Abstract THU0341 – Table 1. Associations of First Vitamin D Measurement with Thrombosis

	Positive for Thrombotic Event		No Thrombotic Event		P-value
	Mean (SD)	N (%)	Mean (SD)	N (%)	
Any Thrombotic Event					
Vitamin D (ng/ml) (Mean/SD)	27.6 (15.1)		30.6 (14.6)		0.0008
Vitamin D<40 ng/ml (N/%)		299 (80.4)		759 (75.4)	0.064
Stroke					
Vitamin D (ng/ml) (Mean/SD)	28.9 (15.2)		29.9 (14.7)		0.5408
Vitamin D<40 ng/ml (N/%)		79 (75.2)		988 (76.9)	0.7914
Myocardial Infarction (MI)					
Vitamin D (ng/ml) (Mean/SD)	30.2 (16.9)		29.8 (14.7)		0.883
Vitamin D<40 ng/ml (N/%)		35(70)		1032(77)	0.3258
DVT					
Vitamin D (ng/ml) (Mean/SD)	25.9 (13.4)		30.4 (14.9)		<0.0001
Vitamin D<40 ng/ml (N/%)		171 (87.2)		895(75)	0.0002

We next adjusted for race, age, sex and lupus anticoagulant. Low vitamin D remained associated with DVT.

Abstract THU0341 – Table 2. Summary of Adjusted Odds Ratio for Low Vitamin D (<40 ng/ml)

Dependent Variables	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Any Thrombosis	1.33 (0.99,1.79)	1.36 (0.99,1.86)
Stroke	0.91 (0.58,1.45)	0.92 (0.57,1.48)
MI	0.7 (0.38,1.29)	0.8 (0.42,1.53)
DVT	2.28 (1.47,3.54)	2.31 (1.47,3.65)

We next looked prospectively: this analysis excluded thrombotic events before the first vitamin D measurement. It allowed for vitamin D to be a time-varying variable, as replacement therapy was given if it was low. After adjustment for race, age and sex, the adjusted hazard ratio remained significant for any thrombosis: 1.75 (1.04,2.92).

Conclusions: Low vitamin D was significantly associated with any thrombosis and with DVT (even after adjustment for lupus anticoagulant). In prospective models it remained significantly associated with any thrombosis. As supplementation with vitamin D was proven to reduce thrombosis in an oncology randomised clinical trial, vitamin D replacement should become routine in SLE patients at risk for thrombosis.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.1953

THU0342 THE LUPUS FOUNDATION OF AMERICA RAPID EVALUATION OF ACTIVITY IN LUPUS (LFA-REAL) PROVIDES A SIMPLE BUT RELIABLE MEASUREMENT OF SLE DISEASE ACTIVITY

¹A. Thanou, C. Arriens¹, T. Aberle¹, J.A. James¹, J.T. Merrill¹, A.D. Askanase².

¹Oklahoma Medical Research Foundation, Oklahoma City; ²Columbia University, New York, USA

Background: Clinical trial evaluations in SLE are problematic, in part due to glossary-based outcome measures with imperfect granular relevance. Visual analogue scales (VAS) allow real world scaling of disease severity, but may be inconsistent when used over time or by different raters. The SELINA SLEDAI Physician's Global Assessment (SSPGA) is a VAS with severity anchors and instructions to promote consistent, transitional scoring. The Rapid Evaluation of Activity in Lupus (LFA-REALTM) extends the SSPGA by scoring each active feature separately, allowing additive impact of each manifestation within organs, and a global score with meaningful weighting of multiple symptoms. It differs from previous constructions that combine PGA with component scoring¹ by incorporating all manifestations of lupus and refining scaling of the SSPGA².

Objectives: To compare performance of SSPGA and LFA-REALTM to accepted SLE trial outcome measures during an ongoing trial in SLE, using a strict protocol for transitional scoring.

Methods: Disease activity, SLEDAI, BILAG 2004 CLASI, SSPGA and LFA-REALTM was evaluated at monthly visits in an investigator-initiated, double-blind, placebo controlled study of abatacept (trial results pending). Validation of total scores and change in SSPGA and REAL vs SLEDAI and BILAG were examined by Spearman Correlation. ROC curve analysis compared changes in SSPGA and LFA-REALTM to the dichotomous SLE trial endpoints, SRI-4 and BICLA.

Results: 50 adult SLE patients, 47 female, were assessed at 528 visits. Changes in disease activity compared to screening were examined in 478 visit pairs. Total SSPGA and REAL scores strongly correlated to each other (r=0.932), as well as to total SLEDAI and BILAG [SSPGA: r=0.742 (SLEDAI), r=0.776 (BILAG); REAL:

r=0.776 (SLEDAI), r=0.813 (BILAG); all p<0.0001]. Changes in SSPGA and LFA-REALTM at each visit compared to screening correlated to each other (r=0.857) as well as to changes in SLEDAI and BILAG (all p<0.0001) (table 1). Changes in SSPGA and LFA-REALTM were very strongly related to the dichotomous SRI-4 and BICLA endpoints by ROC analysis (all p<0.0001) (table 2). LFA-REALTM musculoskeletal correlated to BILAG musculoskeletal, SLEDAI arthritis, and tender and swollen joint counts (r=0.842, 0.817, 0.634 and 0.784 respectively, all p<0.0001). LFA-REALTM mucocutaneous also correlated to BILAG mucocutaneous, the sum of SLEDAI mucocutaneous features as well as CLASI activity (r=0.826, 0.798 and 0.789 respectively, all p<0.0001).

