

# Neurotoxicity of chemotherapy drugs

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Chemotherapy is one of the primary treatments for cancer. However, one of the most disturbing findings of recent studies of cancer survivors is the apparent prevalence of chemotherapy-associated adverse neurological effects, including vascular complications, seizures, mood disorders, cognitive dysfunctions, and peripheral neuropathies.

In addition, chemotherapy triggers changes in ion channels on dorsal root ganglia and dorsal horn neurons that generate secondary changes resulting in neuropathic pains. Although a number of protective agents have been developed, their effects are not satisfactory. Chemotherapy drugs can cause changes in hippocampal neurogenesis and plasticity.

A review reported in the *Neural Regeneration Research* (Vol. 8, No. 17, 2013) focuses on chemotherapy-induced neurodegeneration and hippocampal dysfunctions and related mechanisms as measured by in vivo and in vitro approaches, which is helpful in determining how best to further explore the causal mechanisms of chemotherapy-induced [neurological side effects](#) and in providing direction for the future development of novel optimized chemotherapeutic agents.

**More information:** Yang MY, Moon CJ. Neurotoxicity of cancer chemotherapy. *Neural Regen Res.* 2013;8(17):1606-1614.  
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Provided by Neural Regeneration Research

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