Author's response to reviews

Title: Characteristics and natural course of vertebral endplate signal (Modic) changes in the Danish general population

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Author's response to reviews: see over
Dear Dr. Graham,

Regarding manuscript no. 1321175427245357, “Characteristics and natural course of vertebral endplate signal (Modic) changes in the Danish general population”

On behalf of the research team I would like to thank the editor and reviewers for their constructive comments and suggestions which have helped us improve the manuscript.

Please find our responses after each comment in the text below. All changes to the original text have been highlighted in the revised manuscript.

Kind regards,

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**Editors comments**

**Ethics and informed consent**

In the methods section (page 4, lines 11-14), it is now stated that the study was approved by the Regional Ethics Committee and that all participants signed informed consent prior to inclusion in the study.

**Journal format**

The revised manuscript conforms to the journal style. Please note: Tables 2 and 3 are in landscape format and are therefore attached as additional files as recommended by Natalie Awdry, Editorial Administrator, BMC Series Journals.

**Reviewers' comments**

**Reviewer #1**

1. The MR evaluation was performed by three different observers. The authors should clarify how they solve the problem with disagreement between the observers and if the observers were independent.
   a. A section on the MRI evaluation has been added in the Methods section (page 5, lines 1-26). In this section, the procedure of the MRI evaluations and the training of the non-radiologists are presented in detail. Furthermore, results from the reproducibility studies of the evaluation of disc degeneration and VESC are also presented.

2. 72 persons were lost to follow up. Do they differ from the population that showed up at the 4 years follow up?
   a. In the Methods section (page 6, lines 15-23), it is now stated that an analysis of the possible differences between responders and non-responders was performed. The results from the analysis are also presented.

3. The number of persons with VESC in this study is much higher than in previous studies, and the majority is type 1 VESC which is in contrast to previous findings. The authors should discuss this in more detail.
   a. In the Discussion, two new paragraphs (page 9, line 17 – page 10, line 10) discuss the factors that could have resulted in the high prevalence of VESC and the high proportion of type 1 changes in this study.

4. The MRI was performed on a 0.2 T MRI system. What possible impact may the low field investigation have on the prevalence of VESC type 1 findings?
   a. Please, see the answer to Comment 5.

5. I recommend that more numbers are given in the abstract.
   a. Prevalence estimates have been added to the results section in the abstract.

6. Figure 3 is not easy to read, may be a more 3D presentation of the figure may help?
   a. A revised Figure 3 has been added.
Reviewer #2

1. The images were analyzed by one radiologist and two non-radiologists. This is a major methodological shortage. Either the images should be read by two radiologists or solid data for inter and interobserver errors should be presented. Also it has to be described, how the nonradiologists were trained.
   a. A section on the MRI evaluation has been added in the Methods section (page 5, lines 1-26). In this section, the procedure of the MRI evaluations and the training of the non-radiologists are presented in detail. Furthermore, results from the reproducibility studies of the evaluation of disc degeneration and VESC are also presented.

2. Needs some language corrections before being published.
   a. The manuscript has been proofread by two colleagues, who have English as their native language.