

Chemoradiation for glioblastoma takes toll on brain

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(HealthDay)—Radiation and chemotherapy can cause structural changes in the healthy brain tissue of patients with glioblastoma brain tumors, according to a study published in the Aug. 25 issue of *Neurology*.

The research included 14 glioblastoma patients who underwent 35 weeks of chemoradiation after having their tumors surgically removed. The patients had [brain scans](#) before and after chemoradiation, but an adequate number of images were obtained from only eight of the [patients](#).

Those images revealed a significant decrease in whole [brain](#) volume throughout chemoradiation. The reduced amount of brain tissue became apparent within a few weeks after the start of chemoradiation and was primarily seen in gray matter. The scans also showed that the size of the brain's ventricles grew progressively larger during chemoradiation. Changes were also detected within the subventricular zone, one of two structures in which new brain cells are generated in adults.

"We were surprised to see that these changes—reduced [gray matter](#) volume and

ventricular enlargement—occurred after just a few weeks of treatment and continued to progress even after radiation therapy was completed," study author Jorg Dietrich, M.D., Ph.D., of the Pappas Center for Neuro-Oncology at Massachusetts General Hospital in Boston, said in a hospital news release. "While this was a small study, these changes affected every patient at least to some degree. Now we need to investigate whether these structural changes correlate with reduced cognitive function, and whether neuroprotective strategies might be able to stop the progression of brain volume loss."

More information: [Abstract](#)

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