

This is a repository copy of Development and Validation of the OMERACT Rheumatoid Arthritis Magnetic Resonance Tenosynovitis Scoring System in a Multireader Exercise.

White Rose Research Online URL for this paper: http://eprints.whiterose.ac.uk/127116/

Version: Accepted Version

## Article:

Glinatsi, D, Bird, P, Gandjbakhch, F et al. (6 more authors) (2017) Development and Validation of the OMERACT Rheumatoid Arthritis Magnetic Resonance Tenosynovitis Scoring System in a Multireader Exercise. Journal of Rheumatology, 44 (11). pp. 1688-1693. ISSN 0315-162X

https://doi.org/10.3899/jrheum.161097

© 2017. This is a pre-copy-editing, author-produced PDF of an article accepted for publication in The Journal of Rheumatology following peer review. The definitive publisher-authenticated version "Glinatsi, D, Bird, P, Gandjbakhch, F et al. (2017) Development and Validation of the OMERACT Rheumatoid Arthritis Magnetic Resonance Tenosynovitis Scoring System in a Multireader Exercise. Journal of Rheumatology, 44 (11). pp. 1688-1693", is available online at: https://doi.org/10.3899/jrheum.161097. Uploaded in accordance with the publisher's self-archiving policy.

## Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

## **Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



**Table 1** Intra- and inter-reader agreement of the TS-score

		Wrist		MCP flexor tendons		Total score	
		Baseline	Change	Baseline	Change	Baseline	Change
Intra-reader ICC and SDC Reader 1	smICC (95% CI)	0.91 (0.82-0.95)	0.82 (0.69-0.90)	0.89 (0.80-0.94)	0.81 (0.68-0.89)	0.90 (0.82-0.95)	0.88 (0.79-0.93)
	SDC (% patients ≥SDC) [%MOC]		1.8 (54.7%) [18.9%]		1.1 (22.1%) [15.5%]		2.1 (39.5%) [13.5%]
Intra-reader ICC and SDC Reader 2	smICC (95% CI)	0.93 (0.87-0.96)	0.80 (0.67-0.89)	0.88 (0.79-0.93)	0.83 (0.71-0.90)	0.94 (0.90-0.97)	0.83 (0.70-0.90)
	SDC (% patients ≥SDC) [%MOC]		2.0 (57.0%) [18.2%]		1.2 (23.3%) [10.6%]		2.7 (40.7%) [13.3%]
Intra-reader ICC and SDC Reader 3	smICC (95% CI)	0.84 (0.72-0.91)	0.76 (0.59-0.86)	0.79 (0.65-0.88)	0.68 (0.48-0.81)	0.87 (0.77-0.93)	0.84 (0.73-0.91)
	SDC (% patients ≥SDC) [%MOC]		2.9 (48.8%) [22.8%]		1.8 (44.2%) [23.8%]		3.0 (54.7%) [15.8%]
Intra-reader ICC and SDC Reader 4	smICC (95% CI)	0.94 (0.89-0.97)	0.64 (0.42-0.79)	0.92 (0.85-0.96)	0.87 (0.78-0.93)	0.95 (0.91-0.97)	0.80 (0.67-0.88)
	SDC (% patients ≥SDC) [%MOC]		2.3 (37.2%) [29.7%]		1.1 (44.2%) [13.5%]		2.7 (50.0%) [18.1%]
Intra-reader PEA and PCA Average	PEA	76.7%	75.4%	73.4%	70.3%	75.7%	73.8%
	PCA	98.3%	97.4%	99.4%	98.0%	98.6%	97.6%
Inter-reader ICC and SDC	avmICC (95% CI)	0.94 (0.87-0.97)	0.91 (0.86-0.95)	0.96 (0.93-0.98)	0.94 (0.91-0.97)	0.96 (0.90-0.98)	0.94 (0.90-0.96)
	SDC (% patients ≥SDC) [%MOC]		1.7 (49.4%) [17.1%]		0.9 (50.6%) [10.2%]		1.8 (60.5%) [10.2%]
Inter-reader PEA and PCA	PEA	42.5%	50.3%	41.0%	42.4%	42.0%	47.9%
	PCA	81.1%	84.0%	86.9%	87.2%	82.9%	85.0%

Intra- and inter-reader agreement of the system are expressed as single measure and average measure intra-class correlation coefficients (smICC/avmICC) respectively and are presented for baseline and change scores with 95% confidence intervals (CI). An ICC  $\geq$ 0.50 was considered good and an ICC  $\geq$ 0.80 was considered very good. The smallest detectable difference (SDC) was calculated for the change scores and expresses the lowest amount of change that can be considered as true change and not measurement error. The percentage of patients with a positive or negative change score  $\geq$ SDC (% patients  $\geq$ SDC) and the SDC as a percentage of the maximum observed change (%MOC) were also calculated. The percentage of exact agreement (PEA) was defined as the percentage of individual tendons having an exact agreement between the 2 reads for intra-reader agreement and between the 4 readers for inter-reader agreement. The percentage of close agreement (PCA) was defined as the percentage of tendons with agreement differing  $\leq$ 1.PEA and PCA are presented as the average percentages for total scores.