Supplemental Table 1. Baron & Kelly steps to test the mediation hypothesis

| Baron & Kelly | Regression Analysis | Visual Illustration |
|--------------|---------------------|---------------------|
| Step 1       | Outcome variable Y (Depression) regressed on independent variable X (Stigma) to test path $c$ | $X \rightarrow Y$ $c$ |
| Step 2       | Mediator variable M (Social isolation) regressed on independent variable X (Stigma) to test path $a$ | $X \rightarrow M$ $a$ |
| Step 3       | Outcome variable Y (Depression) regressed on mediator variable M (Social isolation) to test path $b$ | $M \rightarrow Y$ $b$ |
| Step 4*      | Outcome variable Y (Depression) regressed on independent variable X (Stigma) and mediator variable M (Social isolation) to test path $c'$ | $X \rightarrow b\rightarrow Y$ $a$ $b$ $c'$ |

The three main measures used in the study to follow the Baron & Kelly procedures are indicated within parentheses. *After the mediator variable is entered in the regression model, the relationship between the independent and outcome variables should either disappear (full mediation) or significantly diminish (partial mediation).

Supplemental Table 2. Description of Participants by CLASI assessment

| Characteristics               | Indicator               | Overall (n=121) | CLASI Assessment | P-value |
|-------------------------------|-------------------------|-----------------|------------------|---------|
| Age at survey (years)         | Mean ± SD               | 54.1 ± 13.8     | 55.9 ± 14.4      | 52.2 ± 13.0 | 0.1   |
| Disease duration (years)      | Mean ± SD               | 14.2 ± 10.0     | 14.8 ± 9.8       | 13.6 ± 10.2 | 0.5   |
| Sex, n (%)                   | Male                    | 15 (12.4)       | 10 (16.1)        | 5 (8.5)  | 0.2   |
|                               | Female                  | 106 (87.6)      | 52 (83.9)        | 54 (91.5) |       |
| Race, n (%)                  | BlackAA                 | 103 (85.1)      | 48 (77.4)        | 55 (93.2) | 0.02  |
|                               | White                   | 18 (14.9)       | 14 (22.6)        | 4 (6.8)  |       |
| Education (years)            | Mean ± SD               | 14.5 ± 3.1      | 14.7 ± 2.9       | 14.2 ± 3.4 | 0.4   |
| Marital status, n (%)        | Currently married       | 38 (31.4)       | 21 (33.9)        | 17 (28.8) | 0.8   |
|                               | Ever married            | 43 (35.5)       | 21 (33.9)        | 22 (37.3) |       |
|                               | Never married           | 40 (33.1)       | 20 (32.3)        | 20 (33.9) |       |
| Work status, n (%)           | Full- or part-time      | 48 (41.4)       | 23 (38.3)        | 25 (44.6) | 0.7   |
|                               | Out of labor force      | 31 (26.7)       | 18 (30.0)        | 13 (23.2) |       |
|                               | Unemployed/disabled     | 37 (31.9)       | 19 (31.7)        | 18 (32.1) |       |
| Insurance status, n (%)      | No insurance            | 21 (17.6)       | 4 (6.7)          | 17 (28.8) | 0.004 |
|                               | Federal insurance       | 62 (52.1)       | 33 (55.0)        | 29 (49.2) |       |
|                               | Private insurance       | 36 (30.3)       | 23 (38.3)        | 13 (22.0) |       |
| Depression T-score           | Mean ± SD               | 53.9 ± 12.2     | 57.2 ± 16.0      | 53.7 ± 12.0 | 0.6   |
| Stigma T-score               | Mean ± SD               | 51.3 ± 10.4     | 49.5 ± 10.0      | 53.1 ± 10.5 | 0.06  |
| Social Isolation T-score     | Mean ± SD               | 49.8 ± 11.3     | 48.8 ± 10.7      | 50.8 ± 11.9 | 0.3   |
| Emotional support T-score    | Mean ± SD               | 51.7 ± 8.9      | 52.1 ± 8.4       | 51.2 ± 9.5 | 0.6   |
Supplemental Table 3. Multivariate Regression Analysis of Depression by Stigma, Social Isolation, and Emotional Support: Developing Models

