Reviewer's report

**Title:** Are the determinants of vertebral endplate changes and severe disc degeneration in the lumbar spine the same? A magnetic resonance imaging study in middle-aged male workers

**Version:** 2  **Date:** 13 February 2008

**Reviewer:** Michele Battié

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Overall, I think the clarity of the paper has improved with the revisions made. My earlier comments have been addressed and I have little more to add. However, I am not fully convinced of the conclusions of clear differences between determinants of Modic changes and severe disc degeneration, as noted in the abstract and discussion. In particular, the modest association of vibration exposure with severe disc degeneration appears quite similar to that for Modic II findings. The odds ratios for the L5-S1 level for severe disc degeneration for a one-standard deviation difference in vibration exposure (OR=1.05, 95%CI=0.99-1.12) and Modic Type II changes (OR=1.08, 95%CI=1.01-1.14) were very similar. Vibration enters the model for severe disc degeneration (the only factor studied other than age to do so) and appears to just miss entering the model for Modic Type II changes.

I also have some concerns that vibration exposure and occupational group are closely associated, and that vibration exposure may be representing, in part, other uncontrolled (unmeasured) differences between occupational groups or years working as a train engineer, for which vibration may be a proxy, that could be influencing the observed modest associations. There was a difference of borderline significance in the prevalence of severe disc degeneration between the two occupational groups studied (p=0.059). Also, as the authors note, the minor statistically significant association observed between vibration and severe disc degeneration could be a chance finding.