

Cooperative Research Centre to reduce the burden of low back pain

The problem of low back pain

Low back pain affects nearly 4 million people in Australia at any one time [1] and is the *highest contributor to disability in the world* [2, 3], interfering with every aspect of a person's life. Management of low back pain is costly: the total cost of treatment exceeds \$9 billion annually in Australia, largely attributed to costs associated with work absenteeism and loss of work productivity. [12]. The impact of low back pain is substantial for industries in the public and private sectors: 58% of full-time workers need to limit their number of working hours due to low back pain and 39% of part-time workers need at least 1 day/week off work due to low back pain every year [1]. Low back pain is the main musculoskeletal cause for worker compensation claims in Australia (43% of all musculoskeletal claims) and the main reason for Australians to retire involuntarily.

The result of delayed or failure to return to work is high compensations and treatment costs at the expense of industries, including wages paid to absent employees, high-cost replacement workers, and the administrative costs of managing absenteeism [2]. Data from the Australian Workers Compensation 2016-2017 report [3] shows that the median time lost due to serious compensation claims alone for low back pain in the financial and insurance services sectors was 6.6 weeks per claim, with a median compensation cost of \$17,100. Clearly this is a problem worth solving.

Need for a new model of care for low back pain

We argue that low back pain could be better managed in the general population and at the workplace if:

- 1) It could be identified earlier, before it becomes chronic, disabling, forcing people to abstain from work;
- 2) It could be managed through the best available evidence-based approaches, including the right care for the right patient at the right time;
- 3) Low back pain sufferers could be effectively supported to remain at work.

We urgently need a new approach for Australians with low back pain, especially those in the workplace, and which is based on high-quality scientific evidence and the right treatment, has the patient at its centre, and supports people to be healthy, active, and function well in society.

Our proposed solution

We propose a Corporate Research Centre, in partnership with strong and robust partners in the public and private sectors, to implement and evaluate a holistic approach for low back pain generated through the highest-quality body of research in the field, and based on innovative, technology, and eHealth-based solutions. The program will also incorporate new solutions that are discovered through the life of the Centre, and become core scientific products that result from the synergistic actions of the centre and its members. The framework for the approach (solutions) proposed will incorporate:

- 1) At the workplace:
 - a. Frequent monitoring of symptoms associated with low back pain, through the use of efficient eHealth and technology-friendly tools;
 - b. Frequent monitoring, and identification of important risk and prognostic factors for low back pain (e.g. mood, sleep, spinal position);
 - c. An evidence-based risk stratification model of care for low back pain, where more complex and costly treatments are delivered to only those who need them; while simple and less costly care is delivered to patients at lower risk of chronicity.

- d. A holistic, evidence-based, support approach to encourage people to self-manage their symptoms, stay physically active and remain at work;
- 2) For the general community:
 - a. An inclusive and accessible approach for those experiencing low back pain, with increased access to proper care through the use of eHealth (e.g. telehealth, text messages, websites) tools;
 - b. Delivery of models of care that are integrative and link care providers (e.g. hospitals, GP clinics) to services that promote and facilitate lifestyle changes (e.g. GetHealthy services NSW) and educate and inform patients with low back pain (e.g. Musculoskeletal Australia).
 - c. Approaches that minimise the use of low value care (e.g. passive non-effective treatment) and support the adoption of active, evidence-based care (e.g. exercises) particularly for those in need (e.g. residential care).

Aims

We aim to **reduce the burden of low back pain** in the industry sector and in the general population. specifically, we aim to:

- 1) Reduce the average number of days off work per low back pain claim to 23 days per year, compared to the current figure of 46 days off work with the current traditional low back pain approaches in the industry sector. This represents a conservative 50% reduction in the average number of days off work per year (based on studies of best available stratified care for low back pain showing 63% reduction in number of days off work).[4]
- 2) Reduce health-care seeking (number of visits to GPs, physios, chiropractors) by 38% per year (based on our research on eHealth physical activity coaching for low back pain).[5]

Why will it be successful?

The proposed evidence, technology-based model will leverage the best available research evidence and practice for patients with low back pain in the workplace and general community. We have assembled a team with an outstanding record of completing large scale studies in partnership with industries in the private and public sectors, and includes top researchers by international standards in the field of low back pain. The program will empower people with low back pain to improve their lifestyle and physical activity, and avoid chronicity, which we predict will translate into *significant reduction of the economic burden associated with care-seeking and work absenteeism*. The proposal has the potential to improve the lives of millions of Australians currently living with low back pain.

Research Team

Our international team will be led by A/Prof Paulo Ferreira and A/Prof Manuela Ferreira from Sydney University, and Prof Paul Hodges from The University of Queensland who have outstanding international reputation in the implementation of intervention approaches for low back pain that are based on technology, eHealth, and are implemented in collaboration with industry. Partners on the centre include public and private healthcare providers, as well as financial, educational, aerospace, mining, and food industries.

References

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3. SafeWork Australia, *Australian Workers' Compensation Statistics*., in *Canberra: Australian Government*. . 2017.
4. Hill, J.C., et al., *Comparison of stratified primary care management for low back pain with current best practice (STarT Back): a randomised controlled trial*. *The Lancet*, 2011. **378**(9802): p. 1560-1571.
5. Amorim, A.B., et al., *Integrating Mobile-health, health coaching, and physical activity to reduce the burden of chronic low back pain trial (IMPACT): a pilot randomised controlled trial*. *BMC Musculoskelet Disord*, 2019. **20**(1): p. 71.