types of diseases and Lesions

- There are four main types of disease:

1. infectious diseases is the disease caused by invasion of tissues by pathogens, their multiplication, and the reaction of host tissues to the infectious agent and the toxins.

2- deficiency diseases **Malnutrition** occurs when an organism gets too few or too many nutrients, resulting in health problems.

3- hereditary diseases is a health problem caused by one or more abnormalities in the genome.

4- physiological diseases A physiological disorder is a condition in which the organs in the body malfunction causes illness. Examples are **Asthma, Glaucoma, Diabetes**..

- Diseases can also be classified in other ways, such as:-

1-communicable diseases **caused by transmission** or passing of a pathogen.

2- non-communicable diseases is a disease that is not transmissible directly from one person to another

A **pathogen** is any organism or agent that can produce disease. A pathogen may also be referred to as an **infectious agent**, or simply a **germ**. such as a virus, bacterium, protozoan, prion, viroid, or fungus.

A **virus** is a submicroscopic infectious agent that replicates only inside the living cells of an organism.

Bacteria (singular **bacterium**, common noun **bacteria**) , mostly free-living organisms often consisting of one biological cell. They constitute a large domain of prokaryotic microorganisms.

A **prokaryote** is a single-celled organism that lacks a nucleus, and other membrane-bound organelles

Protozoa (singular **protozoon** or **protozoan**, plural **protozoa** or **protozoans**) is an informal term for a group of single-celled eukaryotes, either free-living or parasitic, that feed on organic matter such as other microorganisms or organic tissues and debris.

Prions are misfolded proteins that have the ability to transmit their misfolded shape onto normal variants of the same protein. They characterize several fatal and transmissible neurodegenerative diseases in humans and many other animals.

Viroid's are small single-stranded, circular RNAs that are infectious pathogens. Unlike viruses, they have no protein coating.

A **fungus** (plural: **fungi** or **funguses**) is any member of the group of eukaryotic organisms that includes microorganisms such as yeasts and molds, as well as the more familiar mushrooms. These organisms are classified as a kingdom, separately from the other eukaryotic kingdoms.

Eukaryotes are organisms whose cells have a nucleus enclosed within a nuclear envelope

Parasitism is a close relationship between species, where one organism, the **parasite**, lives on or inside another organism, the host, causing it some harm, and is adapted structurally to this way of life.

Microbiology is the scientific study of microorganisms, those being unicellular (single cell), multicellular (cell colony), or acellular (lacking cells). Microbiology encompasses numerous sub-disciplines including virology, bacteriology, protistology, mycology, immunology, and parasitology.

Virology is the scientific study of biological viruses.

Mycology is the branch of biology concerned with the study of fungi.

A biologist specializing in mycology is called a **mycologist**.

Immunology is a branch of medicine and biology that covers the medical study of immune systems in humans, animals, plant

Parasitology is the study of parasites, their hosts, and the relationship between them.

Genetics is a branch of biology concerned with the study of genes, genetic variation, and heredity in organisms.

Ecology is the study of the relationships between living organisms, including humans, and their physical environment

Parasitic worms, also known as **helminths**, are large macroparasites; adults can generally be seen with the naked eye. Many are intestinal worms that are soil-transmitted and infect the gastrointestinal tract , Other parasitic worms such as schistosomes reside in blood vessels.
Pathogenicity is the potential disease-causing capacity of pathogens.

Virulence is a pathogen's or microorganism's ability to cause damage to a host.

Symbiosis is any type of a close and long-term biological interaction between two different biological organisms,

Transmission: Transmission of pathogens occurs through many different routes, including airborne, direct or indirect contact, sexual contact, through blood, breast milk, or other body fluids, and through the fecal-oral route

Horizontal transmission is the transmission of organisms between biotic and/or abiotic members of an ecosystem that are not in a parent-progeny relationship. This concept has been generalized to include transmissions of infectious agents between human

Vertical transmission of symbionts is the transfer of a microbial symbiont from the parent directly to the offspring. Ma

Lesions

LESION - Any single area of altered skin. Lesions may be solitary or multiple.
PRIMARY LESION - A lesion directly associated with the disease process that is described with established dermatological terminology.
Example: Macule, papule, patch, plaque, vesicle, bulla, and others

SECONDARY LESION - Modification of a primary lesion that results from evolution of the primary lesion, traumatic injury, or other external factors.
Example: Erosion, fissure, ulceration, excoriation, and others

FLAT LESIONS

MACULE - A circumscribed, flat area of discoloration that is less than 10 mm* in diameter.

