

TTWRDC (G) - MAHABUBABAD

DEPARTMENT OF

"ZOOLOGY"

"BEST PRACTICES"

AWARENESS OF

"DISEASES"

Introduction:

* The primary purpose of Awareness on Diseases must to be increase awareness of a disease (or) diseases and to provide health educational information on that disease and its management.

* Disease awareness is the understanding of a medical condition well in advance so that the severe impacts of the disease can be prevented.

* Disease awareness involves knowledge of the factors that give birth to a disease, the symptoms, and the way to prevent it. In fact, disease awareness is quite important - to lead a healthy life.

“prevention is always better than cure”

* The purpose was to sensitize students about the need of preventing diseases and promotion of health by practicing personal and environmental hygienic measures and eating balanced diet in day to day life.

TUBERCULOSIS (TB)

Tuberculosis (TB) is a potentially fatal contagious disease that can affect almost any part of the body but is mainly an infection of the lungs.

Neo-Latin word

Tubercle - Round nodule/swelling
Osis - condition.

Causative organisms:

Mycobacterium tuberculosis Human

Mycobacterium Bovis Animals

Other causative organisms:

Mycobacterium africanum

Mycobacterium microti

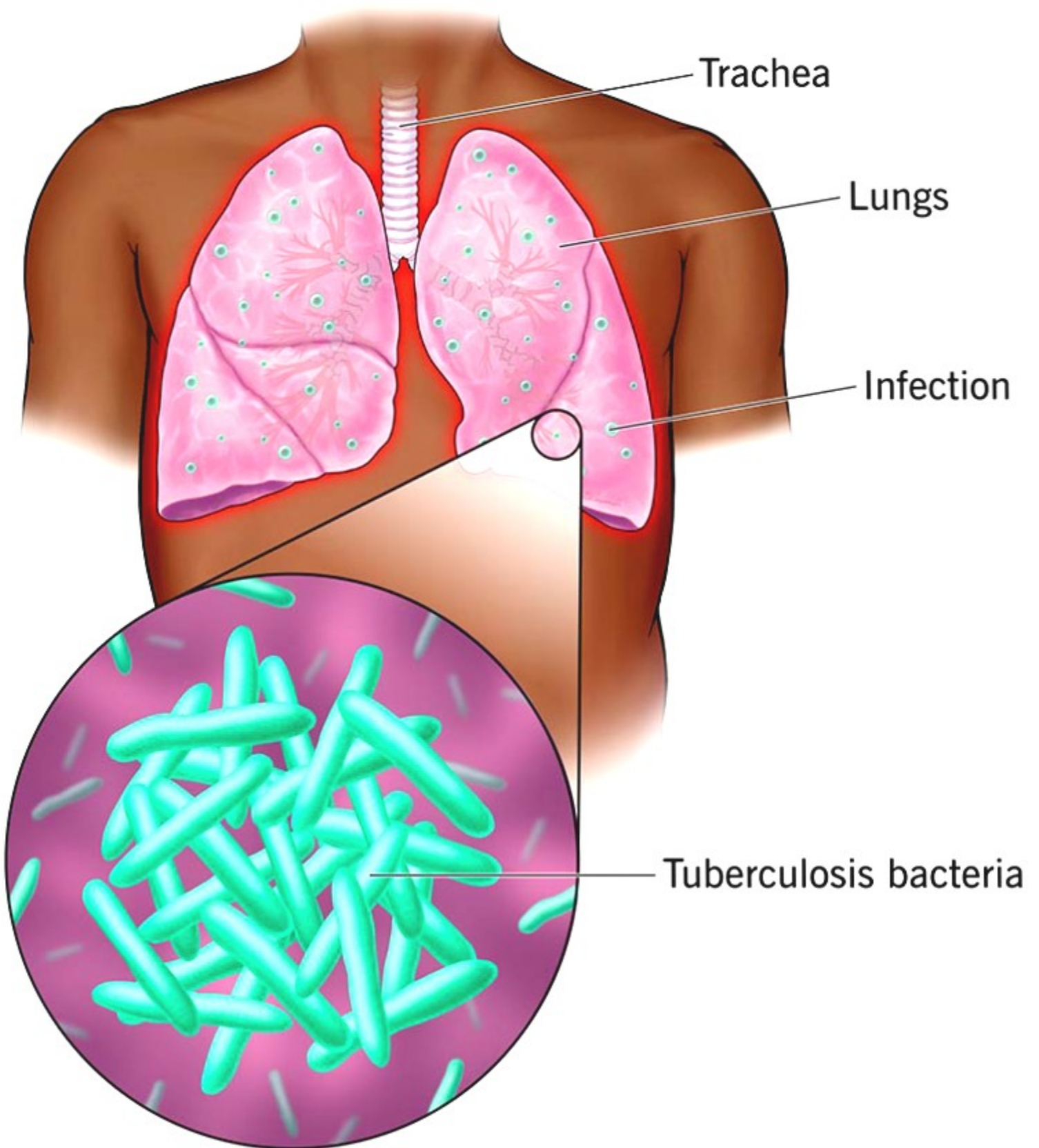
Non-*Mycobacterium* Genus:

Mycobacterium leprae

Mycobacterium avium

Mycobacterium asiaticum.

Tuberculosis



Gram +ve, obligate aerobe, Non-spore forming, non-motile rod, Mesophile, slow generation time, Lipid rich cell wall contains mycolic acid, Acid fast - retains acidic stains, confers resistance to detergents, antibacterials.

classification

pulmonary TB

Primary disease
Secondary disease

Extra pulmonary TB

Lymph node TB
pleural TB
TB of upper airways
Skeletal TB
Genitourinary TB
Milliary TB
Pericardial TB
Gastrointestinal TB
Tuberculous Meningitis

Epidemiology - google.

Symptoms :-

Persistent cough
chest pain

Coughing with bloody sputum

Shortness of breath

Urine discoloration

cloudy and reddish urine.

Fever with chills.

Fatigue.

Tuberculosis Symptoms



fever



fatigue



weight loss



persistent cough



blood in cough



night sweats

Diagnosis:

Bacteriological test:

• Ziehl-Neelsen stain

Auramine stain (fluorescence microscopy)

Sputum culture test:

Lowenstein-Jensen (LJ) solid medium: 4-8 weeks

Liquid medium: 8-14 days

Agar medium: 7-14 days

Radiography: chest x-ray (CXR)

Nucleic acid amplification

Tuberculin skin test:

Injection of fluid into the skin of the lower arm.

48-72 hours later checked for a reaction.

Diagnosis is based on the size of the wheel.

1 dose = 0.1 ml contains 0.04 µg Tuberculin

Tuberculin test interpretation

preventive measure:-

Mask

BCG Vaccine - Bacille Calmette Guerin.

Regular medical follow up

Isolation of patient

Ventilation

Natural sunlight

UV germicidal irradiation.

Management pic + drug pic



TUBERCULOSIS PREVENTION



Healthy Diet



Stop Smoking & Alcohol



Wash your Hands After Sneezing Coughing



Use Mask



Stay Away from Coughing People



Use Personal Utensil & Cutlery

Dosage regimen :-

Intensive phase + continuation phase

HREZ (2 months) + HRE (4 months)

DOTS (Directly observed treatment, short-course) is the name given to the WHO recommended tuberculosis control strategy that combines five components.

Government commitment

Case detection by sputum smear microscopy

Standardized treatment regimen for at least the first two months.

A regular drug supply

A standardized recording and reporting system that allows assessment of treatment results.

DOT is especially critical for patients with drug resistant TB, HIV-infected patients and those on intermittent treatment regimens.

World TB Day - March 24

World TB Day is observed annually on March 24 to raise awareness about TB and efforts to end the global epidemic, marking the day in 1882 when the bacterium causing TB was discovered.

=0 "Malaria" 0=

OVERVIEW:-

Malaria is a disease caused by a parasite. The parasite is spread to humans through the bites of infected mosquitoes. People who have malaria usually feel very sick with a high fever and shaking chills.

While the disease is uncommon in temperate climates, malaria is still common in tropical and sub-tropical countries.

→ Each year nearly 290 million people are infected with malaria, and more than 400,000 people die of the disease.

