



MBC - MRIDUL BHAIYA CLASSES

# HUMAN HEALTH & DISEASE

BIOLOGY CLASS 12TH NOTES

MADE BY  
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**MBC – Mridul Bhaiya Classes**

**CLASS XII**

**BIOLOGY NOTES**

**HUMAN HEALTH AND DISEASE**

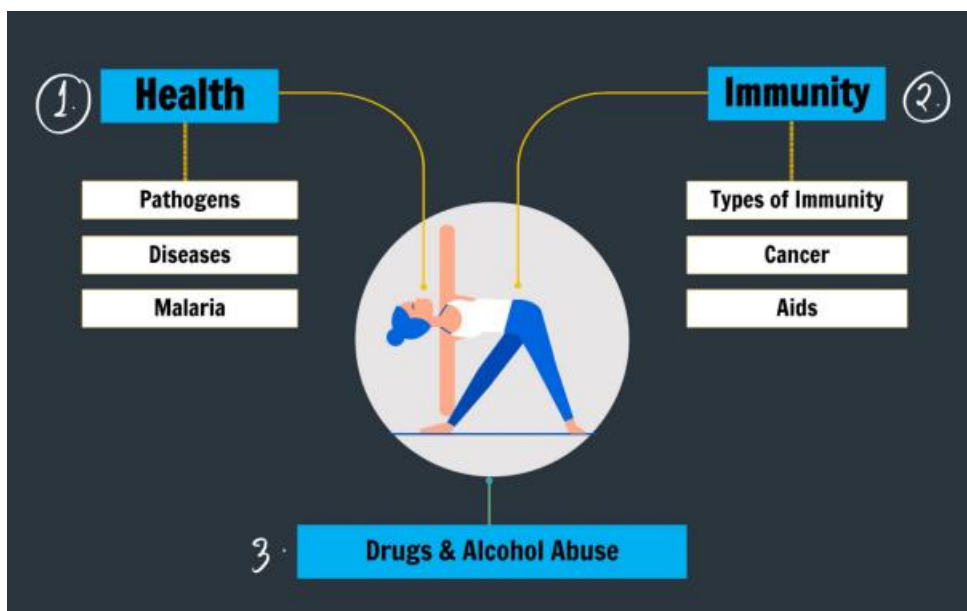
- ✓ Detailed notes
- ✓ PYQs with answers
- ✓ Graphics included





# HUMAN HEALTH AND DISEASES

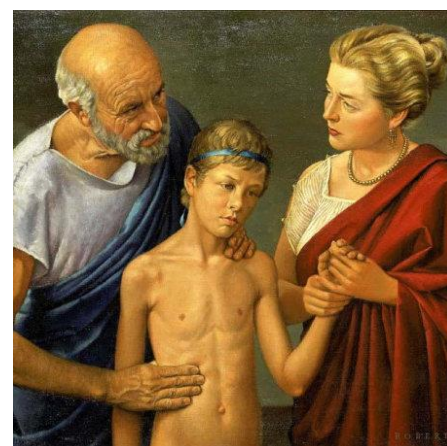
## INTRODUCTION



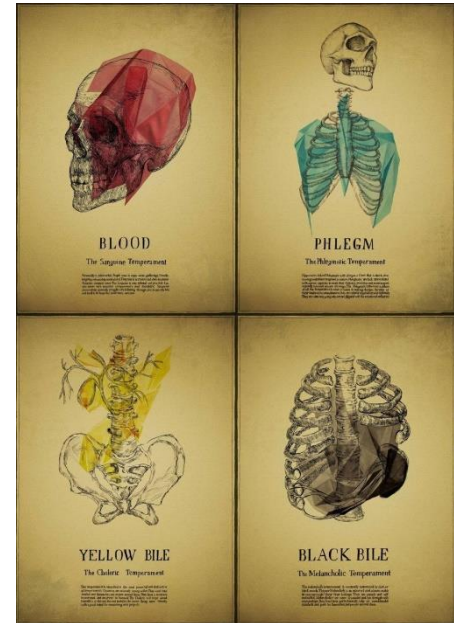
## HEALTH

### Good Humour Hypothesis

- ❖ Health, for a long time, was considered as a state of body and mind where there was a balance of certain 'Humors'
- ❖ This is what early Greeks like Hippocrates as well as Indian Ayurveda system of medicine asserted
- ❖ Humors consists of 4 things :
  - Blood
  - Phlegm
  - Yellow Bile
  - Black Bile



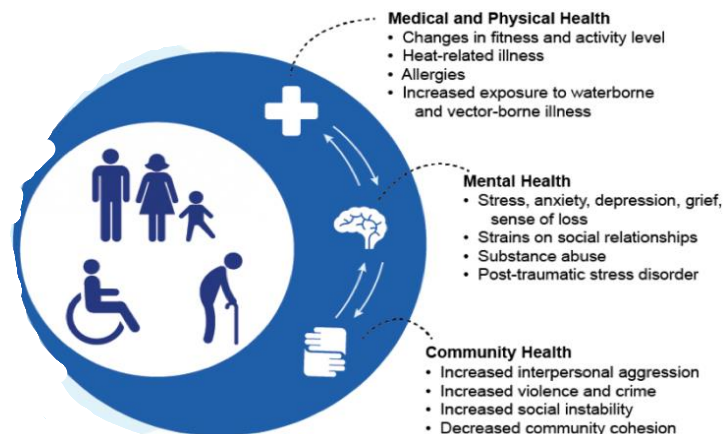
- ❖ When all Humors are BALANCE person is healthy, When all Humors are IMBALANCE person is unhealthy.
- ❖ It was thought that persons with 'Blackbile' belonged to hot personality and would have fevers.
- ❖ Which was Discarded by **William Harvey**.
- ❖ This idea was arrived at by pure reflective thought.



Health does not simply mean 'absence of disease' or 'physical fitness'

**According to WHO – World Health Organisation :**

*Health can be defined as state of body and mind which allows a person to function well physically, mentally, and socially*



→ Biology Stated that mind influences, through neural system and endocrine system and that our immune system maintains our health

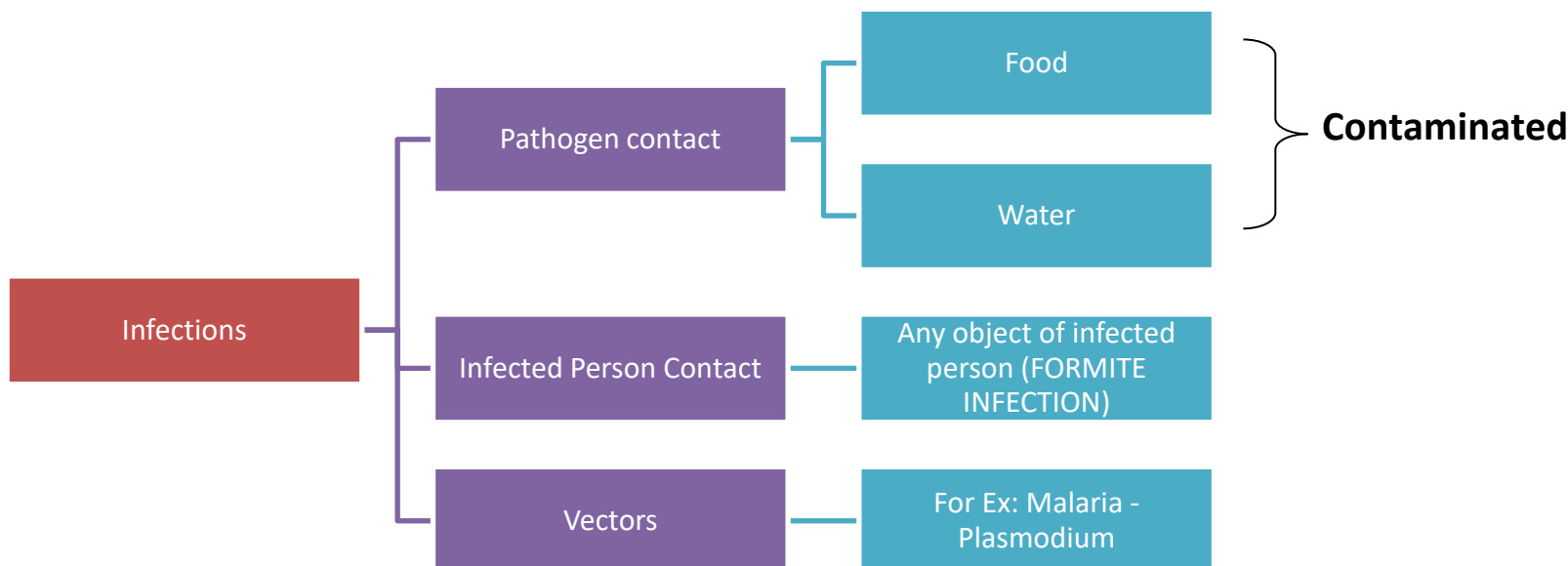
→ Hence, mind and mental state can affect our health.



