

MEDICINE



Modern medicine

• These are synthesized in the laboratory. Active component is identified, extracted and purified from organic compounds.

Psychotherapeutic medicines

Used to treat mental illnesses

How they work

Alter abnormal thinking, feeling or behaviors in people with mental illness.

NB. These medicines do not cure mental illness, but reduce on the symptoms and help a person to get on with life.

These medicine are divided into; **stimulants**, **antidepressants** and **antipsychotics**.

- **Stimulants:** Used to reduce fatigue and increase alertness, attention, energy and elevate mood.

Mode of action.

Increase **dopamine** and **norepinephrine** levels in brain, enhancing neural activity in areas responsible for attention and motivation

Antidepressants: Used to treat depression, reduce tension and anxiety.

Mode of action.

Balancing neurotransmitters in the brain, balancing mood, appetite, sleep and reducing symptoms of depression and anxiety. Examples of anti depressants include; tricyclic antidepressants(TCAs), atypical antidepressants, Monoamine Oxidase Inhibitors(MAOIs)

- **Antipsychotics:** Used to treat psychiatric illness like schizophrenia (mental disorder affecting how a person thinks, feels and behaves; characterized by disconnection from reality), bipolar disorder (characterised by extreme mood swings)

Mode of action.

Blocking dopamine receptors in the brain, reducing hallucinations and delusions, stabilizing mood and emotions, reducing aggression. Examples of antipsychotics include; haloperidol, chlorpromazine, clozapine, cariprazine etc.

Antibiotics,

These are used to treat bacterial infections but cannot cure viral infections such as colds and flu.

Mode of action.

They destroy or prevent or slow down the growth of disease causing bacteria. They do this by interfering with bacteria's ability to build their cell walls, leading to their death or making it easier for immune system to fight the bacteria.

Antibiotics are obtained from micro-organisms such as bacteria and fungi. Examples of antibiotics include **penicillin**, **streptomycin** among others.

- **Penicillin:** Extracted from fungus **Penicillium notatum**.

Used to cure bacterial diseases such as pneumonia pneumonia, gonorrhoea, syphilis, bronchitis etc.

Its only effective on some bacteria. it cannot treat tuberculosis.

- **Streptomycin** These are the Antibiotics produced by bacteria of genus **Streptomyces**.

Used to treat some tuberculosis, whooping cough, typhoid, plague, gonorrhoea and some forms of pneumonia.

NB.

Both penicillin and streptomycin are broken down by acid in the stomach, and so are usually administered by injection not orally.

Analgesics (pain killers),

These medicines relieve a person from pain but they do not treat the cause of the pain.

Mode of action.

By relieving pain by blocking pain signals to the brain, reducing inflammation and swelling and interacting with pain receptors in the body. Examples of pain killers include; **paracetamol**, **aspirin**, **codeine**.

- **Aspirin** Used for **pain relief**, particularly where there is inflammation eg dental pain **arthritic pain**.

Also used in preventing blood clotting and relieving fever. Active ingredient in aspirin is **acetylsalicylic acid**.

- **Paracetamol** Can be taken to relieve mild to moderate pain such as headache, muscle and joint pains, back aches, menstrual pains.

- **Codeine** Used in headache tablets and cough medicines

- Its mostly synthesized from morphine



Wanyamatitus

Traditional medicine

These are the **Medicines** derived from natural sources such as plants and animals.

Plant extract

- **Garlic extract**
- Regulates blood pressure, reduces cancer risk, controls cholesterol levels, treat colds, flu, fungal and bacterial infections.
- **Aloe vera extract**
- Treats burns, malaria, ulcers, allergic reactions, fever, diabetes, skin diseases, indigestion
- **Ginger extract**
- Treat colds, flu, bloating, cramps, diarrhea, relieve pain, cancer, diabetes, heart diseases, asthma, bronchitis
- **Lemon juice**
- Treat Hypertension, obesity, fever, bronchitis, bacterial and fungal infections, fever
- **Quinine**
- Treat malaria, arthritis, fever, joint pain, muscle cramps. Quinine was first isolated in 1820 from the bark of a cinchona tree.
- **Eucalyptus leaf extract**
- Treat coughs, colds, asthma, wounds, cuts, skin diseases, insect bites, fever, bacterial and fungal infections

