

4. Cannabis and cannabinoids

(2021 version)

Contents	Page No.
Introduction	2
How It Is Taken	3
Health	4
The Law, Legislation	7
Medical Use	8
Cannabis Statistics	10

Introduction

Cannabis comes from the plants *Cannabis sativa*, *Cannabis indica* and *Cannabis ruderalis*, *sativa* being the most common source. Herbal cannabis ('grass') comes mainly from the West Indies, Thailand, Western and Southern Africa. Cannabis resin ('hash') comes from Pakistan, Morocco, the Lebanon and Afghanistan.



The male plant (hemp) has a tough fibrous stem and elongated leaves with serrated edges. The fibre can be used to make coarse weave, useful for general-purpose cloth, sails and rope. Hemp was the mainstay of the rope-making industry until the advent of more modern fibres. The female plant produces sticky aromatic resins from the flowering tops and in the leaves. Other cannabis products include paints and varnishes, fertiliser and bird food. The latter is produced from the plant's sterile seeds. It has also been used for herbal medicine since ancient times and was widely used in Western medicine in the 1840s for a variety of ailments from muscle spasm to menstrual cramps.

Another reason for the universal cultivation of *Cannabis sativa* is its hardiness. Adaptable to most climates, it has been successfully grown in Britain. In many Third World countries the plant is a major cash crop for subsistence farmers. Living in poverty, they are forced to grow crops that yield the most money. It is these small farmers who supply the major drug traffickers with opium, cocaine and cannabis. This state of affairs will cease only when the rich nations offer effective, realistic economic and trade partnerships to these poorer countries.

Cannabis became popular as a recreational drug in the UK in the 1950s. The Dangerous Drugs Act 1964 made it an offence to cultivate it or to permit premises to be used for smoking it. One of the most potent products of the plant was prescribed in the UK as a medicine until 1973, 'chiefly for exploring psychiatric states'. Medical cannabis has actually been prescribed as far back as the mid-nineteenth century where it was used to treat migraine. Today cannabis is the most widely available illegal drug in the UK. Millions have tried it and many use it on a regular basis.

Throughout its history, *Cannabis sativa* has been used for religious purposes because of its consciousness-altering properties. A parchment from China dated AD100 reads, 'if taken in excess it will produce hallucinations (literally 'seeing devils') ...and enable communication with spirits'.

Indian religion has a long association of cannabis use in ritual and devotion. It was marijuana, together with LSD (Acid), which fuelled the pseudo-spiritual forces of the 1960s 'Hippie Movement'.

Many followers of the Caribbean cult of Ras Tafari consider the use of 'ganja' indispensable to their religious practices.

Genuine religious experiences cannot be obtained by using drugs, because the trigger used is chemical and such experiences are artificial and entirely self-centred. An authentic encounter with God requires living in the real world, not hiding from reality.

How It Is Taken

There are 3 main types of cannabis, which come from different parts of the plant.

Herbal

Most commonly called marijuana, this is a herbal cannabis made from the dried leaves and flowers of the plant. Bits of stem and twigs may be included in the mixture, which is usually smoked with tobacco in hand-rolled cigarettes.



Cannabis can also be smoked in a water pipe such as a hookah or a home made (or shop bought) bong. This method is used as cooling the smoke reduces the tar content, but as the smoke is cooler the user can hold it in the lungs for longer, therefore absorbing the same amount they would have done using another method.

Resin

Hashish is a sticky resin scraped from the top of the plant and compressed into blocks. Hash may be used as a herb in baking cakes or preparing other foods but is more likely to be mixed with tobacco and smoked.

Oil

Hashish Oil is the least common form of cannabis found in the UK. It is a liquid extracted from the resin and is also the most potent form of the drug. It is usually inhaled by placing a tiny amount upon the tip of an ordinary cigarette.

Skunk

Skunk is an extremely potent form of cannabis grown mainly in the Netherlands and the UK. This name is derived from the inherent pungent, musty smell. Its potency has been achieved by years of genetic manipulation using consecutive generations of selected plants. Over the years these plants have been acclimatised to the European weather and are also grown indoors by use of artificial light and advanced greenhouse technology. It is estimated that there are between 20,000 and 40,000 cannabis growers in the Netherlands. According to drug agencies, skunk is becoming more popular as ecstasy diminishes in purity.