## FACTORS AFFECTING OUR HEALTH

- ✓ Genetic Disorder
- ✓ Infections
- ✓ Life style

- Balanced diet, personal hygiene and regular exercise are very important to maintain good health.
- Yoga has been practiced since time immemorial to achieve physical and mental health.
  - Awareness about diseases and their effect on different bodily functions,
  - Vaccination (immunization) against infectious diseases,
  - Proper disposal of wastes,
  - Control of vectors and maintenance of hygiene in food and water resources are necessary for achieving good health.





## PATHOGENS

A wide range of organisms belonging to Bacteria, Viruses, Fungi, Protozoans, Helminthes etc., could cause diseases in man. Such disease causing organisms are called pathogens.

## DISEASE

A State when the functioning of one or more organs of the body is affected resulting in altered physiological state with signs and symptoms telling us that there is something wrong with our health, it is called as disease.



**Congenital Disease :** Congenital diseases is a disease or a disorder that is inherited genetically and is present from birth in an individual

The names of congenital diseases are,

1. Colour Blindness
2. Haemophilia
3. Down syndrome

**Acquired Disease :** Acquired diseases are a primary disease that begins after birth at some point during one's lifetime.

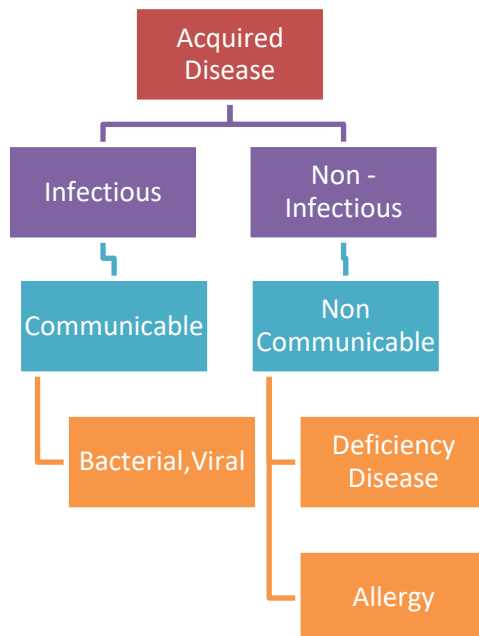
It is of two types :

1. **Infectious :** Transmitted from one person to another.  
**Ex :** Common cold, Malaria, AIDS.



2. **Non – Infectious** : Cannot be transmitted from one person to another

**Ex** : Cancer and Diabetes



## BACTERIAL DISEASE

### 1. Typhoid

**Pathogen Name** → Streptococcus **Pneumoniae & Haemophilus influenzae.**

**Transmission** → Through Food and water contaminated with them and migrate to other organs through blood.

**Symptoms** → **Sustained high fever (39° to 40°C)**, weakness, stomach pain, constipation, headache and loss of appetite are some of the common symptoms of this disease. **Intestinal perforation** and death may occur in severe cases.

**Test** → **Widal Test**





## 2. Pneumonia

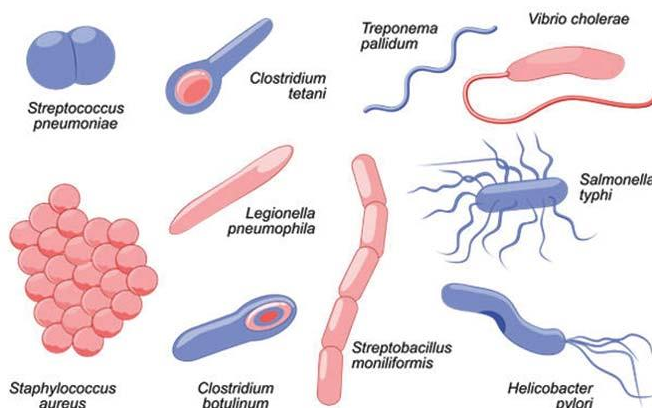
**Pathogen Name** → *Salmonella typhi*

**Transmission** → A healthy person acquires the infection by inhaling the droplets / aerosols released by an infected person.

**Symptoms** → Fever, Chills, Cough & Headache. In severe cases, the lips and finger nails may turn gray to bluish in colour.

## All Bacterial Disease in NCERT

- **Dysentery** ⇒ *Shigella*
- **Plague** ⇒ *Yersinia pestis*
- **Diphtheria** ⇒ *Corynebacterium diphtheriae*
- **Whooping Cough** ⇒ *Bordetella pertussis*
- **Tetanus** ⇒ *Chlostridium tetani*
- **Tuberculosis** ⇒ *Mycobacterium tuberculosis*
- **Cholera** ⇒ *Vibrio cholerea*
- **Pneumonia** ⇒ *Streptococcus pneumoniae*
- **Typhoid** ⇒ *Salmonella typhi*
- **leprosy** ⇒ *Mycobacterim leprae*







## VIRAL DISEASE

### 1. Common Cold

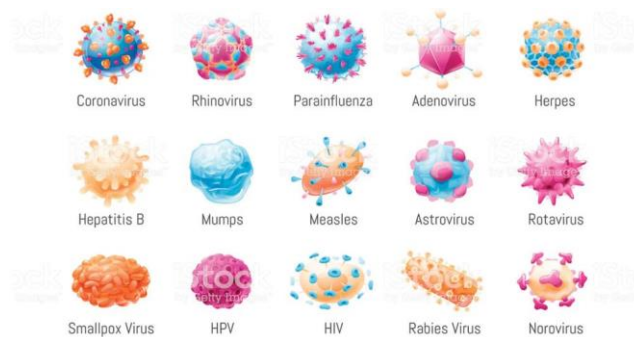
**Pathogen Name** → Rhino viruses

**Transmission** → Droplets resulting from cough or sneezes of an infected person are either inhaled directly or transmitted through contaminated objects

**Symptoms** → They infect the nose and respiratory passage but not the lungs. The common cold is characterised by Nasal Congestion and Discharge, Sore throat, Hoarseness, Cough, Headache, Tiredness, etc., which usually last for 3-7 days.

### All Viral Disease in NCERT

- **Influenza** ⇒ Myxovirus influenzae
- **Chicken pox** ⇒ Varicella zoster
- **Small pox** ⇒ Variola
- **Mumps** ⇒ Paramyxovirus
- **Rabies** ⇒ Rhabdo virus
- **Dengue** ⇒ Arbo Virus
- **Chickengunya** ⇒ Chickengunya Virus
- **Rubella** ⇒ Rubella virus
- **Pappiloma** ⇒ HPV
- **Polio** ⇒ Poliomyelitis



My face when someone tells me they are not up to date with their recommended vaccines



## PROTOZOAN DISEASE

### 1. Malaria

S.no	Types of Malaria	Causative agent
1.	Tertian / Benign tertial	Plasmodium vivax
2.	Quartan Malaria	Plasmodium malariae
3.	Mild Tertian Malaria	Plasmodium ovale
4.	Malignant Tertian	Plasmodium falciparum

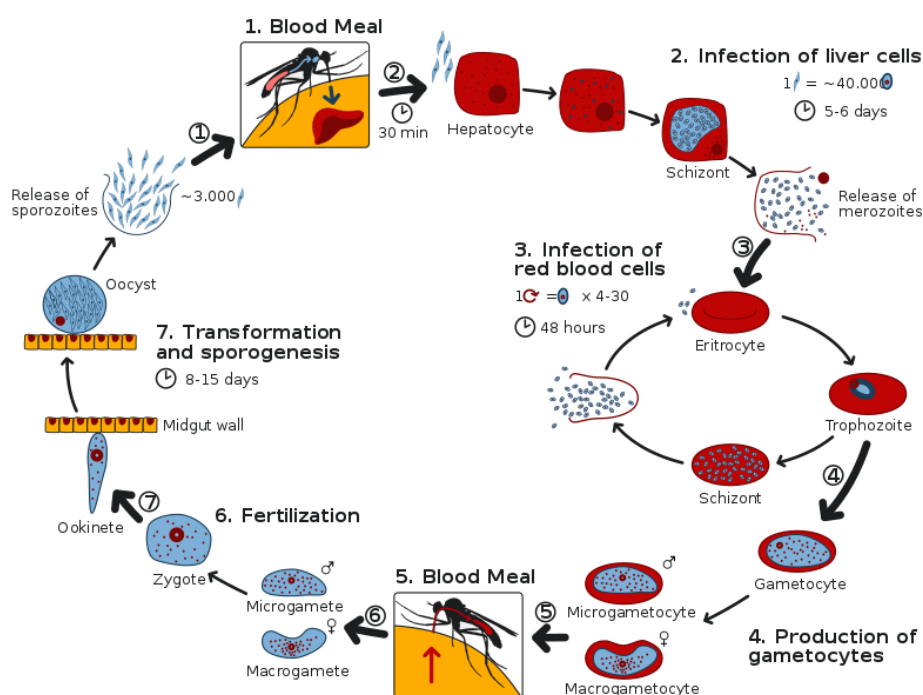
**Most Dangerous**

Plasmodium is digenetic species → It requires two host to complete life cycle

⇒ Anopheles mosquito (Female) – Primary (Sexual life)