| Factor                        | Model 1          | Model 2          | Model 3          | Model 4          |
|-------------------------------|------------------|------------------|------------------|------------------|
|                               | b (95% CI)       | b (95% CI)       | b (95% CI)       | b (95% CI)       |
| **Primary exposures**         |                  |                  |                  |                  |
| Stigma                        | 0.75 (0.62, 0.89)| 0.44 (0.23, 0.66)| 0.12 (-0.14, 0.39)| 0.12 (-0.14, 0.39)|
| Social isolation              |                  |                  |                  |                  |
| Emotional support             |                  |                  |                  |                  |
| **Covariates**                |                  |                  |                  |                  |
| Sociodemographics             |                  |                  |                  |                  |
| Sex (ref: male)               | -0.35 (-4.61, 3.92)| -1.69 (-6.00, 2.62)| -1.66 (-5.67, 2.35)| -1.66 (-5.73, 2.42)|
| Race (ref: white)             | 3.08 (-0.67, 6.83)| 1.15 (-3.72, 6.01)| 1.99 (-2.56, 6.54)| 1.99 (-2.59, 6.57)|
| Age at survey (years)         | -0.02 (-0.14, 0.11)| -0.03 (-0.17, 0.11)| 0.08 (-0.06, 0.23)| 0.08 (-0.06, 0.23)|
| Education (years)             | 0.24 (-0.27, 0.75)| **0.53 (0.01, 1.06)**| 0.40 (-0.10, 0.89)| 0.40 (-0.10, 0.90)|
| Marital status (ref: currently married) |                  |                  |                  |                  |
| Ever married                  | 2.66 (-0.81, 6.13)| **3.78 (0.11, 7.44)**| 1.13 (-2.56, 4.82)| 1.13 (-2.69, 4.94)|
| Never married                 | 2.21 (-1.30, 5.73)| **4.49 (0.80, 8.18)**| **4.80 (1.37, 8.24)**| **4.80 (1.33, 8.28)**|
| Work status (ref: employed)   |                  |                  |                  |                  |
| Out of labor force            | -0.17 (-4.09, 3.75)| -0.85 (-5.13, 3.43)| -1.94 (-5.97, 2.08)| -1.94 (-6.00, 2.12)|
| Unemployed/unable to work     | 0.62 (-3.05, 4.28)| 0.04 (-3.74, 3.82)| 0.37 (-3.15, 3.89)| 0.37 (-3.18, 3.92)|
| **Disease-related factors**   |                  |                  |                  |                  |
| DLE subtype (ref: below the neck) |                  |                  |                  |                  |
| Above and below the neck      | -1.39 (-4.67, 1.89)| -0.69 (-3.77, 2.38)| -0.70 (-3.82, 2.43)|                  |
| Skin index 29+3               |                  |                  |                  |                  |
| Symptoms                      | 0.04 (-0.05, 0.13)| 0.04 (-0.04, 0.12)| 0.04 (-0.04, 0.13)|                  |
| CLE domain                    | 0.06 (-0.02, 0.14)| 0.04 (-0.03, 0.12)| 0.04 (-0.03, 0.12)|                  |
| **Physical health (T-score)** | **-0.36 (-0.58, -0.13)**| **-0.29 (-0.51, -0.08)**| **-0.29 (-0.51, -0.08)**|                  |
| Current treatment             |                  |                  |                  |                  |
| Hydroxychloroquine            | 0.43 (-2.64, 3.51)| 1.54 (-1.38, 4.45)| 1.54 (-1.42, 4.50)|                  |
| Local steroids                | -0.74 (-3.74, 2.26)| -0.56 (-3.35, 2.23)| -0.56 (-3.39, 2.27)|                  |
| Systemic steroids/immunosuppressors | -1.86 (-5.61, 1.90)| -1.34 (-4.85, 2.16)| -1.34 (-4.87, 2.19)|                  |
| **(R-Square)**                | 0.586            | 0.672            | 0.720            | 0.720            |
| Percentage mediated           |                  |                  | 72.0%            | 71.4%            |
| Sobel test                    |                  |                  | <0.001           | <0.001           |

Models were tested among 101 participants with DLE; 8 DLE participants had missing data on 1 or more variables.

Abbreviations: \( b = \) beta coefficient; CI = confidence intervals; bolded values indicate statistical significance (95% CI no crossing 0).
Supplemental Figure 1. Relationship between depression and skin activity in 59 participants with primary chronic cutaneous lupus erythematosus. Depression was measured with the PROMIS Depression SF 8a and values are expressed as T-scores. Skin activity was measured with the Cutaneous Lupus Erythematosus Disease Area and Severity Index (CLASI-A; range 0-70).

Supplemental Figure 2. Relationship between depression and skin damage in 59 participants with primary chronic cutaneous lupus erythematosus. Depression was measured with the PROMIS Depression SF 8a and values are expressed as T-scores. Skin damage was measured with the Cutaneous Lupus Erythematosus Disease Area and Severity Index (CLASI-D; range 0-56).