



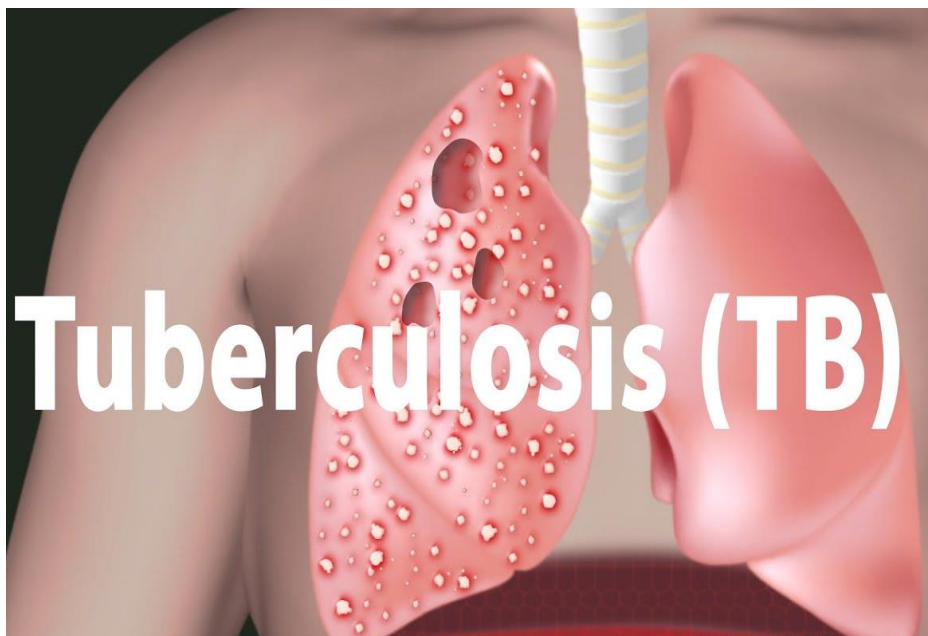
DISEASES - PATHOPHYSIOLOGY & SYMPTOMS

A disease is a particular abnormal condition that negatively affects the structure or function of all or part of an organism, and that is not due to any immediate external injury. Diseases are often known to be medical conditions that are associated with specific symptoms and signs.

Signs and symptoms are abnormalities that can indicate a potential medical condition. Whereas a symptom is subjective, that is, apparent only to the patient (for example back pain or fatigue), a sign is any objective evidence of a disease that can be observed by others (for example a skin rash or lump).

TUBERCULOSIS (TB)

Tuberculosis (TB) is a contagious infection that usually attacks your lungs. It can also spread to other parts of your body, like your brain and spine. A type of bacteria called *Mycobacterium tuberculosis* causes it.