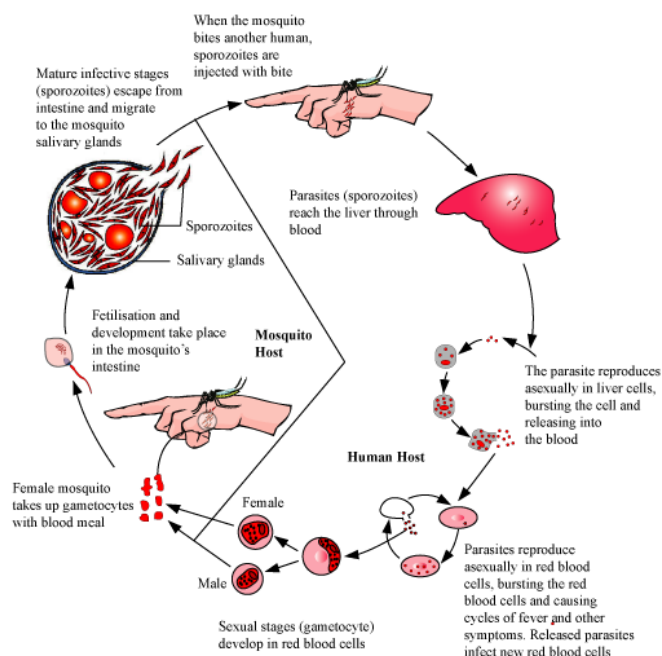
⇒ Human – Secondary host (Asexual life)

### LIFE CYCLE OF MALARIA



## LIFE CYCLE OF PLASMODIUM

1. Sporozoites : the infectious form of Plasmodium which enters the human body through the bite of a female Anopheles mosquito.
2. Multilication of parasites inside the liver cells. Attack of the RBCs by the parasites causing the rupture of the RBCs.
3. Release of a toxic substance called Haemozoin by the ruptured RBCs that causes chills and recurring fevers every three to four days.
4. Transfer of the parasites into the body of the female Anopheles mosquito when the infected person is bitten by the mosquito.
5. Multiplication of the parasites within the mosquito to form sporozites. These sporozoites are stored in the salivary glands of the mosquito.
6. The infected mosquito bites an unfeceted person and the cycle repeats.



## 2. Amoebiasis ( Amoebic Dysentery)

**Pathogen Name** → Entamoeba histolytica

**Transmission** → Drinking Water and food contaminated by the fecal matter are the main the source of infection

**Symptoms** → Symptoms of this disease include constipation, abdominal pain and cramps, stools with excess mucous and blood clots



## HELMINTHIC DISEASE

### 1. Ascariasis

- Pathogen Name** → *Ascaris lumbricoides*
- Transmission** → A healthy person acquires this infection through contaminated water, vegetables, fruits, etc.
- Symptoms** → Symptoms of this disease include internal bleeding, muscular pain, fever, anemia and blockage of the intestinal passage.



### 2. Elephantiasis / Filariasis

- Pathogen Name** → *Wuchereria* (***W. bancrofti* and *W. malayi***)
- Transmission** → The pathogens are transmitted to a healthy person through the bite by the **female mosquito vectors**.
- Symptoms** → Chronic inflammation of the organs in which they live for many years, usually the lymphatic vessels of the lower limbs. The genital organs are also often affected, resulting in gross deformities.



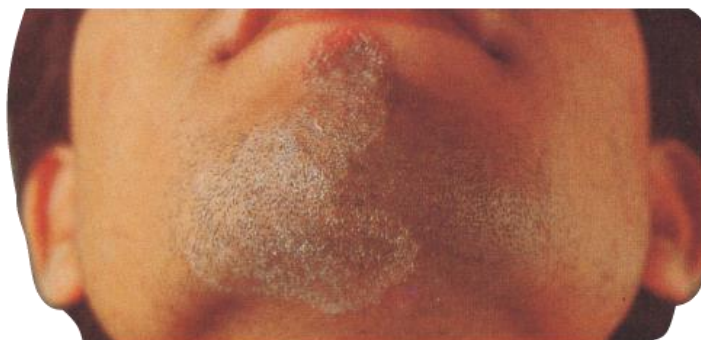
## FUNGAL DISEASE

### 1. Ringworms

**Pathogen Name** → Many fungi belonging to the genera **Microsporum, Trichophyton and Epidermophyton** are responsible

**Transmission** → Ringworms are generally acquired from soil or by using towels, clothes or even the comb of infected individuals.

**Symptoms** → Appearance of dry, scaly lesions on various parts of the body such as skin, nails and scalp are the main symptoms of the disease.



## PREVENTION AND CONTROL

- ✓ Maintenance of personal and public hygiene
- ✓ Elimination of vectors and their breeding places
- ✓ Antibiotics
- ✓ Protection against vectors
- ✓ Vaccination



- ✓ Avoid close contact with infected persons
- ✓ Discoveries of effective drugs against new diseases

**For Diseases such as malaria and filariases that are transmitted through insect vectors, the most important measure is to control or eliminate the vectors and their breeding places.**

This can be achieved by avoiding stagnation of water in and around residential areas, regular cleaning of household coolers, use of mosquito nets, introducing fishes like **Gambusia in ponds that feed on mosquito larvae**, spraying of insecticides in ditches, drainage areas and swamps, etc

In addition, doors and windows should be provided with wire mesh to prevent the entry of mosquitoes. Such precautions have become more important especially in the light of recent widespread incidences of the vector-borne (Aedes mosquitoes) diseases like dengue and chikungunya in many parts of India.

## IMMUNITY

The ability of the the host to fight and protect against disease.

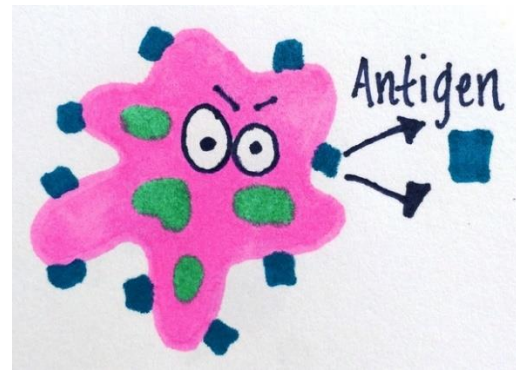
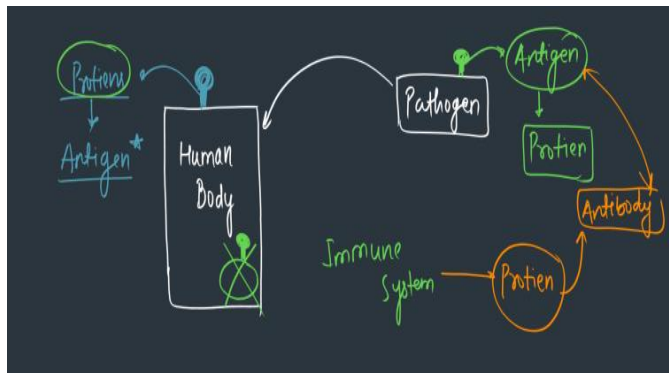
Or

Property of any body to protect itself from pathogens.

Immunity comes from a working system In body – ‘Immune System’

## ANTIGEN

The term antigen (Ag) is used in two senses, the first to describe a molecule which generated an immune response and the second, a molecule which reacts with antibodies.

