

**Evaluating a foot strengthening exercise program to improve foot function and foot health in older adults with diabetes**



Research through Victoria University Footscray Campus.

Foot biomechanics is a major contributor to the development of plantar foot ulcerations in people with diabetes, with high plantar pressures the factor most commonly cited. People with Diabetes related Peripheral Neuropathy (DPN) have been shown to display reduced lower limb joint mobility, foot deformities and reduced plantar tissue thickness which contribute to producing high plantar pressures during gait. A foot strengthening exercise program has been developed, which increases toe strength by 36% in healthy, older people.

The **aim** of our current research is to determine whether this resistance training program can improve foot function and reduce high plantar pressures in people with diabetes who have peripheral neuropathy.

**Participants:** Seeking approximately 50 people with DPN (aged over 50 years) into our intervention study, who live in central Melbourne, or Melbourne’s Western suburbs. See checklist for eligible participants below.

**What will be required of the participants?** After completing baseline testing, the participants will be assigned to either a control or supervised toe strength training group. Group toe strength training classes will be held at a local venue, three times a week for 12 weeks, and involve a warm-up, followed by a series of eight foot strengthening exercises, usually performed using exercise bands, with the resistance level starting from light and progressing through to extra - heavy. We aim to start the training sessions in April 2017.

**Inclusion criteria**

|  |  |
|--|--|
| Type 2 Diabetes  |  |
| Peripheral neuropathy  |  |
| Minimal hearing or vision impairment                         |  |
| Independently living   |  |
| Able to walk for at least 10 m (household distances) unaided |  |

**Exclusions:**

|   |  |
|---|--|
| Type 1 Diabetes   |  |
| Foot or toe amputation, severe foot deformity, foot ulceration                              |  |
| Peripheral arterial disease (ABI <0.9)  |  |
| Planned foot or leg surgery during the intervention period                                  |  |
| Received any corticosteroid injections to the forefoot within the last 3 months             |  |
| An unstable neurological or health condition (e.g Parkinsons, Motor Neuron Disease, cancer) |  |
| Limited English skills (i.e unable to read consent form)                                    |  |
| Participating in physical therapy interventions of lower limb                               |  |

**If any of your patients appear eligible for the study, please ask them if they would allow a researcher to contact them to discuss whether they would be interested in the study. To provide their details to:**

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