Methadone

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What is methadone?

Methadone (4.4-diphenyl-6 dimethylamino-3-hepatone) is a depressant drug, one that slows down the activity of the brain or central nervous system (CNS). It belongs to the same chemical family of drugs as heroin - the opioids or narcotic analgesics. Methadone is a synthetic substance, produced in a laboratory rather than derived from the opium poppy.

A restricted drug in Australia, methadone can only be used legally for specific medical purposes approved by the relevant State or Territory health authority.

History of methadone

Methadone came into clinical use after its synthesis by German chemists at the end of World War II. Supplies of the pain reliever, morphine, had virtually disappeared in wartime Germany because of interruptions to the opium trade with the east. The drug was to be given numerous names over the years but was ultimately popularised as methadone.

In the early 1960s Dr Vincent Dole, a biochemist, and Dr Marie Nyswander, a psychiatrist, introduced methadone as a drug-substitution treatment for opioid dependence. It was first used as a treatment for heroin dependence in New York in 1964 and was subsequently introduced into Australia for the same purpose in 1969.

National guidelines for methadone treatment were first endorsed in 1985 by the Ministerial Council on Drug Strategy. In 1993 the Commonwealth, State and Territory Governments developed a National Methadone Policy which has assisted in establishing a common set of principles for providing methadone treatment in Australia.

What is methadone treatment?

Methadone is used to help stabilise opioid-dependent people, enabling them to break the routines and habits associated with their heroin use, become abstinent, or reduce their opioid use.

Methadone is used widely to treat opiate dependence because it:

- **It is highly effective when taken orally,making it more convenient to use**
- **It prevents heroin withdrawal symptoms and thus reduces illicit drug seeking**
- **It is longer lasting than other opioids such as morphine and heroin, with a single dose usually effective for 24 hours or longer.**

  This enables it to be used less frequently than other opioids

Methadone in a treatment program is an effective treatment generally provided as a syrup which is swallowed. In methadone maintenance programs, an oral methadone syrup preparation is substituted for the user's usual heroin or other opioid to improve the quality of life.

Clients on methadone treatment are given a dose of methadone every day. The methadone is prescribed by a doctor. The size of the dose is determined according to the characteristics of each individual client. It is worked out so that the amount of methadone given to the user will stop them going into withdrawal for 24 hours, but will not get them 'stoned'. Normal activities and functions can generally be maintained.

The longer patients remain in treatment:

- **the less likely they are to use illicit opiates**
- **the fewer crimes they commit**
- **the more likely they are to be employed**
- **the less likely they are to be receiving government assistance**
- **the less likely they are to suffer from serious medical conditions**

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Dosages

The dose levels of methadone used in methadone maintenance programs have varied considerably over time. In early methadone trials, daily doses well in excess of 100 mg for stabilized clients were thought to be appropriate. This was done to create a methadone level that would serve as a 'blockade' against the effects of any extra opioids used, such as heroin, which the client might feel the need to use contrary to program rules. Later, low-dose methadone programs were developed with the aim being to move clients to abstinence in short periods of time, generally within six months. Doses for these programs were often lower than 60 mg.

Experience has shown that clients generally do better on high doses (60 mg or more) than lower doses. Therefore, a more flexible approach exists today in which the doctor prescribes the dose according to the client's needs rather than fixed program rules determining the maximum dose level.

The initial daily dose is 20 to 40 mg, usually taken as a single dose. It can take from several days to some weeks for the new client to be stabilised on methadone. During this time the dose is gradually increased as tolerance develops and as the client's symptoms and signs are carefully monitored, until a maintenance dose level is achieved. The client is then usually maintained on a single daily oral dose at this level, without further increases unless other circumstances change.

Some clients do well on daily doses as low as 20 to 30 mg, but most are maintained in the 50 to 120 mg range. Research suggests that clients receiving daily doses greater than 60 mg are more likely to remain in treatment and to reduce or eliminate their use of illicit drugs.

Benefits of methadone treatment

Methadone treatment has been made available across Australia because research studies have shown that it improves the health of most opioid-dependent people who choose to enter treatment.

People in methadone treatment are less likely to use heroin or to become involved in the criminal activities often associated with illicit drug use. Without the pressures associated with illegal drug use, people are likely to manage their lives more effectively.

Some of the key benefits include:

- **Methadone is legal**
- **Methadone is a pure drug**
- **Methadone lasts in the body for a long time so it only needs to be taken once a day**
- **Methadone is taken orally, making it cleaner and safer than injecting street drugs**
- **Methadone is cheap and can be dispensed in hospitals, clinics or community chemists**
- **Slow withdrawal from methadone may be accomplished safely and with minimal discomfort when the situation is appropriate for the individual**

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What are the short-term effects of methadone?