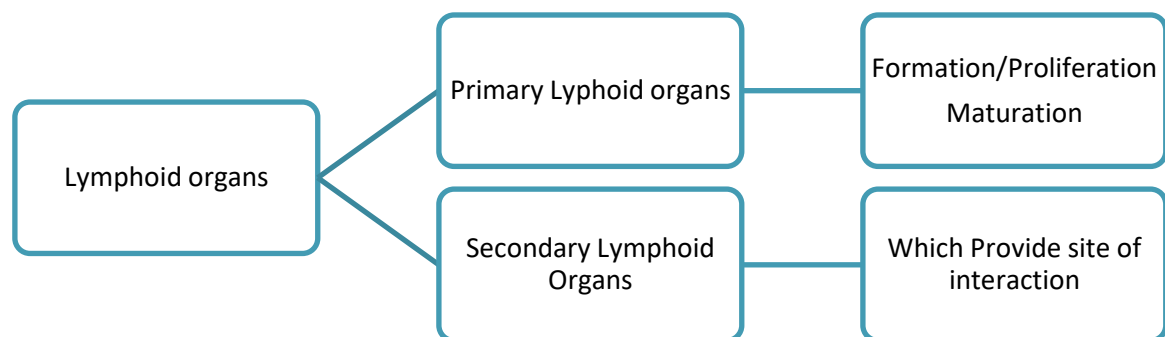


## IMMUNE SYSTEM IN THE BODY

The system which provide Immunity & protects our body from foreign pathogens

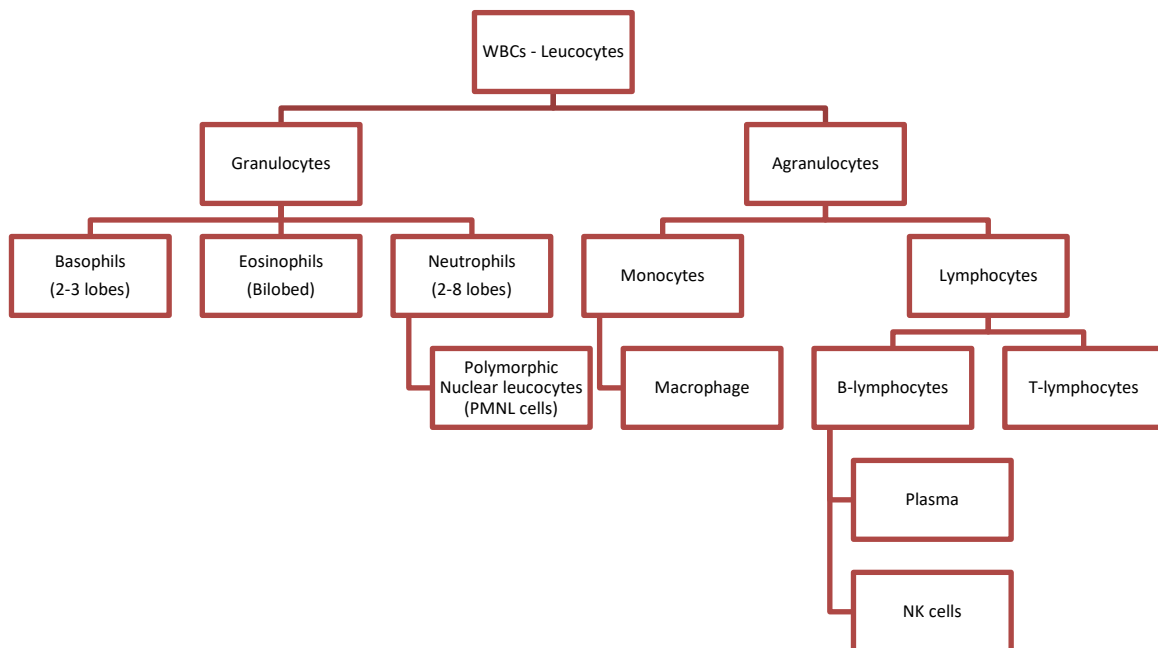
Lymphoid organs Based on their functions, they are classified into-

- ❑ Primary or Central Lymphoid organs and
- ❑ Secondary or Peripheral Lymphoid organs



## CELLULAR IMMUNITY





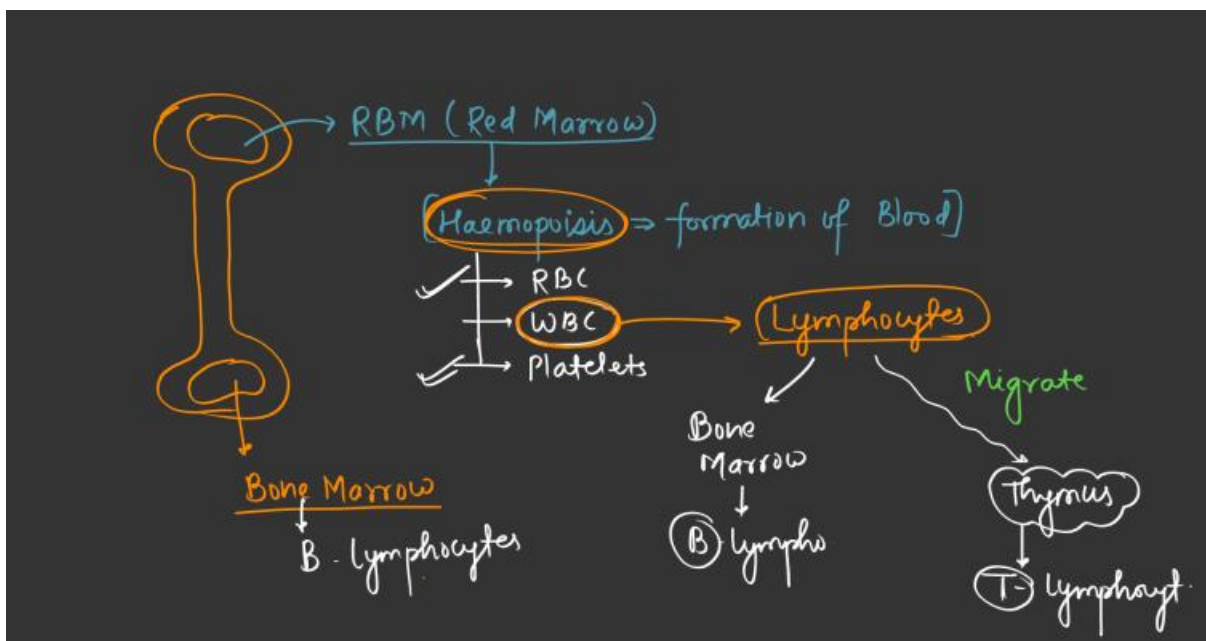
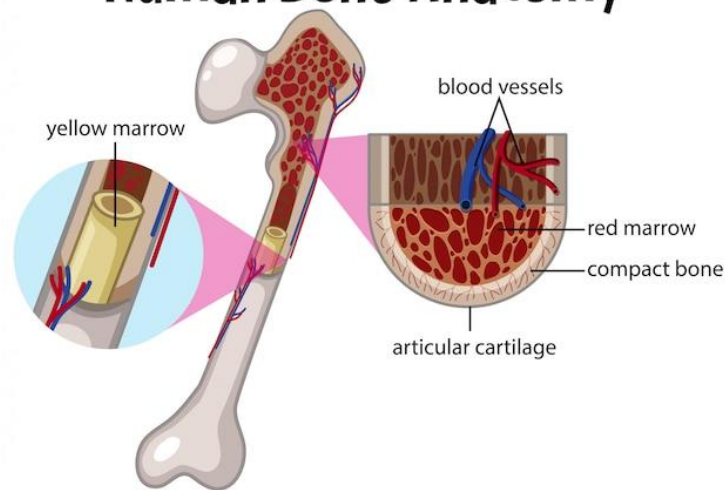
## PRIMARY LYMPHOID ORGANS

The primary lymphoid organs are where immature lymphocytes differentiate into antigen-sensitive lymphocytes (maturation).

- 1. Bone marrow :** The bone marrow is the main lymphoid organ where all blood cells including lymphocytes are produced
- 2. Thymus :** The thymus is a lobed organ located near the heart and beneath the breastbone.

Both Bone-Marrow and Thymus provide micro-environments for the development and maturation of T-lymphocytes.

# Human Bone Anatomy



## SECONDARY LYMPHOID ORGANS

The secondary lymphoid organs provide the sites for interaction of lymphocytes with the pathogens / foreign antigen.

- ☐ Lymph nodes
- ☐ Appendix
- ☐ Peyer's patches of gastrointestinal tract

- ❑ Tonsils
- ❑ Spleen
- ❑ MALT ( Mucosal – Associated Lymphoid Tissue ) [More than 50%]

## IMMUNITY

Immunity is of two types :

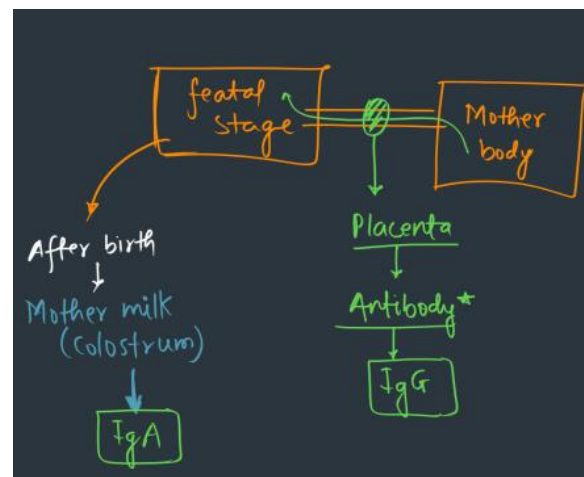
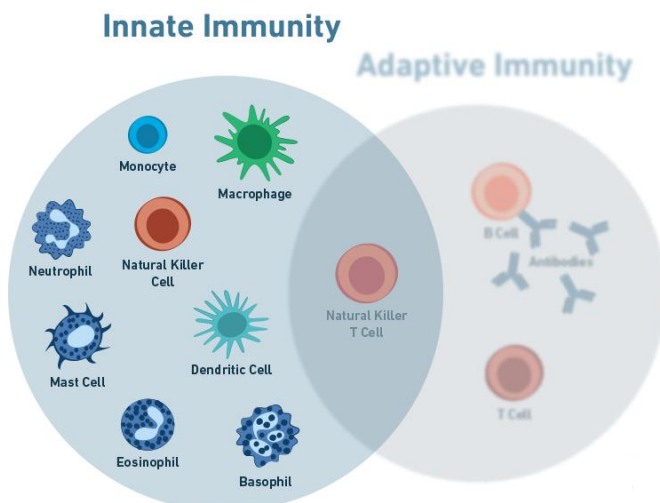
- Innate Immunity
- Acquired Immunity

## INNATE IMMUNITY

Non-specific type of Immunity in an individual that is present at the time of birth.

