

Brain

How do drugs affect the brain?

When drugs get into the bloodstream they are carried to all parts of the body and some reach the brain. The quicker the drug reaches the brain, the more intense the effects. The quickest way to get a drug into the brain - and also the most dangerous way of using any drug - is to inject it intravenously, or into the vein. Almost as quick is smoking a drug, followed by sniffing or snorting and then by mouth. Eating or drinking a drug is the slowest route, because the drug has to pass through the stomach first.

Once in the brain drugs affect chemicals called neurotransmitters. These are the chemicals that control the flow of information within the brain between the neurons or brain cells, forming a synapse. Neurotransmitters also alter people's moods and feelings. Different drugs can affect different neurotransmitters. For example, [ecstasy](#) appears to affect a neurotransmitter called serotonin by reducing the amount of the chemical in the brain. Those people with lower levels of serotonin in the brain tend to suffer from depression and also there are concerns that taking too much ecstasy for too long might make a person chronically depressed.

Experiments with animals have shown that certain drugs like ecstasy can damage brain cells but experts are not agreed on whether this happens with humans to the same extent. There have been concerns about damage to the brain from taking a wide range of drugs including ecstasy, [LSD](#) and solvents but the evidence is, so far, inconclusive. However, excessive and long-term use of alcohol has been shown to lead to possible brain damage.

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