Reviewer's report

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

Version: 2 Date: 11 August 2013

Reviewer: David Felson

Reviewer's report:

The good news is that the authors have addressed the comments we made in review of the initial submission. The bad news is that the responses don't (and perhaps can't) address the substantive and residual concerns about confounding that remain. There have been many studies of smoking and OA, many of which have reported results similar to those in this paper. These have been recently reviewed in at least one meta-analysis. As an author of a couple of these studies, the main concern is that obesity is a huge risk factor for disease in the knee (and to a lesser extent in the hip) and that smokers are invariably much thinner on average than nonsmokers. The persistent thinness of smokers makes the independent relation of smoking and OA difficult to determine without adjustment for obesity and weight over time. Further, the subjects in this study are very old and one worries about specific comorbidities like lung disease that would contraindicate the procedure being studied mostly in smokers. The authors note that specific comorbidities were tested in analyses but they really needed to deal explicitly with targeted comorbidities that might affect the relationship of interest, not all of them.

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

no competing interests.