Abstract THU0342 – Table 1. Change in LFA-REALTM and SSPGA in relation to change in SLEDAI and BILAG.

	ΔSLEDAI	ΔBILAG
ΔLFA-REAL TM	0.701	0.700
ΔSSPGA	0.681	0.624

Abstract THU0342 – Table 2. AUC of change in LFA-REALTM and SSPGA in relation to SRI-4 and BICLA.

	SRI-4	BICLA
ΔLFA-REAL TM	0.876	0.852
ΔSSPGA	0.895	0.913

Conclusions: Both the SSPGA and LFA-REALTM are reliable surrogates of commonly used endpoints in SLE trials. Both instruments are easy to score and understand, and could be employed as continuous or dichotomous endpoints. The LFA-REALTM allows individualised scoring at the symptom or organ level, and each symptom contributes its exact severity to a global score. The simplicity of PGA scoring is accompanied by gains in versatility.

REFERENCES:

- [1] Askanase AD, et al. Arthritis Care Res 2017 Oct 9. doi:10.1002/acr.23445
- [2] Petri M, et al. J Rheumatol 1992;19:53–9.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5613

THU0343 HOW PATIENTS ABILITY BELIEFS ABOUT MATH MATTER TO SLE PATIENTS DISEASE

¹A.S. Meara, M.K. Tompkins², K. Morris³, E. Sullivan⁴, S.P. Ardoian⁵, E. Peters⁶.

¹Division of Immunology and Rheumatology, The Ohio State University;

²Department of Psychology, the Ohio State University; ³Division Of Rheumatology,

The Ohio State University; ⁴Division of Rheumatology, The Ohio State University;

⁵Department of Medicine; ⁶Department of Psychology, The Ohio State University,

Columbus, USA

Background: Systemic lupus erythematosus (SLE) is a heterogeneous disease with high morbidity and mortality; requiring complex treatment plans which can be daunting especially to SLE patients with neuropsychiatric deficits. Numeracy is the "ability to use and understand numbers in daily life" and a key component for effective shared-decision making between physician and patient to ensure the best patient outcomes. Numeracy skills are needed for decisions about health care risk stratification when understanding treatments, understanding potential harm and benefits of therapy and for counting pills and taking medications as prescribed.

Objectives: As there is a lack of information within the lupus patient population, this proposal explores the relationship between patients' numeric ability (both actual and perceived ability) and clinical outcomes fulfilling a gap in our current knowledge of how to support physician communication with patients to ensure patient understanding.

Methods: Patients>18 recruited from IRB approved The Ohio State University Lupus, Vasculitis, Glomerulonephritis Registry. 112 patients had finished subjective numeracy (SNS) which measures patients' perception of their math ability, objective numeracy (ONS) which measures patients' actual math ability. We conducted regression analyses with ONS, SNS, and demographics as predictors of disease activity (measured by SLEDAI). We used backwards-stepwise regression, removing nonsignificant variables one at a time from the model.

Results: Logistic regression analysis revealed a significant interaction between ONS and SNS in predicting whether patients had the active disease or not (interaction b(SE)=−0.70 (0.33), p=0.03; ONS b(SE)=−0.13 (0.30), p=0.68; SNS b(SE)=−0.40 (0.32), p=0.21). Patients higher in both numeric competencies were least likely to have the active disease. Specifically, among those higher in ONS

(+1 SD), the predicted probability of having the active disease was 11% vs. 52% for those higher vs. lower in SNS (± 1 SD), respectively. In comparison, among those lower in ONS (-1 SD), the likelihood of active disease was 38% vs 25% for those higher vs. lower in SNS, respectively. Thus, among patients with greater math abilities, having greater beliefs in one's abilities appeared beneficial; however, among patients with lower math abilities, greater ability beliefs appeared harmful.

Conclusions: Patients with greater math ability, coupled with greater beliefs in one's numeric ability, were least likely to have the active disease. This is consistent with psychological theory about actual math ability and perceived math ability as an outcome predictor. Patients that are overconfident and more active in their health and numeric tasks may make decisions that lead them to worse outcomes. The SNS and ONS may be an efficient screening tool to identify high risk SLE patients that may require extra health care needs.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7006

THU0344 ASSESSMENT OF THE PSYCHOMETRIC PROPERTIES OF PATIENT-REPORTED OUTCOMES OF DEPRESSION IN SLE

¹A. Kwan, S. Marzouk², H. Ghanean³, K. Ali⁴, N. Anderson⁴, J. Su⁴, Z. Touma⁵.

