

# SAFALTA CLASS<sup>TM</sup>

An Initiative by **अमरउजाला**

98-6 F

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**DISEASE:** Discomfort

A disorder of structure or function in a human, animal especially one that produces specific symptoms or that affects a specific location and is not simply a direct result of physical injury.

**TYPES OF DISEASE:**

1. INFECTIOUS DISEASE (COMMUNICABLE DISEASE/ CONTAGIOUS DISEASE): Infectious diseases are disorders caused by organisms — such as bacteria, viruses, fungi or parasites.

2. NON INFECTIOUS DISEASE (NON COMMUNICABLE DISEASE/NON CONTAGIOUS DISEASE): A disease that is not contagious is called a noninfectious disease. These diseases are not caused by pathogens.

3. GENETIC DISEASE: A genetic disorder is a health problem caused by one or more abnormalities in the genome.

# 1. INFECTIOUS DISEASE: संक्रामक रोग - Spreadable

All the disease are caused by micro organism (pathogens) ----- Virus, Bacteria, Fungus, Protozoa

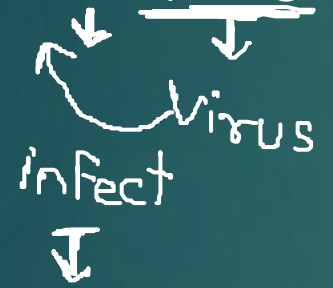
सूक्ष्म जीवों

विषाणु

harmful - रोगजनक

## (A) Viral Disease:

- ▶ Viruses are the most infectious pathogens.
- ▶ Viruses are the link between living and Non living things (Complete Parasite)
- \*▶ Bacteriophage: All the virus which infect only bacteria.  
सूक्ष्म परजीवी



(host) Inside the body - living

Outside the body - Non living

Homophage: Only human  
↓  
virus

Phytophage - Virus → Plants

Vaccine  
(VIRUS)

Virus → DNA  
          → RNA

ELISA -

NAME OF DISEASE	CAUSED BY x	INFECTED ORGAN संक्रमित अंग	TRANSMITTED BY	TYPE OF VACCINE
INFLUENZA / FLU	MYXOVIRUS, A RNA VIRUS	Respiratory passages: epithelial lining of trachea and bronchi.	<u>DROPLET</u> <span style="color:red">दीप्त</span>	KILLED VIRUS
<u>COMMON COLD</u>	Large variety of viruses, commonly rhino-virus (RNA Virus)	RESPIRATORY TRACT <span style="color:red">श्वसन नली</span>	<u>DROPLET</u>	Intramuscular injection.
SMALL POX* <span style="color:red">चेचक</span> ↓ WHO	Variola zoster (a DNA virus)	Respiratory passages, <u>then skin</u>	Droplet Infection (Wounds in skin)	Living attenuated virus applied
<u>CHICKEN POX</u>	Varicella zoster	Blistering <u>Skin rash</u>	Air-borne droplets	Living attenuated virus
MUMPS <span style="color:red">जालसुआ</span>	A PARAMYXO VIRUS (RNA VIRUS)	PAROTID GLAND* <span style="color:red">(Salivary gland)</span>	DROPLET	Living attenuated virus
MAESLES - <span style="color:red">खसरा</span>	A PARAMYXO VIRUS (RNA VIRUS)	Respiratory passages, spreading to skin and intestines.	DROPLET	Living attenuated virus

NAME OF DISEASE	CAUSED BY	INFECTED ORGAN	TRANSMITTED BY	TYPE OF VACCINE
<u>Poliomyelitis (polio)</u> ↓ Brain AF-Pak	Poliovirus (RNA Virus)	Pharynx and intestines, then blood; occasionally motor neurons in spinal cord, paralysis may occur.	Droplet infection or via human feces ↓	Living attenuated virus given orally
<u>Yellow fever</u> - 4/21 STD 5/22	An arbovirus i.e arthropod-borne virus (RNA Virus)	Lining of blood vessels and <u>liver</u> *	Vector- arthropods e.g ticks, mosquitoes	LIVE ATTENUATED VACCINE
<u>AIDS</u> - Acquired Imm. HIV Def. Syn.	Retrovirus (RNA virus)	<u>T- LYMPHOCYTES</u> Human Immunodef. Virus	Sexual intercourse homo- and heterosexuals	NO VACCINE
<u>Ebola hemorrhagic fever</u> Animal → Human = Zoonotic disease	Ebola Virus disease (EVD)	Fatal illness in Humans, Fever	It is transmitted to people from wild animals	NO VACCINE
<u>Zika disease</u> ↓	Zika Virus (mosquito borne disease)	<u>BRAIN</u> (inf. pregnant)	<u>AEDES MOSQUITO</u> ↓ Tiger Mosquito	NO VACCINE
<u>DENGUE</u>	DENGUE VIRUS	<u>PLATELETS</u> O+ O ↓ ↓	<u>AEDES MOSQUITO</u>	LIVE ATTENUATED VACCINE

