

# 9. Opiates

(2021 version)

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# Introduction

All opiates are painkillers, also known as analgesics. These are drugs which relieve pain by lessening the sensitivity of the brain or nervous system, rather than working at the site of the pain. They slow down the body functions and so stop both physical and emotional pain. There is a difference between opiates and opioids, especially in terms of how they are produced:

- Opiates - produced from the natural source, opium poppy, e.g. raw opium, morphine, codeine, heroin.
- Opioids - produced synthetically in a laboratory e.g. methadone.

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## Heroin

### Introduction

Heroin (medical name: diacetylmorphine) was first produced by a German company at the end of the 19<sup>th</sup> century, which was searching for a new drug without morphine's potential for addiction, but with similar painkilling qualities. Heroin is a natural drug (opiate). It derives from morphine which comes from the opium poppy.

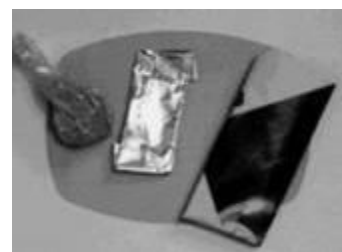
Heroin is the strongest painkiller known to man, with a 5 to 8 times higher potency than morphine. Though it was first thought to be non-addictive it soon became clear that it was, in fact, even more addictive than morphine.

Illicit heroin comes mainly from Pakistan, Afghanistan, India, the Far East, Iran and Turkey.

### How It Is Taken

Heroin comes as a powder, coloured from off-white to mid-brown. Heroin is usually sold in 'wraps' or 'bags'.

Compared to medicinal heroin it is relatively impure and contains a variety of substances coming from opium or from the production process. Heroin is also 'cut' with other substances at street level to increase profit. There is therefore no guarantee of purity when buying heroin and inconsistent quality/purity is often a cause for overdose.



Substances mixed with heroin include glucose (the most common), lactose, curry powder, gravy mix, flour, baking powder, cleaning powder, plaster or brick dust. Phenobarbital is a barbiturate, which facilitates smoking of heroin. Large doses

can lead to disorders of the liver, respiratory depression and mood disturbances, but may also be life-threatening to some users. Quinine is an antimalarial medication which mimics the respiratory 'rush' felt by injecting heroin users shortly after administration. Large doses of this substance can lead to kidney failure, cardiovascular complications and be life-threatening.

Heroin is widely used in medicine in the UK as it relieves pain more quickly than morphine using a far smaller dose. However its use is banned in most other countries. Compared to morphine the effects of heroin wear off more quickly. It is used as a painkiller for accidents, injuries and for illnesses such as heart disease. It also produces instant relief of pain from malignant diseases like cancer (most commonly in palliative care). Due to hospitals using its chemical name, diamorphine, many people are unaware that the pain relief they are receiving is actually heroin. Medicinal heroin comes as a powder, tablets, ampoules or liquids.

Street heroin can be taken using the following methods:

### Injecting

In order to inject heroin, the powder is mixed with citric acid for it to dissolve. Users then often draw the liquid up into the syringe through a cigarette filter or cotton wool in order to filter out impurities. Beginners may start by injecting just below the surface of the skin ('skin popping'). Other users may inject directly into the vein ('mainlining') to feel the effects almost immediately, as the drug is carried through the bloodstream to the brain. Injecting is more dangerous than smoking because the drug reaches the bloodstream in a more concentrated form.

### Smoking

This has become more popular among users in the UK, particularly among first time users who may be scared of the needle. Heroin can be smoked in a cigarette together with tobacco, which may cause an immediate effect. More common is the 'Chasing the dragon' technique where heroin is placed on a piece of tinfoil and heated from beneath by means of a candle or cigarette lighter. The fumes are inhaled through a drinking straw or rolled tinfoil. The drug is absorbed through the lining of the lungs into the bloodstream and transported to the brain.

### Snorting

Heroin can be taken by snorting it into the nostrils like snuff or cocaine.

Some of the street names for heroin are:

• Junk	• Smack	• 'H'	• Brown
• Skag	• Boy	• China White	• Horse

# Health

## Short-term effects

The short-term effects of heroin begin with positive effects and can be followed very quickly by negative effects, all of which can last between 3 and 6 hours and include:

- Sleepy, pleasant euphoria
- Relief from stress and anxiety
- Feelings of well-being and happiness (the user is cushioned from reality)
- 'Buzz' – an overwhelming rush of pleasure as the drug enters the system
- Nausea and vomiting
- Coma and death from respiratory failure

There is relatively little interference with mental or physical functioning, however effects may be dangerously heightened when taken with other drugs (e.g. alcohol and barbiturates).

