

*Scientific Studies:****Chemicals Injure the CNS***

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Our world is full of neurotoxicants, many of which we are not aware of. A neurotoxicant is a chemical substance that can cause adverse effects on the nervous system, such as confusion, fatigue, irritability, and behavioral changes. Central nervous system toxicity may also lead to degenerative diseases of the brain, such as toxic encephalopathy. Chemical neurotoxicants also affect how the nerves carry sensory information and motor impulses, which can lead to tingling, seizures, weakness, lack of coordination, and inappropriate pain sensations. Examples of chemical neurotoxicants include organic solvents, heavy metals, organophosphate pesticides, excitotoxins, mycotoxins, and hundreds of other common chemicals used daily by most people.

Researchers reviewed central nervous system (CNS) injuries, including neurotoxic insults, and revealed the outcome of such insults is largely determined by cellular interactions, inflammatory mediators, the intensity and duration of the insult, the extent of both the primary neuronal damage and glial reactivity, and the developmental stage of the brain.

One would think that neurotoxic insults would cause degeneration of the brain, however the researchers believe that depending on particular circumstances, the brain inflammatory response can promote neuroprotection, regeneration, or neurodegeneration. Once the inflammatory process begins, glial reactivity is regarded as the cen-

tral phenomenon of brain inflammation and has been used as an early marker of neurotoxicity. The researchers used serum-free aggregating brain cell cultures to test the effects of conventional neurotoxicants. They found their approach to help uncover the complex interactions involved in brain inflammatory responses.

The real question is, should these known neurotoxicants be legally allowed for use, despite the apparent harm they cause? Many think chemicals have improved our lives. Those who have been injured by chemicals and those who suffer neurotoxicity would beg to differ. The argument that “it will never happen to me” is familiar to many whom it has happened to. The words were often once said by those whom it has happened to because no one is immune from neurotoxicity.

These commonly used pesticides, cleaners, vaccine preservatives, food additives, and molds are everywhere in our environment and our bodies. There are alternatives and it's time to use them and abandon dangerous chemicals that damage the central nervous system. Our kids deserve a fighting chance!

-LS

Reference

Monnet-Tschudi F, Zurich MG, Honegger P. Neurotoxicant-induced inflammatory response in three-dimensional brain cell cultures. *Hum Exp Toxicol.* 2007 Apr;26(4):339-46.