



PODIATRY

# Podiatry Practice and Neurology

A foot health message from  
PERTH FOOT CENTRE

# Podiatry and neurology



Podiatric conditions associated with neurology vary from cognitive problems that impair motor response and nerve damage that restricts movement, to peripheral vascular disease and circulatory disorders that can be an indicator of circulatory problems affecting the brain. Although podiatry and neurology are not specialties that are traditionally linked, they can work together as part of a comprehensive multidisciplinary healthcare team.

In some patients, delayed motor response can indicate brain injury. In cases where pathology fails to fully explain a podiatric complaint, motor response tests should be performed as part of the consultation to see if the patient responds within the normal range. If the patient has no history of a pre-existing condition, consultation with a neurologist is highly recommended.

Patients suffering nerve damage as a result of injury or disease may suffer from restricted movement as a result of motor and sensory neuropathy. A range of genetic conditions in this category can have serious effects on the feet, and in fact manifest dominantly in the feet, for example in cerebral palsy and in Charcot-Marie Tooth disease.

Podiatric indicators of circulatory problems that can lead to neurologic disorders include constantly cold feet; chronic fungal infections of the feet and nails; and chronic foot cramps. Short-term neurological effects of decreased oxygen levels to the brain include memory loss, confusion and drowsiness. Long-term oxygen deprivation can lead to more serious problems, including vascular dementia.

The link between the feet and the brain works in two directions. Conditions affecting the feet can be both caused by and indicative of serious neurologic complications. The feet can act as warning signals for neurologic conditions that may well be caught early enough for effective holistic treatment, and specialist care of the feet can help to ease the burden of disease.

## KEY PODIATRIC COMPLAINTS WITH LINKS TO NEUROLOGY

There are a number of conditions affecting the feet that have correlating symptoms in the brain and vice versa. Although this area is incredibly broad, some of the conditions seen by podiatrists are listed below. All of these conditions benefit from a multidisciplinary healthcare team.

**Peripheral vascular disease:** cold feet, chronic fungal infections and chronic foot cramps are all indicative of circulatory disorders that have detrimental effects of the feet and can be even more of a concern for the brain due to the potential development of vascular dementia.

**Diabetic neuropathy:** diabetic foot is one of the main conditions seen by podiatrists in Australia and the effects of diabetes on the feet is horrific, including a high risk of below-the-knee amputation for patients with uncontrolled disease.

**Arthritis:** various forms of arthritis, including rheumatoid arthritis and gout have been known to lead to neurologic abnormalities, such as nerve dysfunction and other neuropathies.

**Cerebral palsy:** muscle spasticity and diminished motor response can lead to podiatric pain requiring specialist treatment.

**Charcot-Marie Tooth disease:** Charcot-Marie Tooth disease is a genetic condition of the nervous system causing motor and neuropathy. The condition has a profound impact on the foot, with patients showing signs of muscle wasting, high arches and claw toes as classic symptoms of this disease.

**Parkinson's disease:** stiff muscles in patients with Parkinson's disease can cause severe foot pain and lead to a number of foot problems as a result of altered biomechanics.

**Motor neurone disease (MND):** MND can be misdiagnosed due to the often slow development of symptoms. With the feet and hands being the first areas

of the body to show likely signs of illness in the form of extreme muscle wasting, it is worth keeping this relatively rare, yet possibly under-diagnosed condition in mind when pathology is unclear. Most patients are male and over the age of 50, although there are a number of high profile exceptions to this rule, including Stephen Hawking, who has lived with the disease for many years.

## KEY STRATEGIES TO IMPROVE PODIATRIC AND NEUROLOGIC OUTCOMES

Treatment of conditions affecting the fields of both podiatry and neurology can help to ease and/or prevent onset of further symptoms in one camp or both. The following treatment strategies can be beneficial to both the feet and the brain.

1. Encourage patients to undertake a healthy diet, to reduce alcohol consumption and to quit smoking. Leading a healthy lifestyle helps to repair vascular damage and increase circulation around the body.
2. Diabetics should be careful to keep blood glucose levels controlled. Avoiding spikes that cause hypoglycaemic episodes will help to reduce associated neuropathies.
3. Exercise is key to improving circulation. If the patient is able, they should be encouraged to undertake activities that increase the heart rate and encourage the flow of oxygen around the body. For patients with movement problems, suggest low-impact sports or physical therapy to keep them as active as their condition will allow.
4. Patients with neurologic conditions should be assessed by a podiatrist as part of a full healthcare team to provide necessary treatment to podiatric complications.
5. Orthotics can be useful to patients with neurologic conditions and have a role to play in stability, muscular support and fall prevention.

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