

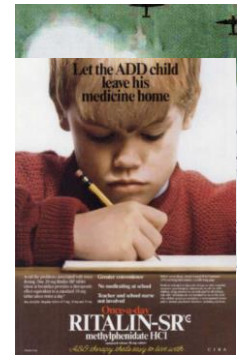
AKA: Amphetamine Sulphate: *speed, whizz, sulph, billy, phet, pink champagne,*

Base Amphetamine: *base, base speed, paste*

Dexamphetamine Sulphate: *Dexedrine, dexies, dex, Adderall*

Methamphetamine Sulphate: *Methedrine, Crystal Meth, meth, ice, shard, glass, Tina, Shabu, Yabba, crank, Pervitin, Sisa*

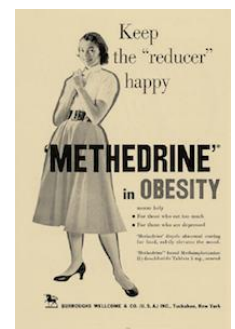
Benzphetamine: *Didrex*



Profile and Relatives: Amphetamines are a family of drugs, part of the larger Phenethylamine group. The amphetamines are stimulant drugs. Other relatives in the family include MDMA (*Ecstasy, Molly*) and the cathinones (e.g. mephedrone).

There are a number of molecular variants of amphetamine, such as 4-fluoro-amphetamine.

Although not actually amphetamines, the drug Methylphenidate (Ritalin, Concerta) has very similar effects to the amphetamines and risks are similar. Analogues of methylphenidate (e.g. ethylphenidate) were briefly available on the UK market as they weren't regulated but, in early 2015, they were brought under the Misuse of Drugs Act.



Lisdexamfetamine is an increasingly popular stimulant prescribed for ADHD. It is metabolised by an enzyme in blood in to dexamphetamine. It isn't psychoactive until converted. This reduces the risk of misuse as there is no "rush" or rapid onset regardless of route of administration. However ultimately it still has a stimulant effect and so is likely to be diverted.

Origins: First synthesised in 1887, amphetamine only started to get prescribed and used from 1934 onwards. It has been used in a variety of settings including:

- Decongestant
- Depression
- Weight loss
- Military settings

Source: Amphetamines are synthetic chemicals. There are a number of production routes. Some amphetamines are synthesised in clandestine labs in the UK, while the bulk of the rest is imported from mainland Europe.

Methylphenidate and lisdexamfetamine are prescribed in the UK for the treatment of ADHD and some diversion does occur.

There is a limited amount of Dexamphetamine prescribing, including to people with history of amphetamine dependency. There is minimal leakage from such prescribing to the street. Historically, in the UK in the 50s, 60s and early 70s, medical diversion of amphetamines was much more widespread. Bensedrine inhalers were broken open and the drug extracted. Dexamphetamine was widely over-prescribed for weight loss and diverted to the streets. Stimulants were also a target for pharmacy thefts. The now-notorious drug methamphetamine was originally a branded pharmaceutical product and was marketed in the UK as "Methedrine." It was briefly and unsuccessfully used in London as a treatment for cocaine dependency.

In Eastern Europe, when the Warsaw Pact was still in place, a brand of methamphetamine

called Pervitin was widely sold. As a term, Pervitin is still used in a number of countries including the Czech Republic. A cheap, crude form of methamphetamine, synthesised from ephedrine, has been reported in the media as a cheap street drug in Greece, sold as Sisa.



Trends: According to the Crime Survey for England and Wales for 2014-15, only 0.6% of 16-24 year olds reported speed use in the last year. This is the lowest level on record and reflects an ongoing trend. Back in 1995 reported levels were almost ten times higher, with 11.7% reporting use in the last year.

Appearance: The mainstay of the UK amphetamine market, amphetamine sulphate, is usually sold as a powder. Colour ranges from white, off-white, grey, yellow, and pink. It is usually sold by weight. This was typically in small rectangular wraps of paper, but increasingly now it is sold in self-seal bags. It is a sour-tasting, water soluble salt powder.

