

## **Practice Note: Clinical effects of resistance training on knee osteoarthritis**

*Rachel Knight, British School of Osteopathy  
30 June, 2008*

The knee complex is one of the most vulnerable joints in the body due to the leverage forces acting on it; both in terms of chronic weight-bearing problems and acute injuries. The integrity of the knee is largely dependant on the congruency of its joint surfaces as well as its muscular supports from the Hamstring and Quadriceps groups.

Osteopaths are becoming increasingly aware of the need to prescribe exercises to help strengthen the muscles supporting the knee in patients suffering with knee dysfunction, especially if the knee is osteoarthritic.

Research has shown that in the medial knee injuries that affect the joint capsule and Medial Collateral Ligament (MCL), the Vastus Medialis muscle starts to waste within 24hrs of the injury. Therefore, it is important for osteopaths to know the most effective way to build strength in these muscles quickly, in order to prevent further injury.

A recent random controlled trial performed by Mei-Hwa Jan et al (2008) set out to investigate the *Clinical Effects of High – Low Resistance Training for Patients with Knee Osteoarthritis*<sup>1</sup>. The purpose of the study was to compare the effects of high and low resistance strength training in elderly subjects; research has shown that high-resistance exercise is more beneficial than low resistance exercises in younger subjects.

Baseline statistics were collected on pain and walking speed on 4 different terrains; level ground, stairs, figure of 8 pattern and spongy surface. The authors found significant improvements for all measures in both of the exercise groups after 8 weeks of resistance strength training, although they found no significant difference between the high and low resistance groups (slightly greater improvement scores in the high resistance group), both groups performed better than the control group (no exercise) after the intervention.

In conclusion, resistance strength training has been shown to be significantly effective in improving pain and disability scores in older patients with knee osteoarthritis (effects appear to be greater in younger subjects). The effects of high resistance strength training appear to be slightly greater than low resistance strength training for people with mild to moderate knee osteoarthritis.

Notes

<sup>1</sup> Investigation of Clinical Effects of High- and Low-Resistance Training for Patients, Jan et al. *PHYS THER.*2008; 88: 427-436