Innate immunity consist of four types of barrier

- |                          |   |                                 |
|--------------------------|---|---------------------------------|
| 1. Physical Barrier      | } | 1 <sup>st</sup> line of Defence |
| 2. Physiological Barrier |   |                                 |
| 3. Cellular Barrier      | } | 2 <sup>nd</sup> line of Defence |
| 4. Cytokine Barrier      |   |                                 |





## PHYSICAL BARRIER

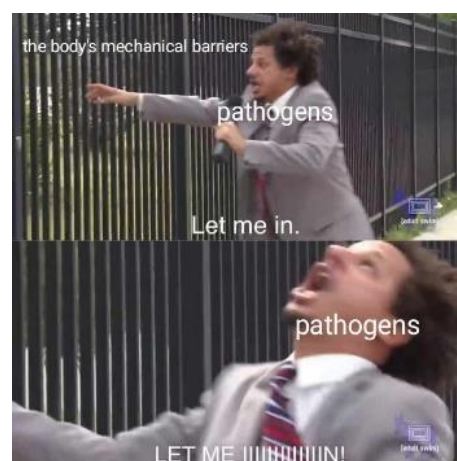
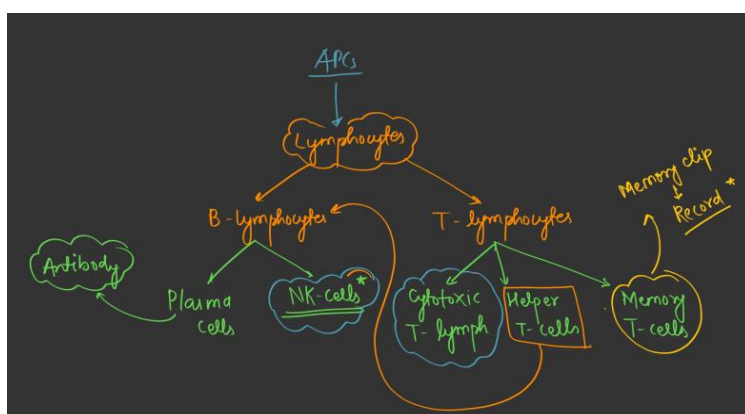
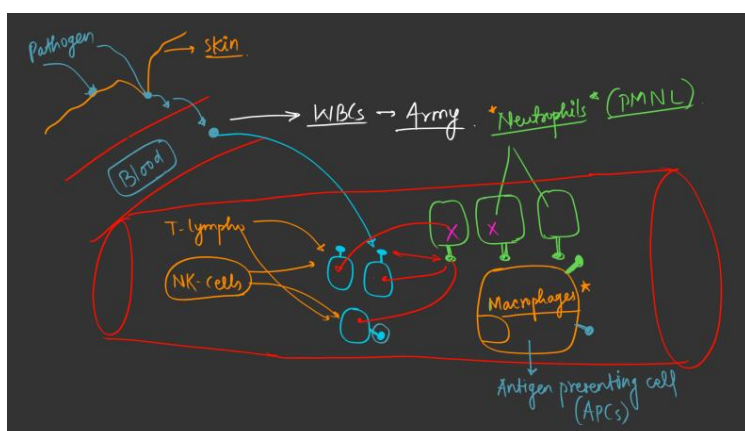
Skin on our body is the main barrier which prevents entry of the micro-organisms. Mucus coating of the epithelium lining the respiratory, gastrointestinal and urogenital tracts also helps in trapping microbes entering our body.

## PHYSIOLOGICAL BARRIER

Acid in the stomach, saliva in the mouth, tears from eyes-all prevent microbial growth.

## CELLULAR BARRIERS

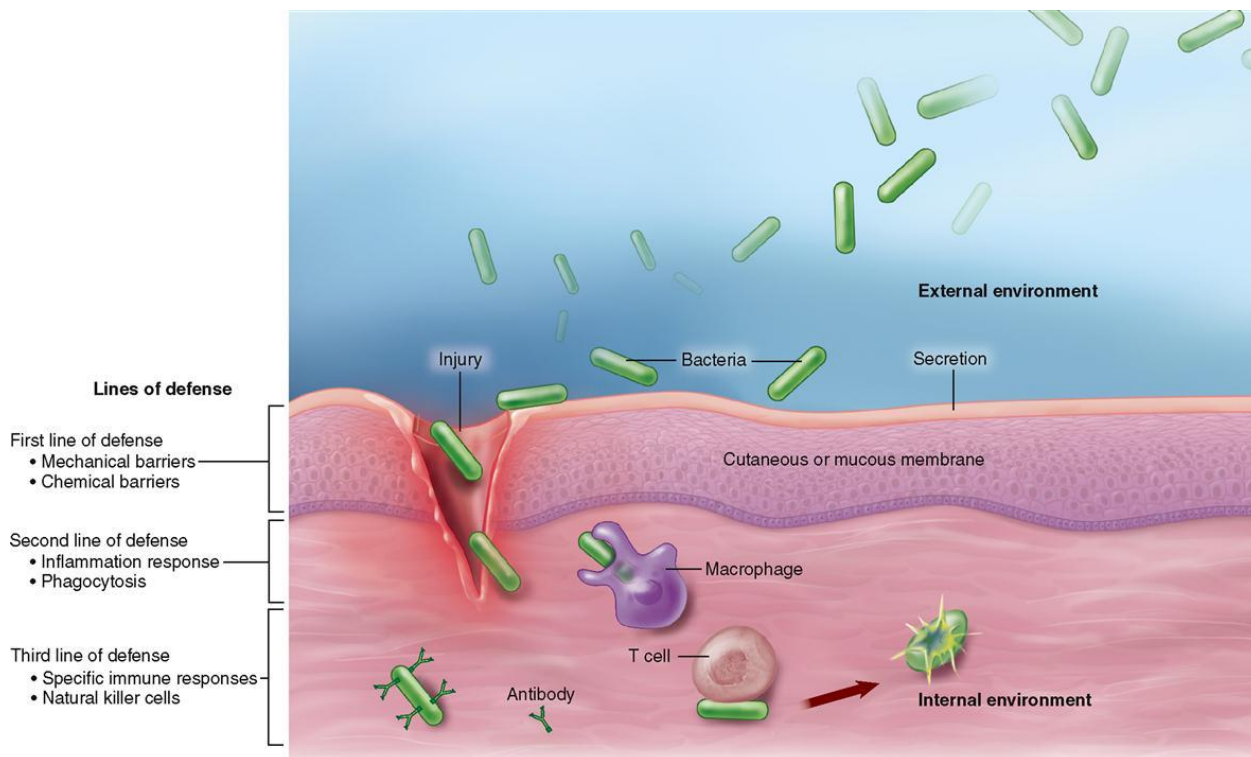
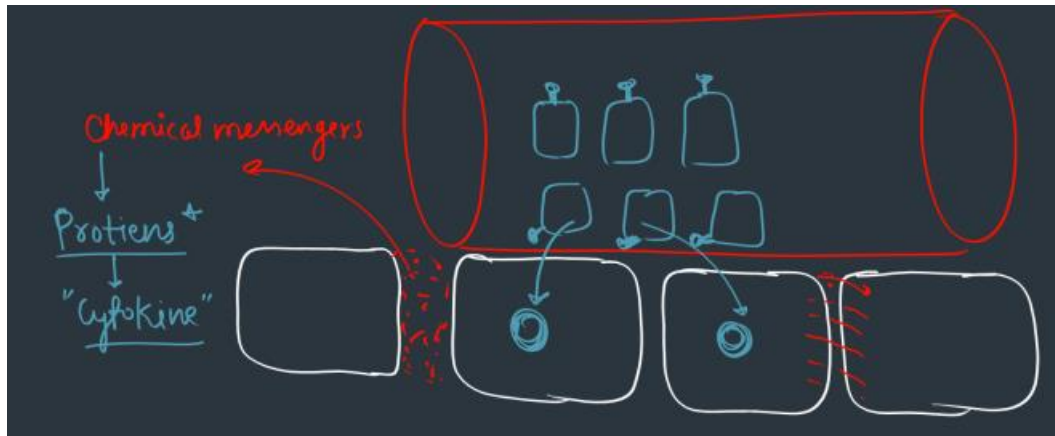
Certain types of leukocytes (WBC) of our body like Polymorpho-Nuclear Leukocytes (PMNL-Neutrophils) and Monocytes and Natural Killer (Type of Lymphocytes) in the Blood as well as macrophages in tissues can phagocyte and destroy microbes.





## CYTOKINE BARRIERS

Virus-infected cells secrete proteins called interferons which protect non-infected cells from further viral infection.