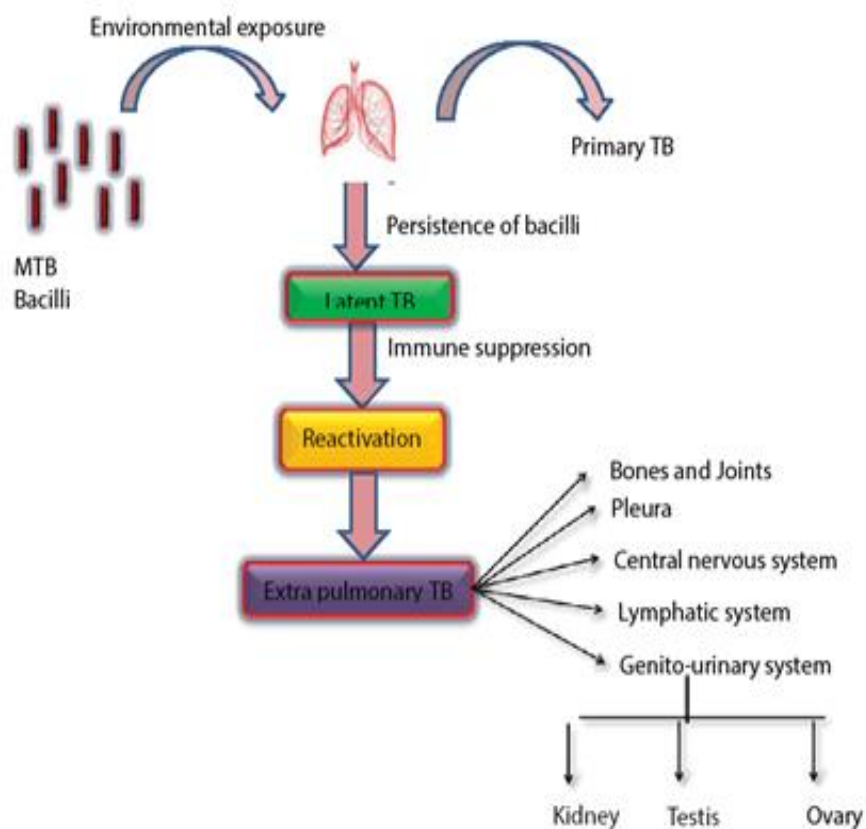
Causes

Tuberculosis is caused by bacteria that spread through the air, just like a cold or the flu. You can get TB only if you come into contact with people who have it.

Signs and Symptoms

- A cough that lasts more than 3 weeks
- Chest pain
- Coughing up blood
- Feeling tired all the time
- Night sweats
- Chills
- Fever
- Loss of appetite
- Weight loss

Pathophysiology



Treatment

- Isoniazid (INH)
- Rifampin (Rifadin, Rimactane)
- Isoniazid and rifapentine

HEPATITIS

Hepatitis refers to an inflammatory condition of the liver. It's commonly caused by a viral infection, but there are other possible causes of hepatitis. These include autoimmune hepatitis and hepatitis that occurs as a secondary result of medications, drugs, toxins, and alcohol. Autoimmune hepatitis is a disease that occurs when your body makes antibodies against your liver tissue.



Types & causes of hepatitis

Viral infections of the liver that are classified as hepatitis include hepatitis A, B, C, D, and E. A different virus is responsible for each type of virally transmitted hepatitis. Hepatitis A is always an acute, short-term disease, while hepatitis B, C, and D are most likely to become ongoing and chronic. Hepatitis E is usually acute but can be particularly dangerous in pregnant women.

Hepatitis A

Hepatitis A is caused by an infection with the hepatitis A virus (HAV). This type of hepatitis is most commonly transmitted by consuming food or water contaminated by feces from a person infected with hepatitis A.

Hepatitis B

Hepatitis B is transmitted through contact with infectious body fluids, such as blood, vaginal secretions, or semen, containing the hepatitis B virus (HBV). Injection drug use, having sex with an infected partner, or sharing razors with an infected person increase your risk of getting hepatitis B.

Hepatitis C

Hepatitis C comes from the hepatitis C virus (HCV). Hepatitis C is transmitted through direct contact with infected body fluids, typically through injection drug use and sexual contact.

Hepatitis D

Also called delta hepatitis, hepatitis D is a serious liver disease caused by the hepatitis D virus (HDV). HDV is contracted through direct contact with infected blood. Hepatitis D is a rare form of hepatitis that only occurs in conjunction with hepatitis B infection. The hepatitis D virus can't multiply without the presence of hepatitis B.

Hepatitis E

Hepatitis E is a waterborne disease caused by the hepatitis E virus (HEV). Hepatitis E is mainly found in areas with poor sanitation and typically results from ingesting fecal matter that contaminates the water supply.

Signs and symptoms

- flu-like symptoms

- dark urine
- pale stool
- abdominal pain
- loss of appetite
- unexplained weight loss
- yellow skin and eyes, which may be signs of jaundice

Pathophysiology

- Destruction of hepatocytes (necrosis) by inflammation
- Altered blood flow through and to liver
- Edema – both peripherally and in portal vessel area
- Blockage of bile ducts leading to reduced bile in small intestine and problems with fat absorption
- Reduction of ability to make blood proteins including albumin, clotting factors, complement
- Buildup of blood toxins including urea and ammonia

Treatment

Several **antiviral medications** can help fight the virus and slow its ability to damage your liver. Example drugs are,

entecavir (Baraclude), tenofovir (Viread), **lamivudine** (Epivir), adefovir (Hepsera) and telbivudine (Tyzeka)

RHEUMATOID ARTHRITIS (RA)

Rheumatoid arthritis (RA) is an autoimmune disease that can cause joint pain and damage throughout your body. The joint damage that RA causes usually

happens on both sides of the body. So, if a joint is affected in one of your arms or legs, the same joint in the other arm or leg will probably be affected, too.



