

# RESEARCH DIRECTIONS

## Low back pain – is it all in your brain?

Dr Siobhan Schabrun of the School of Science and Health, together with an international team of researchers, has been awarded an NHMRC Project Grant to investigate how the brain is altered with persistent low back pain. Members of the research team include Dr James McAuley, Neuroscience Research Australia, University of New South Wales; Professor Thomas Graven-Nielsen, Aalborg University Denmark; Professor Michael Nicholas, University of Sydney; Dr Nicholas Henschke, The George Institute for Global Health, University of Heidelberg and Dr Asad Khan, the University of Queensland.

'Persistent musculoskeletal pain is one of the most significant health issues in the developed world with an economic burden second only to cancer,' says Dr Schabrun. 'Termed a "Western epidemic", low back pain (LBP) is a major cause of suffering, productivity loss and disability. It is also a leading cause of disability amongst Australians. Despite the enormity of the problem, the treatment of pain is shockingly inadequate. A critical question is why some people get better after hurting their back while others do not. This project will examine whether changes in the brain predict low back pain outcome. This information will rapidly advance our understanding of low back pain and lead to the development of new therapies.

This is a multicentre trial which will take place at two sites: NSW and Queensland. Approximately 240 individuals with acute, non-specific LBP will be recruited as participants in a longitudinal study. Fifty primary care practitioners will also be involved. The grant period of 4 years will involve four testing sessions and follow-up. Pain and disability will be measured regularly using a variety of tests, including questionnaires, electrical stimuli, as well as brain activity which will be recorded using electroencephalography (EEG) and a form of non-



invasive brain stimulation known as transcranial magnetic stimulation.

This project has the potential to lead to the design of therapies that can target specific physiological changes in LBP. Therapies developed as a result of this type of longitudinal investigation will ensure the right individuals are targeted at the right time. Eventual benefits will be the reduction of social and economic costs associated with a major health problem.

**Project Title:** Understanding persistent low back pain where it resides, in the brain

**Funding has been set at:** \$814,825

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**July 2014**

**NHMRC ID:** 1059116