

# The 'Severity of Nail Psoriasis Score' (SNAPS) Is Feasible, Reliable and Demonstrates Construct Validity Against the mNAPSI in an Observational Cohort of Patients with Psoriatic Arthritis

Anna Antony<sup>1</sup>, Darren Hart<sup>2</sup>, Charlotte Cavill<sup>3</sup>, Eleanor Korendowych<sup>4</sup>, Neil McHugh<sup>5</sup>, Christopher Lovell<sup>4</sup> and William Tillett<sup>4</sup>, <sup>1</sup>Royal National Hospital for Rheumatic Diseases, Royal United Hospitals NHS Trust, Melbourne, Victoria, Australia, <sup>2</sup>Department of Clinical Measurement, Royal National Hospital for Rheumatic Diseases, Royal United Hospitals NHS Trust, Bath, England, United Kingdom, <sup>3</sup>Royal National Hospital for Rheumatic Diseases, Royal United Hospitals NHS Trust, Bath, United Kingdom, <sup>4</sup>Royal National Hospital for Rheumatic Diseases, Royal United Hospitals NHS Trust, Bath, England, United Kingdom, <sup>5</sup>University of Bath, Bath, England, United Kingdom

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## SESSION INFORMATION

**Date:** Tuesday, November 12, 2019

**Session Type:** Poster Session (Tuesday)

**Session Title:** Spondyloarthritis Including Psoriatic Arthritis – Clinical Poster III: Psoriatic Arthritis, Clinical Features

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

**Background/Purpose: Background:** Longitudinal assessment of psoriatic nail dystrophy and its response to treatment is limited outside of research settings due to the complexity of existing scoring tools. The 'Severity of Nail Psoriasis Score' (SNAPS; previously known as the Bath Nail Score) is a simple tool developed for use in the observational setting. It assesses for the presence of 4 features of fingernail psoriasis (pitting, onycholysis, hyperkeratosis, and severe nail deformity; score 0-40). We aimed to validate this tool in an observational cohort of patients with Psoriatic Arthritis (PsA).

**Methods: Methods:** Consenting consecutive patients enrolled in the Bath PsA longitudinal cohort underwent photography of their fingernails. Clinical assessments included 66/68 tender and swollen joint count, Psoriasis Area and Severity Index, Leeds Enthesitis Index, Leeds Dactylitis Index, and Physician Nail Visual Acuity Scale (PhNVAS). Participants completed the Health Assessment Questionnaire-Disability Index and a Patient Nail VAS (PtNVAS). Dorsal view photographs of each fingernail were acquired using a tripod-mounted DSLR camera with macro lens. An angled mirror was positioned distally to capture the presence of hyperkeratosis. Scoring was conducted by two assessors (WT and AA) using the modified Nail Psoriasis Severity Index (mNAPSI; range 0-130) and SNAPS tools (Table 1). Timed scoring was conducted in a third of patients to assess the feasibility of both tools. Five patients were scored by both assessors at two time points to assess for inter-rater and test-retest reliability using interclass correlation coefficients (ICCs) for absolute agreement of single measures. The correlation between outcome variables was assessed using Pearson's correlation (r) and Spearman's rho where appropriate.

**Results: Results:** Nineteen consecutive patients with and 2 consecutive patients without nail involvement were included. Mean (SD) age was 55 (11.2) years and 42.9% were female. Mean (SD) mNAPSI and SNAPS scores were 24 (17.2) and 14 (8.8). Median (IQR) PhNVAS and PtNVAS were 20 (13.0-37.0) and 18 (9.5-29.3). A total of 210 nails were assessed. Nail disease was present in 90.5% of patients using either score, and in 79% of nails using SNAPS and 82.4% of nails using mNAPSI. The main nail feature contributing to this discrepancy was splinters. Mean time to score the nails per patient using the SNAPS and mNAPSI was 59 (13.0) and 136 (27.8) seconds respectively. The inter-rater and test-retest reliability of the SNAPS was 0.92-0.94 ( $p < 0.001$ ) and 0.93-0.96 ( $p < 0.005$ ). The inter-rater and test-retest reliability of the mNAPSI was 0.71-0.78 ( $p < 0.03$ ) and 0.95-0.97 ( $p = 0.002$ ). There was a strong correlation between the SNAPS and mNAPSI ( $r = 0.95$ ,  $p < 0.001$ ) (Figure 1), and a moderate correlation between the SNAPS and PhNVAS ( $r = 0.77$ ,  $p < 0.001$ ) and PtNVAS ( $r = 0.63$ ,  $p = 0.002$ ), and the mNAPSI and PhNVAS ( $r = 0.84$ ,  $p < 0.001$ ) and PtNVAS ( $r = 0.64$ ,  $p = 0.002$ ). The SNAPS scores did not demonstrate significant floor or ceiling effects (Figure 2).