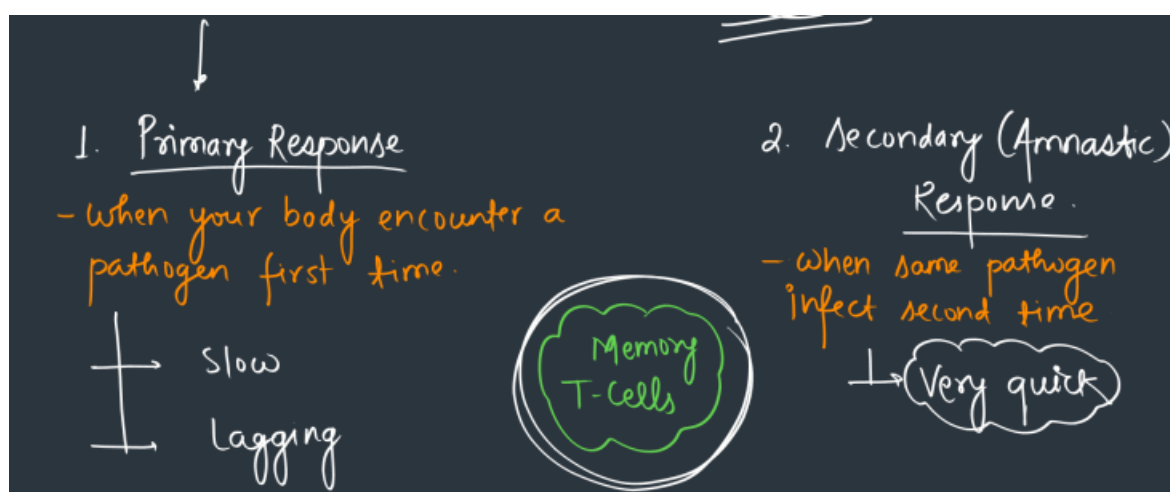
**Note :** Physical Barrier are also called Anatomical Barriers



## ACQUIRED IMMUNITY

This type of immunity is Pathogen specific and is characterized by a memory. B – lymphocytes produces special proteins called antibodies whereas the T – lymphocytes help B – lymphocytes produce special proteins called antibodies whereas the T-lymphocytes help B-lymphocytes to produce antibodies.

## IMMUNE RESPONSES



**ACQUIRED IMMUNITY :** After infection body creates immunity against that pathogen.

## COMPONENTS OF ACQUIRED IMMUNITY

- Cell mediated immunity (CMI)
- Antibody mediated immunity (AMI) / Humoral Immunity

## CELL MEDIATED IMMUNITY (CMI)

When pathogens are destroyed by cells without antibodies, then it is known as cell mediated immune response or cell mediated immunity. This is brought about by-



- T cells
- Macrophages
- Natural killer cells

## ANTIBODY MEDIATED IMMUNITY OR HUMORAL IMMUNITY

When pathogens are destroyed by the production of antibodies, then it is known as antibody mediated or Humoral immunity. This is brought about by B cells with the help of antigen presenting cells and T helper cells.

**Antibody production is the characteristic feature of vertebrates only.**

## ANTIBODIES

Whenever pathogens enter our body, the B-lymphocytes produce an army of proteins called antibodies to fight with them. Thus, they are secreted in response to an antigen (Ag) by the effect of B cells called plasma cells.

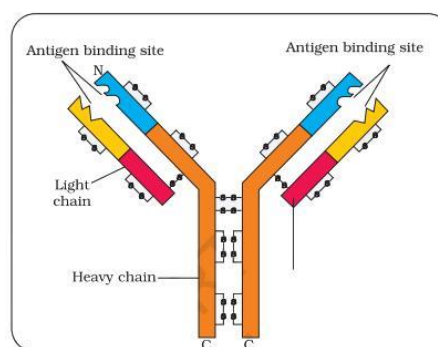
### Structure of Antibody

Each antibody has 2 light chains and 2 heavy chains.

It is represented as  $H_2$  and  $L_2$

The antibodies are classified into five major categories, based on their physiological and biochemical properties.

- IgG ⇒ mother – fetus (placenta)
- IgM
- IgA ⇒ colostrum







→ IgD

→ IgE ⇒ Allergy

## TYPES OF ACQUIRED IMMUNITY

**Active immunity** : when actual infection occurs and our body prepares antibodies itself.

**Passive immunity** : when readymade antibodies are inserted in your body.

### Active immunity v/s Passive immunity

Active immunity	Passive immunity
When a host is exposed to antigens, which may be in the form of living or other proteins, antibodies are produced in the host body. This type of immunity is called active immunity.	When ready-made antibodies are directly given to protect the body against foreign agents, it is called passive immunity. (CBSE 2017 -2MARKS)

## VACCINATION AND IMMUNISATION

The principle of immunisation or vaccination is based on the property of 'memory' of the immune system.

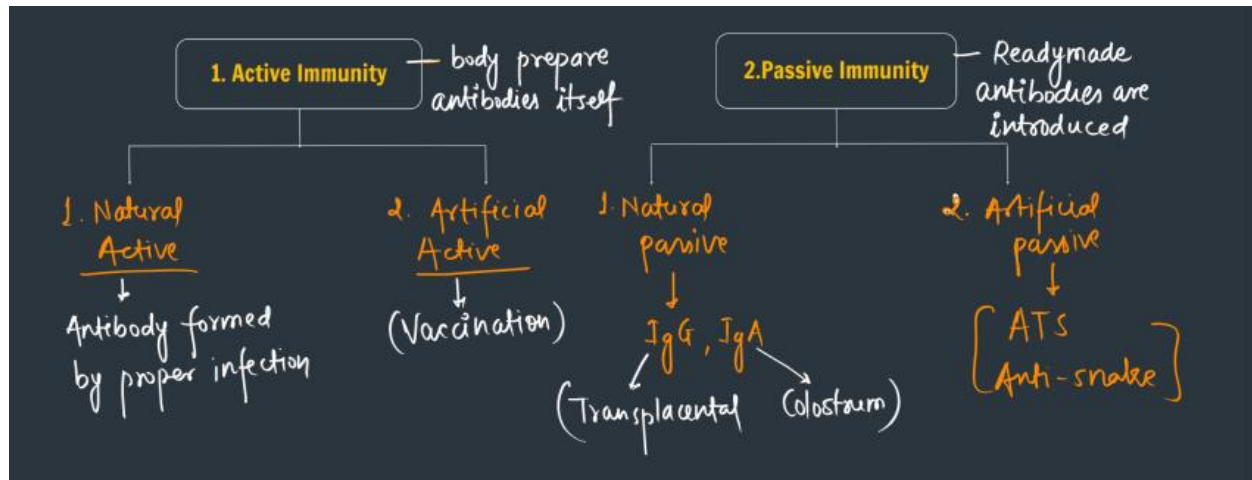
**In vaccination, a preparation of antigenic proteins of pathogens or inactivated / weakened pathogen (vaccine) are introduced into the body.**

If a person is infected with some deadly microbes to which quick immune response is required as in tetanus, we need to directly inject the preformed antibodies antitoxin (a preparation containing antibodies to the toxin). Even in cases of snakebites, the injection which is given to the patients, contain preformed antibodies against the snake venom. This type of immunisation is called **passive immunisation**.

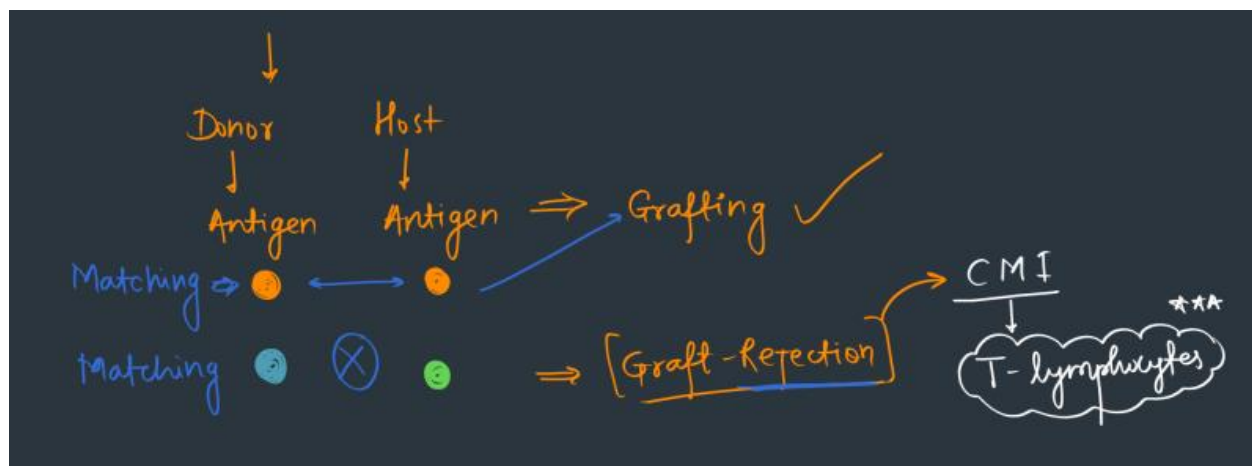
Recombinant DNA technology has allowed the production of antigenic polypeptides of pathogen in bacteria or yeast. Vaccines produced using



this approach allow large scale production and hence greater availability for immunisation, e.g. Hepatitis B vaccine produced from yeast.



## GRAFTING / ORGAN – TRANSPLANTATION



## ALLERGIES

- The antibodies produced to these are of IgE type.
- Allergy is due to the release of chemicals like histamine and serotonin from the mast cells.
- The use of drugs like anti-histamine, adrenaline and steroids quickly reduce the symptoms of allergy.



