

Drugs and the Brain - Background Information

Heroin and morphine send "slow down" messages

The drugs heroin and morphine fit into the same receptor sites as the neurotransmitter ENKEPHALIN.

Heroin and morphine affect:

brain stem
pain
sad
attention
touch
movement
thinking
planning

Heroin and morphine relieve pain by changes in brain's perception of pain - patients report that they can still "feel" the pain, but that it doesn't "bother" them.

Heroin and morphine only relieve slow, aching pain, not fast, sharp pain.

Heroin and morphine are very addictive, with severe withdrawal pains. When someone who is addicted to heroin tries to stop taking it, they feel very sick to their stomach for several days. They also feel depressed, and any small touch feels very painful.

Morphine and heroin are found in the extract of poppy plants, and have probably been used longer than any other drug except alcohol. Morphine and heroin were used as early as 4000 BC to treat pain.

During the Civil War, many soldiers used morphine as a way to stop pain when they were injured. Several of them became addicted to morphine, and it was very difficult and painful for them to stop taking it after they came home from the war.

Compare heroin to morphine. They are similar, but heroin works faster because it gets to the brain quicker.

Heroin was first marketed by Bayer, the aspirin company in 1898 to relieve pain. At that time, doctors thought that heroin could stop pain without making the person addicted. But it was soon clear that heroin was very addictive, and anyone who started taking it couldn't stop.

After someone uses heroin for a long time, their neurons get used to having it, and the same amount of heroin doesn't make the person feel as good as the first time they used it. This makes the person try to take more and more.

People who use heroin or morphine usually get red eyes, constricted (smaller) pupils, itching, and slower breathing.

Heroin and morphine can have different effects on different people. There is no way to know ahead of time how one particular person will react to them.

Receptor for the neurotransmitter,
ENKEPHALIN

Enkephalin sends "slow down" messages

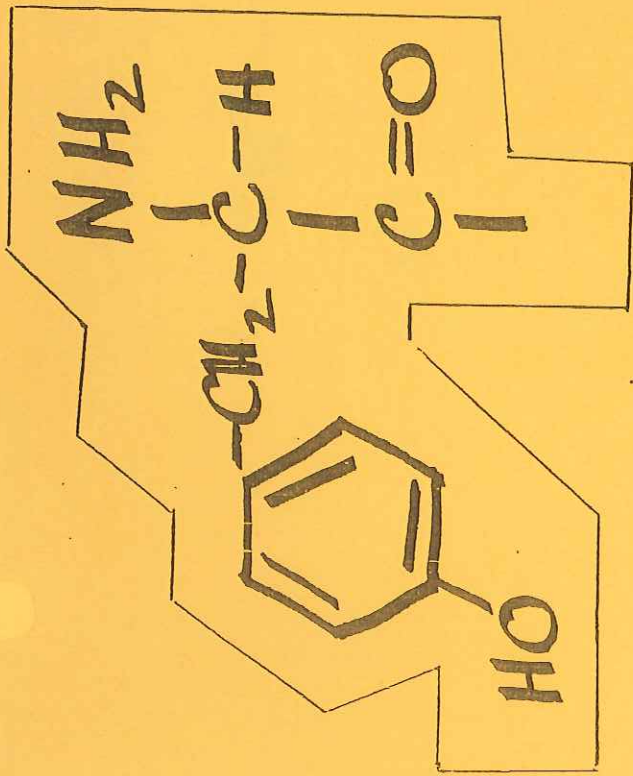
Enkephalin affects:

brain stem
pain perception
emotions
attention
touch
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Enkephalin pathways are associated with the perception of pain and with the control of emotional states.

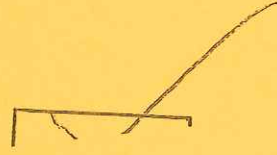
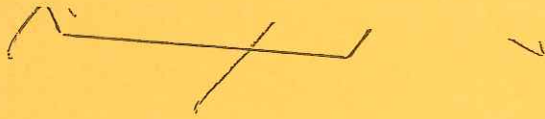


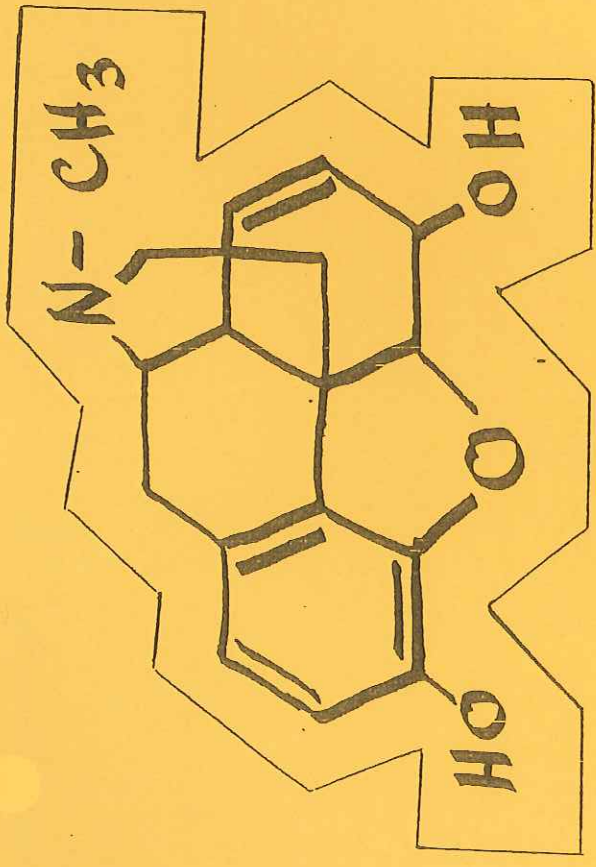
**Receptor for the neurotransmitter,
ENKEPHALIN**



