



# Joint replacement

The association between socioeconomic status and utilisation of total knee joint replacement across Australia

A RESEARCH PROJECT PLAIN LANGUAGE SUMMARY

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**Grant:** \$20,000

## Background

In August 2011 the Board of Arthritis and Osteoporosis Victoria (*now Musculoskeletal Australia*) approved the funding of the research project, The association between socioeconomic status and utilisation of total knee joint replacement across Australia, as part of our Project Grants for 2010-2011.

The researchers began with the hypothesis, or theory, that there may be differences in utilisation of knee joint replacements for people with osteoarthritis between different socioeconomic groups, and across gender and age groups.

These differences exist in countries such as England, USA and Italy<sup>i</sup>. However, with little Australian information available it wasn't known if these differences would be present in the Australian setting.

Information gathered through this project would provide insight into the equality or inequality of access to joint replacement in Australia and provide information on how to improve access.

## What is a joint replacement and what is socioeconomic status?

A *joint replacement*, or arthroplasty, involves the removal of damaged surfaces of the joint. These surfaces are then replaced with metal, ceramic or plastic parts. The entire joint can be replaced (total arthroplasty) or just one part of the joint (hemiarthroplasty). Joint replacements can be performed on knees, hips, shoulders, elbows, fingers, ankles, toes and even the spine<sup>ii</sup>.

Joint replacement surgery is common in Australia and the numbers are rising. The rate of knee replacements over the 10 years to 2010-11 rose by 56%; over the same period hip replacements rose by 22%<sup>iii</sup>.

*Socioeconomic status* is the social standing or class of an individual or group. A combination of education, income and occupation are often used to measure this<sup>iv</sup>.

## The project

This project focused on total knee replacement for osteoarthritis in people 30 years and older performed in Australia - in both the public and private sector - in the period 2003-2010.

Researchers at NorthWest Academic Centre at The University of Melbourne began this project by accessing information from the Australian Orthopaedic Association National Joint Replacement Registry (AOA NJRR) and the Australian Bureau of Statistics (ABS).

The AOA NJRR is funded by the Commonwealth Department of Health and Ageing and is an initiative of the Australian Orthopaedic Association (AOA). It provides the best available evidence about the effectiveness of joint replacement operations in Australia and collects information on more than 99% of all joint replacement surgeries and revisions<sup>v</sup>.

Australian census data were used to determine the level of social disadvantage. Based on this information, residential addresses were categorised into deciles; decile 1 being the most disadvantaged and decile 10 the most advantaged in terms of social advantage/disadvantage.

Working with data from both sources, researchers analysed the information to see if there were any differences in the use of total knee replacement between people from different socioeconomic groups over time, as well as differences based on gender.

### Findings

Researchers found that when they combined all years (2003-2010), the number of total knee replacements for both sexes was approximately 30% higher in the most disadvantaged group (decile 1) than those in the most advantaged (decile 10).

Women – in all ages groups – were more likely than men to have a total knee replacement.

From the data gathered in this project it is not possible to know if there were differences in the waiting time for surgery or symptoms experienced between people of different socioeconomic status.

The findings of this project are important as they add to the body of knowledge about knee replacements in Australia, particularly as they relate to socioeconomic status. This information will assist in addressing inequalities in access to appropriate treatment. The findings also point to the importance of providing people with information about prevention and management of OA, particularly consumers in lower socioeconomic areas.

### How we can help

Call our MSK Help Line and speak to our nurses. Phone 1800 263 265 or email [helpline@msk.org.au](mailto:helpline@msk.org.au).

We can help you find out more about:

- arthritis and musculoskeletal conditions
- ways to live well with these conditions
- managing your pain
- upcoming webinars, seminars and other events.

<sup>i</sup> Brennan, S, Stanford, T, Wluka, A, et al. 2012. Cross-sectional analysis of association between socioeconomic status and utilization of primary total hip joint replacements 2006–7: Australian Orthopaedic Association National Joint Replacement Registry. *BMC Musculoskeletal Disorders*, 13 (1), pp. 1-7. Available from: <http://www.biomedcentral.com/1471-2474/13/63> [Accessed: 18 Jun 2018].

<sup>ii</sup> Arthritis Australia. 2013. *Surgery for arthritis*. [online] Available at: [https://www.arthritis.org.au/media/website\\_pages/arthritis/get-information-sheets/information-sheets/Surgery-for-arthritis.pdf](https://www.arthritis.org.au/media/website_pages/arthritis/get-information-sheets/information-sheets/Surgery-for-arthritis.pdf). [Accessed: 18 Jun 2018].

<sup>iii</sup> Australian Institute of Health and Welfare. 2013. *Rise in hospitalisations for osteoarthritis leads to rise in joint replacements (AIHW)*. [online] Available at: <https://www.aihw.gov.au/news-media/media-releases/2013/2013-may/rise-in-hospitalisations-for-osteoarthritis-leads> [Accessed: 18 Jun 2018].

<sup>iv</sup> American Psychological Association. 2013. *Socioeconomic status*. [online] Available at: <http://www.apa.org/topics/socioeconomic-status/> [Accessed: 18 Jun 2018].

<sup>v</sup> Brennan SL, Stanford T, Wluka AE, et al. *Utilisation of primary total knee joint replacements across socioeconomic status in the Barwon Statistical Division, Australia, 2006–2007: A cross-sectional study*. *BMJ Open* 2012;2(5), pp e001310. Available from: <http://bmjopen.bmi.com/content/2/5/e001310.full> [Accessed: 18 Jun 2014].

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