## Long-term effects

Prolonged use of heroin can have the following effects:

- depressed appetite and dehydration which may lead to malnutrition.
- sores and ulcers caused by deficient hygiene.
- risk of HIV and Hepatitis B and C from shared/contaminated needles.
- risk of overdose: the risk is particularly increased for beginners who have not yet built up tolerance. Users who have been deprived of the drug (e.g. by being in prison or hospital) may overdose because their former tolerance has gone. The risk of overdose is heightened by supplies which are purer than normal, or by mixing heroin with other drugs (e.g. alcohol, barbiturates etc).

When using heroin, people can behave in quite a subdued way. They may be relaxed and sleepy, and are often uncommunicative, spending time only with those who also use the drug. They often become withdrawn and unable to stay in contact with the rest of the world.

## Dependence

Heroin is not immediately addictive and physical dependence often takes a few months to develop, but the addiction can be very profound once it has developed. However, those who have become addicted to heroin due to needing pain relief often find it easier to come off heroin when the pain is relieved another way, as they are not taking it for the 'high' they can achieve.

Psychological dependence is more dangerous and more difficult to overcome than the physical dependence.

## Tolerance

Because the withdrawal symptoms can appear as little as a few hours after it was last taken, the body needs the drug just to stay more or less 'normal' and to counteract the pains of withdrawal.

## Heroin and pregnancy

As well as experiencing irregular periods, women who regularly take heroin can cause serious complications during pregnancy, including miscarriage and premature delivery. Children born to these mothers are at greater risk of Sudden Infant Death Syndrome (SIDS), and these babies can experience withdrawal symptoms after they have been born.

## Withdrawal

Withdrawal symptoms (often referred to as 'cold turkey') vary from user to user. Some people experience the most devastating effects while others have only mild discomfort. Many find it extremely hard to get rid of a heroin dependency. The symptoms can be tremors, diarrhoea, cramps, sneezing, sweating and chills, insomnia accompanied by feelings of uneasiness and restlessness and can last for 7-10 days.

If there is no heroin available users may try bottles of cough mixture or patent medicines, which contain mild opiates (e.g. codeine) or swap to other drugs like alcohol, barbiturates, benzodiazepines etc.

## Synthetic Alternatives

As with cannabis there are synthetic alternatives to heroin that are now available on the street market. Fentanyl is cheaper to produce than heroin and is very potent. While it can produce the same feelings of pain relief, euphoria, relaxation and sleepiness as heroin, it is so potent it is more likely to cause breathing difficulties which can lead to apnoea, where the person who has taken it stops breathing altogether. Carfentanyl, which is used to anaesthetise elephants, can be distributed as blotters in the same way as LSD. It is getting into prisons on pictures being drawn by children. It carries the same risks as fentanyl.

## The Law

Heroin is a Class A, Schedule 2 drug.

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# Opium

## Introduction

The opium poppy grows in many countries including Afghanistan, Pakistan, India, Cyprus, Iran, Burma, Laos, Thailand, China, Greece, Mexico, Poland, Lebanon and Indonesia. The poppy most grown to extract opium is *Papaver somniferum*.

The opium poppy produces a juice, or milk, for a short time during the flowering season. This juice, which looks rather like gum latex, is extracted from the seed capsule and then dried. Raw opium has a characteristic, pungent smell and it contains two potent painkillers - morphine and codeine.

The earliest reference to opium use was by the Sumerians 6,000 years ago. It was used recreationally and as a medicine by the ancient Greeks and was often to be found in Chinese medicine by the 7<sup>th</sup> or 8<sup>th</sup> century AD.

Opium came to Europe and the UK in the 1550s and by the 17<sup>th</sup> century it was being used in medicines, the most well known being laudanum, a mixture of opium and alcohol, which was used to treat a wide variety of symptoms. Opium continued to be used until 1868 when concerns were raised over the number of infant deaths as a result of opium overdoses.

## How It Is Taken

Raw opium can be smoked in pipes, eaten, or drunk as an infusion, but there is little evidence of frequent use of raw opium in the UK. Today opium is used in small doses as an analgesic for patients suffering from terminal illnesses.

## Health

Opium is a depressant affecting the brain and nervous system and there are both short and long-term effects associated with its use:

### Short-term effects

- Opium can initially enhance imagination and speech but is followed by slowed-down respiration and confused mental processes. This leads into a deep sleep and sometimes coma.

