

**TOPICS FOR FINAL EXAMINATION FROM PATHOLOGICAL
PHYSIOLOGY FOR DENTAL MEDICINE**

GENERAL PATHOLOGICAL PHYSIOLOGY

1. NOSOLOGY

1. Health and disease (definitions, forms of pathological processes, stages and outcomes of diseases)
2. Terminal states, dying, clinical, biological and brain death; vegetative state
3. Cardiopulmonary-cerebral resuscitation, postresuscitation disease;
4. Aging – characteristics, hypothesis, aging related diseases (aging in oral cavity)

2. ETIOLOGY

A. Physical factors

1. Effects of mechanical energy (blast & crush syndrome); Mechanical damage in oral cavity – causes, symptoms
2. Effects of acceleration, gravitation, kinetosis, G overload and weightless states on human body
3. Influence of electrical current and electromagnetic field on human body; effects in oral cavity
4. Effects of elevated and decreased pressure on human body, divers' disease; effects in oral cavity
5. Effects of ionising radiation – somatic and genetic effects; Acute and chronic radiation disease
6. Hyperthermia (incl. sunstroke) – forms, manifestation; Hypothermia– forms, manifestations
7. Local thermal injury - burns & chilblains: forms, stages; Burns and chills in the oral cavity

B. Chemical factors

1. General classification of intoxications, intake, distribution (heavy metals; pollutants; CO,
2. Chemical injury in the oral cavity – food, desinfectives, metals, etc.: manifestations
3. Effect of smoking and alcohol in the body; Alcohol addiction & related disorders Alcohol & smoking in oral cavity

C. Nutritional factors

1. Short term starvation; Undernutrition, malnutrition (cachexia, kwashiorkor); Application in dentistry
2. Obesity – causes, measures, forms; Associated disorders, insulin resistance
3. Disorders in iron metabolism, deficit and excess of iron; Application in dentistry
4. Disorders in trace elements metabolism – metals (except iron) and non-metals
5. Water- soluble vitamins – systemic effects of deficiencies ; Application in oral cavity
6. Fat - soluble vitamins – systemic overdose and deficiency; Application in oral cavity

D. Genetic factors

1. Mutations – causes, classification; terminology - hereditary, congenital, familial, genetic disorders
2. Genetics of diseases in general; Mutations–classif., causes; Dis.: genetic, hereditary, inborn; epigenetics
3. Monogenic diseases – autosomal dominant, recessive & gonosomal – cause, principles; Appl. in oral cavity
4. Non-mendelian heredity – imprinting, mitochondrial dis., dynamic mutations (principles, examples)
5. Chromosomal aberrations – structure and numeric alter. of autosomes and gonosomes; Appl. in dentistry

3. PATHOGENESIS

E. Typical pathological processes and manifestations

1. Pain – forms, neurophysiology; Acute and chronic pain; neuralgia, headache; Appl. in dentistry
2. Stress – neurohumoral mechanisms; maladaptation, stress related diseases
3. Shock – pathogenesis; forms: anaphylactic, septic, hypovolemic, cardiogenic, etc.
4. Disorders of consciousness – classification, pathogenesis, quantitative and qualitative disorders
5. Coma - evaluation, scales; Etiology: cerebral damage and extracerebral diseases;
6. Edema, transudate and exudate; systemic disorders, Application in dentistry
7. Hypoxia –principles, compensation; Forms – overview, examples

F. Inflammation

1. Acute inflammation – general description, forms; humoral factors (class, funktion; acute phase response,
2. Acute inflammation - cellular response (incl. leukocyte defects, APC)
3. Chronic inflammation, granulomatous inflammation
4. Fever – forms, manifestation; Examples: systemic; Fever from affection in oral cavity

G. Disorders of immunity

1. Immune deficiency states, AIDS (incl. manifestations); [Application in dentistry](#)
2. Autoimmune disorders (principle, systemic examples); [Application in dentistry](#)
3. Hypersensitivities - types, principles, systemic diseases; [Application in dentistry](#)

H. Disorders of inner milieu

7. Disorders of electrolyte metabolism – water, sodium, potassium
8. Disorders of electrolyte metabolism – calcium, phosphate; [Application in dentistry](#)
9. Disorders of acid-base balance – classification, compensation; [Application in dentistry](#)