Allergies are mistes in dust, pollens, animal dander etc. Symptoms of allergic reaction include sneezing, watery eyes, runnning nose and difficulty in breathing.

Allergy is due to the release of chemicals like histamine and serotonin from the mast cells.

Drugs like anti-histamine, aderlnalin and steroids act quickly to reduce the symptoms of allergy.

## AUTO IMMUNITY

Sometimes, due to genetic and other unknown reasons, the body attacks self-cells. This results in damage to the body and is called auto-immune disease.

**Rheumatoid arthritis** which affects many people in our society is an auto-immune disease

## AIDS

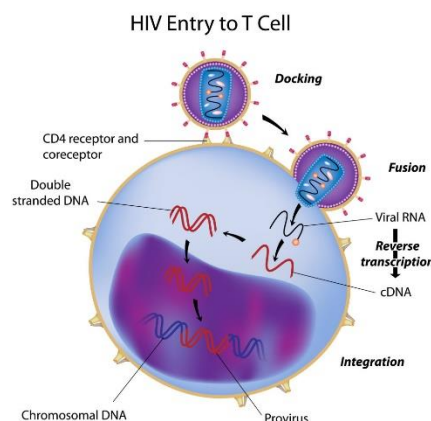
The word AIDS stands for **Acquired Immuno Deficirency Syndrome**.

AIDS was first reported in 1981 and in the last twenty-five years or so, it has spread all over the world killing more than 25 million persons.

AIDS is caused by the **Human Immuno Deficiency Virus (HIV)**, a membrane of a group of viruses called **Retrovirus**, which have an envelope enclosing the RNA genome.

Transmission of HIV-infection generally occurs by –

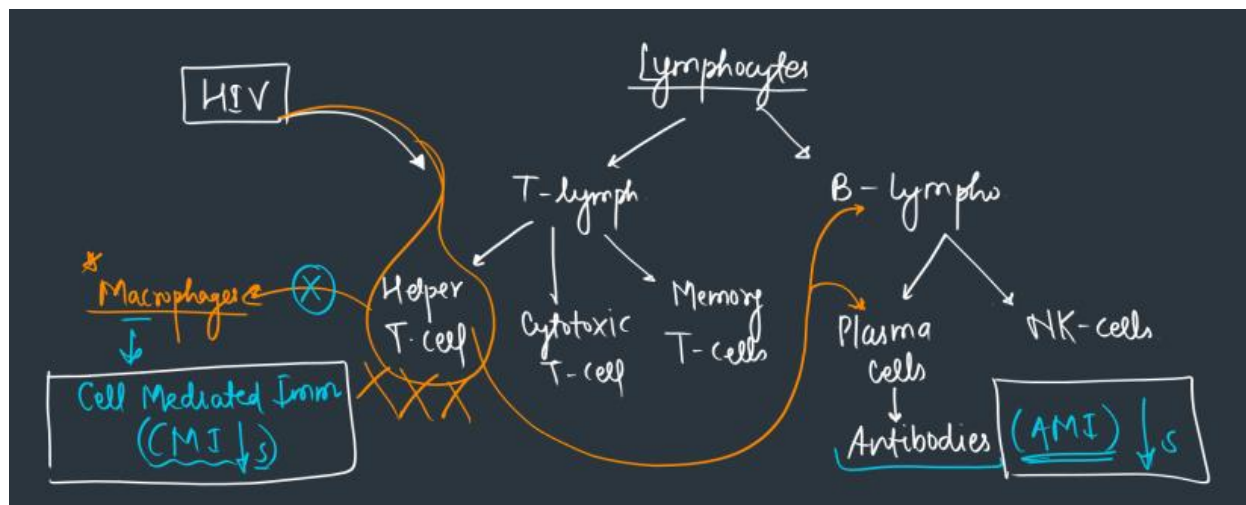
→ Sexual contact with infected person





- By transfusion of contaminated blood and blood products
- By sharing infected needles as in the case of intravenous drug abusers
- From infected mother to her child through placenta

## HIV – INFECTION



A widely used diagnostic test for AIDS is Enzyme Linked Immuno-Sorbent Assay (ELISA).

Treatment of AIDS with anti – retroviral drugs is only partially effective. They can only prolong the life of the patient but cannot prevent death, which is inevitable.

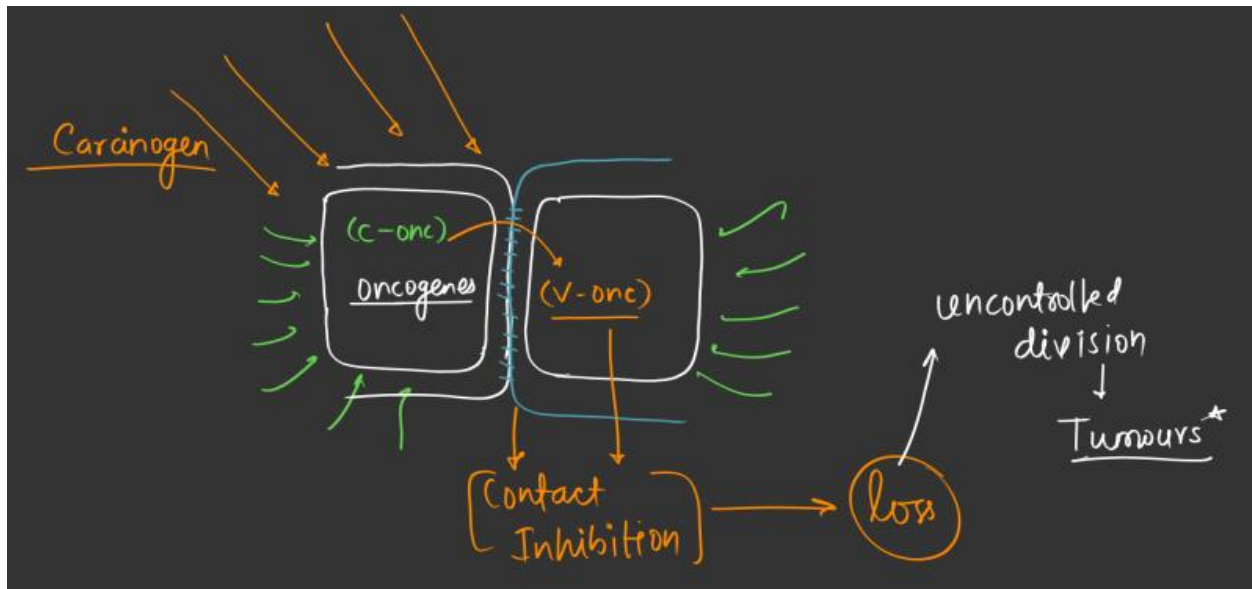
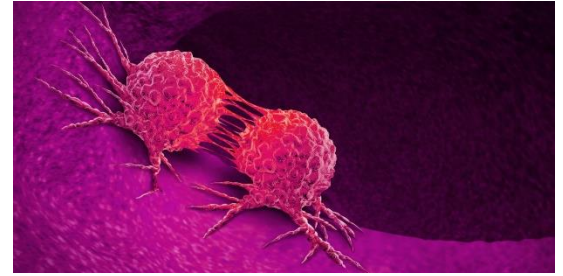
## PREVENTION OF AIDS

In our country the **National AIDS Control Organisation (NACO)** and other Non-Governmental Organisation (NGOs) are doing a lot to educate people about AIDS.

WHO has started a number of programmes to prevent the spreading of HIV infection.

## CANCER

In our body, cell growth and differentiation is highly controlled and regulated. In cancer cells, there is breakdown of these regulatory mechanisms. Normal cells show a property called **contact inhibition** by virtue of which contact with other cells inhibits their uncontrolled growth. **Cancer cells appear to have lost this property.**

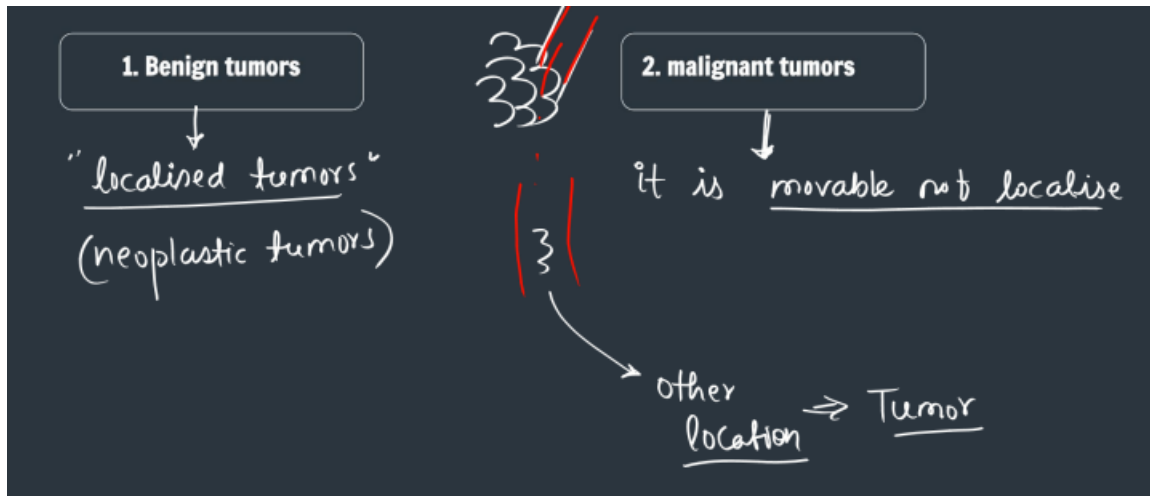


**Causes of Cancer :** Transformation of normal cells into cancerous neoplastic cells may be induced by **physical, chemical or biological agents**. These agents are called **carcinogens**.

