

APERF Researcher Looks at Foot Ulceration in Diabetes

Vanessa Nubé, a podiatrist at the Royal Prince Alfred Hospital Diabetes Centre in Sydney, was an APERF recipient in 2001 for a study on ulceration of the hallux (great toe) and peripheral neuropathy (sensory loss) in people with diabetes.

Her study is both timely and valuable given the increasingly high rate of diabetes in the community. Nearly one million Australians suffer from diabetes and 3000 amputations due to diabetes-related foot complications, such as ulceration, occur every year with a cost of \$48 million annually.

Infection from a foot ulcer increases the risk of amputation and 50% of all amputations are attributable to diabetes. The hallux is reported as the most common site of ulceration in people with diabetes and amputation of the hallux occurs in a significant percentage of cases. Following amputation of the hallux, patients have been shown to develop more forefoot deformities such as clawed toes. One study has shown that half the people who have suffered amputation of the hallux went on to have a higher level amputation of the same leg.

Ms Nubé's study is looking at the factors that are associated with ulceration of the hallux in people with



Vanessa Nubé checks for sensory loss in the big toe of a Royal Prince Alfred Hospital patient.

diabetes and sensory loss who have a current or previous history of hallux ulceration. As part of the study, a range of standard biomechanical tests and the "Foot Posture Index" developed by Anthony Redmond, another APERF recipient, were carried out. Footprints were recorded on paper and assessed to record the angle of gait. A percentage of patients in the study have demonstrated an inability to perform a resupination test. For this reason patients will also undergo muscle testing using the Cybex Norm technology to quantify the degree of lower limb muscle weakness.

While incomplete at this stage, preliminary analysis of the results shows an increased angle of gait (out-toe) of the feet with a previous history of hallux

ulceration. People with hallux ulceration also had a more pronated foot type.

It is hoped that a better understanding of the factors associated with mechanical stress on the hallux will assist podiatrists to prevent and treat these ulcers more effectively. The prompt and effective treatment of hallux ulceration has the potential to significantly reduce the burden of amputation on both the individual and the community.

Diabetes Australia recommends that all people with diabetes should see a podiatrist at least every 12 months. Podiatrists can assist patients with diabetes to reduce their risk of amputation by appropriately assessing for sensory loss, peripheral vascular disease and foot pathology and by providing treatment for active foot problems.

The Australian Podiatry and Education and Research Foundation (APERF) was established in 1990 to encourage and support research into the causes, prevention and treatment of foot problems. Each year APERF awards grants to research projects of merit, after a rigorous selection process. To make a donation or find out more about grant criteria, please contact the APERF trustees on 03 9416 3111 or visit www.apodc.com. aulapodc.laperf.htm