→ To reduce malaria infections, world health programs distribute preventive drugs and insecticide-treated bed nets to protect people from mosquito bites.

→ Protective clothing, bed nets and insecticides can protect while traveling.

→ Preventive medicine can be taken before, during and after a trip to a high risk area.

→ Many malaria parasites have developed resistance to common drugs used to treat the disease.

SYMPTOMS:

Signs and symptoms of Malaria may include:

* Fever

* chills

* General feeling of discomfort

* Head ache

* Nausea and vomiting

* Diarrhea

* Abdominal pain

* Muscle or joint pain

* Fatigue

* Rapid breathing.

* Rapid heart rate

* Cough.

Diagn.

MALARIA SYMPTOMS



Headache



Fatigue



Nausea



Vomiting



Chills



Fever



Muscle Aches



→ Some people who have malaria experience cycles of malaria "attacks". An attack usually starts with shivering and chills, followed by high fever, followed by sweating and return to normal temperature.

→ Malaria signs and symptoms typically begin within a few weeks after being bitten by an infected mosquito. However, some types of malaria parasites can lie dormant in body for up to a year.

CAUSES

→ Malaria is a Mosquito-borne febrile disease caused by malaria parasites.

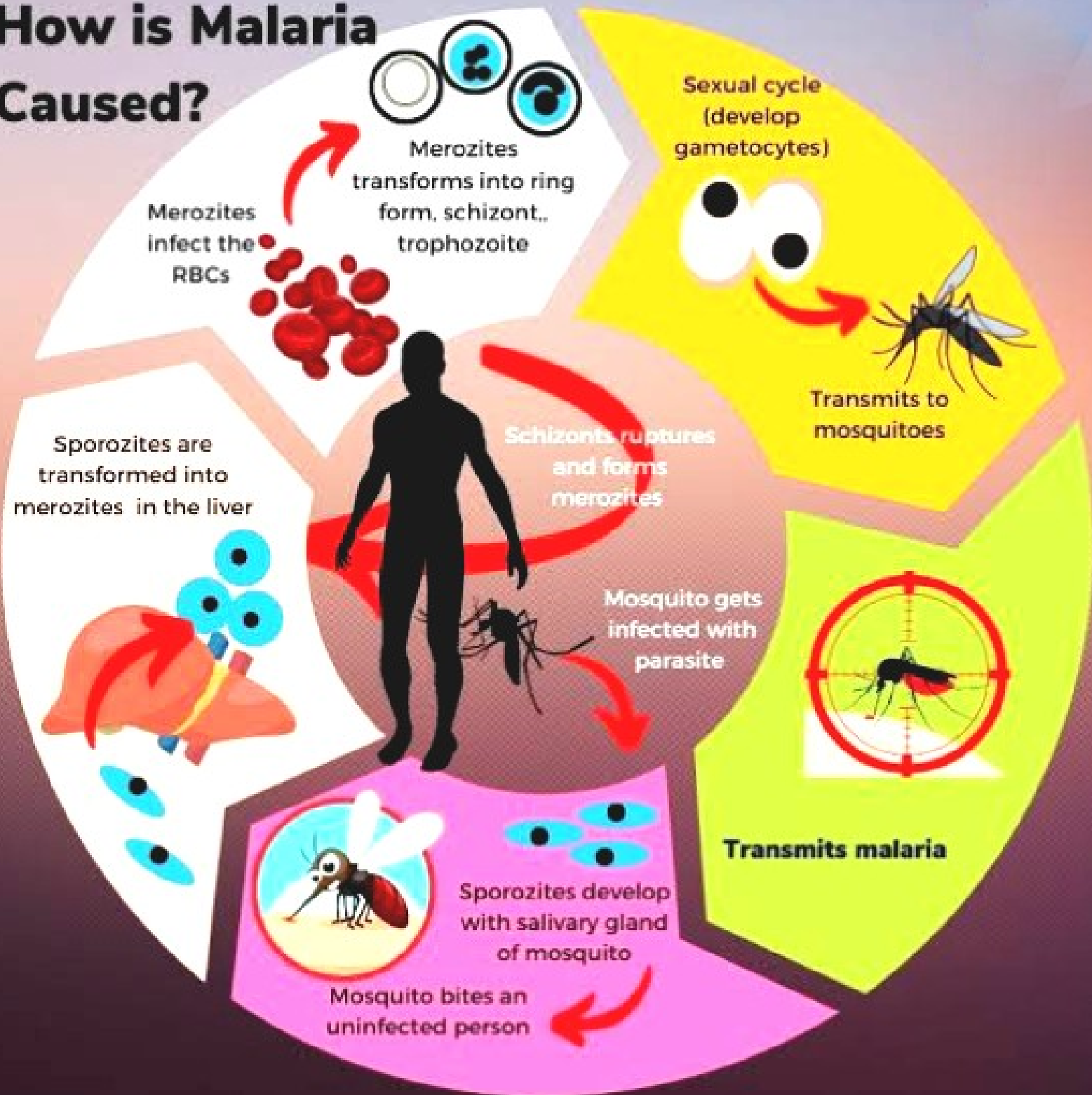
→ Malaria - Mala means Bad, Aria means Air is a protozoan infection.

→ A disease caused by members of protozoan genus plasmodium that affects the human liver and red blood cells.

→ Humans are infected with plasmodium protozoa when bitten by an infective female Anopheles mosquito vector.

→ Symptoms may appear within weeks to months or even years.

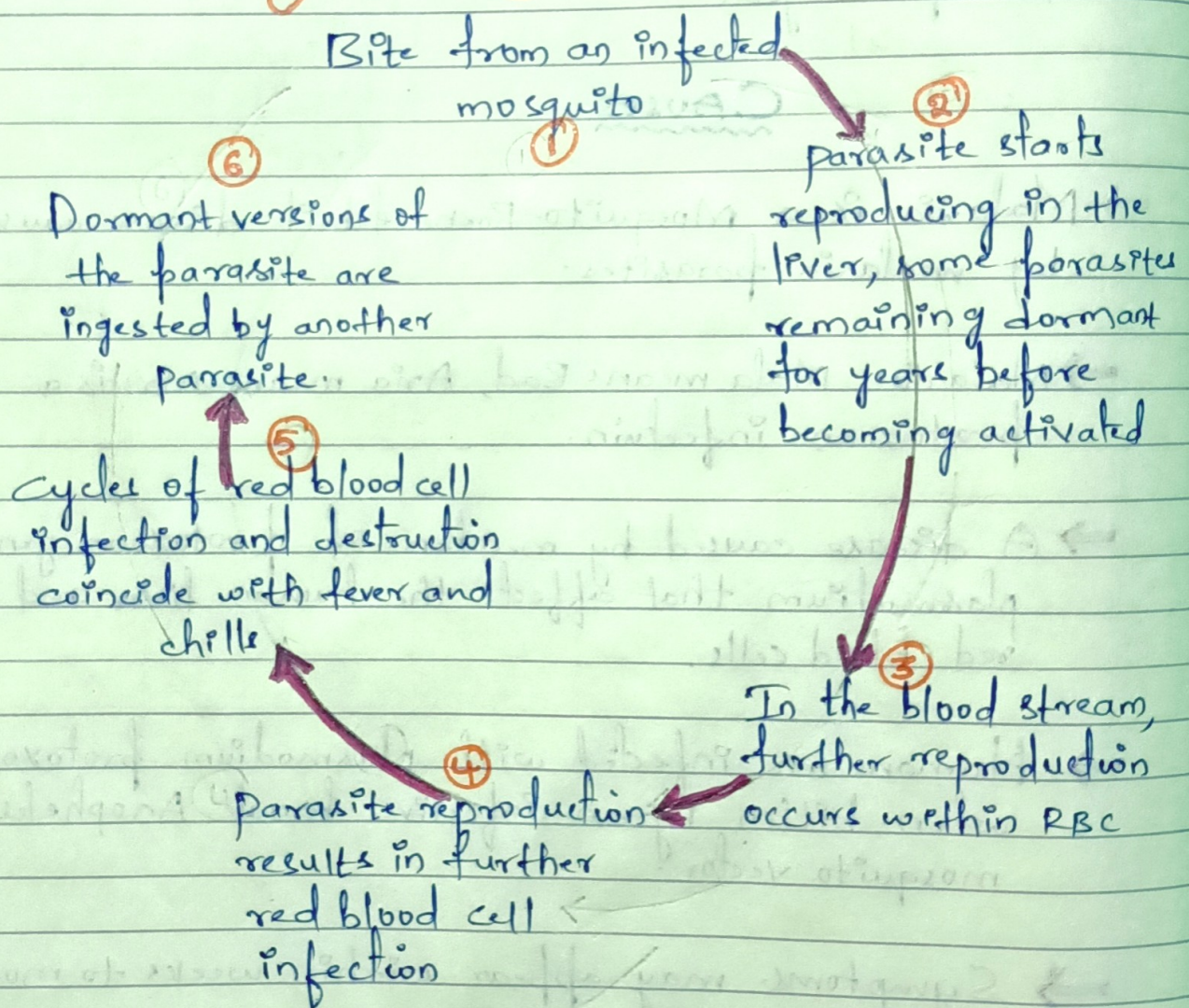
How is Malaria Caused?