Synthetic cannabinoids – Spice

Spice (and similar substances) are a smoking mixture made of herbs and were first sold as 'legal high' or 'tobacco-free smoke'. This mixture has been found to contain synthetic designer cannabinoids, which have been sprayed onto dried herbs (often dyed in bright colours) to mimic the effects of cannabis, and research has shown that some of these substances can be even more potent than THC. A pinch the size of a match-head is an active dose and more than enough for any first-time users. Spice is sold under a variety of 'brand' names including Spice Gold, Spice Silver and Spice Diamond in small pouches often labeled 'herbal incense', and is mixed with tobacco in a joint. Whoever buys one pouch cannot be certain of the exact amount of cannabinoids, which increases the risk of overdose. Overdose in this case would be likely to cause similar effects to heavy cannabis smoking, i.e. paranoia and perceptual disruptions, but also physical effects such as breathing difficulties, racing heart, shakes and nausea/vomiting. Brands and names for

Synthetic cannabinoids include Exodus Damnation, Psyclone, Clockwork Orange, Sensate, Pandora's Box, Mary Joy, Annihilation and Black Mamba.

Cannabis is known by a large variety of street names:

• Pot	• Dope	• Draw	• Sinsemilla
• Blow	• Grass	• Puff	• Marijuana
• Smoke	• Joint	• Ganja	• Spliff
• Weed	• Herb	• Hemp	• Hashish/Hash

Adulterants

Aluminium has been found in cannabis, which may be a result from an impure water supply. It can contribute to smoking-related diseases. Glass has also been used in combination with cannabis, potentially to improve quality and increase weight. There are health risks involved in the inhalation of hot glass fumes.

Health

The female hemp plant produces more than 60 chemicals including Delta-9-Tetrahydrocannabinol (THC). THC is what gives cannabis its potency.

- Marijuana usually contains up to 8% THC.
- Hashish can contain up to 15% THC.
- Skunk contains 17% THC.
- Hashish oil contains up to 60% THC.

The way cannabis is taken determines how the body processes the drug. If cannabis is eaten, THC enters the bloodstream through the walls of the stomach or small intestine. If it is smoked, it enters through the walls of the lungs and the absorption rate is faster. Users can more easily control their intake if they smoke cannabis whereas if it is eaten, the effects will appear later but be more intense.

Short term effects

Cannabis is a depressant drug, but it also has hallucinogenic properties. As with any drug, the effects of it upon a person's body vary according to the individual's mood, the way in which the drug is taken, the quality of the drug, the size of the dose, the circumstances, the user's expectations and their previous experience. Because of its mind-altering (psychotropic) properties, the effects of cannabis may be strongly influenced by any of these factors.

Small doses of cannabis can produce a range of effects upon the user, some of which are eagerly sought after. The positive and negative effects include:

One ex-user said, "For me, being under the influence of cannabis was like being trapped in a mental maze, questioning the reality of the experience but not being able to deny it. I could not trust anybody else or relate to other people."

- a mild sedative effect which makes the user feel relaxed, more sociable, talkative.
- a sense of peace, harmony and well-being which after a time develops into a state of calmness and deep personal reflection.
- loss of concentration.
- increased pulse rate and decreased blood pressure.
- increased appetite.
- reddening of the eyes.
- loss of balance.
- impaired co-ordination.
- dry mouth and occasional dizziness.
- impaired driving skills for at least 24 hours.

Skunk delivers a powerful hallucinogenic trip more commonly associated with LSD. The effect is especially strong among people who are used to cannabis with lower THC content. This might lead to terrifying hallucinations such as the feeling of floating outside your own body, a fear of dying or losing your mind and is likely to lead to vomiting. The cannabis subculture scene knows it as the 'mad weed'.

The larger the dose of any type of cannabis, the stronger the effects become. The user begins to hallucinate, and feelings of anxiety and panic and paranoia occur. Inexperienced users may undergo temporary and, in a small number of cases, severe psychological distress or confusion and delusion.