Increasingly commonly available is base-speed, a grey paste similar in consistency to used clumping cat litter. It is a non-soluble base drug often smelling strongly of ammonia.

Dexedrine tablets are usually circular and are white or yellow. It is also sometimes prescribed as a linctus.

Ritalin in tablet form is prescribed to children with ADHD and some of this is diverted to illicit use.

Methamphetamine comes in the form of white powder or clear crystals, but is also sold in tablet and capsule form, though these are less common in the UK.



Quality and Purity: Non-pharmaceutical products are highly variable in quality. Amphetamine sulphate powder in the UK is notorious for its low purity, typically between 5% and 10% pure.

Base speed, which was taken out of the production process, tended to be higher purity, often around 40%. However, some suppliers made “fake base” by adding oil and ammonia to low quality speed powder to give it the look and smell of base speed.

Crystal meth, made in small batches and sold in crystalline form, is harder to adulterate and tends to be higher quality.

Cost: Speed powder: £5-10/g;
Base speed: £20-40/g
Methamphetamine: wide range of cited prices, from £50-200/g
(prices of methamphetamine dropped significantly over past five years.)

Dose Range: Hugely variable, partly influenced by drug of choice, purity, route, tolerance and experience. For amphetamine sulphate, doses of 100-200mg would be typical for a recreational user, but some will use way in excess of this.

Routes of Administration:

Amphetamine sulphate: as a water-soluble drug, it can be readily snorted or rubbed on gums. However, it has a very unpleasant taste and is painful to snort so it is often wrapped in a cigarette paper and swallowed (bombed) to get it in with as little taste as possible. Speed powder is also injected. It requires no heating or acid but should be filtered (though rarely is).

Base speed: insoluble in water, though will melt in hot water. Injectors have caused significant complications by heating base speed in water and injecting it, where it tends to congeal on cooling. It is safer to dissolve base speed in hot water and drink it. But if it is to be injected, it needs to have an acid added to **cold** water to make a solution. It can be smoked.

Methamphetamine: a salt drug, which dissolves readily. It can be snorted, rubbed on gums or injected without heating or addition of acid. Unusually, although a salt, it can also be smoked.

Tablets: should be swallowed; if crushed for injecting should be filtered thoroughly.

Onset and Duration: Different members of the amphetamine family have different profiles in terms of duration of effect, and this will also change according to route.

Amphetamine Sulphate typically has a 2-4 hour duration of effect. Redosing is common, with people dabbing top-ups in the course of the night to prolong effects. Methamphetamine is longer acting, possibly 8-12 hours or longer.

Smoked and injected drugs will have a faster onset and shorter duration of effects; swallowed drugs will come on more slowly and last longer.

Mechanism of Action: Amphetamines have a number of mechanisms of action. The key effect is to elevate levels of the brain chemicals dopamine, nor-adrenalin (nor-epinephrine) and to a lesser extent serotonin. They do this by:

- pushing brain chemicals out of storage, increasing active levels in the brain
- preventing the reuptake of brain chemicals back in to storage
- inhibiting the enzymes that would normally break down brain chemicals.

Effects: Drug effects are highly variable and can be influenced by the state and expectations of the user, the environment in which the drugs are taken, the drug itself and how it is taken.

Key physical effects include:

- Reduced appetite
- Clenching jaws
- Grinding teeth
- Elevated heart rate and blood pressure
- dilated pupils
- Increased perspiration
- Insomnia
- Talkative, repetitive
- Restlessness, pacing

Key psychological effects include:

- euphoria, intense pleasure
- Confidence, assertiveness
- Repetitive behaviours
- increased libido (but possibly reduced erectile function)
- tactile hallucinations (“bugs under skin”)
- Possible irritability, aggression
- Anxiety, panic

Indicators of Use: The physical effects above are key indicators of amphetamine use, but could also be caused by other stimulants. Heavy prolonged use can result in nasal or tooth damage (depending on route), weight loss, insomnia and mental health problems.