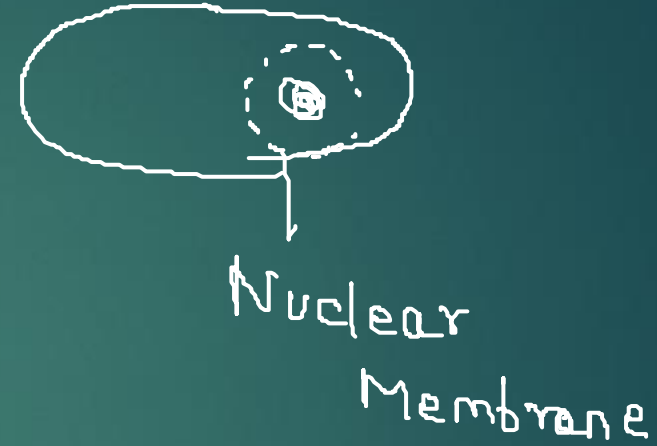
## BACTERIA: जीवाणु

- ▶ Bacteria is a pure living thing
- ▶ It consists Prokaryotic cell. प्रतिकेन्द्रीय
- ▶ Unicellular organism
- ▶ Discovered by "Antony Van Leuwenhoek."

→ Unicellular : १

→ Living cell : १

Dead Cell / cell



NAME OF DISEASE	CAUSED BY	INFECTED ORGAN	TRANSMISSION	TYPE OF VACCINE
TUBERCULOSIS (TB) <del>क्षय रोग / यक्ष्मा</del> नैपेदि	<u>Mycobacterium tuberculosis</u> संक्रमण	Lungs, small intestine	Droplets, Drinking milk from infected cattle.	BCG living attenuated bacteria. Antibiotics e.g. streptomycin.
Whooping cough (Pertussis)	<u>Bordetella pertussis</u>	Upper respiratory tract, inducing violent coughing	droplets	Killed bacteria
<u>Gonorrhoea</u> STD	<u>Neisseria gonorrhoeae</u>	Reproductive organs: mainly mucous membranes of urinogenital tract	Contagion by sexual contact	Antibiotics, e.g. penicillin, streptomycin

<p>Syphilis ↓ STD</p>	<p>Treponema palladium</p>	<p>Reproductive organs, then eyes, bones, joints, central nervous system, heart and skin.</p>	<p>Contagion by sexual contact</p>	<p>Toxoid</p>
<p>Tetanus - Rust Iron Lock - Jaw Disease</p>	<p><u>Clostridium tetany</u></p>	<p>Blood.  Toxin produced which affects motor nerves of spinal cord and hence muscles, causing lockjaw and spreading to the muscles.</p>	<p>Wound infection</p>	<p>toxoid</p>
<p>Cholera - <u>ए. coli</u></p>	<p><u>Vibrio cholerae</u></p>	<p>Alimentary canal: mainly small intestine.</p>	<p>Fecal contamination food - or water borne of material contaminated with feces from infected person.</p>	<p>Killed bacteria: short- lived protection and not always effective Antibiotics e.g. tetracyclines, chloramphenicol</p>
<p>* → Hansen's disease leprosy - कुष्ठ</p>	<p>Mycobacterium leprae</p>	<p><u>Skin</u></p>	<p>Wound infection</p>	<p>Killed Bacteria</p>



## Fungus: फ़ण्गस

- ▶ Found in Humidity.
- ▶ Root word for fungus: Myco
- ▶ Mainly cause disease related to our skin
- ▶ Eg: Mushroom, yeast - alcohol

↓

रसमीर

↓

beverages

Study: Mycology

'Mycophage':

