

Obesity linked with depressive symptoms, increased disease activity in women with lupus

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Obesity is independently associated with worse patient-reported outcomes in women with systemic lupus erythematosus, including disease activity, depressive symptoms, pain and fatigue, according to new research findings presented this week at the 2017 ACR/ARHP Annual Meeting in San Diego.

Lupus is a chronic (long-term) inflammatory autoimmune disease in which an unknown trigger causes the body's immune system to attack its own healthy tissues. The most common type of lupus is [systemic lupus erythematosus](#) (SLE), a complex, multiple symptom disease that can cause inflammation, pain and damage to various parts of the body. While anyone can develop lupus, it occurs 9-10 times more often in women than in men and is 2-3 times more common among women of color.

Obesity is a common comorbidity for people with SLE. While prior research shows that [obesity](#) can worsen systemic inflammation in the general population and contributes to worse disease-related outcomes in rheumatoid arthritis, its impact in [lupus patients](#) is not well established. A group of researchers at the University of California, San Francisco, conducted a study to determine whether excess adiposity, or too much body fat, in women with lupus is independently associated with worse patient-reported outcomes (PROs).

"We know from prior research that [patients](#) with lupus experience worse health-related quality of life and greater symptom burden compared to the general population, but we do not yet have a complete explanation for these worse experiences," said Sarah Patterson, MD, a fellow in rheumatology at the University of California, San Francisco. "For example, neither disease-specific factors such as [disease activity](#) nor

sociodemographic factors such as poverty fully explain the observed severity of these symptoms. And because we are interested in understanding how lifestyle factors such as exercise and weight management impact outcomes in lupus, we sought to determine if excess fat associates with worse PROs in this disease."

Participants in the sample for the study were drawn from the Arthritis Body Composition and Disability (ABCD) Study. They had to be at least 18 years old, female and have a diagnosis of SLE verified by medical record review. The researchers calculated body-mass index (BMI) as weight (kg) divided by height (m²). In addition, they calculated fat mass index (FMI), a measure of total fat mass adjusted for height, from whole dual X-ray absorptiometry (DXA) assessments. They used two established definitions of obesity: FMI greater than or equal to 13 kg/m² and BMI greater than or equal to 30 kg/m².

The dependent variables in the study included four validated PROs: disease activity measured according to the Systemic Lupus Activity Questionnaire (SLAQ), depressive symptoms according to the Center for Epidemiologic Studies Depression Scale (CES-D), pain using the Short Form 36 Health Survey (SF-36) Pain Subscale, and fatigue using the SF-36 Vitality Subscale. The researchers evaluated obesity's association with these outcomes while controlling for potential confounders: age, race, education, income, smoking, disease duration, disease damage, and use of glucocorticoid medications such as prednisone.

The patients in the study's sample of 148 patients were 65 percent white, 14 percent Asian and 13 percent African-American. Their mean age was 48. Of the lupus patients in the sample, 17 percent had

a poverty-level income and 86 percent had education beyond high school. The mean disease duration in the sample was 16 years, and 45 percent of the patients had taken glucocorticoids.

When the researchers measured obesity among the lupus patients in the study, they found that 32 percent met the FMI definition of obesity and 30 percent met the BMI definition. Using a multivariate regression model, obesity as defined by FMI was associated with worse scores for each patient reported outcome: greater disease activity, higher levels of depressive symptoms, more pain and more fatigue. The researchers found the same relationship between obesity and these four outcomes after repeating the analyses using the BMI cut-off point for obesity.

The study's results show that obesity is independently associated with worse outcomes in women with SLE, including increased disease activity, [depressive symptoms](#), pain and fatigue.

"Our findings have important clinical implications because the PROs we measured, particularly pain and fatigue, are known to have profound effects on quality of life and remain a major area of unmet need for people with lupus," said Dr. Patterson. "The relationship we observed between excess fat and worse outcomes underscores the need for lifestyle interventions targeting lupus patients who are overweight. More research is needed in this area, but it is possible that such interventions will reduce both cardiovascular risk and the severity of debilitating symptoms common in this [disease](#). In the meantime, I hope this work sparks greater interest and motivation among rheumatologists to address weight management with their lupus patients."

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