Causes

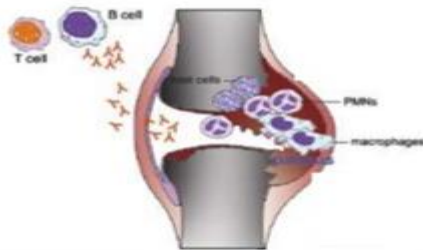
- Rheumatoid arthritis occurs when your immune system attacks the synovium — the lining of the membranes that surround your joints.
- The resulting inflammation thickens the synovium, which can eventually destroy the cartilage and bone within the joint.
- The tendons and ligaments that hold the joint together weaken and stretch. Gradually, the joint loses its shape and alignment.

Symptoms

- joint swelling
- joint stiffness
- loss of joint function and deformities

Pathophysiology

- RA is an autoimmune disease
- Autoimmune disease:
Immune system incorrectly targets your own tissues and organs



Treatment

- **Nonsteroidal anti-inflammatory drugs (NSAIDs)** - used to relieve pain and reduce inflammation.
- **Traditional disease-modifying antirheumatic drugs (DMARDs)** – used reduce inflammation, reduce or prevent joint damage, and preserve joint structure and function.
- **Biologic DMARDs** – these work faster than traditional DMARDs.
- **Steroids** – used for strong antiinflammatory effects.

HYPERTENSION

Hypertension is another name for high blood pressure. It can lead to severe health complications and increase the risk of heart disease, stroke, and sometimes death. Blood pressure is the force that a person's blood exerts against the walls of their blood vessels. This pressure depends on the resistance of the blood vessels and how hard the heart has to work.



Types & Causes

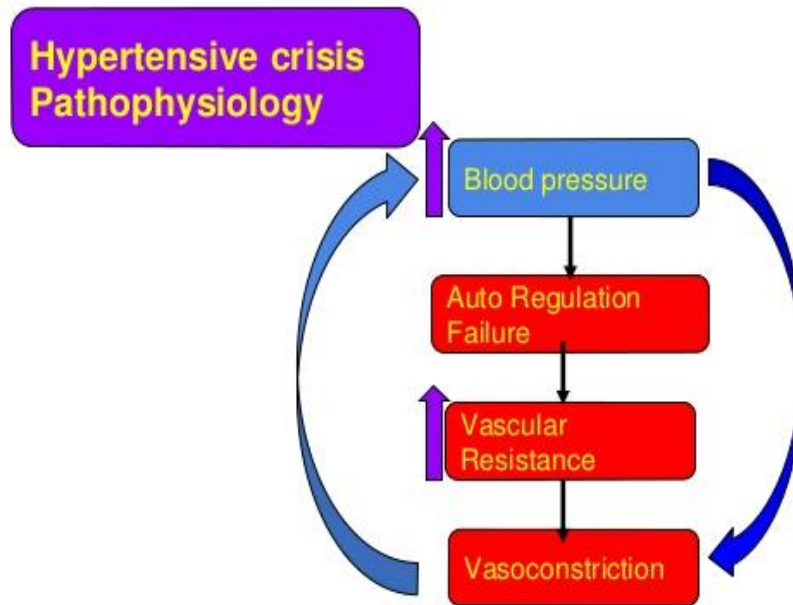
1) Primary hypertension can result from multiple factors, including:

- blood plasma volume
- hormone activity in people who manage blood volume and pressure using medication
- environmental factors, such as stress and lack of exercise

2) Secondary hypertension has specific causes and is a complication of another health problems like,

- diabetes, due to kidney problems and nerve damage
- kidney disease
- pheochromocytoma, a rare cancer of an adrenal gland
- Cushing syndrome that corticosteroid drugs can cause
- congenital adrenal hyperplasia, a disorder of the cortisol-secreting adrenal glands
- hyperthyroidism, or an overactive thyroid gland
- hyperparathyroidism, which affects calcium and phosphorous levels
- obesity

Pathophysiology



Treatment

- diuretics, including thiazides, chlorthalidone, and indapamide
- beta-blockers and alpha-blockers
- calcium-channel blockers
- central agonists
- peripheral adrenergic inhibitor
- vasodilators
- angiotensin-converting enzyme (ACE) inhibitors
- angiotensin receptor blockers

