

Lesson 2

EFFECT OF DRUGS ON THE INDIVIDUAL AND SOCIETY

Aim

To determine different social consequences of drug-taking and the psychological and physical effects of drugs on the individual.

Our community accepts, and in some cases values, drug use. Alcohol is a central part of many people's lives. Medicinal drugs are widely used and vital to the health of our community. They are sometimes misused. Illicit drugs are currently used for their psycho-active properties, but potentially some could be used for medicinal purposes (for example, cannabis and heroin).

Drugs can be used in a number of ways. It is therefore important to distinguish between drug use and drug misuse.

“Drug use is drug taking through which harm may occur, whether through intoxication, breach of laws or of school rules, or the possibility of future health problems, although such harm may not be immediately perceptible. Drug use will require interventions such as management, education, advice, information and prevention work to reduce the potential for harm.

Drug misuse is when drug taking harms health or functioning. It may take the form of physical or psychological dependence or be part of a wider spectrum of problematic or harmful behaviour. Drug misuse will require a further range of interventions that may include treatment.” (www.wiredforhealth.gov.uk)

Defining some drugs as 'illegal' and 'demonising' the users has not eliminated their use. Some users suffer serious health or other problems as a result of their drug use.

There is some evidence that problematic and harmful drug use most often occurs where people are vulnerable or lack self-esteem. The illegal status of the drugs and the stigma attached to users further entrenches their marginalisation. Provision of information, support and treatment is made more difficult in these circumstances.

There are potentially serious health consequences that arise from misuse of illicit drugs. The level and nature of the consequences varies between drugs and is, to some degree, dependent upon the circumstances of their use.

Definitions

Addiction An addiction is often used to describe a situation where a drug user comes to rely on a drug so much that they develop a dependency and it has a detrimental effect on the user.

Dependence is a compulsion to continue using a drug as the result of repeated usage.

Physical dependence - the compulsion is based on a desire to avoid the physical uncomfortableness of withdrawal.

Psychological dependence – the compulsion is based on the need for sensory stimulation or to obliterate reality.

Tolerance is the way the body adapts to the repeated use of a drug, so that increasingly large amounts are needed to obtain the same effect.

Drug tolerance occurs when a person's reaction to a psychoactive drug such as an intoxicant or pain killer decreases. This means that they require larger and larger doses to get the same effect. Using the example of wine, initially a person may feel drunk after one glass, but over time, they drink more and may require two glasses for the same effect, then three, then four, then a bottle, then two and so on. Drug tolerance involves physiological and psychological factors.

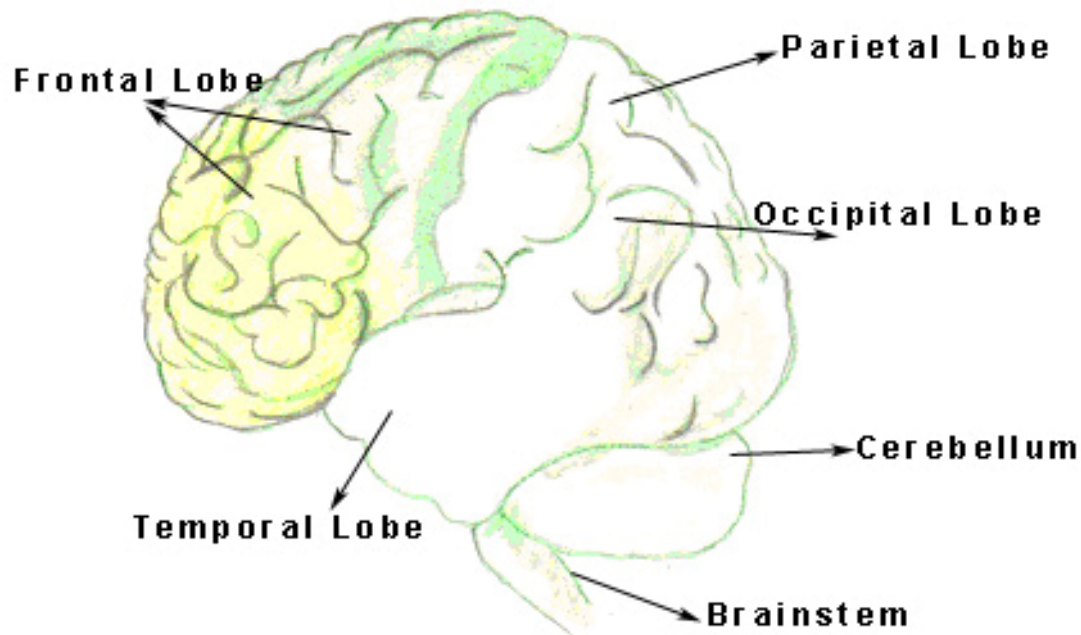
Withdrawal is the reaction to the sudden absence of a drug that a person's mind and body has become accustomed to. Withdrawal can range in severity from a slight headache or irritability to severe cramps and even to death.

