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ESPS PEER-REVIEW REPORT

Name of journal: World Journal of Orthopedics
ESPS manuscript NO: 16973
Title: Standardized quantitative measurements of wrist cartilage in healthy humans using 3T magnetic resonance imaging
Reviewer's code: 00467045
Reviewer's country: Australia
Science editor: Yue-Li Tian
Date sent for review: 2015-02-06 20:34
Date reviewed: 2015-05-15 17:02

CLASSIFICATION	LANGUAGE EVALUATION	SCIENTIFIC MISCONDUCT	CONCLUSION
[ ] Grade A: Excellent	[ ] Grade A: Priority publishing	Google Search:	[Y] Accept
[ ] Grade B: Very good	[Y] Grade B: Minor language polishing	[ ] The same title	[ ] High priority for publication
[Y] Grade C: Good	[ ] Grade C: A great deal of language polishing	[ ] Duplicate publication	[ ] Rejection
[ ] Grade D: Fair	[ ] Grade D: Rejected	[ ] Plagiarism	[ ] Minor revision
[ ] Grade E: Poor		[Y] No	[ ] Major revision
		BPG Search:	
		[ ] The same title	
		[ ] Duplicate publication	
		[ ] Plagiarism	
		[Y] No	

COMMENTS TO AUTHORS

The authors present an interesting paper in a topic relevant to the WJO. There is some good discussion included on MRI and the different scanning sequences. I recommend a minor revision and have some comments and minor changes for the authors listed below. After the manuscript has been revised, the authors may wish to get the paper checked by a native English speaker to refine the wording in some sections. 1. Abstract: Can the authors write the acronyms in full in the Abstract? This has been done for CSA, but not for VIBE or DESS. It should be written in full again at the start of the paper. 2. Core content, bullet point 1: 'quantified in wrist' should be 'quantified in the wrist.' 3. Introduction: The sentence on lines 6-8 is not clear (it depicts joint anatomy topographically...). 4. Introduction, line 15 (p 6): Please write the acronym 'OMERACT' in full. 5. Introduction, line 17 (p 6): The words 'Thanks to' should be replaced by 'Due to' or similar as 'Thanks to' is too informal. 6. Introduction, Paragraph 2, Lines 7-8 (p 7): Please reword 'before and after about an hour' slightly to make this section clearer. For example, 'requires repeated investigations prior to, and then after about an hour of contrast agent injection.' 7. Subjects and Methods/MRI: Change 'in the supine position' to

'in a supine position.' 8. MRI: It is difficult for the reader to visualise how the patient's wrists were scanned from the description. Are the authors able to include a photograph? 9. MRI: 'Mostly used for abdominal investigations' would be better worded as 'predominately used for abdominal investigations.' 10. MRI: The authors have stated that DESS was previously used for knee cartilage imaging. Is it not longer used or is the wording just unclear? 11. MRI: Table 1 should have a capital 'T.' Can the authors please capitalise the first letter of all table and figure numbers? 12. Cartilage segmentation and measurements: How was the cross-sectional area calculated in the thresholding process? 13. Cartilage segmentation and measurements: The authors state that the same (one) radiologist repeated the measurements, but in the results they show data for two operators, each performing the measurements twice. Can they please re-word the methods to reflect that there were two rather than on radiologist? 14. Results: The authors' state that the average cartilage cross-sectional area from the VIBE and DESS sequences was 'slightly but significantly lower.' What was the p-value? Was it statistically significantly different and if so, I think the word 'slightly' should be omitted. 15. Can the authors please check the caption for Figure 3 as the wording is confusing i.e. which one is (A), (B) or (C)? Also, in Figures 3(A) and 3(B), the horizontal axis is 'cartilage bone height' when I think they mean carpal bone length. Can the authors please label the axes of Figure 3(c)? Which axis is VIBE and which axis is DESS? 16. Results (p 15): What do the authors mean by saying the VIBE and DESS measurements are significantly related? I think they mean that the correlation coefficient is high, or the correlation is strong? They have mentioned this again on p 17, where I think they mean high correlation (highly significant relationships - second paragraph on p 17). 17. Results (p 15): The last sentence is unclear and should be reworded. 18. Discussion (p 16): Please reword 'repeated measurements performed twice' as repeated means it was performed twice. 19. Discussion (p 17): In the second paragraph, what do the authors mean by cause-effect relationship? Can you please elaborate? 20. Discussion (p 17): Cannot stand alone as a diagnostic criterion for what? 21. Discussion (p 18): Please rephrase 'in the 3 dimensional space' to 'in three dimensional space.' 22. Discussion (p 20): In Paragraph 2, what do the authors mean by 'readers' (mentioned twice)? Do they mean the researchers interpreting or measuring data from the MRI films? Please rewor