**Conclusion: Conclusion:** SNAPS is feasible, reliable and demonstrates construct validity against mNAPSI for assessing psoriatic nail dystrophy. Follow-up data is needed to assess longitudinal validity.

Nail Scores *	Pitting	Onycholysis and Oil Drop Dyschromia	Crumbling	Severe nail deformity #	Leukonychia	Splinter Haemorrhages	Hyperkeratosis	Lunula Red spots
mNAPSI (0-13)	0-3	0-3	0-3		0-1	0-1	0-1	0-1
SNAPS (0-4)	0-1	0-1		0-1			0-1	

\* Per nail  
 # Psoriatic nail dystrophy affecting both sides of the nail, i.e. across the longitudinal midline

Table 1: Nail Psoriasis Scoring Systems

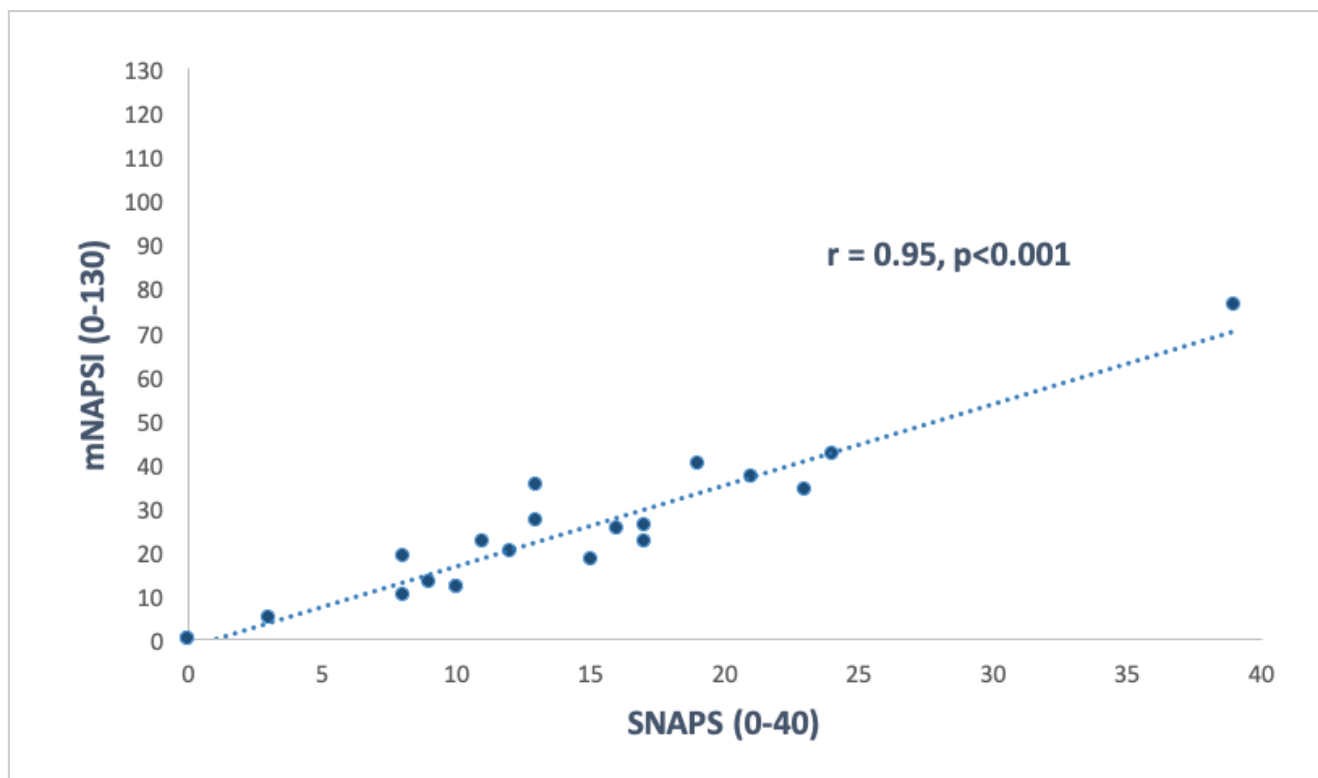


Figure 1: Correlation between the mNAPSI and SNAPS

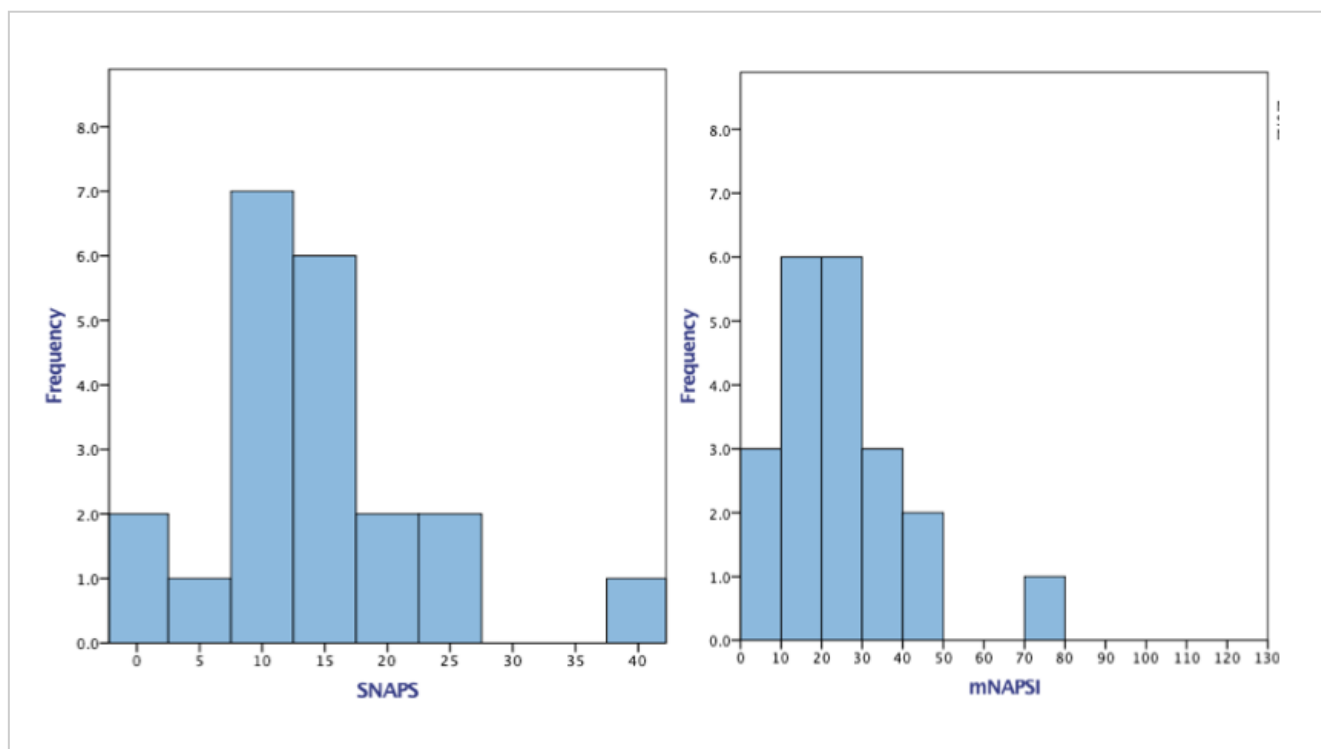


Figure 2: Histograms of Nail Scores

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