The four species of Malaria parasites and incubation period is

MALARIA PARASITE NAME	INCUBATION PERIOD
<i>P. falciparum</i>	9-14 Days
<i>P. Vivax</i>	8-17 Days
<i>P. ovale</i>	16-18 Days
<i>P. malariae</i>	18-40 Days.

PATHOPHYSIOLOGY

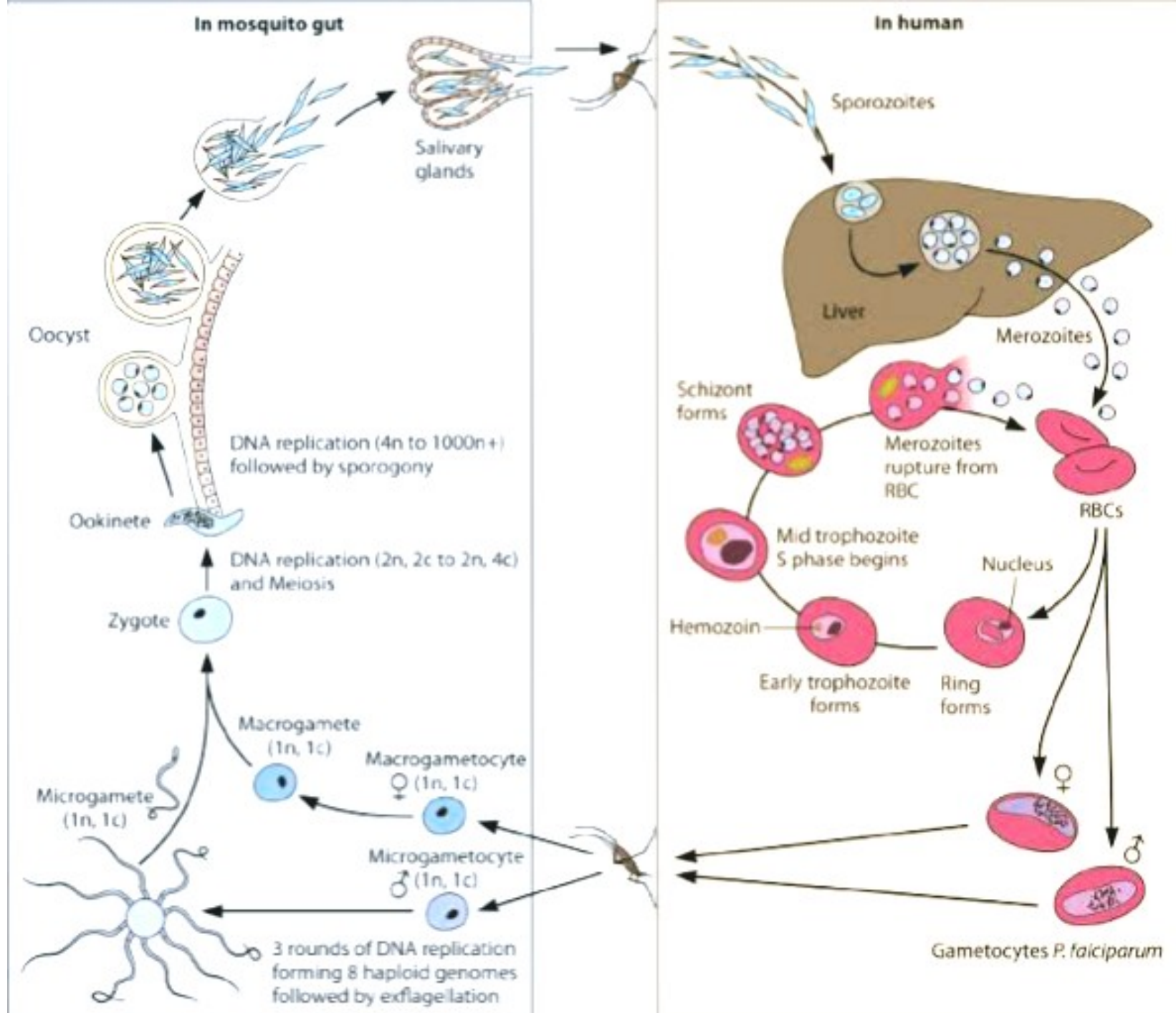


Every year, World Mosquito Day is celebrated on August 20 to mark the historic discovery that female Anopheles mosquitoes

OTHER MODES OF TRANSMISSION:

transmit malaria
blw humans.

- * From mother to unborn child.
- * Through blood transfusions.
- * By sharing needles used to inject drugs.



COMPLICATIONS

- Malaria can be fatal, particularly caused by the plasmodium species.
- The WHO estimates that about 94% of all malaria deaths occur in Africa - most commonly in children under the age of 5.
- Malaria deaths are usually related to one or more serious complications, including
 - * Cerebral malaria
 - * Breathing problems
 - * Organ failure
 - * Anemia
 - * Low blood sugar

INVESTIGATIONS

- * All clinically suspected malaria cases require laboratory examination and confirmation.
- * History collection
- * physical Examination
- * Malaria parasite Test
- * The peripheral smear
- * Bone marrow smear
- * CBC, TC, DC

MALARIA MANAGEMENT

Management of Malaria includes following measures.

- Early detection and early treatment
- Mosquito control measures
- Community

WORLD MALARIA DAY - APRIL 25

* It was instituted by WHO member states during the World Health Assembly of 2007.

* World Malaria Day is an occasion to highlight the need for continued investment and sustained political commitment for malaria prevention and control.

METHODS OF CONTROL

- Removing or poisoning the breeding grounds of the mosquitoes or the aquatic habitats of the larva, stages, for example by filling or applying oil to places with standing water.
- Spraying with DDT
- Early management and disease surveillance.
- Monitoring and evaluation - drug and insecticide resistance monitoring.

Prevention of Malaria



Use Mosquito Nets



Elimination of Mosquito Habitat



Use Mosquito Repellent



Pay Special Attention to Children



Treat Clothing



Know the Symptoms of Malaria



Wear Long-Sleeved Clothing



Keep Home Clean

National Malaria Eradication programme.

- Government of India launched this programme in 1953.
- The National Eradication programme consists various measures:-
 - Administering Antimalarial Drugs.
 - chloroquine 10mg/kg for 3 days.
 - Amodiaquine with 500mg Sulfamethopyrazine (5mg)
 - 25mg pyrimethamine with 500mg Sulfadoxine.
 - The programme Achieved Good success.



52
= 0^v HIV - AIDS 0^v =

Introduction: -

HIV was first identified in 1981 in USA among homosexuals.

