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# Isoflurane

National Cancer Institute

## Source

National Cancer Institute. *Isoflurane*. NCI Thesaurus. Code C65978.

A fluorinated ether with general anesthetic and muscle relaxant activities. Although the exact mechanism of action has not been established, inhaled isoflurane, appears to act on the lipid matrix of the neuronal cell membrane, which results in disruption of neuronal transmission. This agent enhances the release of the inhibitory neurotransmitter gamma-aminobutyric acid (GABA), thereby increasing the activity of the inhibitory neurotransmitter on synaptic transmission. Isoflurane may also both inhibit glutamatergic excitatory transmission by increasing glutamate re-uptake, and potentiate glycine receptor activity, which decreases motor function. In addition, isoflurane may alter certain pro- and anti-inflammatory cytokines, including interleukin-6 and -10 (IL-6, IL-10), possibly through the activation of the nuclear factor kappa B (NF-KB) pathway, which may affect immune responses during surgery.