Since short-term memory, logical thinking, motor skills and the ability to perform complex tasks are all affected, it is dangerous to drive, operate machinery or make important decisions whilst cannabis is in the body.

Gaps on the memory tape - Cannabis use blocks the memory. This effect means that when sober, the user can't recall the experiences of being under the influence of the drug. They may not even remember whether their experiences were pleasant or unpleasant.

Flitting like a butterfly - In order to allow us to concentrate and focus on the issue at hand, our brains have a filtering system, which normally excludes incidental or familiar things that don't need our attention. For example, if there is a crack in the wall, after a time, we no longer 'see' it. Cannabis freezes the filters and lets in all information. The mind is swamped and fails to select priorities for consideration. Awareness flits from one issue to another, details get out of proportion and attention span and sense of time are distorted.

Misdirected signals - For us to function normally we depend on our body's messages being transmitted correctly via the brain. Long term use and high doses of cannabis can cause these signals to become scrambled and the user's perception can become distorted. Signals meant for the eye go to the ear, whilst those meant for the sense of touch end up at taste. Under the influence of the drug people start to 'hear' colours and 'smell' sounds. This is known as synaesthesia and occurs naturally in some people.

Drifting - With larger doses of cannabis the brain's functions are depressed. Instead of making decisions and directing the body, the mind drifts aimlessly. Such an experience can cause problems with motivation. The advice given at one college regarding the drug was that 'it won't do you much physical harm - but you'll feel you needn't bother to do your essay or attend lectures'.

Users of cannabis behave in a variety of different ways. They may be giggly and talkative, or they may be unwilling or unable to communicate at all, instead just staring (see 'Flitting like a butterfly'). They are often relaxed and chilled out and may eat a lot because of the 'munchies' – the hunger that using cannabis can create in the user.

Psychological risks

"Some people have claimed that cannabis use can lead to long term mental problems or 'cannabis psychosis' (mental health problems caused by drug use)" (Drugscope, 2005). Cannabis use can worsen the condition of some people who already have problems such as schizophrenia. A study (BMJ, March 2015) showed that daily use of high-potency cannabis is a risk factor for dependence, poor psychosocial outcomes, and psychosis.

Research conducted by the University of Maastricht in the Netherlands, on long-term cannabis use by 14-18-year-olds, showed that the younger the user, the more problems they developed. The study found that cannabis doubles the risk of schizophrenia, hallucinations and paranoia among a genetically susceptible group.

A study from New Zealand which followed 1000 people over 20 years also found that young people who smoke cannabis for many years run the risk of a significant and irreversible reduction in their IQ (2012).

Long-term effects

A significant fact about cannabis is that it is not soluble in water. It will settle in the fatty tissues of major organs, such as the brain. This means that regular usage will build up a 'stock' of THC in the brain, which is gradually released into the bloodstream. A regular user has to live continually with a THC-tinged mind long after the 'high' has worn off.

Occasional use of small quantities of cannabis may not cause permanent physical damage. More research is needed but evidence suggests that, for those who are regular consumers, the body and brain can be affected in the following ways:

- Heavy use of the drug is damaging for anyone with heart or respiratory problems.
- Regular cannabis smokers can develop chronic bronchitis.
- A heavy user who is constantly under the influence of cannabis may appear lethargic and perform poorly at work or in education.
- When cannabis users smoke the drug in a cigarette with tobacco, the combined toxicity can be very harmful. The tar content of cannabis is 50-100% heavier and contains a higher concentration of certain cancer-producing agents than tobacco. The nicotine present in the tobacco causes dependence and encourages long-term use, which might lead to lung damage.

- There is the possibility that, in certain people, cannabis use could unlock latent schizophrenia.
- Very high doses of cannabis have caused some users to experience an acute toxic psychosis. This is expressed by paranoid delusions, hallucinations, disorientation, intense feelings of depersonalisation, severe agitation and loss of insight.

Cannabis and pregnancy

According to the World Health Organisation, cannabis use during pregnancy is associated with impairment in foetal development leading to a reduction in birth weight. This is attributed to the inhalation of the carbon monoxide in cannabis and tobacco smoke.

