Reviewer's report

**Title:** Cumulative occupational lumbar load and lumbar disc disease - results of a German multi-center case-control study (EPILIFT)

**Version:** 2  **Date:** 23 January 2009

**Reviewer:** Michele Battié

**Reviewer's report:**

The authors have clearly put much effort into tackling a very difficult area and their work will add to the current body of knowledge of dose-response relations of occupational loading and pain associated with disc herniation and lumbar disc narrowing. The authors adequately addressed my earlier comments and queries, which clarified several issues. Generally, the manuscript is clearly written and I have only few small revisions that I deem important for clarity.

- **Major Compulsory Revisions**

  The following require minor revisions, but are important for clarity.

  1. **Abstract:** Disc herniation and disc height narrowing were not studied, but instead ‘seeking medical care for pain associated with herniated discs and disc height narrowing’. The study is relevant to care seeking for symptoms deemed to be associated with disc herniation and disc height narrowing, not simply structural findings. This needs to be clear.

  2. **Discussion:** The first sentence of the second paragraph under the section “Does a positive dose-response relationship exist …” on page 10 needs to be tempered. Stating that “the present study reveals strong evidence for a positive dose-response relationship…[in] women” would not appear to be supported by the findings. While this statement may be reasonable for men, there is not “strong” evidence presented for women.

     In the same sentence, it would be helpful to remind readers that the relationship of physical loading is with ‘care seeking with the diagnosis of’ disc herniation and disc height narrowing, not simply structural findings.

- **Discretionary Revisions**

  1. The authors should at least acknowledge the possibility that there may not be a clear, consistent dose-response relation in women, as suggested by their more fully adjusted models. Of the 10 occupational lumbar load categorizations relative to care seeking for herniated disc or back pain associated with disc narrowing only one of the fully adjusted (b) odds ratios (for cumulative load through intensive work postures) demonstrates consistency of increasing odds ratios with increasing postural loading. An obvious observation and interpretation would be that, overall, a clear dose-response relationship is not present that extends to the
heavy or highest loading categories. The authors dismiss this inconsistency, as a likely result of a “healthy worker survivor effect.” While this is a possibility, I am inclined to place more weight on the study findings than this assumption.

2. The authors note the results of a post hoc analysis related to age for the first in the discussion section. One would typically expect to find all results of study analyses presented in the results section and then referred to in the discussion as appropriate. However, this is a minor point. I did wonder, however, with the good possibility of residual confounding by age when using 10-year categories for age in the analyses, why wouldn’t the authors have included age as a continuous variable in the fully adjusted regression models and ORs? It is stated that using 10-year categories did not substantially alter results, but it would seem that it would be preferable to report the ORs and CIs, even if only slightly modified, using the variable in the form most likely to adequately control for confounding. Why was this not done from the outset?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests.