

POLYDRUG USE

WHAT YOU NEED TO KNOW ABOUT MIXING DRUGS



Australian Government
Department of Health

WHAT IS POLYDRUG USE?

Polydrug use is the mixing of different drugs, or taking one drug while under the influence (or experiencing the after-effects) of another drug.

Polydrug use can include alcohol, prescribed medications and/or illegal drugs. Combining drugs carries extra risks and can be extremely dangerous. The more drugs a person takes (or is affected by) at a time, the more chance there is of something going wrong.

WHY DO PEOPLE MIX DRUGS?

There are several reasons people mix drugs, for example:

- **In an attempt to increase the effect of another drug or to 'bring on' its desired effects. For example, sometimes people smoke cigarettes to enhance their experience on ecstasy, or drink alcohol when they're also under the influence of cocaine**
- **In an attempt to reduce the negative effects of a drug, usually when 'coming down' from that drug. For instance, some people use cannabis or take a sleeping pill after they have used ecstasy**
- **To substitute for the drug they were really looking for, 'the next best thing'**
- **It seemed like a 'good idea at the time'. Sometimes people will mix drugs when they are already intoxicated, aren't thinking straight or if people around them are mixing drugs**

Sometimes people who are trying to cut down their use of one drug find that they start to use more of another drug to help manage withdrawal symptoms (the unpleasant effects that occur when stopping drug use). For example, someone trying to stop using methamphetamine or cannabis might start to drink more alcohol to try and relax or sleep if they are feeling anxious, stressed or are unable to sleep. It's important to be careful in these situations because the person might find they develop a problem with two drugs rather than one.

WHAT ARE THE EFFECTS OF MIXING DRUGS?

It is not always possible to predict the exact effects of a single drug or a single dose of a drug. Everyone is affected by drug use differently. The same person can even use the same amount of the same drug on different occasions and have different effects each time. This variation depends on:

- **The drug itself (e.g. its purity, amount used, frequency of use, how the drug is used, whether the drug has been cut, or mixed with another drug)**
- **The person who is using the drug (e.g. their mood, expectations, personality and individual characteristics)**
- **The setting (e.g. where the person is, the people they are with)**

If the effects of one drug are hard to predict, then being under the influence of more than one drug at a time makes the effects even more unpredictable.

In addition to all the factors listed above, the effect of mixing drugs depends on which drugs are mixed together. Combining drugs that have the same physical effects (e.g. two or more stimulants, or two or more depressants) is especially dangerous. This is because it increases the impact on the normal functioning of the brain and body.

COMBINING STIMULANTS

Stimulant drugs increase activity in the central nervous system (made up of the brain and spinal cord, this system controls the activities of the body). Combining different stimulants can increase the risk of cardiovascular (heart) problems and substance-induced psychosis (a serious mental illness that causes people to misinterpret or confuse reality). Users can also increase their risk of experiencing anxiety or panic attacks.

Stimulant drugs include:

- **Cocaine**
- **Caffeine**
- **Methamphetamine (speed, ice, crystal, crystal meth, base)**
- **Dexamphetamine (prescription medication used to treat ADHD and narcolepsy¹)**

Another group of drugs called entactogens also have some stimulant effects and contribute to similar harms. Entactogens produce feelings of empathy and a strong connection to other people.² Examples include MDMA (ecstasy) and MDA.

In addition, some of these drugs impact on a brain chemical called serotonin. Mixing several drugs that have this action can increase the chances of 'serotonin syndrome', an experience that can be fatal.^{3,4} The risk of serotonin syndrome is also increased in people who are taking some types of antidepressant medication.

What is serotonin syndrome?

Serotonin syndrome can be a life-threatening condition. It occurs when the brain is overloaded with a neurotransmitter (brain chemical) called serotonin (which is responsible for making us feel happy). It can be hard to recognise it developing as many of the early signs are the same as the expected effects of taking ecstasy and other drugs that increase serotonin levels. These include sweating, excitement, tremors and a rapid heartbeat. More serious symptoms require immediate medical help and include coma, seizures, shaking or shivering, fever or overheating, and confusion. Please see 'New Psychoactive Substances' and 'Ecstasy and Pills' factsheets for more information.

COMBINING DEPRESSANTS

Depressant drugs reduce activity in the central nervous system. They do not necessarily make the user feel depressed. The main risk of combining depressants is that they work together to slow down both the heart and breathing rate. **This increases the risk of fatal overdose.** In addition to the risk of using one depressant drug, using more than one at a time can:

- **Increase the risk of accidents or injury through being 'out of it'**
- **Increase the risk of nonfatal overdose (not every overdose is fatal), which can lead to ongoing health problems and permanent brain damage**

Depressant drugs include:

- **Alcohol**
- **Heroin**
- **GHB**
- **Ketamine**
- **Benzodiazepines (e.g. Xanax and Valium)**
- **Opioids (e.g. MS Contin, OxyContin, methadone, codeine and buprenorphine)**

COMBINING STIMULANTS AND DEPRESSANTS

Combining stimulants and depressants ('uppers' and 'downers') can have unpredictable effects and risks. For example:⁵⁻⁷