¹Medicine, Queen's University, Kingston, Ontario; ²Department of Psychiatry,

³Psychiatry, University of Toronto; ⁴Toronto Western Hospital; ⁵Rheumatology, University of Toronto, Toronto, Canada

Background: Mood disorders, including depression, are amongst the most common manifestations of neuro-psychiatric SLE. Currently, the screening and diagnosis for depression in ambulatory settings are delayed and often missed due to the lack of standardised valid questionnaires for assessing depression in patients with SLE.

Objectives: This study aims to: 1) Determine the prevalence of depression in SLE patients using the Centre for Epidemiological Studies-Depression Scale [CES-D] and Hospital Anxiety and Depression Scale [HADS] questionnaires. 2) Study the criterion validity and interpretability of CES-D and HADS, and 3) evaluate their diagnostic accuracy when compared to the assessment of an independent psychiatric assessment using the Mini-International Neuropsychiatric Interview (MINI), based on the DSM-5, as the gold standard.

Methods: A cross-sectional study of consecutive consenting SLE patients (n=227), aged 18–65 and attending the Toronto Lupus Clinic between June 2017–September 2017, was performed. Participants were screened for depression using the CES-D and HADS, and underwent the MINI on the same date of their clinic visit. Conventional cut-off scores were used to indicate the prevalence of depression: CES-D ≥ 16 and HADS-D ≥ 8 . Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were evaluated against the MINI. Receiver operator characteristic (ROC) curves and the Youden Index were utilised to determine the optimal cut-off scores for CES-D and HADS-D.

Results: Among 227 patients, the prevalence of depression ranged from 27.8% (HADS-D) to 46.3% (CES-D). ROC curves showed that the CES-D (AUC 0.86, 95% CI: 0.78–0.95) slightly outperformed HADS-D (AUC 0.84, 95% CI: 0.75–0.93), when compared to the MINI. The sensitivity, specificity, PPV, and NPV for CES-D at the optimal cut-off of 26 was 80%, 82%, 43%, and 96%, respectively. The Youden index exhibited optimal cut-offs for CES-D at 26 and HADS-D at 8 that optimised their sensitivity and specificity as screening metrics for depression in SLE patients. The performance of the CES-D and HADS-D at various cut-offs are displayed in table 1 below.

Abstract THU0344 – Table 1. Cut-offs to predict depression by Youden Index

Cutoffs	Sensitivity	Specificity	PPV	NPV
CES-D				
26*	0.80	0.82	0.43	0.96
24	0.80	0.77	0.37	0.96
21†	0.85	0.71	0.34	0.97
16†	0.95	0.55	0.27	0.98
HADS-D				
8*†	0.80	0.79	0.40	0.96
7	0.85	0.72	0.35	0.97
6	0.95	0.62	0.30	0.99

*Optimal cutoff as determined by the Youden Index

†Conventional cutoffs found in literature

Abstract THU0344 – Figure 1. ROC curves for comparisons

Conclusions: This study assessed the criterion validity and interpretability of patient-reported outcome tools HADS, and CES-D for depression screening in SLE patients. Compared to the gold standard, CES-D outperformed HADS-D. These results suggest that SLE-specific cut-offs may improve diagnostic accuracy of current screening metrics in lupus.

Acknowledgements: The University of Toronto Lupus Clinic is supported by the University Health Network, the Lou Rocca Family, and the Lupus Foundation of Ontario. This summer project is supported by the Canadian Rheumatology Association Summer Studentship Program.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.1094

THU0345 SENSITIVITY AND SPECIFICITY OF ANTIBODIES AGAINST CARBAMYLATED PROTEINS IN A MONOCENTRIC COHORT OF PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS AND RHEUMATOID ARTHRITIS

¹B. Özdemir, O. Kucuksahin², T.H. Yeşil³, S. Akan⁴, S. Erten². ¹Internal Medicine, Yıldırım Beyazıt University; ²Rheumatology, Yıldırım Beyazıt University; ³Rheumatology; ⁴Internal Medicine, Atatürk Research and Educational Hospital, Ankara, Turkey

Background: Systemic lupus erythematosus (SLE) is a chronic systemic autoimmune disease characterised by numerous organ involvement. In SLE, autoantibody development against nucleic acids and their binding proteins plays an important role in disease pathogenesis.

Objectives: Purpose of this study is the determination of the diagnostic value of anti-carbamyl antibody in patients with Systemic Lupus Erythematosus and rheumatoid arthritis and the relationship with disease prognosis.

Methods: Fifty-seven SLE patients (F/M 50/7; median age 40.9 $\pm$ 13.7; median disease duration 2 years) were included in the study according to the 2012 SLICC SLE diagnostic criteria. 46 RA patients (F/M 38/8, median age 54.2 $\pm$ 12.4 years,