Cancer causing viruses called oncogenic viruses have genes called viral oncogenes. Furthermore, several genes called cellular oncogenes (c-onc) or proto oncogenes have been identified in normal cells which, when activated under certain conditions, could lead to oncogenic transformation of the cells.



- Ionising radiations : X-rays & Gamma rays
- Non-ionising radiations : UV cause DNA damage leading to neoplastic transformation.
- The chemical carcinogens present in tobacco smoke have been identified as a major cause of lung cancer.



## CANCER DETECTION AND DIAGNOSIS

Cancer detection is based on biopsy and histopathological studies of the tissue and blood and bone marrow tests for increased cell counts in the case of leukemias.

In **Biopsy**, a piece of the suspected tissue cut into thin sections is stained and examined under microscope (histopathological studies) by a pathologist.

- Radiography (use of X-rays)
- CT (computed tomography)
- MRI (magnetic resonance imaging)

## TREATMENT OF CANCER





The common approaches for treatment of cancer are Surgery, Radiation Therapy and Immuno-therapy.

Most cancers are treated by combination of surgery, radiotherapy and chemotherapy.

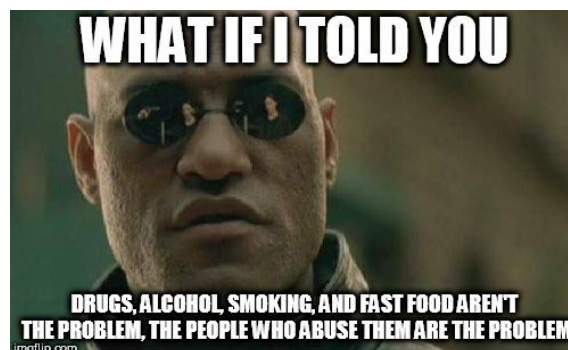
Tumor cells have been shown to avoid detection and destruction by immune system. Therefore, the patients are given substances called biological response modifiers such as **a-interferon** which activates their immune system and helps in destroying the tumor.

## DRUGS AND ALCOHOL ABUSE



The drugs, which are commonly abused are **opioids, cannabionoids and coca alkaloids**.

Majority of these are obtained from flowering plants. Some are obtained from fungi.





## OPIOIDS

**Heroin**, commonly called **Smack** is chemically **Diacetylmorphine** which is a white, odourless, bitter crystalline compound.

This is obtained by acetylation of morphine, which is extracted from the latex of poppy plant *Papaver somniferum*.

Generally taken by **snorting** and **injection**, heroin is a depressant and slows down body functions.

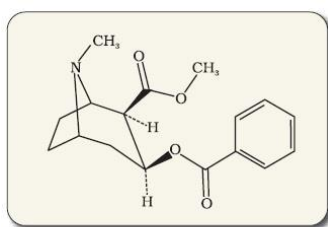
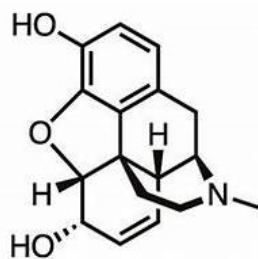


Figure 8.7 Chemical structure of Morphin



Figure 8.8 Opium poppy

## CANNABINOIDS

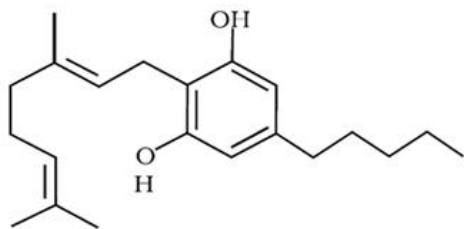
Natural cannabinoids are obtained from the inflorescences of the plant

**Cannabis sativa**

The flower tops, leaves and the resin of cannabis plant are used in various combinations to produce **Marijuana, Hashish, Charas and Ganja**.

Generally taken by inhalation and oral ingestion, these are known for their effects on cardiovascular system of the body.





Skeletal structure of cannabinoid molecule



Leaves of *Cannabis sativa*



Flowering branch of *Datura*

## COCA ALKALOID

Coca alkaloid or cocaine is obtained from coca plant ***Erythroxylum coca***, native to South America.

It interferes with the transport of the neuro-transmitter dopamine.

Cocaine, commonly called coke or crack is usually snorted.



It has a potent stimulating action on central nervous system, producing a sense of **euphoria and increased energy. Excessive dosage of cocaine causes hallucinations.**

Other well-known plants with hallucinogenic properties are ***Atropa belladonna* and *Datura***.

## DRUG ABUSE

Drugs like Barbiturates, Amphetamines, Benzodiazepines, and other similar drugs, that are normally used as medicines to help patients cope with mental illnesses like depression and insomnia, are often abused.

Morphine is a very effective sedative and painkiller, and is very useful in patients who have undergone surgery.

These days cannabinoids are also being abused by some sports persons.



Smoking also paves the way to hard drugs. Tobacco has been used by human beings for more than 400 years. It is smoked, chewed or used as a snuff. Tobacco contains a large number of chemical substance including **nicotine, an alkaloid**. Nicotine stimulates adrenal gland to release adrenaline into blood circulation, both of which raise blood pressure and increase heart rate.

## ADOLESCENCE & DRUG / ALCOHOL ABUSE

Adolescence means both 'a period' and 'a process' during which a child becomes mature in terms of his/her attitudes and beliefs for effective participation in society. The period between 12-18 years of age may be thought of as adolescence period. In other words, adolescence is a bridge linking childhood and adulthood.



Curiosity, need for adventure and excitement, and experimentation, constitute common causes, which motivate youngsters towards drug and alcohol use.

The first use of drugs or alcohol may be out of curiosity or experimentation, but later the child starts using these to escape facing problems.

## ADDICTION AND DEPENDENCE

Because of the perceived benefits, drugs are frequently used repeatedly. The most important thing, which one fails to realise, is the inherent addictive nature of alcohol and drugs.



Addiction is a psychological attachment to certain effects – such as euphoria and a temporary feeling of well-being associated with drugs and alcohol. These drive people to take them even when these are not-needed, or even when their use becomes self-destructive.



With repeated use of drugs, the tolerance level of receptors present in our body increases. Consequently the receptors respond only to higher doses of drugs or alcohol leading to greater intake and addiction.

Dependence is the tendency of the body to manifest a characteristics and unpleasant withdrawal syndrome if regular dose of drugs/alcohol is abruptly discontinued. This is characterised by anxiety, shakiness, nausea and sweating, which may be relieved when use is resumed again. In some cases, withdrawal symptoms can be severe and even life threatening and the person may need medical supervision.



Dependence leads the patient to ignore all social norms in order to get sufficient funds to satiate his/her needs. These result in many social adjustment problems.

## EFFECTS OF DRUG / ALCOHOL ABUSE

The immediate adverse effects of drugs and alcohol abuse are manifested in the form of reckless behaviour, vandalism and violence. Excessive doses of drugs may lead to coma and death due to respiratory failure, heart failure or cerebral hemorrhage. A combination of drugs or their intake along with alcohol generally results in overdosing and even deaths.

Those who take drugs intravenously ( direct injection into the vein using a needle and syringe), are much more likely to acquire serious infections like AIDS and Hepatitis B.

**Both AIDS and Hepatitis B infections are chronic infections and ultimately fatal. Both can be transmitted through sexual contact or infected blood.**

The chronic use of drugs and alcohol damage nervous system and liver (cirrhosis).

The use of drugs and alcohol during pregnancy is also known to adversely affect the fetus.

Another misuse of drugs is what certain sportsperson do to enhance their performance. **They misuse narcotic analgesics, anabolic steroids, diuretics and certain hormones in sports to increase muscle strength and bulk and to promote aggressiveness and as a result increase athletic performance.**



## PREVENTION & CONTROL

In this regard, the parents and the teachers have a special responsibility. Parenting that combines with high level of nurturance and consistent discipline, has been associated with lowered risk of substance (alcohol/drugs/tobacco) abuse.

- Avoid Undue Peer Pressure
- Education and Counselling
- Seeking help from Parents and Peers
- Looking for Danger Signs
- Seeking Professional and Medical Help





**This Chapter Ends here !! But not your work**

Go to Practice Questions, Solve Dpps attend MCQs and revise the notes after some 2<sup>nd</sup> 4<sup>th</sup> and 7<sup>th</sup> day

To get 95+ you have to keep on revising what you studied.

**[ Remember Consistency and HardWork Gives Great Result ]**

**NOTES MADE BY**



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