



Abriel Photo

KEEPING PEOPLE MOVING

Anyone who has had serious lower back pain knows it can be debilitating. It can be agonizing to sit, stand and even sleep. And forget about exercising or simple, everyday chores. These just seem to aggravate the condition further.

Typically back pain is treated through anti-inflammatory medication, massage and/or ultrasound and by strengthening the trunk muscles through therapeutically-controlled exercises. Most people are feeling better within a few weeks.

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But often the condition is recurrent. Dr. Cheryl Kozey, from Dalhousie's School of Physiotherapy and School of Biomedical Engineering, wants to know why. Is it due to the fact that it never actually healed in the first place? She's specifically interested in the body's biomechanics and whether the muscles are working as they are meant to.

What her research has shown to date is that people who have lower back pain have atypical muscle activation patterns. “We strategically placed electrodes on the person's trunk and had them perform a number of tasks,” Kozey says. “We found that, for the people with lower back pain, the muscle activation patterns were uncoordinated and more variable than those with no lower back pain.”

This suggests that the muscles may have to be retrained, not just strengthened, in order to actually heal the back. “Specific muscles may have turned off or are overactive,” she explains. “This means that more effective treatment might be exercises directed at the actual neurological muscle impairment, where the issue is more about motion control than strength.”

Armed with this knowledge, Kozey, in collaboration with the clinical orthopedic community and other health disciplines at Dalhousie, is actively recruiting for another lower back pain study. This one aims to find out if researchers can predict which people with a previous occurrence of lower back pain will, in fact, experience it again, based on their muscle activation and movement patterns.

“It is important to better understand neuromuscular impairments associated with such orthopedic problems as lower back pain. It is only then that effective, practical, non-invasive interventions and assessment protocols can be developed. Reducing lower back pain will help keep people functional and active, key components of good overall health,” she says. ■