

## DID YOU KNOW?

### PRESCRIPTION AND OVER-THE-COUNTER



Some medications have psychoactive (mind-altering) properties and, because of that, are sometimes abused—that is, taken for reasons or in ways or amounts not intended by a doctor, or taken by someone other than the person for whom they are prescribed. In fact, prescription and

over-the-counter (OTC) drugs are, after marijuana and alcohol, the most commonly abused substances by Americans ages 14 and older.

The classes of prescription drugs most commonly abused are: opioid pain relievers, such as Vicodin or Oxycontin; stimulants for treating Attention Deficit Hyperactivity Disorder (ADHD), such as Adderall, Concerta, or Ritalin; and central nervous system (CNS) depressants for relieving anxiety, such as Valium or Xanax. The most commonly abused OTC drugs are cough and cold remedies containing dextromethorphan.

People often think that prescription and OTC drugs are safer than illicit drugs, but that's only true when they are taken exactly as prescribed and for the purpose intended. When abused, prescription and OTC drugs can be addictive and put abusers at risk for other adverse health effects, including overdose—especially when taken along with other drugs or alcohol.



### How Do Prescription and OTC Drugs Affect the Brain?

Taken as intended, prescription and OTC drugs safely treat specific mental or physical symptoms. But when taken in different quantities or when such symptoms aren't present, they may affect the brain in ways very similar to illicit drugs. For example, stimulants such as Ritalin increase alertness, attention, and energy the same way cocaine does—by boosting the amount of the neurotransmitter dopamine. Opioid pain relievers like OxyContin attach to the same cell receptors targeted by illegal opioids like heroin. Prescription depressants produce sedating or calming effects in the same manner as the club drugs GHB and rohypnol, by enhancing the actions of the neurotransmitter GABA (gamma-aminobutyric acid). When taken in very high doses, dextromethorphan acts on the same glutamate receptors as PCP or ketamine, producing similar out-of-body experiences.

When abused, all of these classes of drugs directly or indirectly cause a pleasurable increase in the amount of dopamine in the brain's reward pathway. Repeatedly seeking to experience that feeling can lead to addiction.

All of these drugs have the potential for addiction, and this risk is amplified when they are abused. Also, as with other drugs, abuse of prescription and OTC drugs can alter a person's judgment and decision-making, leading to dangerous behaviors such as unsafe sex, drugged driving and death.

### What Are the Health Effects of Prescription and OTC Drugs?

Stimulants can have strong effects on the cardiovascular system. Taking high doses of a stimulant can dangerously raise body temperature and cause irregular heartbeat or even heart failure or seizures. Also, taking some stimulants in high doses or repeatedly can lead to hostility or feelings of paranoia. Opioids can produce drowsiness, cause constipation, and—depending upon the amount taken—depress breathing. The latter effect makes opioids particularly dangerous, especially when they are snorted or injected or combined with other drugs or alcohol.

CNS depressants slow down brain activity and can cause sleepiness and loss of coordination. Continued use can lead to physical dependence and withdrawal symptoms if discontinuing use. Dextromethorphan can cause impaired motor function, numbness, nausea or vomiting, and increased heart rate and blood pressure. On rare occasions, hypoxic brain damage—caused by severe respiratory depression and a lack of oxygen to the brain—has occurred due to the combination of dextromethorphan with decongestants often found in the medication.

Source of Information: National Institute on Drug Abuse (NIDA)