Neurotransmitter:

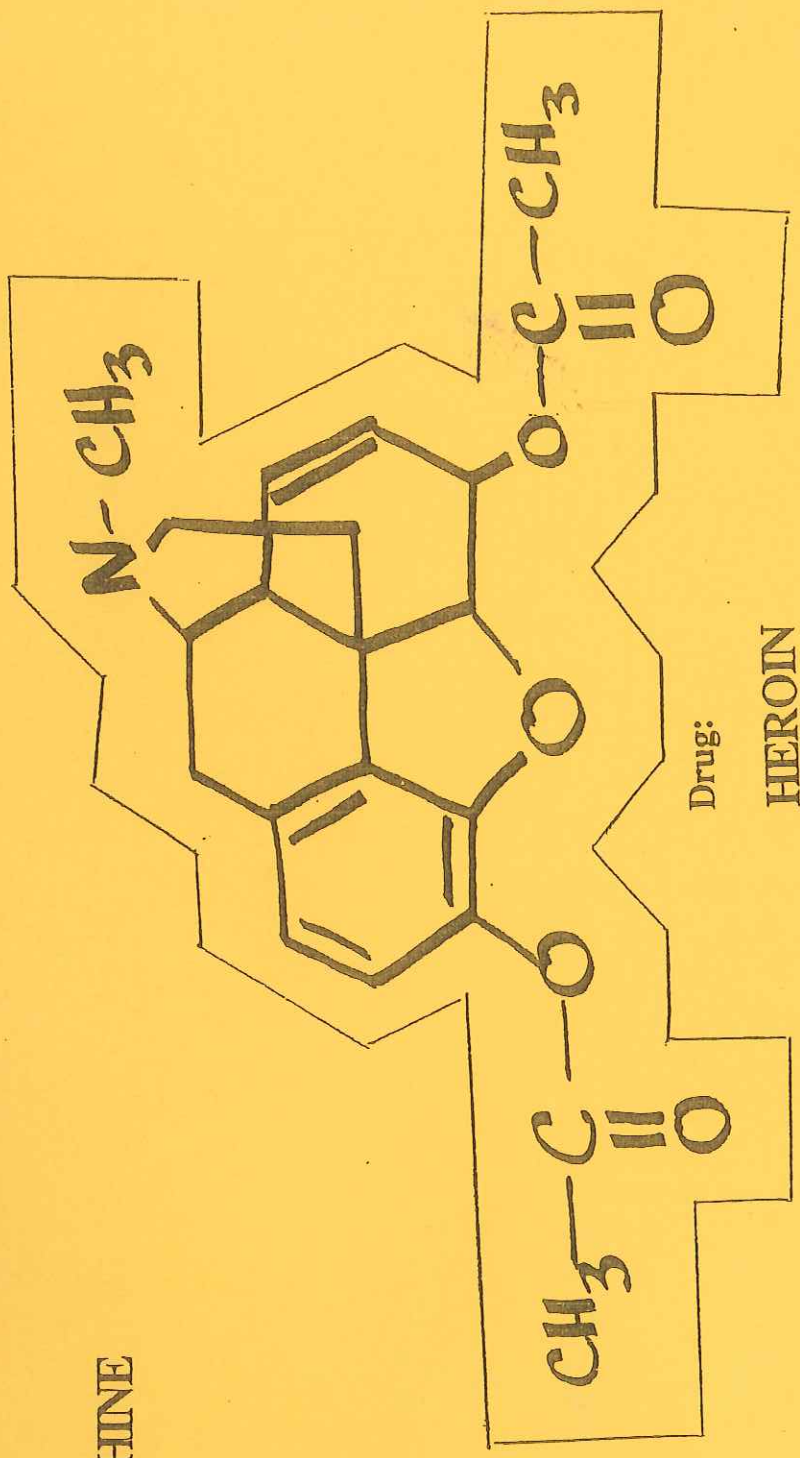
ENKEPHALIN





Drug:

MORPHINE



Drug:

HEROIN

Heroin

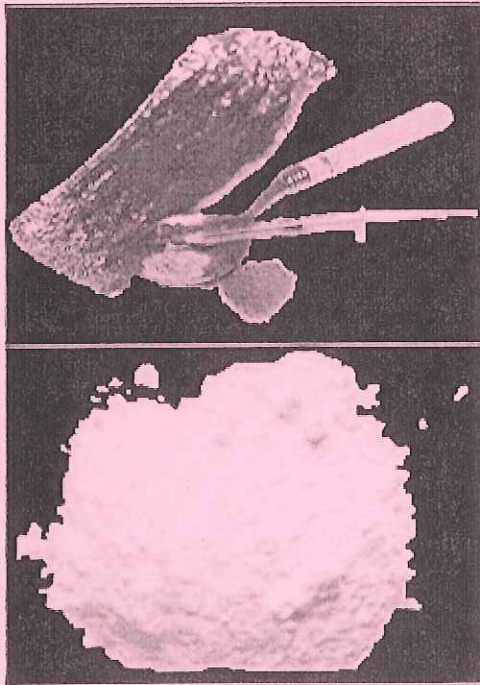
Heroin is a highly addictive drug that produces a euphoric effect and relieves pain (analgesic effect). Street heroin (often containing other substances) can range from off-white to dark brown in color. There is also a "black-tar" variant that is popular in Indiana. Very often, users are not aware of precisely what they are putting into their bodies...

Heroin dealers often add substances such as sugar, starch, quinine, and powdered milk to heroin to increase profits. Users are generally unaware that this is done, which increases the risk of overdose or death.

Typical Street Names

- Black Tar
- Brown Sugar
- Junk
- Smack
- Skag

Pictures



<http://www.drugs.indiana.edu/drug-info-heroin.html>



What is heroin?

Heroin is a highly addictive and rapidly acting opiate (a drug that is derived from opium). Specifically, heroin is produced from morphine, which is a principal component of opium. Opium is a naturally occurring substance that is extracted from the seedpod of

the opium poppy

What does it look like?

The appearance of heroin can vary dramatically. In the eastern United States, heroin generally is sold as a powder that is white (or off-white) in color. (Generally, the purer the heroin the whiter the color, because variations in color result from the presence of impurities.) In the western United States, most of the heroin available is a solid substance that is black in color. This type of heroin, known as black tar, may be sticky (like tar) or hard to the touch. Powdered heroin that is a dirty brown color also is sold in the western United States.

Who uses heroin?

Individuals of all ages use heroin--data reported in the National Household Survey on Drug Abuse indicate that an estimated 3,091,000 U.S. residents aged 12 and older have used heroin at least once in their lifetime. The survey also revealed that many teenagers and young adults have used heroin at least once--76,000 individuals aged 12 to 17 and 474,000 individuals aged 18 to 25.

Heroin use among high school students is a particular problem. Nearly 2 percent of high school seniors in the United States used the drug at least once in their lifetime, and nearly half of those injected the drug, according to the University of Michigan's Monitoring the Future Survey.

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How is heroin abused?

Heroin is injected, snorted, or smoked. Many new, younger users begin by snorting or smoking heroin because they wish to avoid the social stigma attached to injection drug use. These users often mistakenly believe that snorting or smoking heroin will not lead to addiction. Users who snort or smoke heroin at times graduate to injection because as their bodies become conditioned to the drug, the effects it produces are less intense. They then turn to injection--a more efficient means of administering the drug--to try to attain the more intense effects they experienced when they began using the drug.

What are the risks?

Both new and experienced users risk overdosing on heroin because it is impossible for them to know the purity of the heroin they are using. (Heroin sold on the street often is mixed with other substances such as sugar, starch, or quinine. An added risk results when heroin is mixed with poisons such as strychnine.) Heroin overdoses--which can result whether the drug is snorted, smoked, or injected--can cause slow and shallow breathing, convulsions, coma, and even death.

All heroin users--not just those who inject the drug--risk becoming addicted. Individuals who abuse heroin over time develop a tolerance for the drug, meaning that they must use increasingly larger doses to achieve the same intensity or effect they experienced when they first began using the drug. Heroin ceases to produce feelings of pleasure in users who develop tolerance; instead, these users must continue taking the drug simply to feel normal. Addicted individuals who stop using the drug may experience withdrawal symptoms, which include heroin craving, restlessness, muscle and bone pain, and vomiting.

Heroin users who inject the drug expose themselves to additional risks, including contracting human immunodeficiency virus (HIV), hepatitis B and C, and other blood-borne viruses. Chronic users who inject heroin also risk scarred or collapsed veins, infection of the heart lining and valves, abscesses, pneumonia, tuberculosis, and liver and kidney disease.

What is it called?

Street Terms for Heroin

Big H	Dead on arrival	H	Mud
Boy	Diesel	Hell dust	Poppy
Capital H	Dope	Horse	Smack
China white	Eighth	Junk	Thunder
Chiva	Good H	Mexican horse	Train
			White junk

Is heroin illegal?

Yes, heroin is illegal. Heroin is a Schedule 1 substance under the Controlled Substances Act. Schedule I drugs have a high potential for abuse and serve no legitimate medical purpose in the United States.