

## National Jewish Health Led Study Focuses on Improving Cognitive Symptoms of Lupus

---

JULY 14, 2022

DENVER — A National Jewish Health led study recently published in [Lupus](#) finds that technology through video game-based cognitive therapy improves attention and executive functioning in patients with systemic lupus erythematosus (SLE).



There are treatments to improve the physical symptoms that people with lupus suffer from, such as muscle pain, joint pain, fatigue, rashes and swelling. "Patients with lupus may also experience a variety of cognitive problems," said lead author of the study Elizabeth Kozora, Ph.D., a research and clinical neuropsychologist at National Jewish Health. "There are few treatment options available to improve cognitive deficits in SLE, which is what makes this innovative study utilizing non-invasive technology exciting."

In the study, patients with SLE first completed baseline neuropsychological tests of attention and psychomotor speed and flexibility using standardized paper and pencil tests, as well as a novel tablet-based digital platform. The patients were randomized into treatment and control groups and returned four weeks later for follow-up testing for cognitive and behavioral testing. Patients in the treatment group completed five sessions of a video game intervention, five times a week for four weeks. The video game-like treatment group had significant improvement in visuomotor speed and complex attentional sequencing skills compared to the control group — a finding consistent with other studies utilizing this treatment in patients with attention deficit hyperactivity disorder and depression. "We believe that SLE patients would benefit from participation in digital interventions designed to interact with the prefrontal networks of the brain," said Dr. Kozora.

In the Adult Neuropsychology Clinic at National Jewish Health, a number of autoimmune patients, including those with lupus, will likely benefit from having expanded treatment options for cognitive difficulties that researchers are working to develop.

Contributing authors to the study were JoAnn L. Zell, MD, University of Colorado School of Medicine; David Baraghoshi, National Jewish Health; Rebecca M. Smith, National Jewish Health; and Matthew Strand, Ph.D, National Jewish Health. The digital platform was provided by Akili Interactive.

The study can be found here: [Improved executive function in patients with systemic lupus erythematosus following interactive digital training - Elizabeth Kozora, JoAnn L Zell, David Baraghoshi, Rebecca M Smith, Matthew Strand, 2022 \(sagepub.com\)](#)

**National Jewish Health** is the leading respiratory hospital in the nation. Founded 123 years ago as a nonprofit hospital, National Jewish Health today is the only facility in the world dedicated exclusively to groundbreaking medical research and treatment of patients with respiratory, cardiac, immune and related disorders. Patients and families come to National Jewish Health from around the world to receive cutting-edge, comprehensive, coordinated care. To learn more, visit the

media resources page.

## **Media Contacts**

Our team is available to arrange interviews, discuss events and story ideas.

**Jessica Berry**

303.398.1082

[berryj@njhealth.org](mailto:berryj@njhealth.org)