Animal extract

- **Ant extracts**
- Treat Hepatitis B, Cancer, tuberculosis, wounds, skin conditions, diarrhea, diabetes, fever.
- **Honey bee venom**
- Arthritis, pain, inflammation
- **Snake venom**
- Pain, inflammation, cancer
- **Scorpion venom**
- Pain, inflammation, cancer
- **Shark cartilage extract**
- Cancer, arthritis
- **Tiger bone**
- Arthritis, pain
- **Frog skin secretions**
- Pain, inflammation
- **Sea cucumber extract**
- Arthritis, cancer, wounds, cuts, ulcers, kidney diseases, skin diseases,
- **Centipede extract**
- Pain, fever, tuberculosis, cancer, wounds, snake bites, epilepsy, malaria.

Disadvantages of using traditional medicine

- Take a long time to act
- Not efficient for serious cases like heart attack
- May results into health concerns eg kidney failure, liver damage since some may have toxins or heavy metals
- Cause negative effects to the users eg allergic reactions, skin rashes, asthma, headaches, vomiting, nausea.
- Variation in quality and effectiveness.



SIDE EFFECTS

Side effects of aspirin

- Internal bleeding and ulceration
 - Causes brain and liver damage if given to children with flu and chicken pox (it should never be given to children)
 - Allergic reactions, skin rashes
- Bleeding in stomach since its acidic

side effects of Paracetamol

- Skin rashes
- Blood disorders
- Acute inflammation of the pancreas
- Overdose can cause liver damage

Side effects of Codeine

- May cause drowsiness (state of feeling sleepy)
- Abuse of the medicine may lead to skin rashes, addiction, depression and nausea

General effects of Painkillers

Side effects

- Nausea and vomiting
- Dizziness and drowsiness
- Stomach upset and abdominal pain
- Fatigue
- Diarrhea
- Allergic reactions, causing rashes, itching, swelling
- Kidney and liver damage
- Stomach ulcers

Mitigations

- Take with food
- Minimize over dependence on them
- Stay hydrated
- Take as prescribed by the doctor
- Continually consult the doctor
- Get enough rest
- NB. Side effects must be explained and mitigation given

Side effects of using stimulants

- Insomnia (state of difficulty to get sleep)
- Anxiety
- Hallucinations (sensory experiences occurring in absence of external stimulus, may be visual, auditory, tactile, olfactory (smell). They are unreal sensations)
- Severe depression
- Increased heart rate and blood pressure
- Headache
- Weight loss
- Addiction due to excessive usage

Side effects of using Antibiotics

- Headache
- Allergic reactions causing rashes, itching, swelling
- Gastrointestinal issues eg vomiting, diarrhea, nausea
- Liver damage
- Kidney damage

Mitigations

- Take the dosage as prescribed by doctor,
- Take with food to avoid nausea
- Stay hydrated
- Inform doctor about the reactions
- Get enough rest
- Make follow up with a doctor about the progress of the infection

Side effects of using

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- Anxiety
- Hallucinations (sensory experiences occurring in absence of external stimulus, may be visual, auditory, tactile, olfactory (smell). They are unreal sensations)
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Side effects of using Antidepressants

- Nausea and vomiting
- Insomnia
- Headaches
- Weight changes
- Dizziness
- Sexual dysfunction(decreased libido)
- Fatigue

Side effects of using antipsychotics

- Weight gain
- Drowsiness
- Constipation
- Blurred vision
- Increased risk of diabetes and metabolic changes
- Increased risk of cardiovascular diseases
- NB. Above side effects should be explained.

Mitigations to side effects caused by use of psychotherapeutics

- Follow prescribed dosage by doctor
- Make regular consultation with the doctor
- Priorities a balanced lifestyle including, a health diet, regular exercise, sufficient sleep.
- Seek social support
- Stress management
- NB. Mitigation should match with the side effect given.

Correct ways of using medicine

- Do not do self medication
- Follow instruction given by medical personnel regarding the dosage
- Do not take a drug for longer time than directed
- Follow the right method of taking drugs eg before food or after food, orally or by injection.
- Medicine for adults should not be given to children and vice versa
- Complete the whole dose when using antibiotics to avoid resistance to the drug
- Consult the doctor incase of side effects
- Do not take expired drugs