### Long-term effects

- Noticeable deterioration in both mental and physical capacities and reactions
- Loss of appetite
- Dehydration
- Stomach pains

- Interest in personal relationships fade
- Reduced sexual drive

## Dependence and Tolerance

Opium is highly addictive and dependence develops very quickly. Tolerance also builds up, requiring the user to take larger doses to achieve the same high. Withdrawal symptoms include nausea, tearing, yawning, chills and sweating. Users tend to keep using opium to avoid the withdrawal symptoms rather than to attain the high.

## The Law

Opium is a Class A, Schedule 1 drug.

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# Morphine

## Introduction

In 1805 a German pharmacist, Wilhelm Sertürner, isolated the pure 'Principium Somniferum' from opium, which he called morphium after Morpheus, the Greek god of dreams. Morphine was purer than opium and therefore easier to dose correctly, and it rapidly became the alternative to opium, especially when the hypodermic needle was invented in the 1850s.

Today morphine is isolated from opium in very large quantities - over 1000 tons per year. Most commercial opium is converted into codeine by methylation but on the illicit market, opium gum is filtered into morphine base and then synthesized into heroin.

Morphine is a powerful analgesic, 3 to 5 times stronger than opium, and is particularly effective for treating persistent pain. It also relaxes the patient and brings about a happy feeling, which helps to counteract the fears and concerns that can accompany serious illnesses and operations.

## How It Is Taken

Morphine can be taken as tablets, or as a liquid for drinking or for injecting into a vein, muscle or under the skin. Some of its trade names are Duromorph, Cyclimorph, Kaolin, Oramorph, Sevredol and Morcap SR.

It is used in medicine to relieve pain after an operation, after a heart attack, for chronic pain and can be controlled by a patient through a pump where the patient presses a button to receive a controlled dose when they need it.

Sometimes morphine is stolen from pharmacies but generally it is not very popular among drug addicts because of its unpleasant side effects.

## Health

Morphine is a depressant, and there are many side effects to taking it, even when it is used under medical supervision. These effects include:

- nausea, vomiting, sweating and confusion
- fainting, dizziness, drowsiness, sedation
- restlessness, mood changes, seizures

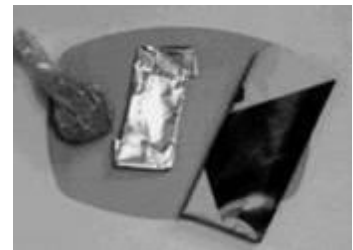
An overdose of morphine can cause respiratory problems, low blood pressure, coma, overall physical decline, and even death can follow.

## Dependence

Like opium, morphine is highly addictive. The euphoria produced by taking morphine can quickly develop into an overwhelming urge to continue its use, which leads to physical and psychological dependence.

## Tolerance

Tolerance to morphine develops very quickly.



## Withdrawal symptoms

After stopping the supply, withdrawal symptoms begin within a few hours, peak after 36 to 72 hours and then gradually fade. Withdrawal symptoms vary according to the individual and the degree of dependence but they can include:

- irritability
- anxiety
- sneezing
- headache
- weakness
- restlessness
- sweating
- insomnia
- nausea
- vomiting
- tremor



- cramps
- diarrhoea
- increased heart and respiratory rate and blood pressure

## The Law

Morphine is a Class A, Schedule 2 drug.

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# Codeine

## Introduction

Codeine is the other major constituent of opium, along with morphine. It is a painkiller similar to morphine, but much less potent and with only mild sedative effects. It is used for the treatment of moderate pain and is much less likely to cause dependence or toxic effects.

## How It Is Taken

Codeine is a popular prescription painkiller and is often combined with other medicines (e.g. paracetamol) for combined effects. It can be taken in a few ways:

- swallowed as tablets.
- a linctus for cough relief.
- injected under the skin or into the muscle.

Injecting codeine into veins is dangerous as it results in very serious side effects. Codeine free base can be smoked on aluminium foil similar to smoking heroin.

Some of the trade names are Phenedyl and Codeine linctus.

## Health

Side effects from taking codeine under prescription are nausea, vomiting, dizziness and drowsiness. Non-medical doses can produce restlessness, excitement and exhilaration.

Addiction to codeine can result in:

· depression	· seizures	· tremors	· agitation	· hangover
· constipation	· "itchies"	· Hallucinations	· convulsions	· disorientation

· tiny pupils	· nausea	· liver damage	· stomach bleeding	· kidney damage
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## Dependence

Physical dependence to codeine can develop if it is used for more than 2-3 weeks. The withdrawal symptoms usually pass in a few days but it can take several months for a user to feel normal again.