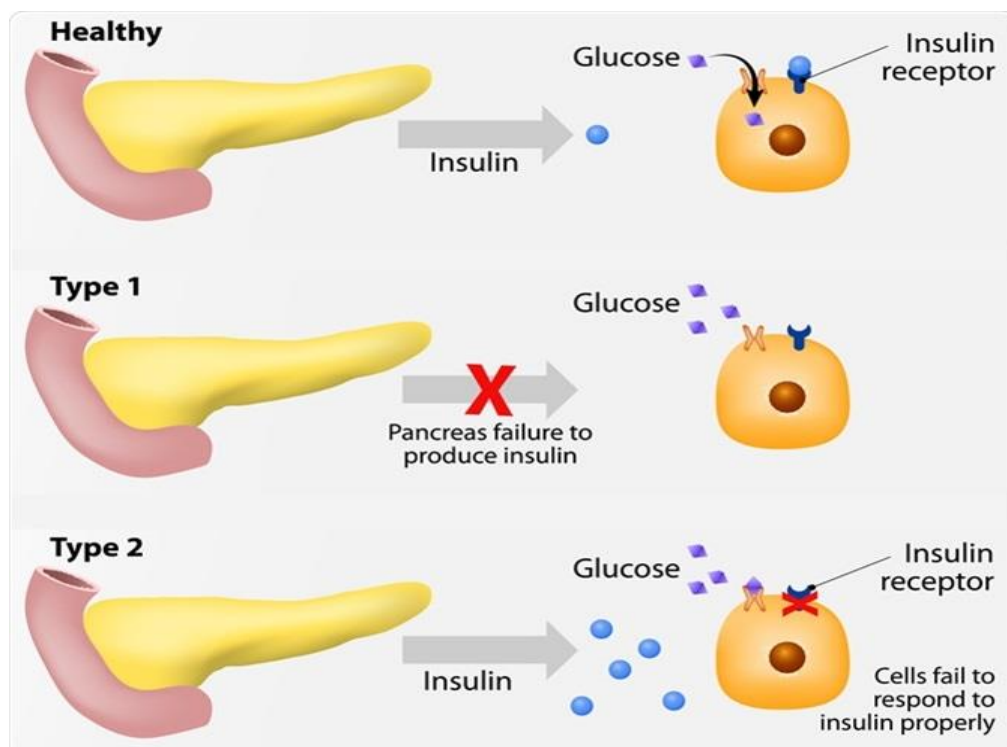
DIABETES MELLITUS

Diabetes mellitus, commonly known as diabetes, is a metabolic disease that causes high blood sugar. The hormone insulin moves sugar from the blood into your cells to be stored or used for energy. With diabetes, your body either doesn't make enough insulin or can't effectively use the insulin it does make.

Untreated high blood sugar from diabetes can damage your nerves, eyes, kidneys, and other organs.

Types

- Type 1 diabetes is an autoimmune disease. The immune system attacks and destroys cells in the pancreas, where insulin is made. It's unclear what causes this attack. About 10 percent of people with diabetes have this type.
- Type 2 diabetes occurs when your body becomes resistant to insulin, and sugar builds up in your blood.
- Prediabetes occurs when your blood sugar is higher than normal, but it's not high enough for a diagnosis of type 2 diabetes.
- Gestational diabetes is high blood sugar during pregnancy. Insulin-blocking hormones produced by the placenta cause this type of diabetes.



Causes

1) Type 1 diabetes

Doctors don't know exactly what causes type 1 diabetes. For some reason, the immune system mistakenly attacks and destroys insulin-producing beta cells in the pancreas. Genes may play a role in some people. It's also possible that a virus sets off the immune system attack.