Why do people use drugs? Wired for Health (www.wiredforhealth.gov.uk) claims that many young people may be attracted to drugs for the following reasons:

- They are curious about the effects
- The drugs are easily available
- They want the same kind of experience that they get from drinking a lot of alcohol (and illegal highs may be cheaper than an evening of drinking)
- They enjoy the short-term effects
- Their friends use them
- 'Dance drugs' are a part of their music scene
- Use seems part of the local youth culture
- As part of growing up, they might want to 'break the rules'
- There is not much attractive recreational provision locally

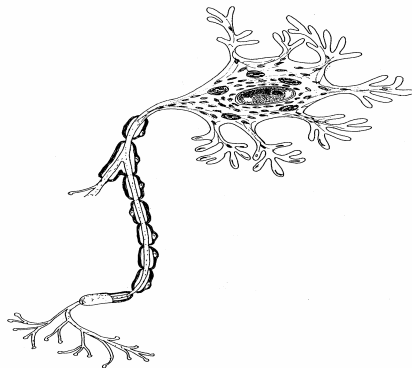
Addiction – How drugs work in the brain

The Central Nervous system is a network of tissue that specialises in controlling the actions and reactions of the body. This enables the body to adjust to its environment. THE CNS consists of the brain and spinal cord, receiving impulses from the skin and sense organs via afferent or sensory nerve fibres. The CNS functions by receiving signals from all parts of the body and relaying them to the spinal cord and brain, then sending signals to muscle and body organs.



In humans, there are millions of neurons (nerve cells); half of these neurons are in the brain in humans. Neurons consist of a cell body, containing a cell nucleus, dendrites and axons which are covered by a myelin sheath. A neuron works by receiving chemical signals through dendrites and sending electrical impulses along its axon.

Nerve Cell



Neurotransmitters released at the terminal fibres of the axon diffuse across a junction called a synapse and bind to dendrites of recipient neurons. Dendrites and axons are called nerve fibres. A nerve is a bundle of nerve fibres. The nervous system is split into the CNS and the peripheral nervous system. The peripheral nervous system comprises the cranial nerves controlling the face, neck, spinal nerves and radiating to other parts of the

body, autonomic nerves, controlling the iris of the eye, muscles of heart glands, lungs and so on.

Central nervous system – The brain

The cerebral cortex is the outer grey matter covering each hemisphere of the brain. The cerebral cortex contains a motor and speech centre, visual, olfactory, and auditory parts along with areas concerned with higher mental activity such as judgement, memory, reasoning, and thought. Drugs that depress the cellular activity in the cerebrum, such as the opiates, barbiturates, and alcohol, may decrease the acuity of perception and sensations, and decrease alertness and concentration. Drugs that increase the cellular activity in the cortex may cause more vivid impulses to be received with greater awareness of surroundings and even hallucinations. Information on the awareness of pleasure or pain and other sensory impulses is received in this area of the brain from the body via the thalamus. The thalamus is the relay centre of the brain. All incoming and outgoing signals pass through this area. It can relay signals from the brain stem to all parts of the cerebral cortex and cause a generalized activation of the cerebrum. The thalamus is the centre for sensations such as the agreeableness or disagreeableness of a situation. Depression of this part of the brain from depressants such as tranquillisers and opiates may block off unpleasant sensations to the cortex and cause the person to feel good.

The hypothalamus lies below the thalamus and is directly connected to it. It contains centres that regulate body temperature, fat and carbohydrate metabolism, water balance, hunger and satiety, and pleasure and pain. There are also pain centres in the limbic system. Depressants acting in this area can cause the person to be sleepy, and substances such as aspirin can affect the heat-regulating centre. Natural sleep chemicals produced by the brain, such as delta-sleep-inducing peptides, react in this part of the brain. Amphetamines and other stimulants appear to act on this area to stimulate the satiety and the pleasure centres, causing the person to feel good, alert, and not hungry. The major pleasure centre of the brain is thought to be located in the hypothalamus. Stimulation of this area results in such feelings as orgasm, joy, and extreme pleasure. The positive high and good feeling produced by drugs is also thought to originate here. The hypothalamus is directly linked to the autonomic nervous system.