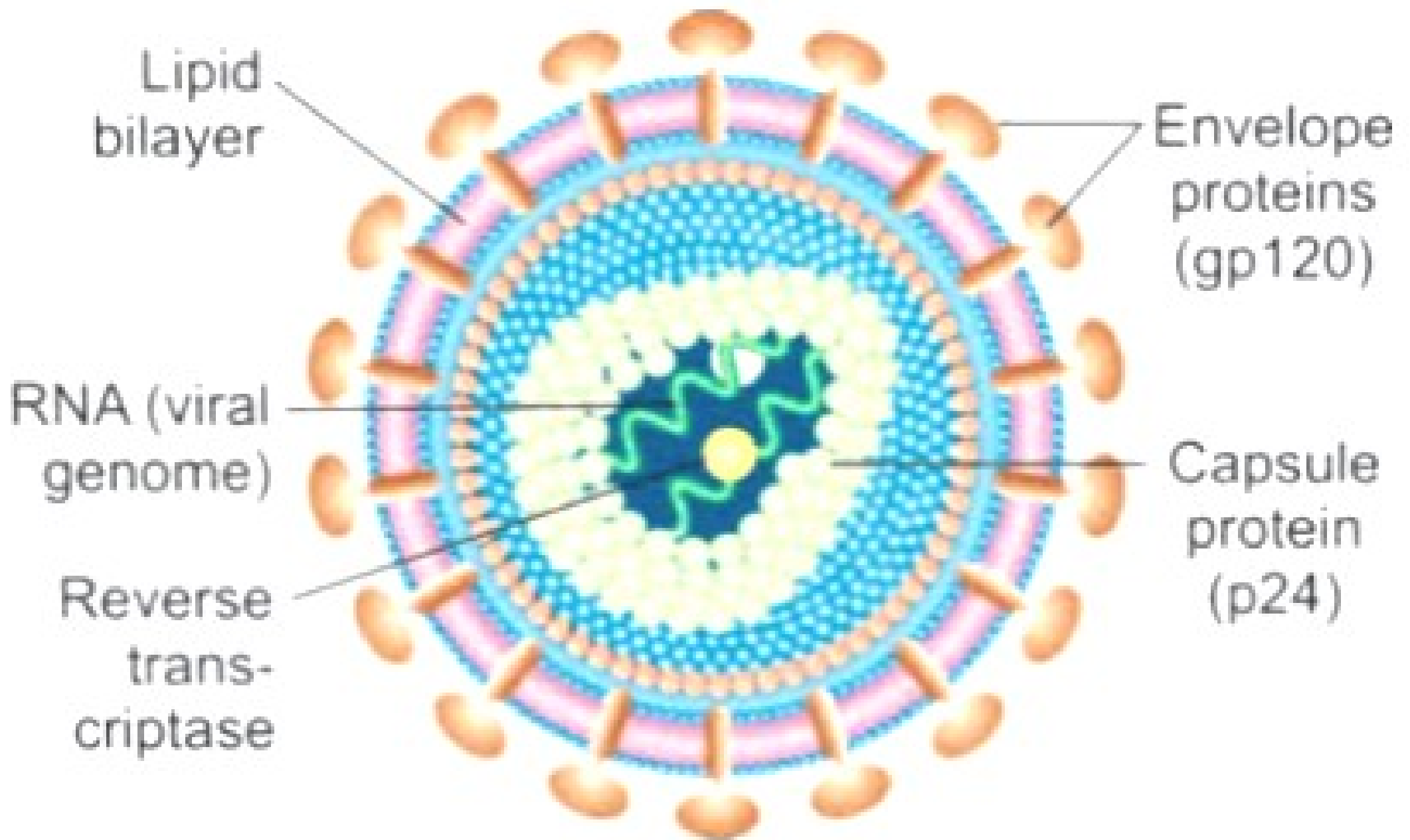
In 1983 French investigator named Lymphadenopathy associated virus (LAV)

In 1984 virus was isolated by Gallo and coworkers from national Institute of health in United states.

They named Human T-cell lymphotropic virus III (HTLV-III)

Thailand was the first country in the SEAR to report a case of AIDS, in 1984. In 1986 a new strain of HIV was isolated in West Africa patient with AIDS which is called HIV-2.

In May 1986, International committee on taxonomy gave a new name called Human Immune Deficiency virus. Since its identification, HIV/AIDS is devastating disease of mankind.



Etiology:

Human Immuno Deficiency virus.

Size: $1/10,000$ th of a millimeter in diameter.

It is a protein capsule containing two short strands of genetic material (RNA) and enzymes.

Two types: HIV-1 and HIV-2.

Reservoir of Infection:

Once a person is infected, virus remains life long.

Cases are carriers

It can be transmitted even if the person is symptoms less.

Source of Infection:

Virus has been found in greatest concentration in blood, semen and CSF.

Lower concentrations have been detected in tears, saliva, breast milk, urine, and cervical and vaginal secretion.

To date, only blood and semen have been conclusively shown to transmit the virus.

Most cases have occurred among sexually active persons aged 20-49.

Sex workers

IDUs

Clients of sex workers

MSM

Labor migrant / Transport workers
 Partners of migrants / house wives
 Street children
 Military, police
 Health care workers

Phases of HIV Infection:-

1. phase 1 (3-12 weeks)

Acute HIV syndrome

Sore throat

Fever

Skin rash

Meningitis

High viremia.

2. Middle chronic phase (10-12 years)

Competition between HIV and host immune system

patient asymptomatic or has mild symptoms

Moderate viremia

3. phase-3

Full blown AIDS

Severe Immuno suppression.

Drop in CD4 count below 200/uL

(normal count: > 950 CD4 cells / uL)

High viremia.

AIDS signs :- signs

Major .

Weight loss $> 10\%$ body weight
 Chronic diarrhea > 1 months duration
 Prolonged fever > 1 month.

Minor

Recurrent oral-pharyngeal candidiasis
 Persistent generalized lymphadenopathy
 Persistent cough > 1 month
 Recurrent herpes zoster.

Mode of transmissions.

During sexual contact

Unprotected sex

Anal (10 times higher risk)

Vaginal

Oral

Transmission from male to female is more (twice) as compared to female to male.

STDs facilitate for transmission of HIV.

Through infected blood

Sharing needles

Use of contaminated needles and syringes.

Transfusion of HIV infected blood or blood products.

From mother to child

During pregnancy

During child birth

Through breast feeding.