Risks: Amphetamines can cause significant short, medium term and long term problems.

OD/Death: amphetamines put a significant strain on the cardiovascular system and can cause death through heart failure. Amphetamine was a feature in 177 deaths in the UK in 2019. Of these 76 were MDMA-related deaths.

Weight loss: heavy prolonged use of amphetamines can cause significant and dangerous weight loss. In turn this can lead to organ damage, and compromised immune system.

Nasal/tooth damage: highly acidic amphetamine erodes and weakens teeth and, when rubbed on gums can cause tooth loss. It also irritates and damages nasal tissue when snorted. Smoked methamphetamine causes significant tooth damage leading to a condition called “meth mouth.”

Swallowing amphetamine: although safer than other routes, amphetamine can irritate and damage the stomach lining and may cause stomach damage.

Risk taking behaviour: amphetamines can cause over-confidence, irritability and possible aggression. It can contribute to increased violent episodes, especially in night-time economy settings. Amphetamines can also increase libido and the use of methamphetamine in the “chemsex” scene has caused increasing concern. Chemsex is a term used to refer to drug-related sex activity, especially amongst Gay men and MSM and is associated with the use of methamphetamine. In these settings methamphetamine may be injected (“*slamming*”) and this, combined with high-risk sexual activity has seen increased prevalence of HIV and Hepatitis C.

Mental wellbeing: amphetamine causes an unpleasant comedown. Low levels of dopamine post use can cause low mood, depression, craving and dysphoria. Comedown also tends to leave the person feeling tired, run down, irritable and anxious. Even single episodes of use can lead to an unpleasant comedown – amphetamine is generally a drug that leaves the user feeling pretty low the next day. Some people will use other drugs (cannabis, benzos, alcohol) to take the edge off a comedown. Others will use more speed, leading to multi-day speed binges. The crash off extended use is inevitably far worse.

Amphetamines can cause anxiety and paranoia. With extended use, the combination of amphetamine use and sleep deprivation can lead to serious symptoms – hallucinations, delusion, paranoia and panic. The condition, often referred to as “amphetamine psychosis” doesn’t usually persist once use stops and the person starts to eat and sleep again. However, symptoms can last for a number of days and possibly weeks, and may require inpatient treatment

Amphetamine and ADHD: Amphetamine-type drugs are used to help treat ADHD. A proposed mechanism for this is that the drugs elevate levels of dopamine in key areas of the brain and triggers increased neuronal development in these areas. The theory is that deficiency in neuronal activity in these areas are in part responsible for ADHD symptoms. Dopamine is important in motivation, reward and focus and so a lack of dopamine may

contribute to stimulus-seeking, lack of reward and difficulty with focus.

The same drugs are of course stimulants and so may be diverted for recreational use.

Use of amphetamine-type drugs for ADHD is not unproblematic. As stimulants they can still affect sleep and appetite and some people prescribed stimulants self-medicate with additional drugs in part to offset negative aspects of their prescribed stimulants, such as using cannabis for sleep or to improve appetite.

When working with older people who use amphetamine as their primary drug it will always be worth exploring if there are other indicators of an undiagnosed condition such as ADHD. Where there is a pattern of difficulty with schooling, labelling as disruptive or inattentive, possible exclusion or leaving education early, and subsequently gravitating towards stimulants, there is a good chance that there is an underlying, undiagnosed condition such as ADHD. Such diagnosis can open up treatment routes and prescribing and take people out of the illicit drugs market.