Many psychosomatic illnesses including ulcers and hypertension are thought to result from over stimulation of this centre, which in turn activates the autonomic nervous system. It is thought that most drugs used for recreational purposes exert their major effect in this area of the brain.

The limbic system includes the thalamus, hypothalamus and other structures. The limbic system appears to be the memory site of emotions. If a certain drug is associated with pleasure, the emotional content of the experience is stored in this system and may become a stimulus for repeating this experience. The feelings of anger, joy, and remorse are also thought to occur here.

The reticular activating system receives input from all parts of the sensory system as well as the cerebrum. The major function of this system is to control the arousal level of the brain. This system secretes norepinephrine and dampens the many stimuli coming through it, so new and different stimuli can be recognized by the rest of the brain. If the stimulus is new it will be selected out; if it is not new or is routine it is usually ignored. As

an example, if while you are sleeping you are getting cold because you do not have enough covers over you, this system will stimulate the cortex and wake you up.

It is thought that in hyperactive children all incoming signals are sent into the rest of the brain for attention and that stimulants, such as Ritalin(R), given to these children stimulate under working cells to produce this selectivity effect. Depressants such as barbiturates depress this system and produce sedation and loss of consciousness. Stimulation of this part of the brain with amphetamines, caffeine and other stimulants can cause a person to feel alert, awake, and very good. Such stimulation can also cause the distortion of sensations. LSD and Cannabis are thought to affect this part of the brain by creating changes in sensory feelings.

The cerebellum controls balance and coordination of various body movements. It is also the centre for muscle coordination and tone and equilibrium. The cerebellum receives incoming messages from the cortex, spinal sensory nerves, and balance system in the ear, and from the auditory and visual system. Depressant drugs such as barbiturates and alcohol can depress the cells in this centre and cause uncoordination in body movement and balance. Stimulants can cause tremors.

The medulla oblongata in the brain stem is the centre for such vital functions as respiration, coughing, vomiting, and cardiac and vasomotor control. If overdoses of depressants, such as alcohol and barbiturates, are taken together, this centre may cease to function, and the individual could die of suffocation and heart stoppage. Stimulation of this area can cause vomiting.

The autonomic nervous system comprises the sympathetic nervous system (responds to short term stress e.g. increased heart rate) and the parasympathetic nervous system (acts in opposition to the sympathetic nervous system, e.g. reducing heart rate).

Drugs that affect the spinal cord and brain are used to treat several neurological (nervous system) and psychiatric problems.

- Antiepileptic drugs reduce the activity of the over excited brain area to reduce or eliminate seizures.
- Antipsychotic drugs are used to regulate neurotransmitters which do not function correctly in people with psychoses (major mental disorders often characterised by extreme behaviours) and hallucinations (as in schizophrenia).
- Antidepressant drugs can help reduce mental depression.
- Whilst anti-manic drugs can reduce excessive mood swings in people with manic-depression.
- Anti-anxiety drugs (tranquilizers) treat anxiety by decreasing the activity in the anxiety centres of the brain.
- Narcotics relieve pain by acting on receptors located on nerve cells in the brain or spinal cord.
- Non-narcotic analgesics (e.g. aspirin, ibuprofen) reduce pain by inhibiting the formation of nerve impulses at the site of pain.
- General anaesthetics depress brain activity, causing a loss of sensation throughout the body and unconsciousness.
- Local anaesthetics are applied directly to a specific area of the body, causing a loss of sensation without unconsciousness, preventing nerves from transmitting impulses signalling pain.

The effect of drugs varies greatly, depending on the type of drug, the amount, the user's previous experience of it, what they want and expect to happen, the environment or social situation in which it's taken, and their mental state. The same person may react differently to the same drug at different times.

They may become tolerant of some drugs, which means their body gets used to having it, so that higher doses are needed to maintain the same effect. Withdrawal is the body's reaction when it doesn't get the drug it's adapted to. The effects of withdrawal can be stopped, either by taking more of the drug, or by stopping using it completely (sometimes called cold turkey), which may take up to a week.

PHYSIOLOGICAL AND PSYCHOLOGICAL EFFECTS OF DRUG USE

Adapted from Goldstein and Kalant, (1990) in United Nations Economic and Social Council, Economic and Social Consequences of Drug Abuse and Illicit Trafficking: An Interim Report, 1995.

