Oxidative and nitrosative stress contribute to lupus disease activity

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University of Texas Medical Branch researchers have uncovered an association between free radical-mediated reactions and the severity and progression of system lupus erythematosus (SLE). Higher levels of oxidative and nitrosative stress markers were found in SLE patients with greater disease activity suggesting a causal relationship. Full findings of the study are available in the July issue of *Arthritis & Rheumatism*.

Lupus, an autoimmune disease in which the body's immune system produces antibodies against itself, causes inflammation, joint pain, fatigue, as well as tissue and organ damage. Approximately 1.5 million Americans and 5 million people worldwide have a form of lupus according to the Lupus Foundation of America with SLE accounting for 70% of all cases. Experts estimate that 70% to 90% of those with this chronic and potentially life-threatening disease are women.

While prior studies have suggested an association between oxidative and nitrosative stress and autoimmunity in mice, its relevance in SLE disease development and progression in humans is not fully understood. To explore the link between reactive oxygen and nitrogen species (RONS) and SLE, M. Firoze Khan, Ph.D., and colleagues used serum from 72 patients (62 female and 10 male) with SLE and 36 healthy control subjects (31 female and 5 male) in their study. The mean age was 47.2 years for the SLE group and 43.1 years in the control. Researchers used the SLE Disease Activity Index (SLEDAI) scores to measure disease activity which ranged from 0 to 38 (mean 10.7). SLE participants were divided into 2 groups—those with a low SLEDAI score of