Dependency: Amphetamines can and do lead to dependency. Patterns of dependency in the UK are significantly different to other countries where methamphetamine dependency is a more significant issue. Many drug projects, especially in regions where there is entrenched amphetamine use, will have a small cohort of speed-dependent clients. Early speed use is euphoric, rewarding and typified by binges. Most people learn to take long breaks from speed use and the unpleasant come-down is a big deterrent. After sustained, use, the person is liable to be significantly dopamine depleted and feel very tired. At this point speed use is less about reward and more about just being able to function. Speed becomes a tool to help the person get up and do things.

A fair proportion of the dependent speed users attending drug projects are older men, in poor physical health, who have been using for a number of years some of whom will as mentioned above have undiagnosed conditions such as ADHD.

Interventions don't usually require medical input, though some research suggests use of anti-depressants to help reduce craving. The key interventions centre on craving management, and interventions to address the low levels of dopamine and the associated cravings.

Substitute prescribing isn't widespread in the UK but is still undertaken on a limited basis, usually using dexamphetamine. It would be interesting to see if lisdexamfetamine represented a useful substitute but it is not licensed for such use.

Mixing: Amphetamine is used extensively alongside alcohol. The stimulant effects of amphetamine significantly reduce the sedating effects of alcohol, allowing for increased alcohol consumption. This increases the risk of alcohol related liver damage. Alcohol continues to disinhibit and the increased confidence and assertiveness of amphetamine with the disinhibition of alcohol makes for a volatile combination.

Harm Reduction:

Route specific harm reduction:

- don't share snorting or injecting equipment
- always practice safer injecting techniques
- discontinue application at site getting nose-bleeds or bleeding gums
- if swallowing consider using alongside an anti-acid and take breaks especially if getting nausea or gastric upset

General health:

- don't use for extended periods of time – allow time to rest and recover
- don't use in combination with alcohol; if you do drink on speed moderate alcohol intake and ensure adequate water consumption
- maintain diet or use liquid replacement meals
- consider use of vitamin D and calcium supplements
- avoid if you have high blood pressure or any family history of cardiac problems
- be aware of indications of depression worsening mental health; discontinue use and seek help.

Law: Amphetamines Sulphate is a Class B, Schedule 2 drugs. This allows for legal medical use. Amphetamines, like other class B drugs, are counted as Class A drugs when prepared for injection.

Methamphetamine and other structurally modified Amphetamines (e.g. 4-Fluoroamphetamine) are Class A drugs.

Pharmaceuticals such as Dexamphetamine Sulphate are legal if prescribed and used by the person to whom they were prescribed. A small number of weaker amphetamine-based compounds (e.g. Benzphetamine) are Class C drugs.

Other Information: Amphetamines were once one of the core drugs on the UK

drug scene. Recreationally they were popular in lots of music/club/youth scenes and diverted amphetamines were popular with mods, rockers, Northern Soul fans, and then a core feature in the punk scene and amongst some Goths.

Non-recreationally, amphetamines had long been a feature of the diet-pill world. They were also used in a number of workplace settings, including factory and warehouse work, fishing and driving settings, and amongst students and night workers. Ian

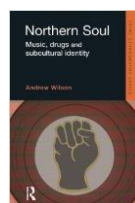
Fleming's James Bond uses Benzedrine on several occasions in the course of work.

Speed has, in part been displaced by more popular, less harsh and more “glamorous” competitors, most notably Ecstasy and cocaine. The advent of Ecstasy, with a less edgy, more “loved-up” feel, made for a better clubbing experience and contributed to a decline in speed's popularity. Where cocaine was scarce and expensive, speed,

although considered “poor man's coke” was an acceptable alternative. As availability of cocaine increased and price dropped, many people would choose to use cocaine over speed.

It had always been recognised that speed was a low purity drug at street levels, and the advent of legal, pure alternatives like mephedrone and later ethylphenidate contributed still further to a drop in speed's popularity.

Having said this, in large parts of the UK, speed remains the stimulant of choice, especially where cocaine is hard to obtain. In an increasingly contaminated “white powder” market, it's hard to know how many of the street blends are, in part, amphetamine.



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