The effects of any drug will vary from person to person. Not everyone experiences all the possible effects. The strength of the effects and how long they last are also different for each person. Many of these will depend on the size of the dose and the frequency with which it is taken. It is not unusual to experience one or more of the following:

- **Sweating**
- **Constipation**
- **Lowered sex drive**
- **Aching muscles and joints**
- **Itchy skin**

The side effects listed below should not generally. If any of these effects occur, they should be reported to your doctor:

- **Sedation**
- **Relief of pain - insensitivity to pain**
- **Lightheadedness or dizziness**
- **Narrowing of the pupils of the eyes**
- **Impaired night vision**
- **Shallow breathing**

Other effects like suppression of appetite, stomach pain, nausea and vomiting can occur and can usually be reduced by adjusting the dose. Deaths have been associated with methadone, particularly in those patients who are not used to using the drug.

What are the long-term effects of methadone?

Methadone, taken in pure form and regular doses as part of a treatment program, generally has no severe long-term effects on health. Methadone can make some people put on weight. This is probably due to fluid retention and changes in diet.

For men, methadone can lead to delayed ejaculation, particularly in higher doses. Some women have reported a reduced libido. Disrupted menstrual cycles have also been reported, while other women have found their cycles return to normal after experiencing irregularities on heroin and other opiates.

Some potential dental decay may be a problem due to the reduction in the amount of saliva produced. Saliva carries out anti-bacterial work in the mouth and prevents deterioration of teeth and gums. Simple dental hygiene - regular cleaning of teeth, rinsing, adequate diet and chewing sugar-free gum - can counteract this problem.

Withdrawal from methadone

When a client wishes to come off methadone, their dose is gradually reduced, in consultation with their prescribing doctor, usually over 3-12 months or even longer. The time span depends on the size of their regular dosage and the individual concerned. During withdrawal clients receive assistance and support from their prescribing doctor and other health workers.

Sudden discontinuation of methadone treatment causes the development of withdrawal symptoms and is not usually recommended. Such symptoms vary and usually begin one to three days after the last dose. They can include uneasiness, yawning, tears, diarrhoea, abdominal cramps, goosebumps, a runny nose and a craving for the drug. They reach a peak on the sixth day and last up to one week after that. A feeling of lethargy and anorexia can last for a while longer.

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Pregnancy

Pregnant women who are regular users of heroin and illicit opioids can also receive methadone treatment. Women who use street heroin during their pregnancy can experience problems whilst carrying the child and during childbirth. Their babies may be born prematurely and develop more slowly than other babies.

Pregnant women who receive methadone treatment are likely to have fewer complications during their pregnancy and childbirth than pregnant women who continue to use illicit opioids. Starting methadone treatment early in the pregnancy reduces the likelihood of complications occurring.

Like all opioids, methadone crosses the placenta to the unborn child. Babies born to methadone-dependent mothers may go through withdrawal at birth, although with lower doses this is rare. If it occurs it can be successfully treated while the baby is still in hospital.

Breastfeeding

Methadone passes to a baby in very small quantities through the mother's breast milk. Women who wish to breastfeed while on the methadone program may do so safely if on a low to moderate dose. Clients of a high dose are advised to discuss breastfeeding with their paediatrician or their methadone provider.

No immediate ill effects have been noticed in the breastfed children of methadone treatment clients. Little is known about the long-term effects on a baby who has had regular doses of methadone in the early stages of development.

Methadone and the law

Each state and territory in Australia has different laws about drugs. Under the Commonwealth Customs Act, 1901 the importation of methadone is illegal and carries penalties of up to $100 000 and/or life imprisonment.

There are no restrictions on the amount of methadone that an individual can have in their possession, provided that it is legally prescribed to them by a suitably authorised medical practitioner.

The laws governing the possession, use and prescription of methadone vary from state to state. For their own protection, clients planning to travel interstate should find out what the laws are in the states which they are planning to visit, and what health services are available.

Travelling

Special arrangements need to be made by people on the methadone program who wish to travel. Clients travelling to another town or state for a short period of time may request temporary transfer to a pharmacy or program in the place they are visiting. If a client is moving for a longer period, or permanently, he/she will need to make arrangements through their current treatment program to be admitted to a methadone program near their new home.

Travel overseas may be difficult for clients on methadone treatment. Special arrangements have to be made to conform with regulations of the Commonwealth Department of Human Services and Health and the Australian Customs Service. Certain conditions will be applied, depending on the client's situation. It is extremely important that these are adhered to, as possession of methadone is a serious offence in some countries. Your methadone provider should be able to assist you with your arrangements.

