Reviewer's report

Title: Smoking and primary total hip or knee replacement due to osteoarthritis in 54,288 elderly men and women

Version: 1 Date: 27 June 2013

Reviewer: Jari P Arokoski

Reviewer's report:

This study evaluates the association between smoking and risk of undergoing primary total joint replacement (TJR) in a large national cohort of men and women. The aim of the study is important as the authors indicate, that the reported association of smoking with OA or total joint replacement has not been consistent. The one strength of this study is that the study sample represents family medical practices throughout Australia well. However, I would like to suggest some points for revision.

1. One possible limitation or confounding factor is that if participant already had clinical knee or hip OA at baseline. You asked several co-morbidities at baseline (please explain shortly the Charlson Co-morbidity Index). Although TJR subject were excluded from the analysis, did you ask separately the clinical hip and/or knee OA at baseline?

2. Secondly, two important possible confounding risk factors were not taken account in this study. It is known that heavy physical stress at work and traumatic joint injuries are well known risk factors predisposing to OA particularly in the knee joint. Is it possible to take into account these confounding factors afterwards?

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.