HIV/AIDS is transmitted



UNPROTECTED
SEX



DRUG ADDICTS



BLOOD
TRANSFUSION

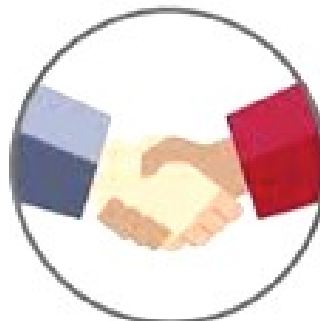


PREGNANCY



NON-STERILE
INSTRUMENTS

HIV/AIDS is not transmitted



TOUCHING



THROUGH FOOD



WITH A KISS

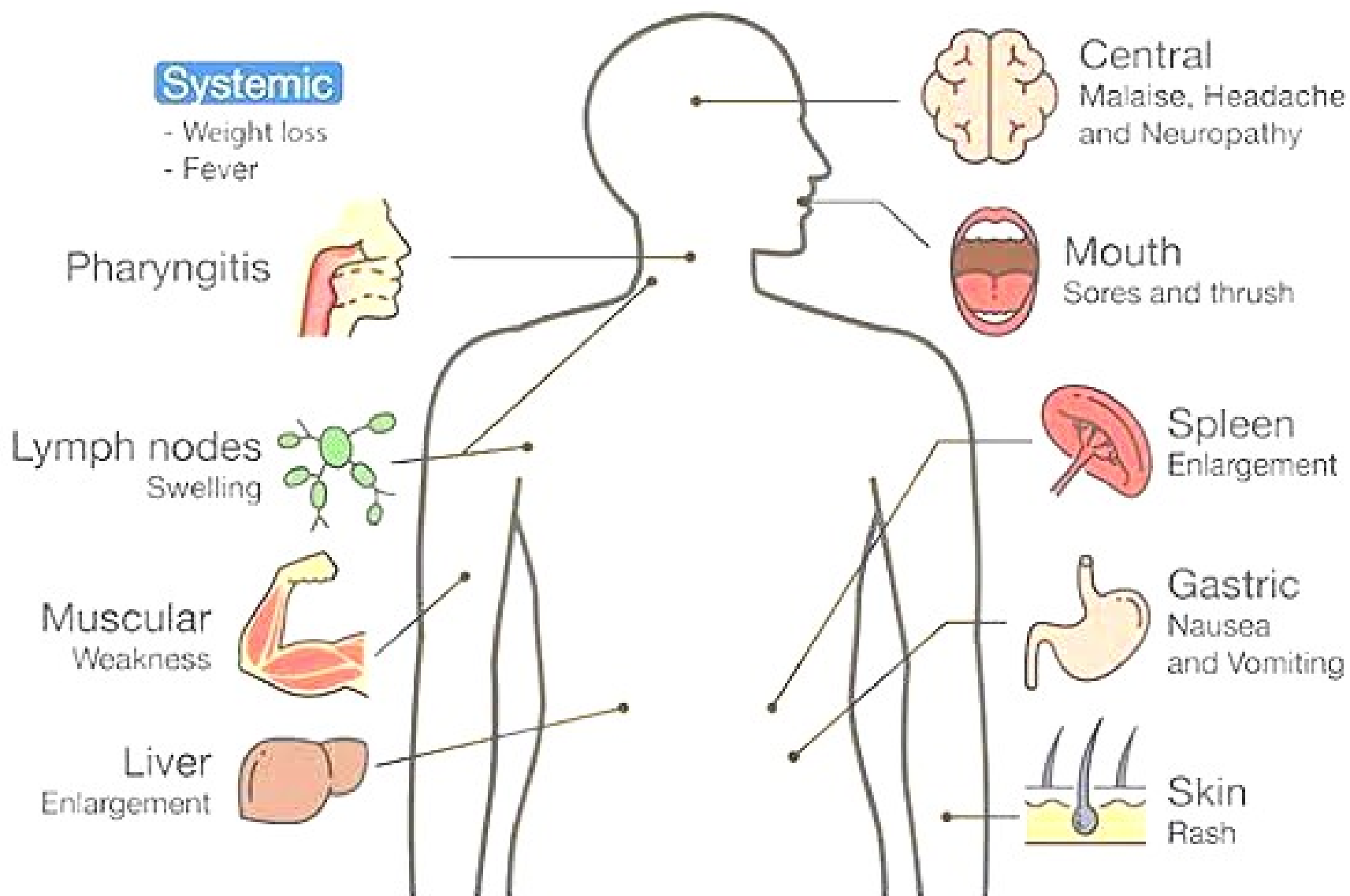


INSECT BITES



IN THE POOL

Main symptoms of HIV infection



Diagnosis:

Direct tests

ELISA

Recombinant DNA techniques

Viral isolation in culture

PCR

Indirect tests

CD4 counts

Lymphopenia

Lymph node biopsy

Incubation period: Current data suggests that the incubation period is uncertain, (from a few months

prevention:

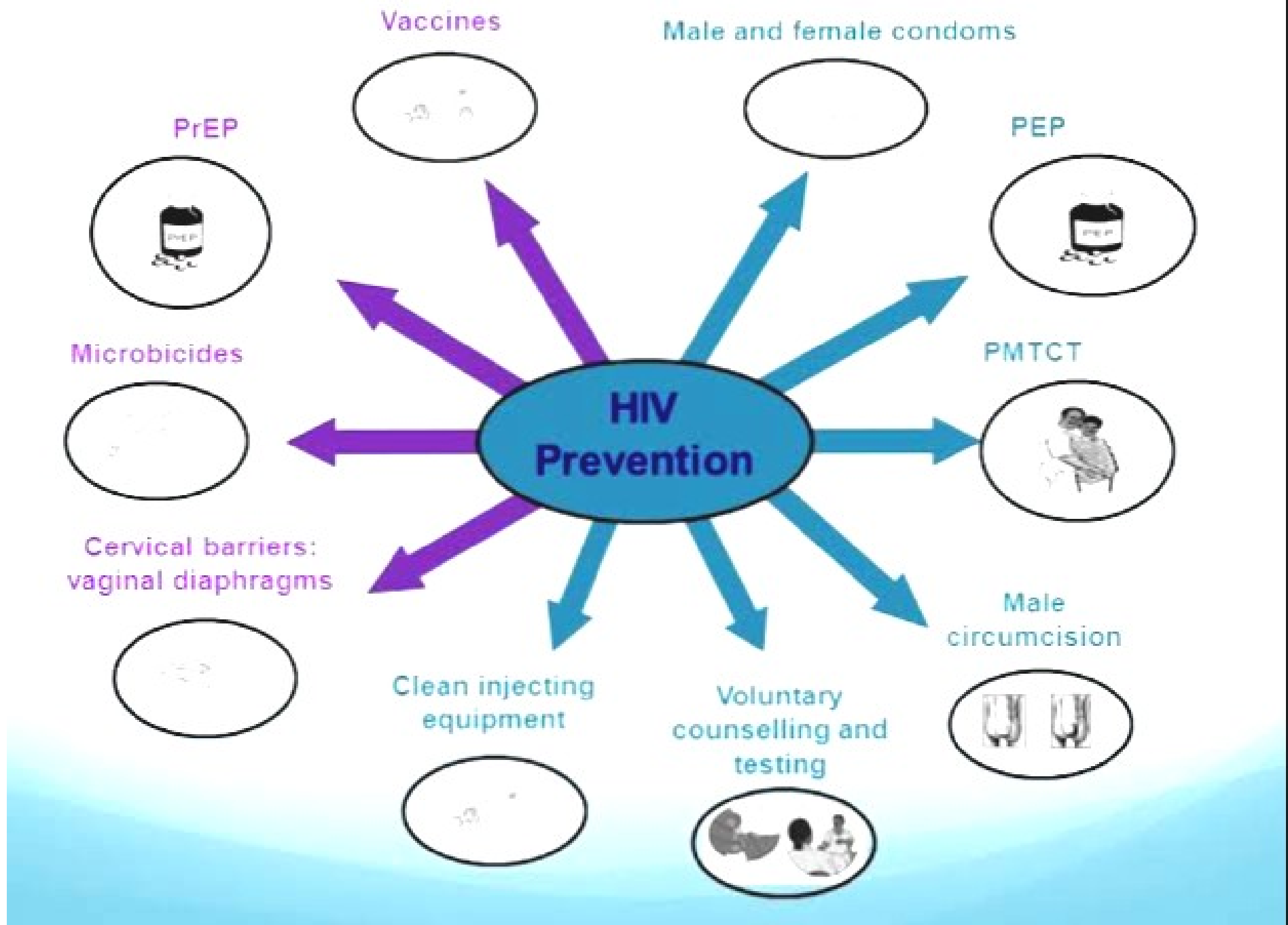
Raising awareness

prevention of blood borne HIV Transmission.

Strict sterilization techniques should be applied to the hospitals and clinics.

