

downregulated in ERA patients with erosions, with 6 (3.9%) downregulated more than twofold. A total of 16 miRNAs were differentially expressed ( $P < 0.05$ ) and 4 were possibly differentially expressed ( $P \leq 0.1$ ) between ERA patients with and without erosions. At baseline, expressions of miR-143-3p, miR-145-5p and miR-99b-5p were significantly higher in ERA patients with erosions than those without erosions ( $P < 0.05$  for all). After 12 months of csDMARDs treatment, 31.7%, 47.7%, and 20.6% of the ERA patients had erosion progression, stable erosion and partial erosion repair respectively. Logistic regression analysis revealed baseline expression of miR-99b-5p to be an independent predictor of erosion progression at 12 months (Exp [B]= 4.203, 95% CI 1.166–15.147,  $P=0.028$ ) (table 1).

	Univariate			Multivariate		
	P value	Exp (B)	95% CI	P value	Exp (B)	95% CI
Depth	0.068	0.479	0.217–1.056	0.085	0.177	0.025–1.269
Width	0.108	0.746	0.522–1.067	0.871	1.069	0.481–2.373
RF+	0.102	3.833	0.764–19.224	0.087	5.407	0.784–37.317
ACPA>250U	0.062	3.281	0.941–11.439	0.084	4.238	0.822–21.843
miR99b-5p	0.075	2.512	0.913–6.905	0.028	4.203	1.166–15.147

**Conclusions:** Increased level of cell-free circulating miR-99b-5p was associated with erosions at presentation in ERA patients and could predict erosion progression as assessed by HR-pQCT over a period of 12 months, indicating that it may well serve as a biomarker of poor response to csDMARDs. Whether early biologic DMARDs use in these miR-99b-5p positive patients could reduce or prevent progression of erosion will need to be addressed in future studies.

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#### FRI0667 DEVELOPMENT AND VALIDATION OF A RHEUMATOLOGIST SATISFACTION WITH PRACTICE SCALE- "THE RHEUMATOLOGIST SATISFACTION SCALE" (RSS)

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**Background:** Rheumatology practice improvement research routinely measures patient satisfaction and disease-specific outcomes but seldom considers the satisfaction of physicians who deliver the care. Studies suggest that physician dissatisfaction may pose a barrier to implementing quality improvement efforts. There is a paucity of succinct measures of physician satisfaction.

**Objectives:** As part of a Performance Improvement Project, in an academic rheumatology practice and an affiliated practice, we developed and piloted a simple questionnaire to study physician satisfaction in Rheumatology.

**Methods:** Thirty-five rheumatologists in the academic or private setting were sent open-ended questions to determine the factors that made them satisfied or dissatisfied with respect to their rheumatology practice. From the responses we formed 14 questions on a 0 to 10 scale centering on satisfaction and dissatisfaction. We then administered the questionnaires to a small pilot of 30 rheumatologists in academic and/or private setting.

**Results:** Our sample included 30 rheumatologists, from whom 60% were faculty members, 27 % were fellows. 53% (N=16) were males and the majority (77%) were salaried. Racial distribution was 57% white, 40% Asian, with 7% Hispanic/Latino ethnicity. The most common practice setting was academic medicine (80%, N=24), followed by multi-specialty group (10%, N=3), private practice (7%, N=2), and rheumatology group (3%, N=1). 40% (N=12) and 37% (N=11) had been in practice <5 and >30 years, respectively. Coefficient Alpha for each factor was 0.54 (raw), 0.66 (standardized) for satisfaction and 0.60 (raw), 0.60 (standardized) for dissatisfaction. Based on the results of this survey, mean satisfaction factor in rheumatologists was high (8.6±0.99). 91.3% of rheumatologists (N=21) had mean satisfaction factor >8 (range 5.5–9.9). The ability to make a difference in patient's life and having the opportunity to work with great colleagues were the strongest contributors to physicians' satisfaction (mean 9.2±1.1 and 9.4±0.8, respectively). Time spent on documentation and getting inappropriate referrals that are not in the scope of practice were among the strongest contributors to physicians' dissatisfaction (mean 3±1.9 and 3.9±1.3, respectively). None of the items were highly correlated with each other. This work has now been expanded to more than 150 rheumatologists including in the United States(US) and Latin American countries. Analysis is in progress.

**Conclusions:** A simple and practical questionnaire to measure physician satisfaction was developed and successfully piloted on a predominately academic sample of rheumatologists. The strongest correlates of physician satisfaction

were the "ability to make a difference in a patient's life" and to "work with great colleagues" whereas the greatest correlates of dissatisfaction were "time spent on documentation" and "inappropriate referrals." With further testing on a larger sample from the US and Latin American countries, we aim to gain a deeper understanding of how the cultural differences and practice of medicine may affect physician satisfaction. It is hoped that, this scale will serve as a means of determining aids and barriers to improving rheumatology practice for both patients and physicians and become a useful tool in rheumatology performance practice implementations and studies.

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#### FRI0668 ITEM RESPONSE THEORY TO STANDARDIZE PATIENT REPORTED PHYSICAL FUNCTION OUTCOMES; LINKING 10 COMMONLY USED QUESTIONNAIRES TO A COMMON METRIC

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**Background:** Physical function is a core outcome domain in clinical trials in various inflammatory rheumatic diseases. It is also included in the recently developed International Consortium for Health Outcomes Measurement (ICHOM) standard set for patients with inflammatory arthritis. Physical function patient reported outcome measures (PROMs) are commonly collected in patient registries and are used by decision makers in ways that require outcomes to be aggregated across different data sources. A major barrier to such initiatives is that many different physical function PROMs are in widespread use, and results cannot be meaningfully compared across them, if the traditional scoring procedures based on summing of the individual item scores are used. This is because summed scores depend on both patient- and item characteristics. To facilitate standardization of physical function outcome measurement, we developed a common metric for ten commonly used physical function PROMs using item response theory (IRT), that can be used to adjust PROM scores for item characteristics.

**Methods:** Data of 16,386 patients with inflammatory arthritis from the United States National Databank of Rheumatic Disease, the Swiss Clinical Quality Management Registry, the National Database of the German Collaborative Arthritis Centres, the Dutch Rheumatoid Arthritis Monitoring Study, and several smaller observational studies were used to map the items of 10 commonly used physical function PROMs on a continuous latent physical function variable. The resulting common metric was cross-validated in an independent dataset of 243 patients with gout, osteoarthritis or polymyalgia rheumatica, in which four of the linked PROMs were administered

**Results:** Our analyses supported that all 97 items of the 10 included PROMs relate to a single underlying physical function variable and that responses to each item could be described by the generalized partial credit IRT model. In the cross-validation analyses we found congruent mean scores for four different PROMs when the IRT based scoring procedures were used.

**Conclusions:** We showed that scores obtained using the IRT based common metric developed in this study can be used to make physical function outcomes obtained using different physical function PROMs comparable.

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#### FRI0669 PHYSICIAN GLOBAL ASSESSMENTS FOR DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS ARE ALL OVER THE MAP!

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**Background:** Assessments of disease activity in rheumatoid arthritis (RA) determine the course of treatment. Physician global assessments of disease activity (MD globals) are important outcomes in trials as they are part of the CDAI and