## Tolerance

With regular use, a user may require more of the drug to get the same effects.

## The Law

Codeine is a Class B, Schedule 2 drug.

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# Methadone

## Introduction

Methadone is an opioid, a synthetic drug with similar effects to opiates. Other opioids often used in medicine are pethidine (commonly used at child birth), pentazocine, buprenorphine (available as TEMGESIC and SUBUTEX), dextromoramide and dihydrocodeine, which is one of the most widely used painkillers in the UK.

Methadone is a powerful painkiller similar to morphine but doesn't have such a strong sedative effect. It has become well known for its use in treating heroin addiction, where it is widely prescribed by doctors.

## How It Is Taken

In its basic form, methadone is a white crystalline powder but it is usually found in tablet form or as ampoules for injection. However, it is most commonly taken as a syrup.

# Health

Methadone is a depressant and has a variety of side effects. Its effects are much the same as heroin, and its side effects are:

· light-headedness	· dizziness
· nausea and vomiting	· dry mouth
· sweating	· respiratory depression
· low blood pressure	· circulatory failure
· coma	

As methadone counteracts heroin's euphoria and prevents the onset of heroin withdrawal, it is used to treat heroin addiction. The effects of methadone last longer than those of heroin, so the frequency of administration can be reduced to once or twice a day.

The aim is to withdraw the addict from illicit injectable heroin and transfer them on to methadone by initially giving daily doses of methadone comparable to those of heroin. In theory the doses of methadone should be gradually reduced until the client is weaned off the drug, but although methadone addiction is supposed to be easier to treat, many addicts find withdrawal from methadone even harder. Many clients stay on methadone for months and years, and instead of getting off the drug many young heroin users turn into middle-aged methadone users. In some cases methadone may prevent people from turning to crime to feed their growing consumption, but there is also the risk that people with a methadone dependency will turn to illicit sources to feed their growing dependency, which can't be satisfied by the doses distributed in a methadone programme of treatment.

It is also argued that methadone, with its slow-acting properties, enables a user to live without violent mood swings and helps them to lead a more 'normal' life. This type of treatment is known as harm reduction or harm minimisation.

## Dependence

Methadone causes dependence, and because the withdrawal from it can take up to a month, as opposed to that of heroin, which takes 7-10 days, users are even more reluctant to stop taking it.

# The Law

Methadone is a Class A, Schedule 2 drug.

# Tramadol

## Introduction

Like other opioid drugs, tramadol works as a painkiller by stimulating opioid receptors in the brain. Unlike other opioids tramadol also causes an increase in serotonin levels. Serotonin is a chemical in the brain associated with mood (low levels are implicated in depression). Tramadol is used medically as a moderate to strong painkiller.

## How It Is Taken

Tramadol is normally swallowed as a tablet or capsule though some people do crush the tablets, or open the capsules, and snort the powder.

## Health

The effects of tramadol are similar to the other opioid painkillers:

- Feelings of warmth and well-being
- Relaxation
- Sleepiness
- Fatigue
- Drowsiness
- Loss of appetite
- Nausea and retching
- Constipation

Less commonly tramadol can also cause:

- Diarrhoea
- Dizziness or fainting
- Excessive sweating
- Itching
- Raised blood pressure
- Tightness in the airways
- Muscle weakness
- Sensory disturbances
- Hallucinations
- Fits
- Blood disorders

## Dependence

Tramadol is addictive, and prolonged use will result in psychological symptoms and cravings.

Similar to other opioids tolerance will also develop.

There are withdrawal affects associated with stopping tramadol. They include nervous tremors, anxiety, yawning, sweating, runny nose, sleep disturbance, nausea, diarrhoea, goosebumps, restlessness, abdominal cramps and muscle spasms.

## The Law

In June 2014 tramadol was reclassified as a Class C, Schedule 3 drug.

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# Fentanyl

## Introduction

Fentanyl is a synthetic opioid that is highly toxic. It can be prescribed as a pain killer or used as an anaesthetic in a medical setting. Medical brand names include Sublimaze, Abstral, Fentora and Lazanda. Fentanyl is around 50 times more potent than heroin and 100 times more potent than morphine. It was first synthesized by Dr Paul Janssen in December 1960 and has become one of the world's most frequently used opioid pain killers.

