

## Supplemental Methods

### *Assessment of comorbidities and adverse events*

At each visit, patients underwent complete physical examination (including blood pressure measurement) and standard biochemical (including renal and liver function) tests. Lipid tests were repeated on annual basis. Age- and sex-specific screening for comorbidities (e.g., mammography, colonoscopy) was performed according to standard recommendations. Other tests (e.g., CT scans, carotid artery triplex, heart echocardiogram) were performed at the physician's discretion based on the clinical signs and symptoms of the patient. Sources for the adverse events included patient history, reviewing of medical charts, electronic health records and prescriptions, as well as any relevant formal documentation (e.g., hospitalizations, microbiology tests).

### *Sample size estimation*

Based on previously published data,[11] we assumed that 30% of patients with active moderate-to-severe SLE would spend  $\geq 50\%$  of time in LLDAS which would be linked to 30% reduction in damage accrual events captured over an average 6 visits per patient. In regression analysis with right-skewed data, the inclusion of 317 patients would provide 80% power at  $\alpha=0.05$  (one-sided).