

# Changes in brain function in early HIV infection: A reliable indicator of disease prognosis?

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*Brain Connectivity* is the journal of record for researchers and clinicians interested in all aspects of brain connectivity. Credit: ©2011, Mary Ann Liebert Inc., publishers

Measurable changes in brain function and communication between brain regions may be a consequence of virus-induced injury during the early stages of human immunodeficiency virus (HIV) infection. These abnormalities and their implications in disease prognosis are detailed in an article in the groundbreaking new neuroscience journal [\*Brain Connectivity\*](#).

Diminished cognitive function will develop in about half of individuals infected with HIV, which may include deficits in memory, attention, psychomotor capabilities, or [verbal fluency](#). Evidence of cognitive decline in HIV infection has implications for prognosis, reduced survival time, and increased risk of death.

Xue Wang and colleagues from Northwestern University (Chicago and Evanston, IL) and North Shore University Health System (Evanston), used functional [magnetic resonance imaging](#) (fMRI) to obtain blood-oxygen-level-dependent measurements in multiple brain regions that yield information on resting-state brain connectivity. They compared the measurements collected in HIV-infected (less than 1 year) and healthy subjects. The authors report "prominent changes" between the two groups in the functional connectivity of visual networks, which have a role in visuo-motor coordination. Based on these findings, they conclude that functional connectivity measurements may be a useful, noninvasive tool for identifying neurological involvement and central nervous system injury early in the course of HIV infection. The findings from the NIH-funded Chicago Early HIV Infection Study are presented in the article, "Abnormalities in Resting-State Functional Connectivity in Early [Human Immunodeficiency Virus](#) Infection."

"These findings indicate that changes in brain function are occurring very early in HIV infection, and subclinical alterations in [functional connectivity](#) may reflect vulnerability to cognitive decline," says Ann Ragin, PhD, Principal Investigator and Research Professor, Northwestern University Medical School, Chicago, IL.

Provided by Mary Ann Liebert, Inc.

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