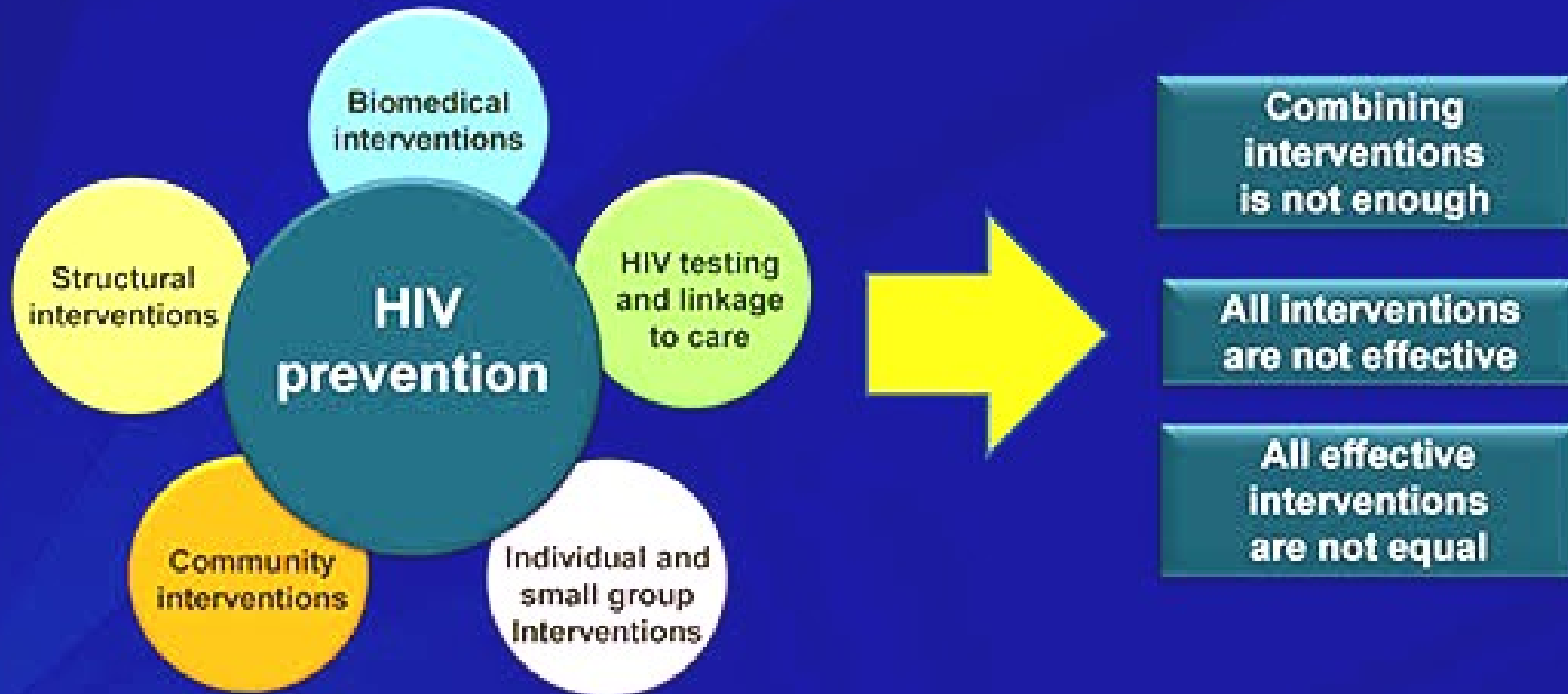
Avoid injections unless they are absolutely necessary.

Rehabilitation of HIV/AIDS cases.



Combination prevention

Multiple disciplines and approaches



Treatments

Antiretroviral treatment

protease inhibitors

post exposure prophylaxis treatment

Every year, on 1 December, the World commemorates World AIDS Day. People around the world unite to show support for people living with and affected by HIV and to remember those who lost their lives to AIDS.

It is designated on 1 December every year since 1988. Government and health officials, non-government organizations, and individuals around the world observe the day, often with education on AIDS prevention and control.

PICS

DIARRHOEA

Introduction -

Diarrhoea is defined as passage of unusually loose or watery stools usually at least three times in a 24 hour period. (WHO)

For adults stool weight $> 200\text{g/d}$ can generally be considered diarrhoeal.

Passage of even one large watery stool in young child is diarrhoea.

INCIDENCE:

Every year there are about 1.5 to 2 billion deaths of diarrhoeal diseases occur.

Diarrhoea is the second leading cause of child mortality and morbidity in the world. One in 5 children die of diarrhoea every year in India.

It is mostly due to contaminated food and water sources.

classification pic ①

ETIOLOGY: -

The causes of diarrhoea are as follows:

- 1) Infection
- 2) Drugs
- 3) Dietary causes
- 4) Surgical conditions
- 5) Miscellaneous causes

Symptoms of diarrhea



Clinical feature and assessment:

Clinical feature of diarrhea depends on its severity:

Mild diarrhea (2-5 loose stool)

Moderate diarrhea (10 or more loose stool)

Severe diarrhea (100 loose stool within 24 hours)

Common Causes of Sudden or Chronic Diarrhea

Sudden Diarrhea



Food poisoning



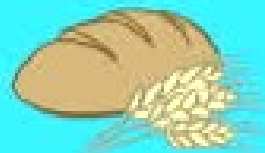
Traveler's diarrhea



Stomach flu



Chronic Diarrhea



Celiac disease



Food intolerance/
allergy



Milk/soy protein
intolerance



IBS



Medication

DIAGNOSTIC EVALUATION:

History taking
physical examination
Stool examination
Stool culture
Blood tests.

MANAGEMENT:-

Management of infants and young children with diarrhea and dehydration focus on:

- Replacement of fluids
- Administration of prescribed drugs.
- Maintenance of nutritional status.
- Educate the mother regarding prevention of diarrhea.

Diarrhea Prevention



Sanitation

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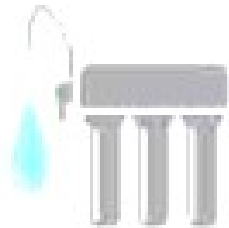


Vaccination

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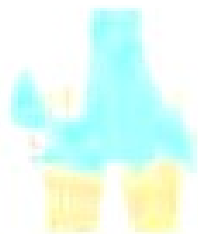
Clean water

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Nutrition

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Hand washing

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Breastfeeding

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DIABETES

INTRODUCTION

→ Diabetes mellitus, is a group of metabolic diseases in which there are high blood sugar levels over a prolonged period.

→ Symptoms of high blood sugar include frequent urination, increased thirst, and increased hunger.

→ If untreated, diabetes can cause many complications like Diabetic ketoacidosis, non-ketotic hyperosmolar coma or Death.

Serious long-term complications include heart diseases, stroke, chronic kidney failure, foot ulcers and damage to the eyes.

* Diabetes is due to either the pancreas not producing enough insulin or the cells of the body not responding properly to the insulin produced.

TYPES

* There are three main types of diabetes mellitus.

- Type 1 DM
- Type 2 DM
- Gestational Diabetes.

Type 1 DM: - Results from the pancreas failure to produce enough insulin.

→ This form was previously referred to as "insulin dependent diabetes mellitus" (IDDM) or "juvenile diabetes."

*** Type 2 DM:** - Begins with insulin resistance, a condition in which cells fail to respond to insulin properly.

This form was previously referred to as "non insulin-dependent diabetes mellitus" (NIDDM) or "adult-onset diabetes."

The primary cause is excessive body weight and not enough exercise.

GESTATIONAL DIABETES - It is the third main form and occurs in pregnant women without a previous history of diabetes.

COMPARISON OF TYPE 1 AND 2 DIABETES

FEATURE	TYPE 1	TYPE 2
Onset	Sudden	Gradual
Age at onset	Mostly in children	Mostly in Adults
Body size	Thin or Normal	Often obese
Ketoacidosis	Common	Rare
Autoantibodies	Usually present	Absent
Endogenous insulin	Low or Absent	Normal/decreased/ Increased
Concordance in Identical twins	50%	90%
prevalence	~10%	~90%

SIGNS AND SYMPTOMS :-

The classic symptoms of untreated diabetes are weight loss, polyuria (increased urination), polydipsia (increased thirst) and polyphagia (increased hunger).

Symptoms may develop rapidly (weeks or months) in type 1 DM, while they usually develop much more slowly and may be subtle or absent in type 2 DM.

In addition they also include

- Blurry vision
- Head ache
- Fatigue
- Itchy skin

Symptoms of Diabetes



Increased thirst.



Slow-healing cuts and sores.



Fatigue.



Blurred vision.



Frequent urination.



Unexplained weight loss.

slow healing of cuts.

Prolonged high blood glucose can cause glucose absorption in the lens of the eye, which leads to changes in its shape, resulting in vision changes.

A number of skin rashes that can occur in diabetes are collectively known as diabetic dermadromes.

Complications

All forms of diabetes increase the risk of long-term complications. These typically develop after many years (10-20).

