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Does cancer treatment affect connections in the brain?

APRIL 09, 2025 - New research published in the Journal of Magnetic Resonance Imaging has uncovered changes in brain connectivity during chemotherapy in patients with breast cancer.

In the study of 55 patients with breast cancer and 38 controls without cancer, investigators conducted functional magnetic resonance imaging scans of participants' brains over several months.

Scans from patients revealed changes in brain connectivity, particularly in the frontal-limbic system (involved in executive functions) and the cerebellar cortex (linked to memory) throughout the course of treatment. These changes got worse and spread more as chemotherapy continued.

"The findings suggest that chemotherapy can quickly disrupt brain function in breast cancer patients, potentially contributing to cognitive issues," the authors wrote.

Full Citation: "Altered brain functional networks in patients with breast cancer after different cycles of neoadjuvant chemotherapy." Jing Yang, Yongchun Deng, Daihong Liu, Yixin Hu, Yu Tang, Xiaoyu Zhou, Yong Tan, Jing Zhang, Jiang Liu, Chengfang Wang, Xiaohua Zeng, Jiuquan Zhang. JMRI; Published Online: April 09, 2025 (DOI: 10.1002/jmri.29772).

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