Supplement to:

Use of SLICC criteria in a large, diverse lupus registry enables SLE classification of a subset of ACR-designated incomplete lupus subjects

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Supplementary Methods. SLE classification of study subjects.

Extensive effort was made to obtain complete medical records for all patients enrolled in the LFRR, particularly for clinical encounters that would be relevant to SLE classification, such as rheumatology, dermatology, and hematology records. Rheumatology records were available for a large majority of subjects in this study. Records were reviewed for SLE classification criteria by a rheumatologist, rheumatology-trained physician assistant, or rheumatology-trained nurse. Medical record review was standardized using an extensive and detailed form that weighs and scores individual criteria documented by the care provider as well as additional clinical observations, laboratory results, and patient complaints. Recording the progression of these various forms of evidence over time (in most cases, multiple years of medical records) provides a clinical picture for each patient.

To supplement the medical records, blood samples were collected at the time of enrollment and tested for autoantibodies in the College of American Pathologists-certified Clinical Immunology Laboratory at OMRF (see “Methods: Autoantibody detection”). For classification purposes, subjects were considered autoantibody positive if a positive result was obtained by in-house testing or recorded in the medical record.

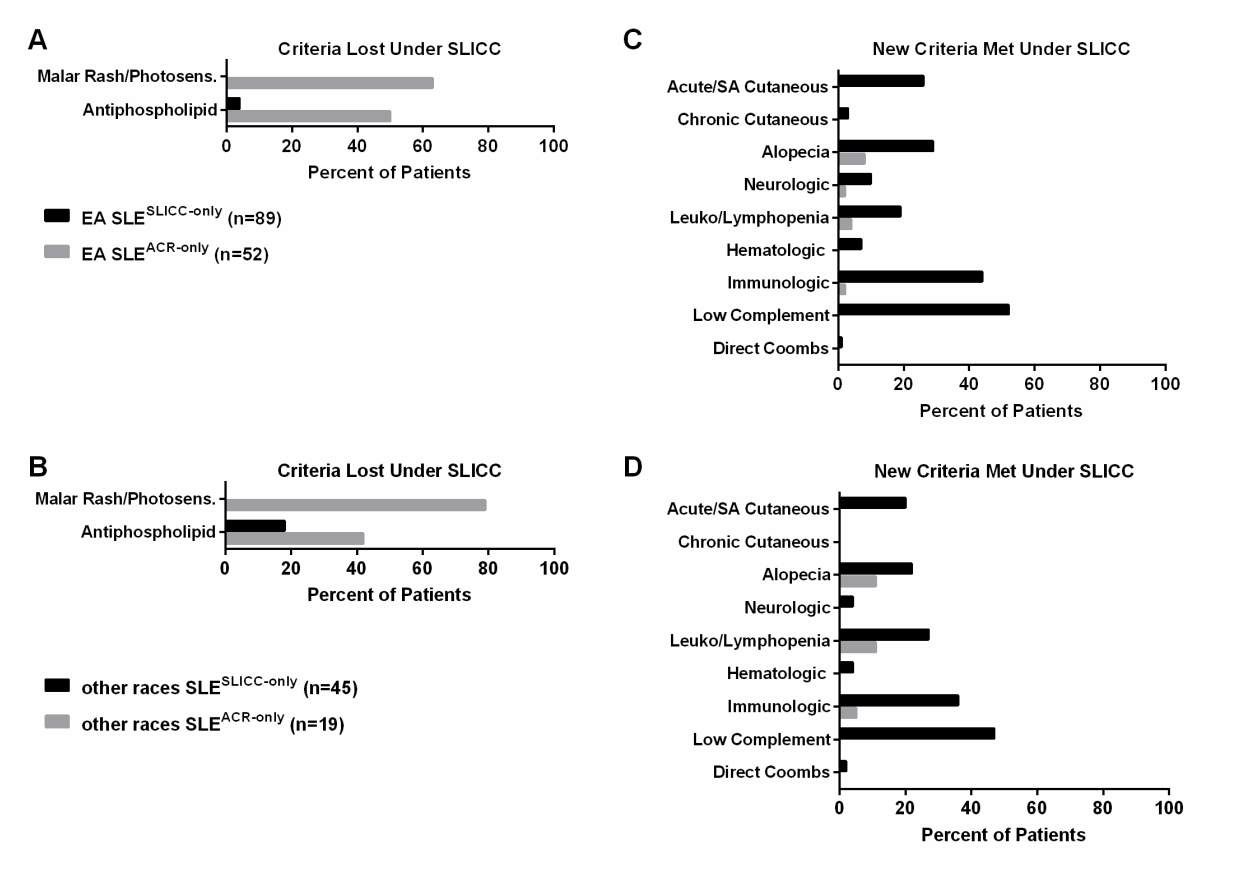
Supplementary Table 1. Organ system involvement in SLE and ILE patients.