Dependence

Cannabis is not a physically addictive drug, although people can become psychologically addicted.

Tolerance

Tolerance, or rather 'reverse tolerance' develops where more experienced users can feel the effects of the drug more quickly than before due to the build up of THC that provides the body with a constant dose. Very little is needed to attain a high.

The Law

Cannabis is a Class B, Schedule 2 drug. (Medicinal cannabis is currently unlicensed so doctors can prescribe it only if a patient has a need that can't be met by licensed medicines. Under the new rule, GPs are not allowed to prescribe cannabis-derived medicines. It has to be a specialist consultant, for example in neurology or paediatrics.)

In December 2009, Spice products, together with a range of currently available designer cannabinoids, any derivatives and mixtures including these such as Black Mamba and Annihilation, were designated class B drugs. Since December 2016 all synthetic cannabis drugs have been classified class B. However, it is impossible to know exactly which cannabinoids a product contains. Forensic testing is the only way to determine the contents of any given sample.

Legalisation – the debate

Cannabis was first prohibited in the UK in 1928. In January 2004 it was re-classified from Class B to Class C but in January 2009 it went back into Class B.

Many people think that because cannabis seems relatively harmless and is used by so many people, its use should be made completely legal. Here are a few arguments for and against complete legalisation.

Arguments FOR legalisation:

- The health effects of cannabis are minor in comparison with other legal substances such as tobacco; the decision to use or not should be one of informed personal choice.
- Legalisation would ease the tension between the public and the police.
- It would allow the regulation of quality control of drug supplies thus reducing health risks.
- Through regulation it would be easier to prevent supplies reaching the young and vulnerable.
- The black market would disappear, and the police and customs would have additional resources to spend on more serious matters.
- People imprisoned for cannabis offences are forced into an environment that is far more damaging in the longer term than the drug use itself.

Arguments AGAINST legalisation:

- Legalisation would send a message to young people that drug taking is okay.
- Legalisation would send a message that cannabis is harmless.
- Criminal activity could be transferred to more lucrative drugs.
- The use of cannabis would rise. An increase of use would occur in the young and vulnerable – it has proved difficult preventing tobacco reaching these groups.
- Once it is accepted that cannabis use is legal, and therefore apparently safe, the principle could be applied to more dangerous substances, such as cocaine and heroin.
- Other widely used drugs – alcohol and tobacco – already have legal status and widespread availability. To place cannabis in the same category would increase enormously its damaging effects upon individuals and society. Powerful new strains of this drug, such as skunk, are being processed and the effects of their use are even more unpredictable.
- Using cannabis does not inevitably lead to the use of harder drugs (escalation), but a significant number of those who are dependent on heroin and cocaine got there via the use of so called 'softer' gateway drugs.

Medical use

Considerable research and anecdotal evidence have found that cannabis has therapeutic value for complaints such as asthma, glaucoma, treating mild to severe pain and muscle spasms, muscular spasticity, multiple sclerosis, anorexia, mood disorders, and convulsive disorders. The identification of anandamide, a chemical naturally occurring in the body which activates the two types of cannabinoid receptors (CB1 and CB2), has also led to speculation that cannabis and some

cannabinoids may be effective as treatment for a number of psychological disorders.

Internationally a lot of research is being carried out to identify cannabis extracts and develop them into medicines in the form of tablets, inhalers, sprays, rectal suppositories or skin patches. Smokable cannabis is unlikely to become a prescribed drug, as it would be difficult to administer in precise dosages and contains a number of carcinogens, tars and toxins that can damage health and have negative mood-altering properties. One question is whether it is right to allow patients to self-administer drugs which not only have positive medical effects but may also make them feel pleasantly stoned.

Nabilone is a synthetic cannabinoid, which imitates the anti-vomiting effects of cannabis. It is prescribed in cancer chemotherapy but only used in a hospital setting under close supervision and when other anti-vomiting medicines fail to work.

Sativex was the first cannabis-based medicine to be licensed in the UK in 2011. It comes as a spray and contains both THC and CBD. Sativex is used to treat MS-related muscle stiffness when people have found that other medicines have not worked well or found their side effects intolerable. The most common side effects are sleepiness or dizziness and it has not been proven to have any psychopathological effects. However, people with a known or suspected personal history or family history of schizophrenia, psychosis or other significant psychiatric disorder should not be prescribed Sativex.