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ESPS PEER-REVIEW REPORT

Name of journal: World Journal of Orthopedics
ESPS manuscript NO: 16973
Title: Standardized quantitative measurements of wrist cartilage in healthy humans using 3T magnetic resonance imaging
Reviewer's code: 00458932
Reviewer's country: Greece
Science editor: Yue-Li Tian
Date sent for review: 2015-02-06 20:34
Date reviewed: 2015-06-02 16:19

CLASSIFICATION	LANGUAGE EVALUATION	SCIENTIFIC MISCONDUCT	CONCLUSION
[ ] Grade A: Excellent	[ ] Grade A: Priority publishing	Google Search:	[ ] Accept
[Y] Grade B: Very good	[Y] Grade B: Minor language polishing	[ ] The same title	[Y] High priority for publication
[ ] Grade C: Good	[ ] Grade C: A great deal of language polishing	[ ] Duplicate publication	[ ] Rejection
[ ] Grade D: Fair	[ ] Grade D: Rejected	[ ] Plagiarism	[ ] Minor revision
[ ] Grade E: Poor		[Y] No	[ ] Major revision
		BPG Search:	
		[ ] The same title	
		[ ] Duplicate publication	
		[ ] Plagiarism	
		[Y] No	

COMMENTS TO AUTHORS

The manuscript is of interest. The task would be a challenging one particularly in patients with rheumatological conditions. There is some heterogeneity in the Reference list which should be corrected.

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ESPS PEER-REVIEW REPORT

Name of journal: World Journal of Orthopedics
ESPS manuscript NO: 16973
Title: Standardized quantitative measurements of wrist cartilage in healthy humans using 3T magnetic resonance imaging
Reviewer's code: 00711004
Reviewer's country: United States
Science editor: Yue-Li Tian
Date sent for review: 2015-02-06 20:34
Date reviewed: 2015-04-12 14:11

CLASSIFICATION	LANGUAGE EVALUATION	SCIENTIFIC MISCONDUCT	CONCLUSION
[ ] Grade A: Excellent	[ ] Grade A: Priority publishing	Google Search:	[ ] Accept
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		[ ] Duplicate publication	
		[ ] Plagiarism	
		[Y] No	

COMMENTS TO AUTHORS

General Comments: This manuscript presents a study to quantify cartilage cross-sectional area at the wrist in healthy subjects and the reproducibility of the proposed measurements. The study is in general well designed and clearly presented in the manuscript. However, the reviewer has some technical concerns below: 1) This is a manual measurement instead of a semi-automatic measurement method claimed by the authors. The reviewer did not see any semi-automatic image-processing method in the measurement. 2) The measurement plane is determined using manual selection. As shown in Figure 1, the coronal and sagittal plane in B and C are calculated using the axis in A. This reconstructed image is a MPR image. Please clarify it. 3) In the measurement of area, the authors indicated "a visual threshold" is applied. This threshold tends to be sensitive to the measurement results. In terms of Figure 2C, it might be possible to calculate a threshold using image-processing method instead of "a visual threshold". This may improve the reproducibility of the measurement. 4) If the study can add some number of subjects with RA or OA, the comparison between normal subjects and diseased subjects will improve the significance of the study.

Minor comments: 1) P8, Subject mean age: 51, range 23 to 53. For 14 subjects, this is incorrect. Please check. 2) Table 2 Caption: CV1 and CV2 were mentioned but no data in the table. 3) The authors used the terms of CV, variation coefficient, coefficient of variation interchangeably through the manuscript. Please revise it.