Drug Type	Mode of Use	Severity of Addictiveness Low 5 – 1 high	Effects Directly Due to Drug	Possible Harmful Effects: Acute	Possible Harmful Effects: Chronic
ILLICITS					
Depressants					
Cannabis	Smoked, or eaten in food (hashish)	4	Feelings of self-confidence, wellbeing and relaxation, altered perception of time and space, heightened perceptions of taste, smell, touch and hearing, dissociation of ideas, difficulties with concentration and memory.	Anxiety, feeling unwell, impairment of thinking & performing skilled tasks, psychotic symptoms at high doses.	Chronic respiratory diseases, cannabis dependence syndrome, apathy, precipitation of psychotic tendency.
Heroin	Injected, smoked, inhaled	2	Intense pleasure and a strong feeling of wellbeing, pain relief, hunger and sexual urges are diminished.	At large doses (overdoses) breathing is suppressed and death can occur.	Constipation, impotence, infertility, collapsed veins (injectors), abscesses, damage to heart, liver, lungs and brain (due to contaminants).
Stimulants					
Amphetamines	Injected, taken orally, or inhaled	1	At low doses: sensations of wellbeing, enhanced self-awareness and self-confidence, increased visual awareness, heightened alertness, increased capacity for concentration, greater energy. Users become hyperactive, talkative, excited, irritable and restless. Reduction of appetite, increased breathing and heart rate.	Headaches, dizziness, blurred vision, irregular heart beat, stomach cramps, loss of coordination, dehydration. At high doses, amphetamine users may experience distortions & gross alterations in body image.	Chronic fatigue and exhaustion, paranoid psychosis, delusions, hallucinations, violent behaviour, depression, malnutrition, blockage of blood vessels leading to damage to kidneys, lungs and brain.
Cocaine	Inhaled, smoked, injected	1 (Crack, Cocaine)	Low dose effects include improved performance, increased confidence,	High dose effects include loss of coordination,	Heightened reflexes, muscle twitching, loss of appetite, insomnia,

			increased energy, exhilaration, enhancement of physical and mental wellbeing, increased rate of respiration resulting in rapid shallow breathing, increased temperature, spasm of local blood vessels, enlarged pupils, cardiac arrhythmias, suppression of appetite, insomnia.	tremors, dizziness, muscle twitches, severe agitation, confusion, paranoid symptoms, headaches, cold sweats, pallor, nausea & vomiting weak, rapid pulse, anxiety reaction.	chest pain, heart attacks. Cocaine psychosis: paranoid delusions, auditory and visual hallucinations, tactile hallucinations, violent or aggressive behaviour and decreased libido/ impotence.
Ecstasy	Taken orally	Not included in 5 point scale	The effects of ecstasy are similar to those found with amphetamines, although it is reported that Ecstasy produces a more positive mood and sense of intimacy than amphetamines. A 1987 survey of MDMA users reported that they felt 'euphoric', more verbal and had a sense of closeness with other individuals'.	Jaw clenching, teeth grinding, hangover effect - painful jaw muscles, drowsiness and sometimes, depression, reduced ability to concentrate, dehydration.	Long term effects uncertain.

Hallucinogens					
LSD (lysergic acid)	Swallowed, injected, sniffed or smoked	3	The effects of LSD can include intense perceptual distortion including visual and auditory hallucinations. Low dose: alterations in mood and perceptions.	High dose: hallucinations, trembling, chills and nausea. Possible feelings of terror, depression, acute paranoia and panic.	Psychosis and post-hallucination perceptual disorders (flashbacks).
LICITS					
Alcohol	Orally	3	A feeling of self-confidence and relaxation, social inhibitions are reduced, individuals become talkative. Low to moderate doses: increase or decrease in heart rate, lowering of body temperature.	Capacity to think, concentrate & perform tasks is impaired with increased likelihood of engaging in risky behaviour e. g., dangerous driving, and unsafe sex. With increasing doses disorientation, confusion, slurred speech & blurred vision. At higher doses, stupor, coma & death.	High blood pressure, stroke, heart failure, gastritis, oesophagitis, pancreatitis, hepatitis, cirrhosis, bleeding from veins in the gullet, diarrhoea, malnutrition, brain damage, vitamin deficiency. Contributes to cancers in oesophagus, bowel and breast. Alcohol dependence syndrome.
Tobacco	Smoked	2	Palpitations and cough.	Initial inhalation of cigarette smoke can produce palpitations, dizziness, sweating, nausea & vomiting.	Chronic bronchitis, emphysema, vascular disease including heart attacks, gangrene of the legs, stroke, stomach ulcers, contributes to cancer of the lung, pharynx and larynx, stomach, bladder, breast, uterus and ovary. Nicotine dependence syndrome