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WARNING:

METHADONE OVERDOSE CAN BE FATAL

Like heroin, methadone is a powerful drug. If a client accidentally uses more than their prescribed dose it is vital that they alert medical and/or clinical staff and then follow any advice given to them.

Methadone overdose can be fatal.

The main risk of methadone overdose is stopping breathing. Feeling extremely tired, leading to a loss of consciousness and coma occurs (where the client cannot be roused), often with a sudden collapse. Oral methadone can be slow acting and an overdose may not occur till 3 to 24 hours after taking the dose.

WARNING:

MIXING DRUGS CAN BE DANGEROUS

The use of other drugs with methadone can cause fatal overdose. Other depressants such as alcohol, benzodiazepines (valium, rohypnol, serepax, etc), other narcotics and cannabis interact with methadone causing drowsiness, unconsciousness, failure to breathe and ultimately death.

Some drugs reduce the effectiveness of methadone or change its effects. On the other hand, methadone can change the effectiveness of other drugs, or produce unexpected side effects.

It is very important for people to let their doctor or dentist know that they are taking methadone, so that they don't prescribe anything which could affect the treatment, and so that other medical procedures are safe.

Other treatment options

There are a variety of treatment choices for people who wish to give up heroin use. Some of these treatments involve giving the person a substitute drug that is like heroin. However, not all treatments use drugs. Rehabilitation services such as We Help Ourselves and Odyssey House run 3-6 month programmes, that require the person to live as a part of a community of recovering drug users.

Detoxification services are offered in various settings: short-term in-patient, ambulatory or at home. Detoxification itself, however, is not a treatment. Most people who undergo detoxification, with no other form of treatment, start using heroin again very quickly.

Self-help groups such as Narcotics Anonymous are also an option for some people. These groups are generally confidential, highly accessible and provide continuing assistance. If you want further information on the services that are available in your local area, there is an alcohol and other drug information service in your state or territory that you can call, the numbers are at the back of this booklet.

Currently, methadone and naltrexone are the only drugs approved for opioid maintenance treatment for dependent users in Australia. Currently a number of new drugs are being trialled around Australia which may assist opioid-dependent people and could become available in the future.

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Naltrexone

Naltrexone is a long-acting (up to 72 hours, depending on the dose) drug, which when taken orally, blocks the euphoric and other effects of opioids. The reason that naltrexone treatment is used is that those taking the drug soon realize that any opioid taken will be ineffective and therefore money spent on those drugs will be wasted.

One of the major disadvantages of naltrexone is the need for the patient to be opioid free at the beginning of treatment. Giving naltrexone to someone who is opioid dependent will bring on severe withdrawal.

It has mild side effects and is usually taken daily (50mg). Some of the side effects that people using naltrexone have identified are loss of energy, depression, loss of appetite, headaches, constipation and nausea. Sometimes it is difficult to distinguish between residual withdrawal symptoms and naltrexone side effects.

Naltrexone treatment has a very high early dropout rate and has been poorly accepted by street users. Naltrexone appears to be a useful as part of a comprehensive treatment plan for highly motivated and psychologically healthier patients.

Naltrexone is also used to treat alcohol dependence. It is not known exactly how the drug works, however it is thought that naltrexone may block the rewarding or pleasurable effects associated with alcohol use.

Buprenorphine

Buprenorphine, like methadone, is an opioid used to treat moderate to severe pain. Studies have shown buprenorphine to be as effective as methadone as a treatment in reducing illicit opioid use, keeping clients in treatment and in reducing withdrawal symptoms. Studies have also shown that buprenorphine is acceptable to heroin users, has few side effects and appears to cause a low-level of physical dependence.

Possible side effects of buprenorphine include headaches, sweating, nausea, constipation and respiratory depression.

Buprenorphine is safe at high doses, thus reducing the possibility of overdose. It also lasts in the body for longer, allowing for less than daily dosing, making it potentially more attractive to opioid dependent people and health providers.

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LAAM

LAAM (levo-alpha-acetylmethadol) is a synthetic drug, chemically related to methadone. It prevents symptoms of withdrawal from heroin and other opioids and is effective when taken orally. LAAM is used as an alternative to methadone in the maintenance treatment of opioid-dependent individuals.

It is important to note that LAAM is not a long-acting form of methadone, but an entirely different substance. Its major advantage compared with methadone is that it has a longer duration of action so that patients can be dosed every 48-72 hours, rather than every 24 hours as required with methadone, thereby reducing the number of times a person has to attend a clinic each week.

The side effects reported with LAAM are those generally seen with methadone. They can include constipation, abdominal pain and decreased sexual interest.

LAAM is believed to have a low potential for abuse. As it takes a while to take effect it can be unattractive to opioid users who seek an immediate 'high'. This decreases its street value as well as its potential for diversion.

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