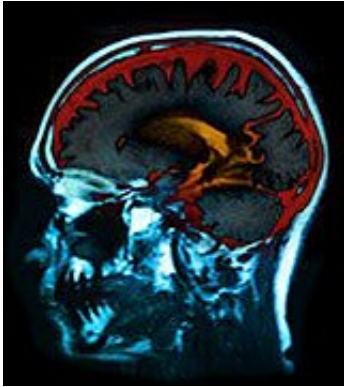


Alterations in topological architecture of brain in PTSD

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putamen, pallidum, and temporal regions, were exhibited locally by patients with PTSD.

"These results suggest that individuals with PTSD exhibit a shift toward 'small-worldization' (in which the network transforms from a random or regular network to a small-world network) rather than toward randomization; furthermore, the disequilibrium between the DMN and the SN might be associated with the pathophysiology of PTSD," the authors write.

More information: [Abstract](#)
[Full Text](#)

(HealthDay)—Patients with posttraumatic stress disorder (PTSD) exhibit alterations in the topological architecture of the brain, according to a study published in the September issue of *Radiology*.

Du Lei, Ph.D., from the West China Hospital of Sichuan University in Chengdu, and colleagues used [magnetic resonance imaging](#) (MRI) and graph theory approaches to examine the topological organization of the functional connectome of patients with PTSD. Seventy-six patients with PTSD caused by an earthquake and 76 matched [control subjects](#) who experienced the same disaster underwent resting-state functional MRI.

The researchers found that patients with PTSD exhibited abnormalities in global properties, including a significant decrease in path length ($P = 0.0002$), and increases in the clustering coefficient, global efficiency, and local efficiency ($P = 0.0014$, 0.0002 , and 0.0004 , respectively), compared with control subjects. Increased centrality in nodes mainly involved in the [default mode network](#) (DMN) and the salience network (SN), including the posterior cingulate gyrus, precuneus, insula,

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