

Schizophrenia, bipolar disorder associated with dendritic spine loss in brain

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Schizophrenia and bipolar disorder both appear to be associated with dendritic spine loss in the brain, suggesting the two distinct disorders may share common pathophysiological features, write author Glenn T. Konopaske, M.D., and colleagues at McLean Hospital, Belmont, Mass., and Harvard Medical School, Boston.

The [dendritic spines](#) play a role in a variety of brain functions. Previous studies have observed spine loss in the dorsolateral prefrontal cortices (DLPFCs) from individuals with schizophrenia (SZ). To determine whether spine pathology happens in individuals with a disorder distinct from SZ, the authors included patients with bipolar (BP) disorder in their study. SZ and BP differ clinically but they share many features.

The authors analyzed postmortem human brain tissue from 14 individuals with SZ, nine individuals with BP and 19 unaffected [control group](#) individuals.

Average spine density was reduced in individuals with BP (by 10.5 percent) and in individuals with SZ (by 6.5 percent) compared with control patients, although the reduction in individuals with SZ just missed significance. There was a significant reduction in the average number of spines per [dendrite](#) in both individuals with SZ (72.8 spines per dendrite) and individuals with BP (68.9 spines per dendrite) compared with control group [individuals](#) (92.8 spines per dendrite). Individuals with SZ and BP also had reduced average dendrite length compared with the control group.

"The current study suggests that spine pathology is common to both SZ and BP. Moreover, the study of the mechanisms underlying the spine pathology might reveal additional similarities and differences between the two disorders, which could lead to the development of novel biomarkers and therapeutics."

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