Damage to blood vessels

Cardiovascular disease

Coronary artery disease

Stroke

Peripheral vascular disease

Diabetic retinopathy

Diabetic Nephropathy

Chronic kidney disease

Diabetic neuropathy

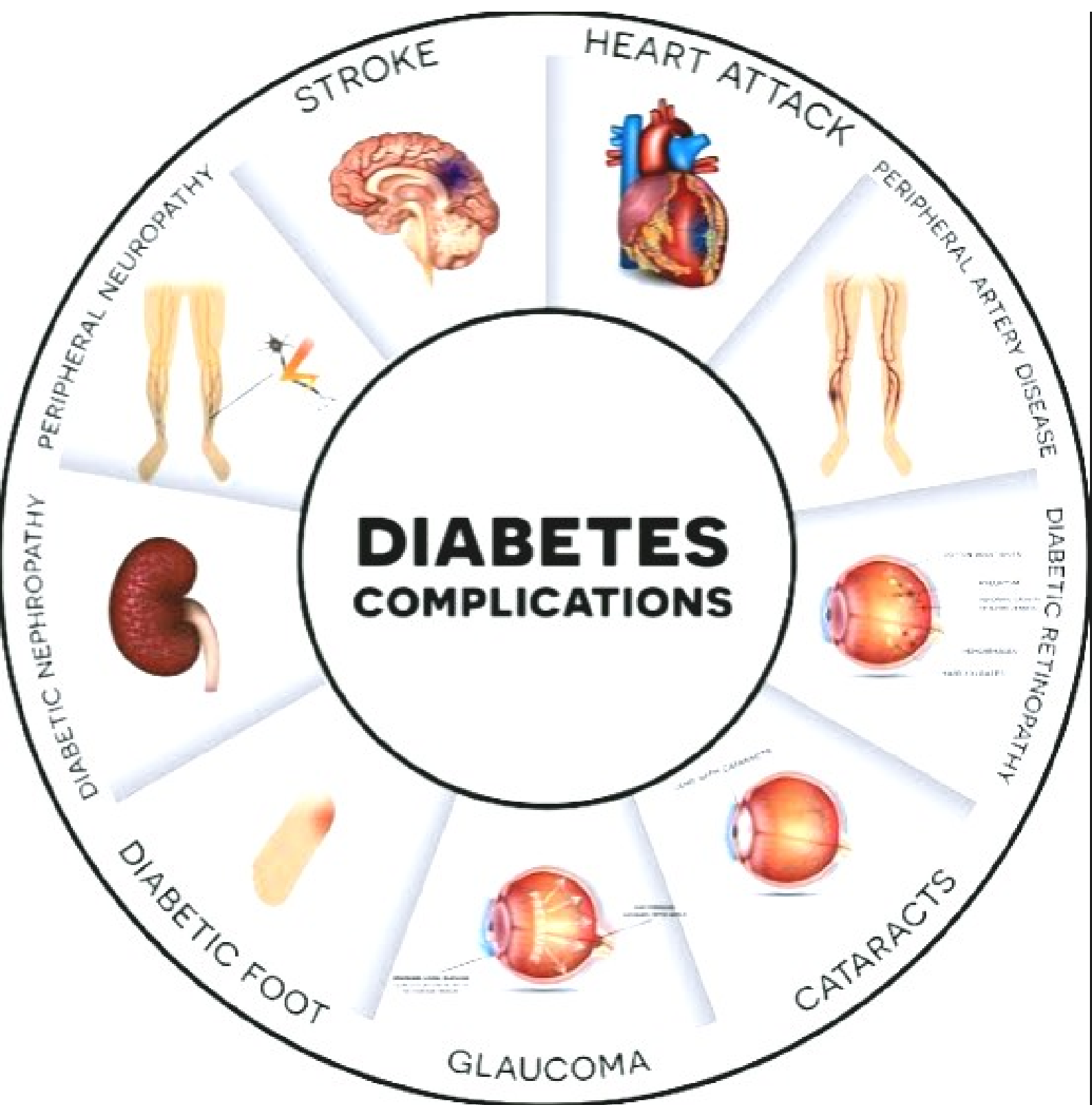
Diabetic foot ulcers

Diabetic Amyotrophy

Mental health

Gastroparesis

Hearing loss



causes of diabetes -

Diabetes causes vary depending on genetic makeup, family history, ethnicity, health and environmental factors.

There is no defined diabetes cause because the causes of diabetes vary depending on the individual and the type.

Diagnosis DIAGNOSIS

Blood tests are used to diagnosis diabetes and pre-diabetes. Lab analysis of blood is needed to ensure test results are accurate.

Glucose measuring devices such as finger stick devices may be used as a quick indicator of high blood glucose.

- Glucose tolerance test
- Oral Glucose tolerance test

diagnostic pic

Treatment - TREATMENT

prevention and treatment often involve physical exercise

Maintaining Normal body weight

Healthy diet

Diet plan - Daily nutritional needs should be taken frequently but small portions.

Below are some Diabetes myths:

People with diabetes should not exercise.

Fat people always develop type 2 diabetes eventually

Children can outgrow diabetes

Only older people develop type 2 diabetes

If you have diabetes you cannot eat chocolates or sweets

Diabetics cannot eat bread, potatoes or pasta.

Diabetes diets are different from other people's diet.

PATHOPHYSIOLOGY - TYPE 1 | TYPE 2

- If the amount of insulin available is insufficient
- If cells respond poorly to the effects of insulin
- If insulin itself is defective

Then glucose will not be absorbed properly by the body cells

The net effect is persistently high levels of blood glucose, poor protein synthesis, and breakdown of fat storage

Acidosis

When the glucose concentration in the blood remains high over time, the kidneys will reach a threshold of reabsorption → **GLYCOSURIA**

This increase the osmotic pressure of the urine
POLYURIA → increased fluid loss.

Lost blood volume will be replaced osmotically from water held in body cells and other body compartments → **DEHYDRATION** → **POLYDIPSIA**

GESTATIONAL DIABETES!

Gestational diabetes mellitus resembles type 2 in several aspects.

It occurs in about 2-10% of all pregnancies and may improve or disappear after delivery.

Risk to the baby include - Macrosomia

Congenital heart defects

Central Nervous system Abnormalities

Skeletal Muscle Malformations

Respiratory distress syndrome

Perinatal death in severe cases

MANAGEMENT :-

Hyperglycemia needs medical intervention and insulin administration

While emergency, give glucose first!

Small amount is unlikely to cause significant harm.

Life style - Good nutrition

Regular exercise

Diet control to maintain blood pressure

Medications

Surgery - pancreas transplant

kidney transplantation

Weight loss surgery

Normal

Diabetic



Fasting - $< 110 \text{ mg/dl}$ 2 hrs - $< 140 \text{ mg/dl}$.
glucose

Fasting - $\geq 126 \text{ mg/dl}$ 2 hrs - $\geq 200 \text{ mg/dl}$.
glucose

World Diabetes Day - November 14

Established in 1991 by the International Diabetes Federation with support from WHO in response to growing concerns about the health and economic threat posed by diabetes, World Diabetes Day became an official UN day in 2006.

World Diabetes Day provides an opportunity to raise awareness of diabetes as a global public health issue and what needs to be done, collectively and individually, for better prevention, diagnosis and management of the condition.

