REFERENCES

- [1] van Roon AM, Smit AJ, van Roon AM, Bootsma H, Mulder DJ. Digital ischaemia during cooling is independently related to nailfold capillaroscopic pattern in patients with Raynaud's phenomenon. *Rheumatology (Oxford)* 2016;55:1083-1090.
- [2] Chikura B, Moore T, Manning J, Vail A, Herrick AL. Thumb involvement in Raynaud's phenomenon as an indicator of underlying connective tissue disease. *J Rheumatol* 2010;37:783-786.

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Abstract AB0692 Figure 1. Percentage of patients with and without restoration of perfusion in all fingers during 10 minutes of recovery, measured in one hand by photoplethysmography.

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AB0693 DUROMETRY: HARD FACTS IN SYSTEMIC SCLEROSIS – A SYSTEMATIC LITERATURE REVIEW

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Background: Fibrosis represents one of the main characteristics of systemic sclerosis (SSc), with skin and internal organ involvement being its main clinical expressions. The modified Rodnan Skin Score (mRSS), using clinical palpation to estimate skin thickness, is considered the current "gold standard" to measure skin involvement in a semi-quantitative way. The mRSS has been judged as fully valid through the Outcome Measures in Rheumatology Clinical Trials (OMERACT) Filter, however a high risk of observer bias exists. Therefore, a new challenge for the SSc community is to define a reliable tool, able to more precisely investigate skin involvement in SSc patients, which would be of great value in clinical trials. Durometry, able to objectively investigate skin hardness, might address this need.

Objectives: To appreciate the validation status of durometry in SSc patients, guided by a systematic literature review.

Methods: Relevant full-text articles using durometry in SSc patients were identified through a systematic literature search in PubMed, EMBASE and Web of Science, according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Besides this systematic search, an additional hand search was performed through reference list screening. All retrieved records were screened by two raters based on title, abstract and full-text level to finally include manuscripts eligible for quality appraisal and data extraction. The finally included manuscripts were analysed according to the OMERACT Filter 2.0.

Results: The systematic search yielded 94 records, of which 50 were unique. Seven records were retained for full-text review and analysis, comprising one randomised clinical trial (RCT). The pillar feasibility was well

documented in 3 studies [1-3]. Of note, the credibility (i.e. having face validity) of durometry was considered to be valid, as was stated by Kissin et al. [1]. Concerning the pillar truth: content validity was confirmed as durometry correlated well with histological findings (i.e. myofibroblast score and hyalinized collagen, $r=0.69$ and 0.78 respectively) [4], construct validity was confirmed as a moderate to high significant correlation with the total mRSS was documented in 5 studies (correlation coefficients ranging 0.59-0.81) [1, 3-6]. Concerning the pillar discrimination, the sensitivity to change in the context of one RCT was confirmed [3], inter-rater reliability was confirmed as intraclass correlation coefficients (ICC) ranged from 0.61-0.91 in 2 studies, of which one RCT [1, 3], intra-rater reliability has not been confirmed as this was domain was only investigated in a cohort 5 SSc patients (ICC 0.86-0.94) and thus solid evidence was lacking [1]. The sensitivity to change in situations of change (i.e. change over time, discrimination between SSc patients or between SSc patients and controls) was not confirmed, since solid evidence was lacking in literature.

Table 1: Validation of durometry according to the OMERACT Filter 2.0

Pillar	Subdomain	Reference
Truth	Face validity	[1]
	Content validity	[4]
	Construct validity	[1,3-6]
Discrimination	Sensitivity to change in the context of a RCT	[3]
	Detecting change in situations of change	
	- Sensitivity to change over time	[1]
	- Discrimination between disease subsets	[1,5]
	- Discrimination between SSc and HC	[1,2]
Feasibility	Stability in situations of no change	[1]
	Intra-rater reliability	[1,3]
	Inter-rater reliability	[1,3]

Green: a criterion was judged valid, if appropriate evidence from studies including SSc patients indicated that durometry met the requirements to be valid. **Amber:** a criterion was judged partially valid, if appropriate evidence from studies including SSc patients indicated that durometry only partially met the requirements to be valid. **White:** a criterion was judged with a white rating if appropriate evidence from studies including SSc patients was lacking. Exceptions are face validity and feasibility, in general evaluated by the judgement of experts as an appropriate measure rather than by specific studies.

Conclusion: Current systematically identified evidence suggests partial validation of durometry in SSc patients according to the OMERACT Filter 2.0. Further dedicated studies are needed to completely validate this tool in SSc, more specifically concerning the pillar 'discrimination'.

REFERENCES

- [1] Kissin & Schiller. *Arthritis Rheum* 2006;55(4):603-9
- [2] Falanga. *J Am Acad Dermatol* 1993;29(1):47-51
- [3] Merkel. *Arthritis Care Res* 2008;59(5):699-705
- [4] Kissin & Merkel. *Arthritis Rheum* 2006;54(11):3655-60
- [5] Moon. *Rheumatol Int* 2012;32(8):2465-70
- [6] Wiese. *Arthritis Care Res* 2014;66(11):1731-9

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AB0694 IS DUROMETRY A RELIABLE TOOL TO INVESTIGATE SKIN HARDNESS IN SYSTEMIC SCLEROSIS? A PILOT STUDY AND SYSTEMATIC LITERATURE REVIEW

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Background: Fibrosis of skin and internal organs is a hallmark feature of systemic sclerosis (SSc). The modified Rodnan Skin Score (mRSS) is routinely used to measure skin involvement, however this method has only an inter-rater reliability ranging from 0.38-0.92 and intra-rater reliability ranging from 0.74-0.76. Hence, finding a more reliable tool, capable of investigating skin involvement in SSc patients more reliably and precisely, would be of great significance. Durometry has been proposed as an objective technique to investigate skin hardness.

Objectives: To identify and critically appraise literature on the reliability of durometry in SSc patients by a systematic literature review and to perform a pilot study to investigate the intra-rater reliability of durometry in SSc patients.