PATCH - A circumscribed, flat area of discoloration that is greater than 10 mm* in diameter. Slight scale may or may not be present.
Example: Vitiligo

RAISED LESIONS

PAPULE - A circumscribed, elevated, solid lesion that is less than 10 mm* in diameter.
Example: Wart
PLAQUE - A circumscribed, elevated, solid lesion that is greater than 10 mm* in diameter and is usually broader than it is thick. ***Example:*** Psoriasis

NODULE - A palpable, solid lesion that is greater than 10 mm* in diameter. Nodules are usually found in the dermal or subcutaneous tissue, and the lesion may be above, level with, or below the skin surface.
Example: Dermatofibroma
TUMOR - A solid, firm lesion that is typically greater than 20 mm in diameter. Tumors can be above, level with, or beneath the skin surface. Also known as a mass.
Example: Metastatic carcinoma
WEAL - Transient, circumscribed, edematous papules or plaques caused by swelling in the dermis.
Example: Urticaria

DEPRESSED LESIONS
BURROW - A thread-like linear or serpiginous (wavy, serpent-like) tunnel in the epidermis typically made by a parasite.
Example: Scabies
EROSION - A shallow, moist, or crusted lesion resulting from the loss of the superficial layers of the upper epidermis only, as from friction or pressure.
Example: Ruptured varicella vesicles
EXCORIATION - A skin abrasion that is usually superficial and due to scratching of the skin. Excoriations may be linear or focal.

FISSURE - Sharply defined linear or wedge-shaped tears in the epidermis with abrupt walls.
Examples: Interdigital tinea pedis, anal fissure, lip fissure.

PITS - Small, sharply demarcated depressions in the skin or nail surface.
Example: Pitted keratolysis

ULCER - (loos of continuity of skin or mucus membrane), a circumscribed loss of the epidermis and at least upper dermis.
Example: Bedsores — also called pressure ulcers and decubitus ulcers.

FLUID-FILLED LESIONS

ABSCESS - A localized accumulation of pus in the dermis or subcutaneous tissue that is frequently red, warm, and tender.

BULLA (PLURAL = BULLAE) - A large, raised, circumscribed blister that is greater than 10 mm* in diameter and is fluid filled. The fluid can be clear, serous, hemorrhagic, or purulent.
Example: Pemphigus vulgaris

CYST - A closed cavity or sac containing fluid or semisolid material. A cyst may have an epithelial or endothelial lining.
Example: Epidermal inclusion cyst

VESICLE - A small, superficial, circumscribed blister that is less than 10 mm* in diameter and is fluid filled. The fluid may be clear, serous, hemorrhagic, or purulent.
Example: Herpes zoster

PUSTULE - A purulent (pus filled) vesicle. Pustules are filled with neutrophils and may be white or yellow. Not all pustules are infected.
Example: Bacterial folliculitis

VASCULAR LESIONS

ECCHYMOSIS (PLURAL = ECCHYMOSES) - Nonblanching, purpuric macules or patches greater than 3 mm in diameter due to extravasated blood in the skin.
Example: Bruise from blunt trauma

HEMATOMA - A collection of extravasated blood that is relatively or completely confined within a space. The blood is usually clotted (or partly clotted) and, depending on time, may manifest various degrees of organization and color.
Example: Postsurgical bleeding

PETECHIAE - Tiny, 1- to 2-mm (pinpoint to pinhead size) nonblanchable purpuric macules resulting from the rupture of small blood vessels. Color may be red, purple, or brown.
Example: Rocky Mountain spotted fever

PURPURA - Bleeding into the skin that results in violaceous (violet or purple) discoloration that varies according to its duration and does not blanch with pressure. Purpura includes petechiae and ecchymoses. When purpuric lesions are palpable, they represent vasculitis (vascular inflammation).
Example: Henoch-Schönlein purpura

TELANGIECTASIA - Small, superficial cutaneous blood vessels that become persistently visible because they are dilated.