



DISEASE - any condition that prevents an organism from functioning effectively in its surroundings

INFECTIOUS DISEASES

- caused by pathogen (e.g. bacterium, fungus, protozoan, worm, insect or virus)
- can be transmitted

NON-INFECTIOUS DISEASES

- can be genetic, nutritional, environmental or caused by physiological malfunction
- cannot be transmitted

INFECTIOUS DISEASES

- **Causative Organism** - the pathogen that causes the disease (e.g. _____, _____, fungus, protozoan, worm, insect or arachnid)
- **Mode of Transmission** - the means by which the pathogen is spread (e.g. droplets in sneezing and coughing, direct contact, sexual contact, food and water contaminated by either _____ or bacterial toxin, soil contamination, vector such as mosquito or _____)
- **Signs and Symptoms** - e.g. fever, headache, nausea, vomiting, _____
- **Pyrogens** – Pyrogens cause fever by changing the set-point temperature of the brain's 'thermostat' from the normal 37°C up to higher temperatures such as 40°C. A person with a fever will sweat more to try to _____ body temperature. The sick person may also become thirsty as water is lost by sweating. If too much body _____ is lost in a short time, the person may experience 'chills'.
- **Carrier** - a person who is infected with pathogenic micro-organisms in the body but shows no _____ of the disease
- **Antibiotic** - the chemical treatment used to treat all infections except those caused by a _____

COMMON INFECTIOUS DISEASES	CAUSATIVE ORGANISM	MODE OF TRANSMISSION	SIGNS AND SYMPTOMS
<i>Influenza</i>	virus	droplet	inflammation of respiratory tract, fever, headache
<i>Cold sores (Herpes simplex)</i>	virus	direct contact	blisters on lips and gums
<i>Genital Herpes</i>	virus	sexual contact	burning sensation on genitals, blisters and painful ulcers, may cause cervical cancer in women
<i>Tetanus</i>	bacterium	deep wound contaminated with infected soil	muscle paralysis, death in severe cases
<i>Cholera</i>	bacterium	having food or drink contaminated with infected faeces	severe diarrhoea, high fever, some intestinal damage
<i>Botulism (food poisoning)</i>	bacterium	eating food containing a bacterial toxin	muscle paralysis, death in some cases
<i>Tinea (Athlete's Foot)</i>	fungus	contact with contaminated wet floors towels or shoes	cracks in the skin between toes, itching
<i>Malaria</i>	protozoan	vector of Anopheles mosquito	muscular pains, chills, fever, sweating, death in some cases
<i>Tapeworm infection</i>	tapeworm	having food or drink contaminated with infected faeces	malnutrition, weight loss

CAUSATIVE ORGANISMS (PATHOGENS)

- **Viruses** - Viruses are not classified as _____ organisms. They are not cells. They consist of a nucleic acid core (either DNA or RNA) surrounded by a protein coat. They are all parasitic. Viruses cannot _____ on their own, but instead they must invade other cells, multiplying within the host cells using the _____ cell's materials and metabolic processes. All viruses are unaffected by _____.
- **Bacteria** – Bacterial colonies grown on agar plates are easily identifiable. They appear as flat shiny white or yellow colonies.
- **Fungi** – Fungal colonies grown on agar plates are easily identified as fuzzy raised colonies of various colours.

- **Life Cycle of a Parasite**

Parasites may be **endoparasites** (live _____ the host) or **ectoparasites** (live on the outside of the host).

Some parasitic organisms (e.g. *Ascaris* nematode) require one host. Other organisms (e.g. *Plasmodium* protozoan that causes malaria, *Echinococcus* tapeworm that causes hydatids) require more than one _____ to complete its life _____.

The **primary host** is the host that is infected by the adult parasite which reproduces inside that host.

The secondary or **intermediate host** is infected by the young or larval stage of the parasite.

A **vector** (e.g. the *Anopheles* mosquito that transports the malaria protozoan *Plasmodium*) is an organism that transports a parasite from one organism to another without being _____ itself.

Many parasites are _____ having both male and female reproductive organs, and these organisms can self-fertilise in the absence of a mate. This is of advantage if the parasite is deep inside the body tissues of the host.