As well as being made for pharmaceutical purposes, it has become possible to illegally create new versions of fentanyl - known as fentanyl analogues. The most well known of these are carfentanil and lofentanil, which have a potency approximately 10,000 times that of morphine. Fentanyl and its analogues are used as a low-cost additive to increase the strength of heroin and counterfeit medicines. This practice is much more common in the USA and Canada than in the UK, but it has started to become more of a problem here in the last few years.

## How It Is Taken

Fentanyl, when pure, is a white powder. Some users would say that when it is mixed with heroin, the heroin has a grey, silvery appearance, but others say it is impossible to tell if the heroin has been cut with fentanyl. Fentanyl can also come in patches, nasal sprays, lozenges and tablets to dissolve in the mouth and in injectable form if given in hospital.

Fentanyl can be taken in all the ways it is possible to take a drug. It can be sniffed; it can be inhaled either by burning the powder on aluminium foil or using a vaporizer; it can be taken by intravenous injection; it can be taken under the tongue (sublingual); it can be taken orally (it is sold online in blotter form); and it can be used rectally. Fentanyl can also be extracted from patches by removing the gel content and either injecting it or swallowing it. It has been known for

users to freeze the patches and cut them into pieces and place them under the tongue or in the cheek.

## Street names

Some street names for fentanyl are White Heroin, China White, China Girl, Jackpot, TNT.

# Health

## Short-term effects

The effects from taking fentanyl can begin as quickly as 1-2 minutes if injected and 10-15 minutes if taken under the tongue or by nasal spray. The pain killing effect can last between 2-4 hours but can be anywhere between 3 and 12 hours if injected.

In the short term, a user may experience:

Drowsiness	Pain relief	Disorientation	Clammy skin
Fatigue	Nausea	Vomiting	Sedation
Constricted pupils	Respiratory depression		Slow heart rate
Unconsciousness	Suppression of cough reflex		Coma

The user may also experience effects on the brain such as euphoria, mood alteration, relaxation, a sense of invincibility, the feeling of floating, a dreamlike state and visual hallucinations.

Overdose is very easy with fentanyl as it is mixed with other drugs, but a user won't know what strength of fentanyl has been used, or how much is in the product. It is also likely a heroin user won't know that it has been cut with fentanyl and because fentanyl works so quickly, there may be no time to realise and they could overdose.

Someone who has used fentanyl may appear to be sleepy and disorientated. They may even fall into a very deep sleep.

## Long-term effects

If fentanyl is used regularly a user may experience:

- mood instability
- reduced libido
- constipation
- menstrual problems
- respiratory impairment

However, more research needs to be done to find out all the possible long-term effects as fentanyl is still a relatively new illegal drug.

### **Dependence**

Dependence on fentanyl is possible, and the withdrawal symptoms start to occur within 12 hours of the last dose.

### **Tolerance**

Tolerance can occur with use of fentanyl and a user will need to keep increasing the dose over time, in order to get the required effects.

### **Withdrawal**

Withdrawal symptoms include muscle and bone pain, sleep problems, diarrhoea and vomiting, uncontrollable leg movements and a severe craving for the drug.

### **Pregnancy**

It is not recommended that someone uses fentanyl if they are trying to get pregnant or are pregnant. There is currently little research around fentanyl use and pregnancy, but if a baby is born to a fentanyl user, as with the use of other opioids, it could have withdrawal symptoms.

## **The Law**

Fentanyl is a Class A, Schedule 1 drug. Some fentanyl analogues are further placed in Schedule IV, the strictest control regime.

# Opiates Statistics

Last updated December 2020

## Use of heroin

Of adults aged 16-59, 0.0% reported having used heroin in the last year. In 2010/11, the percentage was 0.01%. The number of users has fluctuated between 0.0 and 0.1 from as far back as 2000/01. The heroin market is long established, with a relatively stable number of long-term users (approximately 260,000).

The proportion of adults aged 16-24 reporting heroin use in the last year is 0.0%. The survey will have rounded down, so it isn't that there aren't any users, they just don't register as a percentage. In 2010/11, 0.1% of this age group also reported having used heroin in the last year, so there has not been much change from 10 years ago.

(ONS Drug Misuse in England and Wales, 2019/20; British Crime Survey 2010/11; Review of Drugs, 2020)

## Opiates and death

Deaths in 2019 in England and Wales involving opiates:

Any opioid .....	2,160
Heroin and/or morphine ...	1,329
Methadone .....	407
Tramadol .....	201
Fentanyl .....	59

(ONS Drug Misuse in England and Wales, 2019/20)