Always check inside your shoes for things that could cause an injury, such as stones or even sharp edges within the shoe lining. Avoid walking barefoot or wearing unsupportive shoes. A foot orthotic from a podiatrist can help to provide extra support.
6. Keep the circulation flowing to your feet by staying active. Some physical activity every day will help to keep the blood circulating around your body. If you have a foot wound though, speak to your podiatrist about what types of exercise you can do that won't cause further harm to your wound. Quitting smoking will help, as smoking is known to reduce blood flow to extremities.
7. If you have lost feeling in your feet, you are at risk at both hot and cold temperature extremes. Always wear shoes in hot weather to avoid walking on hot surfaces. Avoid electric blankets, hot water bottles and getting too close to the heater – these commonly cause severe burns and blisters for people with diabetes. Wear thick socks to stay warm instead.
8. Look at your feet every day. If something looks like it should hurt, but it doesn't, go and see your podiatrist or GP. If you have lost feeling in your feet, you may not notice a problem. A lot of serious foot problems, such as infected and severe foot wounds, could have been avoided if they had been identified and treated early.

Hopefully, you now understand why you need to look after your feet when you have diabetes. A diabetes foot assessment by a podiatrist is recommended to establish your foot health status. They will be able to undertake simple testing to assess the sensation in your feet, determine the blood supply to your feet and identify any potential risk areas on your feet. Your podiatrist will then determine whether you need to return annually, or if you need to be seen more frequently.



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