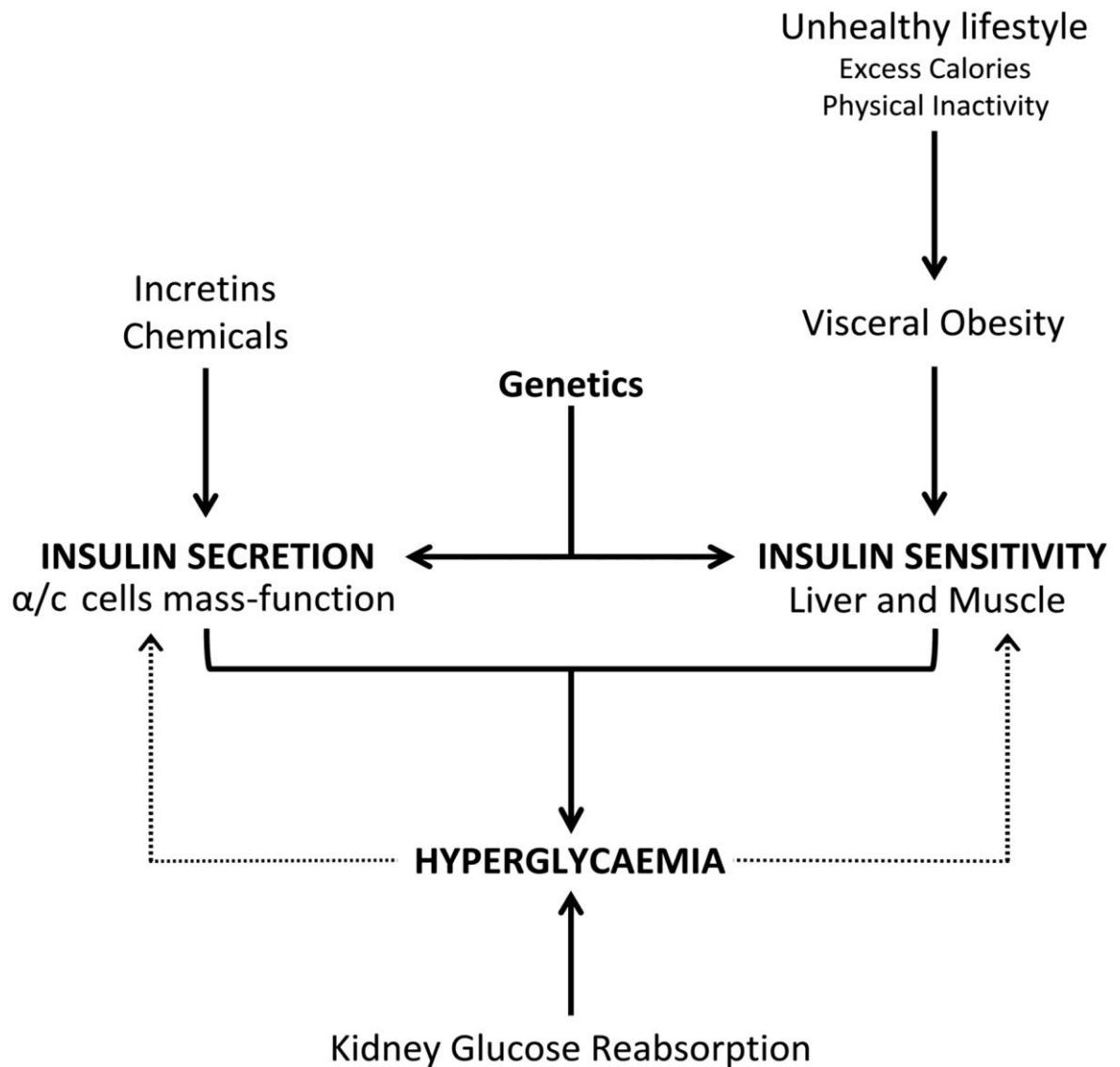
2) Type 2 diabetes

Type 2 diabetes stems from a combination of genetics and lifestyle factors. Being overweight or obese increases your risk too. Carrying extra weight, especially in your belly, makes your cells more resistant to the effects of insulin on your blood sugar. This condition runs in families. Family members share genes that make them more likely to get type 2 diabetes and to be overweight.

3) Gestational diabetes

Gestational diabetes is the result of hormonal changes during pregnancy. The placenta produces hormones that make a pregnant woman's cells less sensitive to the effects of insulin. This can cause high blood sugar during pregnancy. Women who are overweight when they get pregnant or who gain too much weight during their pregnancy are more likely to get gestational diabetes.

Pathophysiology



Symptoms

- increased hunger
- increased thirst
- weight loss
- frequent urination
- blurry vision
- extreme fatigue
- sores that don't heal

Treatment

- Insulin,
- Exercise,
- Diet
- Metformin
- Sulfonylureas