

# Nootropics ●

## What are nootropics?

Nootropic also known as ‘cognitive enhancers’ are drugs that some people use in an attempt to improve memory, increase mental alertness and concentration as well as boost energy levels and wakefulness.

There are many different nootropics. Some are pharmaceutical drugs that are designed to treat conditions such as sleepiness or narcolepsy, and to improve attention and focus in people with attention disorders. However, some healthy people use these drugs in an attempt to improve their cognitive performance.<sup>1</sup>

Claims that nootropics improve a healthy person’s cognitive processes and performance are weak whereas the side effects do pose health risks.<sup>2</sup>

While nootropics may help mask fatigue, procrastination or boredom, they do not make people more intelligent and their effects only last as long as the drug remains in the body.<sup>3</sup>

Some of these drugs may cause dependence and can have a range of side effects. They can be particularly harmful to young people as their brains continue to develop into their mid-twenties.

### Other names

Nootropics, smart drugs, brain boosters, memory boosters, neuroenhancers, drive drugs, study drugs.

### How do they work?

The research is still inconclusive on exactly how the drugs work to stimulate the mind, but early research indicates they may act on a variety of different systems within the body simultaneously. One explanation is that they may increase blood flow to the brain, which allows the brain to use more oxygen.<sup>4</sup>

Some nootropics may raise the body’s adrenalin levels and produce effects similar to drinking large amounts of caffeine, which means people can stay awake for extended periods of time.

Some drugs increase the amount of certain chemicals (neurotransmitters) such as dopamine, which are released in the part of the brain associated with dependence.

### Types of nootropics

The drugs often used to enhance cognition can generally be divided into 3 groups: Eugarotics, ADHD medications and Nootropic Supplements.

## Eurogeroics

Eurogeroics are a class of drugs that promote wakefulness and alertness. The most commonly used Eurogeroic drug that is used to improve cognition is Modafinil.

Brand names: Modavigil<sup>®</sup>, Modafin<sup>®</sup>, Nuvigil<sup>®</sup>

The drug was introduced in the late 1990s to treat narcolepsy, obstructive sleep apnea and shift work sleep disorder. Modafinil promotes wakefulness and alertness and may have some value in treating stimulant withdrawal and could be effective in decreasing drug craving and dependence. However, further research is needed.<sup>5,6</sup>

## Side effects

**There is no safe level of drug use.** Taking any type of drug always carries some risk, so it's important to be careful.

Modafinil affects everyone differently, but the most common side effects include:

- increased alertness and focus
- reduced fatigue
- anxiety
- headache
- pins and needles
- chest pains
- dizziness
- sleeplessness
- nausea
- nervousness.<sup>4</sup>

## Long-term effects

Research into nootropics is still limited which means there is a lot of uncertainty about the side effects the drugs may cause if used on an ongoing basis. It is recommended that these drugs are used only with a prescription from a medical practitioner to avoid any potential harms.

## ADHD medications

Types of ADHD medications used as nootropics include:

Methylphenidate, Lisdexamphetamine, Dexamfetamine

Brand names: Ritalin<sup>®</sup>, Ritalin la<sup>®</sup>, Concerta<sup>®</sup>, Ritalin 10<sup>®</sup>, Dexamphetamine tablets<sup>®</sup>, Vyvanse<sup>®</sup>

Ritalin was introduced during the 1950s to treat chronic fatigue, depression, and psychosis associated with depression. It was used extensively in the 1990s to treat ADHD and is now the most common psychotropic medication prescribed to children in the United States and Australia to treat restlessness, impulsive behaviour and inattentiveness.<sup>7</sup> New research has explored the potential side effects of using Ritalin<sup>®</sup> by people without ADHD—such as students using it as a study enhancer. This research showed changes in brain chemistry associated with risk-taking behaviour, sleep disruption and other undesirable effects such as weight loss.<sup>8</sup>

## Side effects

There is no safe level of drug use. Taking any type of drug always carries some risk, so it's important to be careful.

Methylphenidate affects everyone differently, but the most common side effects may include:

- euphoria and heightened sense of well-being
- high body temperature
- cardiovascular system failure
- hostility or paranoia
- irregular or increased heartbeat and palpitations
- increased blood pressure and respiration
- increased activity, talkativeness and alertness
- reduced fatigue, drowsiness and appetite
- dry mouth, dilated pupils, nausea and headaches
- increased sex drive
- feelings of cleverness, great competence, and power.<sup>9</sup>

## Long-term side effects

Regular use may eventually cause:

- rapid or irregular heartbeat, high blood pressure and potential inflammation of heart valves
- skin disorders, vitamin deficiency, flushed or pale skin
- stomach ulcers and malnutrition
- mental health and behavioural problems
- dizziness and difficulty breathing
- loss of coordination and physical collapse
- unusual tiredness or weakness
- repetitive physical actions
- convulsions, coma, and death.<sup>9,10</sup>

## Nootropic supplements

Certain B vitamins, fish oil and herbal supplements (such as Ginkgo biloba and extracts of Bacopa monnieri) may offer a safer option to pharmaceutical drugs to enhance cognitive performance. The benefits may not be as immediate but the effects are reportedly much longer lasting.<sup>11</sup> The most commonly used nootropic supplements are CILTEP<sup>®</sup> and Alpha Brain<sup>®</sup>. However, the American Medical Association has advised that a number of products being advertised as nootropic supplements have not been examined in terms of safety and efficacy.

## Cognitive enhancers (nootropics) and the law

Modafinil and is a Schedule 4 substance that can only be prescribed by a doctor or dentist in the ordinary course of their professions.

Methylphenidate is a Schedule 8 drug which means doctors must follow state and territory laws when prescribing it and must notify, or receive approval from, the appropriate health authority.

Using modafinil or methylphenidate without a prescription from a doctor, or selling or giving them to someone else, is illegal. There are also laws against forging or altering a prescription or making false representation to obtain pharmaceuticals or a prescription for them.<sup>2</sup>

See also, drugs and the law - [adf.org.au/talking-about-drugs/law/](http://adf.org.au/talking-about-drugs/law/)

## References

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Always call an ambulance on triple zero (000) if an overdose is suspected: tell the paramedic exactly what has been taken. Paramedics are there to help and will not involve the police unless there is a danger to themselves or others.

## Other help, support services and resources

Links to further help and support • [adf.org.au/help-support/](http://adf.org.au/help-support/)

### ● Further information

#### **DrugInfo • 1300 85 85 84**

Free confidential information and advice about alcohol and other drugs (9am - 5pm, Mon-Fri)

#### **Family Drug Help • 1300 660 068 • [www.familydrughelp.com.au](http://www.familydrughelp.com.au)** (Victorian-based)

Services are available to support those around you who may be affected by your drug use. As well as providing understanding, they can provide information about how best to help during treatment.

#### **Family Drug Support • 1300 368 186 • [www.fds.org.au](http://www.fds.org.au)** (Australia-wide)



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