- Using methamphetamine and alcohol at the same time places extra strain on the heart which may lead to serious complications, particularly among those with pre-existing heart problems
- Using cocaine and alcohol together produces a chemical called cocaethylene, which is toxic and can have potentially fatal consequences
- Smoking cannabis with tobacco increases exposure to harmful chemicals such as tar and carbon monoxide, which increases the chances of a variety of health problems such as respiratory tract infections, bronchitis and a range of cancers
- Consuming alcohol and ecstasy together can increase the chances of dehydration and overheating. This risk can lead to serious consequences such as kidney failure if users don't drink enough water and try to cool down (drinking too much water can also be dangerous)

TAKING DRUGS AND MEDICATIONS

Taking prescribed medications alongside any other type of drug can have serious negative effects. For example:¹⁻⁴

- Using sedative medications (e.g. benzodiazepines) with other depressants (e.g. alcohol) can increase the risk of overdose
- Using stimulant medications (e.g. Ritalin) with other stimulants (e.g. methamphetamine) can increase the risk of anxiety and panic attacks. It can also increase the risk of other problems associated with stimulant use, such as cardiovascular (heart) problems and substance induced psychosis
- Some types of antidepressants increase the risk of serotonin syndrome when combined with other drugs that also increase the levels of serotonin (e.g. ecstasy/MDMA, methamphetamine, cocaine, LSD, some other medications and herbal supplements, and a number of new drugs such as BZP and TFMPP)





FOR MORE INFORMATION

We have listed some of the national telephone helplines and websites below.

Australian Drug Foundation

Provides information about drugs and links to services in each state and territory
www.adf.org.au

DrugInfo Line

Provides information about drugs and alcohol. Open 9am–5pm, Monday to Friday
1300 85 85 84 or **03 8672 5983**. Or visit www.druginfo.adf.org.au

Cannabis Information Helpline

(confidential information and support line for cannabis users, their families and friends)
Open 11am–7pm Monday to Friday.
1800 30 40 50. Or visit www.ncpic.org.au

Just Ask Us

Provides information about drugs, alcohol, health and well-being
www.justaskus.org.au

Kids Helpline

Free, private and confidential telephone and online counselling service for young people aged 5–25 years
Open 24 Hours **1800 55 1800**

Lifeline

24 hour crisis line **131114**
Also available is one-on-one chatlines for crisis support, visit
www.lifeline.org.au/Find-Help/Online-Services/crisis-chat

Counselling Online

Free, confidential counselling service for people using drugs, their families and friends
www.counsellingonline.org.au

National Drugs Campaign

Australian Government website provides information about illicit drugs and campaign resources.
www.australia.gov.au/drugs

Family Drug Support

For families and friends of people who use drugs or alcohol
1300 368 186

Some state and territory based helplines are listed below.

Alcohol and Drug Information Service (ADIS)(free, confidential advice about drugs and alcohol).
Some services operate 24 hours.

State/Territory	City contact	Regional/Rural contact (free call from landline)
New South Wales ADIS	02 9361 8000	1800 422 599
Queensland ADIS	1800 177 833	1800 177 833
Victoria Directline	1800 888 236	1800 888 236
Western Australia ADIS	08 9442 5000 08 9442 5050 (for parents)	1800 198 024 1800 653 203
Australian Capital Territory Alcohol & Drug Program	02 6207 9977	
Northern Territory Alcohol & Other Drug Services	08 8922 8399 (Darwin) 08 8951 7580 (Alice Springs)	1800 131 350
Tasmania ADIS	1800 811 994	1800 811 994
South Australia ADIS	1300 131 340	1300 131 340

Callers in Victoria can also contact the Youth Substance Abuse Service (YSAS) on 1800 014 446
(24 hour toll free service)

SOURCES

1. MIMS online, 2012. MIMS online accessed 23 August 2012 via UNSW www.mimsonline.com.au.
2. Nichols, D.E., 1986. Differences Between the Mechanism of Action of MDMA, MBDB, and the Classic Hallucinogens. Identification of a New Therapeutic Class: Entactogens. *Journal of Psychoactive Drugs*. 18(4): p. 305-313.
3. Berney-Meyer, L., Putt, T., Schollum, J. and Walker, R., 2012. Nephrotoxicity of recreational party drugs. *Nephrology*. 17(2): p. 99-103.
4. Silins, E., Copeland, J. and Dillon, P., 2007. Qualitative review of serotonin syndrome, ecstasy (MDMA) and the use of other serotonergic substances: hierarchy of risk. *Australian and New Zealand Journal of Psychiatry*. 41(8): p. 649-55.
5. Darke, S., Kaye, S., Mcketin, R. and Duflou, J., 2008. Major physical and psychological harms of methamphetamine use. *Drug and Alcohol Review*. 27(3): p. 253-62.
6. Farooq, M.U., Bhatt, A. and Patel, M.B., 2009. Neurotoxic and Cardiotoxic Effects of Cocaine and Ethanol. *Journal of Medical Toxicology*. 5(3): p. 134-138.
7. National Cannabis Prevention and Information Centre, 2011. Cannabis and tobacco use, National Cannabis Prevention and Information Centre, University of New South Wales: Sydney.

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