Medical cannabis (and cannabis oils) (taken from NHS website Sept 2019)

"Medical cannabis" is a broad term for any sort of cannabis-based medicine used to relieve symptoms.

Many cannabis-based products are available to buy online, but their quality and content is not known. They may be illegal and potentially dangerous.

Some products that might claim to be medical cannabis, such as "CBD oil" or hemp oil, are available to buy legally as food supplements from health stores. But there's no guarantee these are of good quality or provide any health benefits.

And some cannabis-based products are available on prescription as medicinal cannabis. These are only likely to benefit a very small number of patients.

Can I get a prescription for medical cannabis?

Very few people in England are likely to get a prescription for medical cannabis.

Currently, it is only likely to be prescribed for the following conditions:

children and adults with rare, severe forms of epilepsy
adults with vomiting or nausea caused by chemotherapy

And it would only be considered when other treatments weren't suitable or hadn't helped.

Epidiolex for children and adults with epilepsy

Epidiolex is a highly purified liquid containing CBD (cannabidiol).

CBD is a chemical substance found in cannabis that has medical benefits.

It won't get you high, because it doesn't contain THC (tetrahydrocannabinol), the chemical in cannabis that makes you high.

Epidiolex is not yet licensed in the UK but is currently going through the licensing system.

In the meantime, the unlicensed medication can be prescribed for patients with Lennox-Gastaut syndrome and Dravet syndrome (both rare forms of epilepsy).

Nabilone for chemotherapy patients

Many people having chemotherapy will have periods where they feel sick or vomit.

Nabilone can be prescribed by a specialist to help relieve these symptoms, but only when other treatments haven't helped or aren't suitable.

Nabilone is a medicine, taken as a capsule, that has been developed to act in a similar way to THC (the chemical in cannabis that makes you high). You may have heard it described as a "manmade form of cannabis".

The medicine has been licensed in the UK. This means it has passed strict quality and safety tests, and is proven to have medical benefit.

Nabiximols (Sativex) for MS

Nabiximols (Sativex) is a cannabis-based medicine that is sprayed into the mouth.

It is licensed in the UK for people with MS-related muscle spasticity that hasn't got better with other treatments.

But its availability on the NHS is limited. The National Institute for Health and Care Excellence (NICE) does not recommend that NHS doctors prescribe Sativex, as it is not cost effective.

Long-term pain

There is some evidence medical cannabis can help certain types of pain, though this evidence is not yet strong enough to recommend it for pain relief.

What about products available to buy?

Some cannabis-based products are available to buy over the internet without a prescription.

It's likely most of these products – even those called "CBD oils" – will be illegal to possess or supply. There's a good chance they will contain THC, and may not be safe to use.

Health stores sell certain types of "pure CBD". However, there's no guarantee these products will be of good quality.

And they tend to only contain very small amounts of CBD, so it's not clear what effect they would have.

Is medical cannabis safe?

The risks of using cannabis products containing THC (the chemical that gets you high) are not currently clear. That's why clinical trials are needed before they can be used.

"Pure" products that only contain CBD, such as Epidiolex, do not carry these unknown risks linked with THC.

But in reality, most products will contain a certain amount of THC.

Cannabis Statistics

Last updated December 2020

Use of cannabis

As in previous years, cannabis was the most commonly used illegal drug, with 7.8% of adults aged 16-59 having used it in the last year (around 2.6 million people), similar to last year in the 2018/19 survey (7.6%). This indicates a slight change from a decade earlier in 2010/11 when it was 8.8%. It is, however, lower than at the start of measurement in 1996 (9.4%).

Among younger adults aged 16-24, cannabis was also the most commonly used drug, with 18.7% having used it in the last year (around 1.1 million young adults). This was similar to last year, with a figure of 17.3% and to the 2010/11 survey (17.1%). It is a significant fall since the first measurement in the 1996 survey (25.8%).

(Crime Survey for England and Wales, 2019/20; British Crime Survey 2010/11)