Alcohol effects

From a Depressant to relaxation, lowered inhibitions, reduced intensity of physical sensations, digestive upsets, body heat loss, reduced muscular coordination. This can lead to loss of body control, passing out (also causing physical injuries), susceptibility to pneumonia, and cessation of breathing.

Sedative effects

Can range from being a depressant and causing relaxation, lowered inhibitions, reduced intensity of physical sensations, digestive upsets, body heat loss, reduced muscular coordination to passing out, loss of body control, stupor, severe depression of respiration, possible death. (Effects are exaggerated when used in combination with alcohol - synergistic effect).

Stimulant effects

This can cause a stimulation of Central Nervous System as well as increased blood pressure and pulse rate, appetite loss, increased alertness, dilated and dried out bronchi, restlessness, and insomnia to causing a paranoid reaction, temporary psychosis, irritability, convulsions, and palpitations. (Not generally true for caffeine – but this stimulant can also cause insomnia and irritability.)

Hallucinogenics

This type of drug may have the effects of alteration of mental processes as well as distorted perceptions, hallucinations, confusion, anxiety, panic, stupor, vomiting, to the extreme effects of psychosis.

LSD, DMT, Mescaline, PCP, and Psilocybin have very unpredictable effects. Users may experience morbid hallucinations and feel panicked, confused, paranoid and out of control -- or in other words, a "bad trip." The heightened suggestibility and intensified emotions that hallucinogens create can worsen any pre-existing emotional problems.

Physical effects of hallucinogen use include dilated pupils, sweating, insomnia, loss of appetite, tremors; and increased body temperature, heart rate and blood pressure.

Psychological effects of drugs

Fortunately, as research shows, most people don't suffer any ill-effects to their mental health as a direct result of using most drugs, of course there are some drugs that may have a lasting change to the psyche. They may feel better, in the short term, and believe they benefit from a variety of social and other factors, in the long term. Trying to get them to stop, when they don't want to, is therefore unlikely to work.

For most people, taking drugs is a purely recreational activity. But for some, it offers a relief from other problems, and for others, it may be a symptom of problems rather than a cause. If you are concerned about someone who is taking drugs, you need to focus on their feelings, behaviour, and personal circumstances, and not on their drug use, in isolation. The most effective way of supporting a drug user who is having mental health problems is to see the drug as just one element affecting them, and not necessarily the major one. Their own feelings about their drug use, the reasons for it and its consequences need to be understood before any action is taken. If the person decides that their drug use is a problem, and they want to do something about it, the organizations, opposite, should be able to help.

Any drug will affect a user's perceptions and behaviour, and may magnify their mood or their underlying mental state. But drugs affect people in different ways, at different times. Just because someone is taking a particular drug, doesn't mean their mental health will be affected in the way but their chemical and psychological balance may be. Nor is it right to assume that someone demonstrating the effects listed is taking drugs.

Don't be fooled into believing that some substances are 'safe' because they're not physically addictive. It's the demands your mind can create which really prove hard to beat. Psychological dependence is a risk with any drug. A substance which affects your mood can easily become addictive, especially if you start thinking it's a better feeling than being straight.

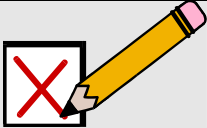
Smoking a lot of hash frequently leaves some people thinking they have to get stoned to cope with the world. It's the mind which gets hooked on stimulants such as crack and cocaine. This is because the hit is intense but doesn't last long, and so many users feel the need to 'chase the high' by taking more and more.


While some people are more likely to develop a psychological addiction than others, it's impossible to predict as your state of mind is always changing. There are no guarantees.

Kicking a psychological addiction may be as testing as a physical withdrawal.

SET TASK

Carry out an internet search or library search and find useful sources of information regarding drugs and their side effects. Send this list of resources in with your assignment to your tutor.

	SELF ASSESSMENT Perform the self assessment test titled 'Self Assessment test 2.1.' If you answer incorrectly, review the notes and try the test again.
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	ASSIGNMENT Download and do the assignment called 'Lesson 2 assignment'.
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