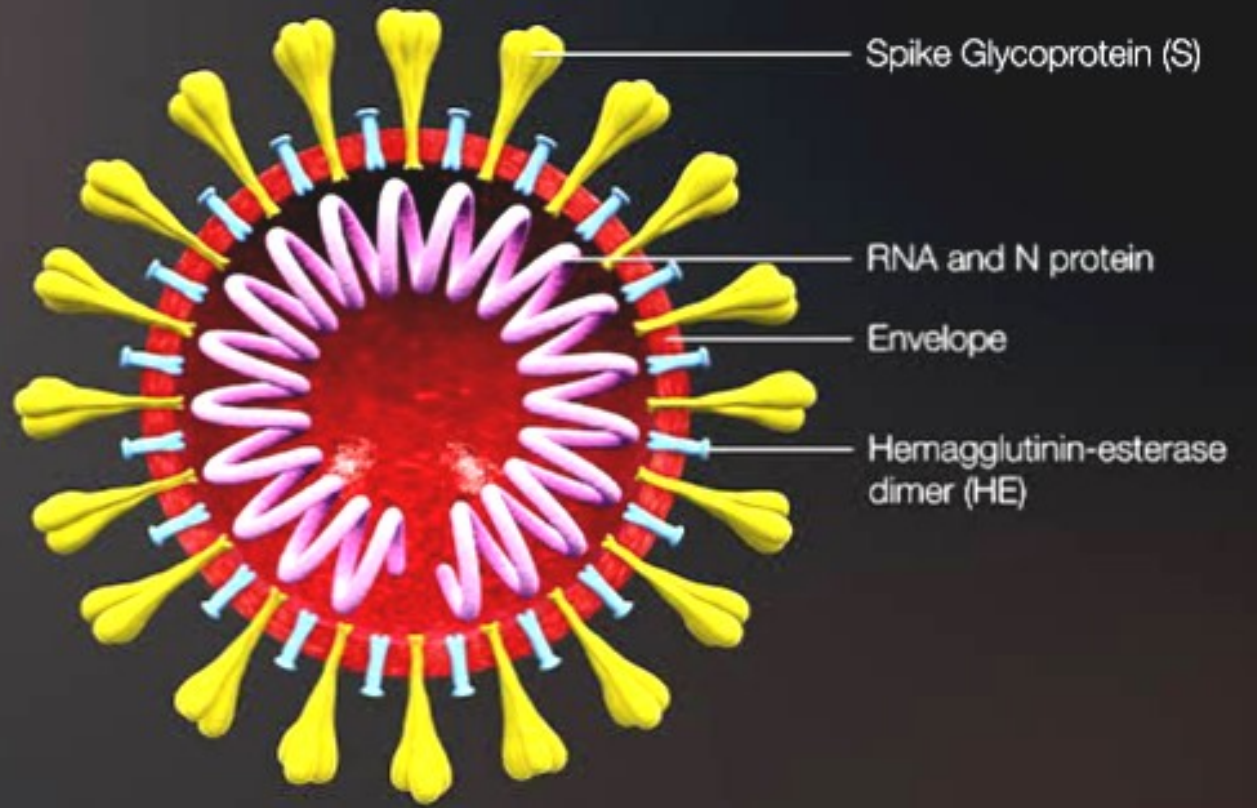
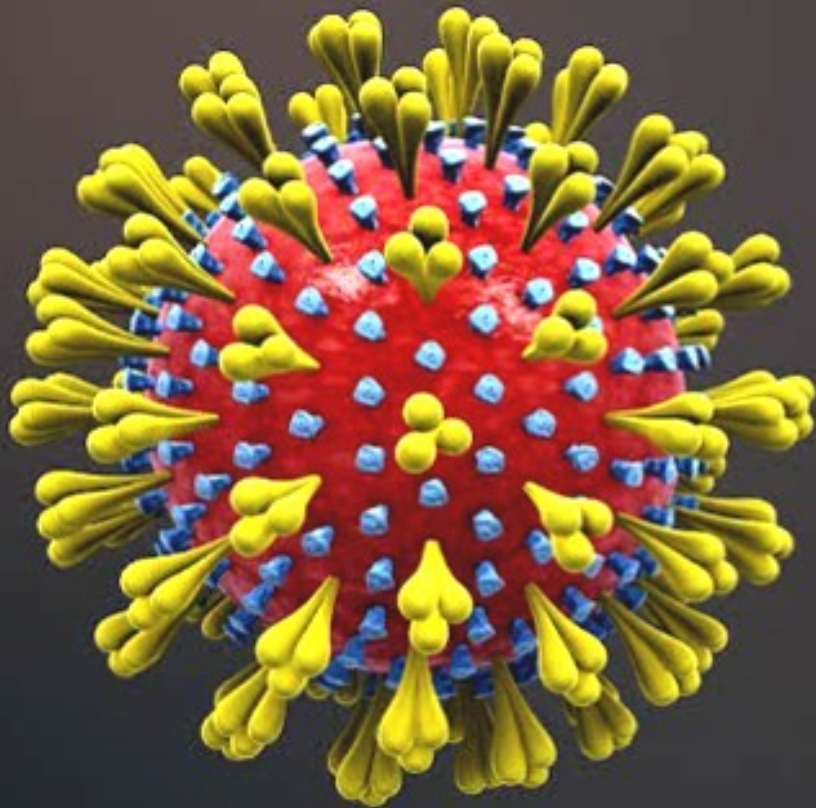
COVID-19 (Coronavirus disease)

COVID-19 (Coronavirus disease 2019) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), previously known as 2019 novel coronavirus (2019-nCoV), a strain of Corona virus.

The first cases were seen in Wuhan, China in December 2019 before spreading globally. The current outbreak was recognized as a pandemic on 11 March 2020.

Coronaviruses are a large group of viruses that have crown-like thorns on their surface. The Latin word for crown is coronam.

pic of corona v



Transmission: -

Coronaviruses mainly spread from person to person among those in close contact (within about 6 feet, or 2 meters).

The virus spreads by respiratory droplets released when someone infected with the virus coughs, sneezes, breathes, sings or talks. These droplets can be inhaled or land in the mouth, nose or eyes of a person nearby.

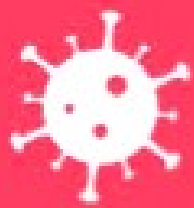
Sometimes the COVID-19 virus can spread when a person is exposed to small droplets that stay in the air for several minutes or hours called airborne transmission.

Transmission pic

SYMPTOMS: -

COVID-19 symptoms can be very mild to severe. Some people have no symptoms. The most common symptoms are fever, cough and tiredness.

Other symptoms may include shortness of breath, muscle aches, chills, sore throat, headache, chest pain and loss of taste or smell. Other less common symptoms have also been reported. Symptoms may appear 2-14 days after exposure.



CORONAVIRUS SYMPTOMS

ICONS SET



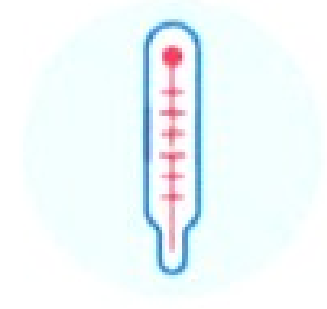
Fatigue



Aching muscles



Headache



Fever



Sore throat



Shortness of breath



Cough



Diarrhea

RISK FACTORS :-

COVID-19 symptoms ca

The risk is higher for anyone in close contact with people who have COVID-19, such as health care workers.

Others are :-

Serious heart conditions, such as heart failure, coronary artery disease, or cardiomyopathies.

Kidney disease

Chronic obstructive pulmonary disease (COPD)

Obesity, which occurs in people with a body mass index (BMI) of 30 or higher

Sickle cell disease

A weakened immune system from an organ transplant

Type 2 diabetes.

DIAGNOSIS: -

PCR test: This tests for the presence of the actual virus's genetic material or its fragments as it breaks down. This is the most reliable and accurate test for detecting active infection.

Antibody (serology test): This test detects if you've had an immune response (antibodies) to the virus. This means that you've had the virus and your body (immune system) specifically antibodies has mounted an attack to fight it. This test detects those antibodies. It should not be used to diagnose an active infection.

TREATMENT :-

AT Home :-

REST: It can make you feel better and may speed your recovery.

STAY HOME: Don't go to work, school or public places.

DRINK FLUIDS: Dehydration can make symptoms worse and cause other health problems.

MONITOR: If your symptoms get worse, call your doctor right away.

ASK YOUR DOCTOR - about over the counter medicines that may help to lower your fever.

Treatment at hospital's -

check the levels of oxygen in your blood with a clip on finger monitor.

Lung Examination

COVID-19 test - putting a 6-inch cotton swab up both sides of your nose for about 15 seconds

Chest x-ray or CT-Scan.

MEDICATION: MEDICATION

In October 2020, the FDA approved the antiviral drug Remdesivir to treat COVID-19. The drug may be used to treat adults and children ages 12 and older and weighing at least 88 pounds, who have been hospitalized for COVID-19. Clinical trials suggest that in these patients, remdesivir may modestly speed up recovery time.

PREVENTION

PREVENTION:

ways to prevent the spread: -

- * Wear a mask
- * Stay 6 feet apart from others
- * Get a COVID-19 vaccine
- * Avoid crowds and poorly ventilated indoor spaces.
- * Wash your hands often with soap and water.
- * Use hand sanitizer.

“protect yourself and others”

CORONAVIRUS PREVENTION

