

Comprehensive Medical Encyclopedia

Diabetes Mellitus

Diabetes Mellitus is a chronic metabolic disorder characterized by high blood glucose levels over a prolonged period. There are three main types:

Type 1 Diabetes: An autoimmune condition where the body's immune system attacks insulin-producing beta cells in the pancreas. Requires lifelong insulin therapy.

Type 2 Diabetes: Caused by insulin resistance and relative insulin deficiency. Often linked to obesity and a sedentary lifestyle.

Gestational Diabetes: Occurs during pregnancy and usually resolves after childbirth but increases the mother's risk for Type 2 diabetes.

Complications: Cardiovascular disease, kidney damage (nephropathy), nerve damage (neuropathy), eye damage (retinopathy), and slow wound healing.

Management: Regular blood sugar monitoring, a balanced diet low in refined sugars, exercise, weight control, and medications including metformin and insulin.

Hypertension

Hypertension is persistently elevated blood pressure, often without symptoms. It can damage arteries, leading to heart disease, stroke, kidney damage, and vision problems.

Risk Factors: High salt intake, obesity, sedentary lifestyle, excessive alcohol consumption, smoking, chronic stress, and genetic predisposition.

Complications: Left ventricular hypertrophy, atherosclerosis, aneurysms, kidney failure.

Management: Low-sodium diet, regular aerobic exercise, stress management, limiting alcohol, and medications such as ACE inhibitors, ARBs, beta-blockers, calcium channel blockers, and diuretics.

Asthma

Asthma is a chronic inflammatory condition of the airways causing recurrent episodes of wheezing, breathlessness, chest tightness, and coughing.

Triggers: Allergens (pollen, dust mites, mold, pet dander), air pollution, cold air, exercise, respiratory infections, stress.

Pathophysiology: Airway inflammation and hyperresponsiveness lead to bronchoconstriction and mucus overproduction.

Management: Reliever inhalers (short-acting bronchodilators), preventer inhalers (inhaled corticosteroids), leukotriene receptor antagonists, avoiding triggers, and patient education.

Heart Disease

Heart disease includes conditions such as coronary artery disease, heart failure, arrhythmias, and heart valve disorders.

Coronary Artery Disease (CAD): Narrowing or blockage of coronary arteries due to plaque buildup (atherosclerosis).

Arrhythmias: Irregular heartbeats such as atrial fibrillation.

Heart Failure: The heart's inability to pump blood efficiently.

Risk Factors: Smoking, high cholesterol, high blood pressure, diabetes, obesity, inactivity, and family history.

Prevention: Healthy diet, exercise, avoiding tobacco, managing stress, and controlling underlying health conditions.

Influenza

Influenza is an acute viral respiratory illness caused by influenza A or B viruses.

Symptoms: Fever, chills, sore throat, muscle aches, fatigue, cough, nasal congestion.

Complications: Pneumonia, bronchitis, sinus infections, worsening of chronic health problems.

Prevention: Annual flu vaccination, hand hygiene, covering mouth/nose when coughing, avoiding close contact with sick individuals.

Tuberculosis (TB)

TB is a contagious bacterial infection caused by *Mycobacterium tuberculosis*, primarily affecting the lungs but can spread to other organs.

Symptoms: Persistent cough (>3 weeks), coughing blood, chest pain, night sweats, fever, weight loss.

Diagnosis: Tuberculin skin test, blood tests, chest X-ray, sputum analysis.

Treatment: Long-term antibiotic therapy (6–9 months) with drugs like isoniazid, rifampicin, ethambutol, pyrazinamide.

COVID-19

COVID-19 is caused by SARS-CoV-2 and can range from asymptomatic to severe pneumonia and multi-organ failure.

Symptoms: Fever, dry cough, fatigue, loss of taste/smell, difficulty breathing.

Prevention: Vaccination, mask-wearing, social distancing, hand washing.

Treatment: Supportive care, oxygen therapy, antiviral drugs, steroids for severe cases.

Cancer

Cancer is uncontrolled cell growth with the potential to invade other tissues and spread (metastasize).

Common Types: Breast, lung, prostate, colorectal, skin (melanoma).

Risk Factors: Smoking, radiation, certain infections, obesity, genetics.

Treatment: Surgery, chemotherapy, radiation therapy, immunotherapy, targeted drug therapy.

Depression

Depression is a mood disorder causing persistent sadness, loss of interest, and impaired daily functioning.

Symptoms: Low mood, fatigue, changes in appetite/sleep, difficulty concentrating, feelings of hopelessness.

Treatment: Psychotherapy (CBT), antidepressant medications, exercise, social support.

Arthritis

Arthritis involves inflammation of one or more joints, causing pain and stiffness.

Types: Osteoarthritis (wear-and-tear) and Rheumatoid arthritis (autoimmune).

Treatment: Medications (NSAIDs, DMARDs), physical therapy, joint replacement surgery.

Disclaimer: This encyclopedia is for educational purposes only and does not replace professional medical advice.