Organ System SLICC criteria/ sub-criteria	**SLE$^{SLICC\text{-}only(1)}$** **(n=178)**	**SLE$^{ACR\text{-}only(2)}$** **(n=85)**	**SLE$^{both(3)}$** **(n=3,312)**	**ILE$^{(4)}$** **(n=291)**
Mucocutaneous, n (%) Acute/Subacute Cutaneous Rashes Chronic Cutaneous Rashes Oral/ Nasal Ulcers Alopecia	105 (59.0)	74 (87.1) **P<0.0001**	2868 (86.6) **P<0.0001**	158 (54.3) P=0.320
Musculoskeletal, n (%) Arthritis	67 (37.6)	46 (54.1) **P=0.012**	2344 (70.8) **P<0.0001**	131 (45.0) P=0.117
Pulmonary, n (%) Pleuritis	5 (2.8)	5 (5.9) P=0.233	966 (29.2) **P<0.0001**	11 (3.8) P=0.575
Cardiovascular, n (%) Pericarditis	6 (3.4)	5 (5.9) P=0.347	576 (17.4) **P<0.0001**	11 (3.8) P=0.818
Renal, n (%) Renal	23 (12.9)	9 (10.6) P=0.589	1262 (38.1) **P<0.0001**	13 (4.5) **P=0.001**
Neurologic, n (%) Neurologic	22 (12.4)	5 (5.9) P=0.113	585 (17.7) P=0.071	4 (1.4) **P<0.0001**
Hematologic, n (%) Anemia Leukopenia/Lymphopenia Thrombocytopenia	86 (48.3)	28 (32.9) **P=0.019**	2458 (74.2) **P<0.0001**	72 (24.7) **P<0.0001**

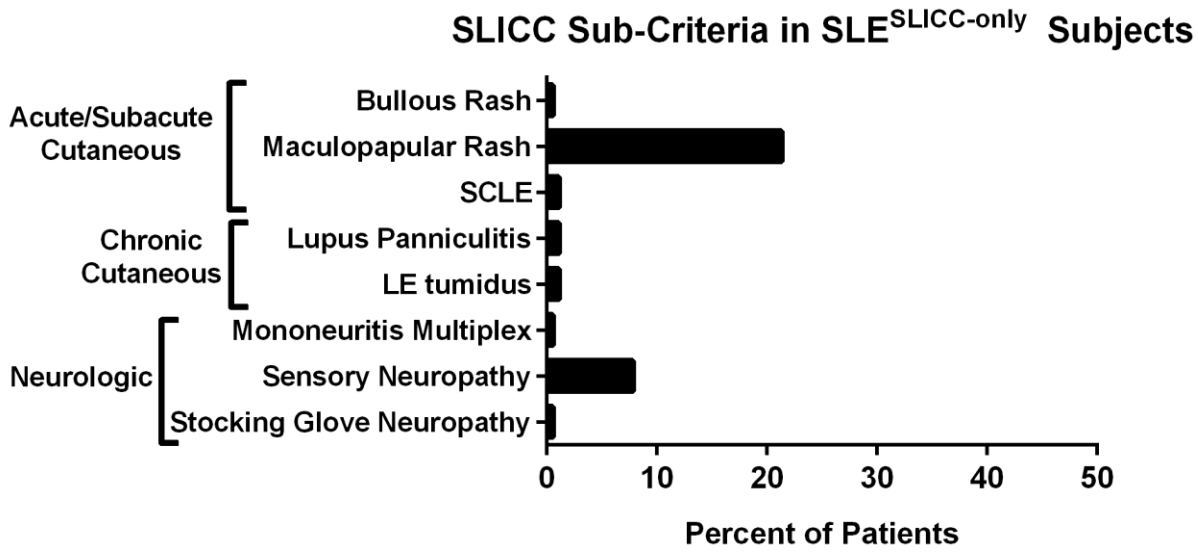
[1]SLE$^{SLICC\text{-}only}$ were classified with SLE by SLICC criteria, but not ACR criteria. [2]SLE$^{ACR\text{-}only}$ were classified with SLE by ACR criteria, but not SLICC criteria. [3]SLE^{both} were classified with SLE by both SLICC and ACR criteria. [4]ILE patients met 3 ACR criteria and were not classified with SLE by SLICC criteria. Bold P-values are significant (P<0.05) compared to SLE$^{SLICC\text{-}only}$.

