

# Inter and Intrarater Reliability of the Modified Rodnan Skin Score in Early Diffuse Systemic Sclerosis

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## SESSION INFORMATION

**Date:** Monday, November 9, 2015

**Session Type:** ACR Poster Session B

**Session Title:** Systemic Sclerosis, Fibrosing Syndromes and Raynaud's - Clinical Aspects and Therapeutics Poster II

**Session Time:** 9:00AM-11:00AM

## Background/Purpose:

The Modified Rodnan Skin Score (MRSS) is a semiquantitative assessment of skin thickness which is a commonly used outcome measure in Systemic Sclerosis (SSc) clinical trials. The MRSS has been shown to be reproducible among different observers and within the same observer over time as determined by inter and intraobserver means and standard deviations (SD). The objective of this study was to determine the inter and intrarater reliability of the MRSS in patients with early diffuse cutaneous (dc) SSc in the Prospective Registry of Early Systemic Sclerosis (PRESS) Cohort.

## Methods:

A cross-sectional study was conducted over one day. Seven patients meeting ACR/EULAR criteria for SSc, with the diffuse subtype, and from the PRESS Cohort were examined by 10 rheumatologists. Prior to the exercise, the rheumatologists were trained in the MRSS examination as part of an investigator meeting for the Abatacept in Systemic Sclerosis Trial (ASSET.) The MRSS was performed by 10 examiners at 2 separate times on 5 patients. Patients underwent diagnostic testing between examinations, and so significant time elapsed between assessments, decreasing the possibility of recall bias. Data collection sheets were collected by a research coordinator

immediately following each examination, and the investigators did not discuss their examinations with each other in order to avoid bias. For the continuous variable MRSS we computed the inter and intrarater reliability by fitting a linear mixed model to the examiners' ratings with random effects for patient, rater, and patient by rater. For inter/intrarater reliability, the following values represent the following degrees of agreement: <0 – poor; 0-0.2 – slight; 0.21- 0.4 – fair; 0.41- 0.6 – moderate; 0.61-0.8 – substantial; and 0.81-1.0 – almost perfect agreement.

### Results:

The mean age of the patients was  $41.6 \pm 19.8$  years and the mean disease duration from the first non-Raynaud's symptom was  $2.7 \pm 0.8$  years. Three patients were female and 4 male.

The interrater reliability for the MRSS was 0.81, and the intrarater reliability for the MRSS was 0.94. The interobserver mean for the MRSS was 14.67 and the within patient standard deviation was 4.04. The intraobserver mean for the MRSS was 15.04 and the within patient standard deviation was 2.30.

### Conclusion:

We found the MRSS to have inter and intra-rater reliability of 0.81 and 0.94, respectively, suggesting almost perfect agreement among this group of investigators examining patients with early dcSSc. The within patient standard deviation was 4.04 in our study which is comparable to previously published figures of 4.6.<sup>[1]</sup> The intra observer patient standard deviation was 2.30 which is also similar to the previously published figure of 2.45. Our study confirms the reliability of MRSS in the study of patients with dcSSc. In-person training for MRSS should be considered before starting a multicenter randomized controlled trial.

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[1] Clements, PJ, et al. J Rheumatol 1995;22:1281-5

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**Disclosure:** J. K. Gordon, Bayer, 5; V. J. Berrocal, None; S. Assassi, Biogen Idec, 5,Boehringer Ingelheim, 5; E. J. Bernstein, None; R. T. Domsic, Biogen-Idec, 5,Bayer, 5; F. N. Hant, None; M. E. Hinchcliff, None; E. Schiopu, None; V. D. Steen, None; T. M. Frech, None; D. Khanna, Bristol-Myers Squibb, 2,EMD Serono, 2,Genentech and Biogen IDEC Inc., 2,Bayer, 5,Biogen Idec, 5,Cytospor, 5,EMD Serono, 5,Forward, 5,Genentech and Biogen IDEC Inc., 5,Gilead, 5,Lycera, 5,Seattle Genetics, 5.

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