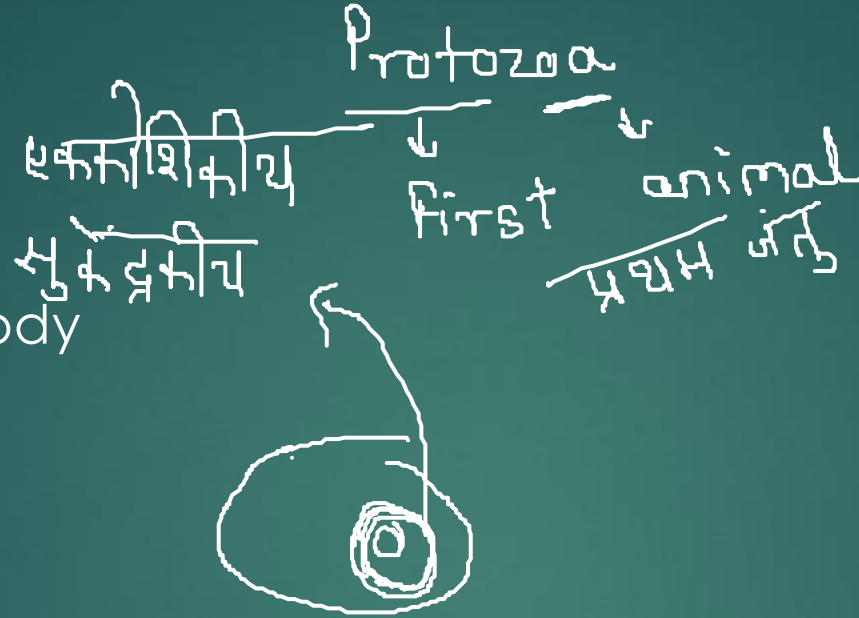
↓

infect virus

Disease	Pathogen responsible	Mode of transmission	Main symptoms
Ring worm <u>दाद</u>	Microsporum, Trichophyton <del>X</del>	Direct contact from <del>X</del> unbathed cats and dogs or objects handled by infected individuals	Contain one or more blistered areas on skin and scalp. Cause partial and temporary baldness in children
Athlete's foot <u>पैरो में सड़न</u>	Trichophyton	Bad foot hygiene where skin remains warm and moist for long periods.	Painful itching or burning sensation in the infected areas. Crack appears in the skin, mass of loose dead skin clings between toes.
Madura foot <u>Baldness</u> <u>गंजापन</u>	Maurella Mycetomi	Fungi gain entry through some minor injury to the skin.	

## PROTOZOA:-

- ▶ Unicellular organism
- ▶ Eukaryotic organism
- ▶ Parasite in human body
- ▶ First organism



Enzyme Linked Immuno Sorbent Assay

→ ELISA

Edward Jenner

↓ Father of Vaccination

→ Small Pox

Vaccine

↓ Virus

→ Deactivate

टीका

Protozoa Name

Vector जीव

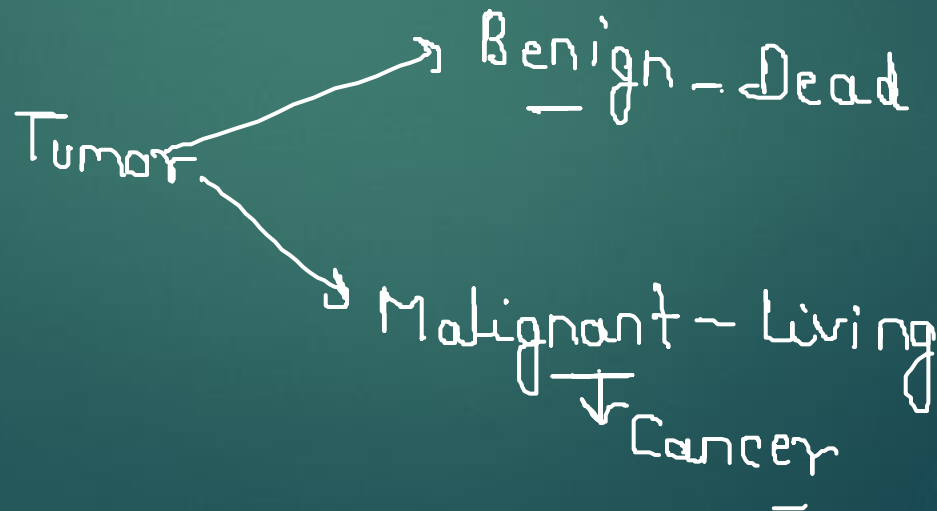
Disease	Causal Agent
Amoebiasis	Entamoeba histolytica
Primary Amoebic meningoencephalitis	Naegleria fowleri
Giardiasis ✓ - Fly	Giardia Lamblia
Trichomoniasis	Trichomonas vaginalis
African Sleeping Sickness ✓ - Tse Tse Fly	Trypanosoma brucei
Leishmaniasis ( Kala - azar) ✓ - Sand Fly / Black Fever / Dum Dum Fever	Leishmania donovani
Toxoplasmosis	Toxoplasma gondii
Malaria ✓ - Female Anopheles	Plasmodium spp.
Babesiosis	Babesia microti
Pneumocytosis ( PCP)	Pneumocystis carinii

## NON INFECTIOUS DISEASE:

**Non infectious diseases** are generally caused by a combination of genetic and environmental factors other than pathogens.