SLICC Criteria	ACR 1997 Criteria
Clinical	
Acute/subacute cutaneous lupus	**Malar rash**
malar rash, photosensitive lupus rash, and other lupus rashes	**Discoid rash**
Chronic cutaneous lupus	
discoid rash and other lupus rashes	**Photosensitivity**
Oral or nasal ulcers	**Oral or nasal ulcers**
Non-scarring alopecia	
Arthritis	**Arthritis**
Serositis	**Serositis**
Renal disorder	**Renal disorder**
Neurologic	**Neurologic**
seizures, psychosis, mononeuritis multiplex, myelitis, peripheral or cranial neuropathy, or acute confusional state	*seizures or psychosis*
Hemolytic anemia	**Hematologic**
Leukopenia or lymphopenia	*hemolytic anemia, leukopenia, lymphopenia, or thrombcytopenia*
Thrombcytopenia	
Immunologic	**Immunologic**
Anti-dsDNA	*anti-dsDNA, anti-Sm, or antiphospholipid (abnormal anti-cardiolipin IgG or IgM)*
Anti-Sm	
Antiphospholipid	
medium- or high-titer anticardiolipin IgA, IgG, or IgM	
Low complement	
Direct Coombs' test	
ANA	**ANA**

Supplementary Figure 1. Comparison of SLE classification criteria under 2012 SLICC and 1997 ACR criteria. SLICC criteria (left) classify subjects with SLE if they meet ≥4 criteria, including at least one clinical and one immunologic criterion, or if they exhibit biopsy-proven lupus nephritis with positive ANA or anti-dsDNA.[1] The 1997 ACR criteria (right) classify subjects with SLE if they meet ≥4 criteria.[2] Criteria are listed in bold type. Sub-criteria that fulfill the given criterion are in italics, when SLICC and ACR sub-criteria differ. Comparable SLICC and ACR criteria are aligned in the table. Patients may gain criteria under SLICC criteria compared to ACR criteria by the addition of new criteria (alopecia, low complement, positive Direct Coombs) or new sub-criteria (acute cutaneous, chronic cutaneous, neurologic), less stringent thresholds for leukopenia/lymphopenia, and/or the separation of hematologic and immunologic sub-criteria into separate main criteria. Patients may lose criteria under SLICC criteria compared to ACR criteria by the combination of malar rash and photosensitivity into a single SLICC criterion, and/or the more stringent threshold for anti-phospholipid positivity. [1]Petri M, Orbai A-M, Alarcón GS, et al. Derivation and validation of the Systemic Lupus International Collaborating Clinics classification criteria for systemic lupus erythematosus. *Arthritis Rheum* 2012;**64**(8):2677-86. [2]Hochberg MC. Updating the American College of Rheumatology revised criteria for the classification of systemic lupus erythematosus. *Arthritis Rheum* 1997;**40**(9):1725.



Supplementary Figure 2. Criteria contributing to SLE classification under SLICC criteria vary by race. (A-B) Reasons for loss of criteria under SLICC criteria compared to ACR criteria were evaluated in $SLE^{SLICC\text{-}only}$ (black) and $SLE^{ACR\text{-}only}$ (gray) patients of European American (EA; A) and other races (B). (C-D) New criteria met under SLICC criteria compared to ACR criteria were evaluated in $SLE^{SLICC\text{-}only}$ (black) and $SLE^{ACR\text{-}only}$ (gray) patients of EA (C) and other races (D). SA=subacute



Supplementary Figure 3. Inclusion of maculopapular rash and sensory neuropathy as SLICC sub-criteria allows SLE classification of patients who do not meet ACR classification standards. Graph shows the percent of $SLE^{SLICC\text{-}only}$ patients positive for new SLICC sub-criteria. One additional $SLE^{SLICC\text{-}only}$ patient (not shown) failed to meet the more stringent anti-cardiolipin threshold under SLICC, but met the SLICC anti-phospholipid criterion by anti-β2-glycoprotein positivity.