Non spreadable

Malnutrition of 41401 / Malfunction



<i>Vitamin</i>	<i>Diseases and their symptoms</i>	<i>Available from</i>
A (Retinol)	poor vision, night-blindness	spinach, carrots, butter, mangoes
B <sub>1</sub> (Thiamine)	extreme weakness, beri-beri	eggs, meat, yeast
B <sub>2</sub> (Riboflavin)	retarded growth, bad skin	green leafy vegetables, beans, peas, milk
B <sub>12</sub> (Cyanocobalamin)	anaemia	non-vegetarian food like meat
C (Ascorbic acid)	scurvy, swollen gums, loose teeth	lime, lemon, oranges
D (Calciferol)	rickets, brittle bones in children which break or bend easily	milk, fish, liver oil
K (Phylloquinone)	excessive bleeding due to injury	green leafy vegetables
<b>Diseases Caused due to Deficiency of Minerals</b>		
<i>Name of minerals</i>	<i>Diseases and their symptoms</i>	<i>Available from</i>
Calcium	brittle bones, excessive bleeding, bad muscular movement	milk, green leafy vegetables
Phosphorus	bad teeth and bones	pulses, cereals, milk
Iron	anaemia, lack of red blood cells	green vegetables, pulses, meat
Iodine	goitre, enlarged thyroid gland	fish, salt from sea water
Copper	low appetite, retarded growth	pulses and leafy vegetables



Cancer:

① All cancer are tumor  
② All tumor are cancer

TUMOR VERSUS CANCER	
Tumor is a development of a lesion or lump in the body due to an abnormal cellular growth	Cancer is a disease caused by an uncontrolled division of abnormal cells in a part of the body
Can be benign or malignant	<u>Malignant</u> (Movable)
May not be fatal	Can be fatal
Can be treated by watchful waiting or surgical removing	Can be treated by surgical removal, chemotherapy, & radiotherapy

Tumor : Uncontrolled division

Cancer: 'Onco'

Carcinogens

Heart attack:

abnormal blood flow

Heart fail

Heart beat : 72/min (30, 120, 130)

**CARDIAC ARREST**
→ beating prob

CARDIAC ARREST IS AN "ELECTRICAL" PROBLEM, OCCURRING WHEN THE HEART MALFUNCTIONS & STOPS BEATING UNEXPECTEDLY.

An irregular heartbeat, caused by an electrical malfunction, triggers cardiac arrest. The heart is unable to pump blood to the brain, lungs, and other organs.

Within seconds a person will become unresponsive and stop breathing. If not treated within minutes, death occurs.

**HEART ATTACK**

A HEART ATTACK IS A "CIRCULATION" PROBLEM, OCCURRING WHEN BLOOD TO THE HEART IS BLOCKED.

Blocked artery prevents oxygen-rich blood from reaching the heart. If this blocked artery is not reopened, the unnourished part of the heart begins to die.

Discomfort in chest, shortness of breath, cold sweats, nausea, and/or vomiting may occur. Unlike cardiac arrest, the heart doesn't stop beating during a heart attack.

Smallest unit of Chromosome :

↑  
**Genetic Disease:** आनुवंशिक रोग

▶ A disease caused by an abnormality in an individual's genome.

Examples of Genetic Disease:

↗ Insulin gene

1. ✓ Diabetes Mellitus: It is a group of metabolic disorders characterized by a high blood sugar level over a prolonged period of time. Symptoms often include frequent urination, increased thirst, and increased appetite.

▶ It is caused by the deficiency of Insulin Hormone.

2. Heart attack:—



Colour Blindness वर्णान्धता defect

↓ Eye → Cone Cell शंकु - light, Colour  
 → Rod शमक - Dark

Primary colors

R G B

Red - Green C.B. - Black

Red - Blue C.B. - Yellow

Blood

3. Hemophilia: Hemophilia is a rare disorder in which your blood doesn't clot normally because it lacks sufficient blood-clotting proteins (factor IX) →

▶ Also known as Royal Disease / Christmas Disease.

4. Color blindness: It is also known as color vision deficiency, is the decreased ability to see color or differences in color.

5. Thalassemia: Thalassemia is an inherited blood disorder in which the body makes an abnormal form of hemoglobin. The disorder results in excessive destruction of red blood cells, which leads to anemia.

6. Sickle cell anemia: It is one of a group of disorders known as sickle cell disease. Sickle cell anemia is an inherited red blood cell disorder in which there aren't enough healthy red blood cells to carry oxygen throughout your body

Down Syndrome

Elephantiasis एलेफैंटासिस }  
41d

Hb → dead → ~~RBC~~ → Anaemia