I. Oncology

1. Tumours – epidemiology; characteristics; benign, malignant; tumour markers; [Application in dentistry](#)
2. Tumours – etiopathogenesis, carcinogens, viruses; oncogens, protooncogens

SPECIAL (SYSTEMIC) PATHOLOGICAL PHYSIOLOGY

A. CARDIOVASCULAR SYSTEM

1. Heart failure – classification; pressure & volume overload, low-output failure, compensatory mech.
2. Left and right heart failure - causes; symptoms, manifestations, compensatory mechanism
3. Arterial hypertension – classification, etiopathogenesis; Primary and secondary forms; organ consequences
5. Systemic arterial hypotension and syncopal states
6. Atherosclerosis - etiopathogenesis, risk factors, manifestations
7. Coronary heart disease - definition, classification and risk factors of
8. Acute coronary syndrome – definition, etiology, symptoms
9. Angina pectoris – stabile and unstable; common and different signs
10. Myocardial infarction – diagnostics, complication
11. Cardiomyopathies
12. Inborn cardiac defects with cyanosis and without cyanosis
13. Acquired valvular disorders – causes (tooth focuses - endocarditis); mitral stenosis and insufficiency
15. Acquired valvular disorders – causes (tooth focuses - endocarditis); aortic stenosis and insufficiency
16. Dysrhythmias – electrophysiology, etiopathogenesis, classification,
17. Bradyarrhythmias and conductive disorders
18. Tachyarrhythmias – atrial and ventricular; flutter, fibrillation, extrasystoles, paroxysmal tach.

B. RESPIRATION

1. Disorders of pulmonary circulation - Pulmonary hypertension
2. Respiratory insufficiency – partial and global; acute and chronic; causes, manifestations
3. Obstructive respiratory disorders – classification, characteristics; [Application in dentistry](#)
4. Restrictive respiratory diseases – classification, characteristics
5. Bronchial asthma – forms, manifestation; [Applications in dentistry](#)
6. Chronic obstructive bronchopulmonary disease (COPD)- forms, manifestations,
7. Pulmonary edema – mechanism, causes; respiratory distress syndrome in adults (ARDS) and kids (IRDS)

C. HEMATOLOGY

1. Anaemia – classification, symptomatology, compensatory mechanisms; [Application in dentistry](#)
2. Anemias from blood loss / destruction - hemorrhagic, hemolysis; [Application in dentistry](#)
3. Anemias from impaired Ery production; sideropenic sroblastic, megaloblastic; [Application in dentistry](#)
4. Hemorrhagic diathesis – vessel wall abnormalities, thrombocytes abnormalities
5. Inherited and acquired disorders of coagulation, DIC, [Application in dentistry](#)
6. Thromboembolism, inherited thrombophilia; [Application in dentistry](#)
7. Non-leucemic diseases of leucocytes (according to difer. caunt WBC; incl. agranulocytosis)
8. Myeloid and lymphoid leucemias

D. NERVOUS SYSTEM

1. Motor disorders – mechanism, terminology, symptomatology
2. Upper and lower motor neuron syndromes (palsy, paralysis); facial palsy Application in dentistry
3. Extrapyramidal disorders and cerebellar motor disorders
4. Spinal shock, spinal syndromes, hemisyndrome
5. Somatosensory disorders – classification; symptomatology; Application in dentistry
6. Demyelinating disorders – general characteristics; Multiple sclerosis
7. Neurodegenerative diseases (Parkinson disease and others)
8. Alzheimer disease and others dementia
9. Epilepsy - classification, manifestation; Status epilepticus, Application in dentistry
10. Pathophysiology of neuromuscular disorders- overview (Myasthenia gravis, Duchenne dis.)
11. Disorders of vegetative nervous system
12. Brain edema and intracranial hypertension; subdural and subarachnoidal bleeding
13. Cerebrovascular disorders – stroke; haemorrhagic, ischemic; manifestations Application in dentistry

E. KIDNEY AND URINARY TRACT

1. Acute renal failure - causes, manifestations
2. Chronic renal failure – causes, manifestations; Uremia, Application in dentistry
3. Glomerulopathies - classification, manifestations; Nephritic and nephrotic sy.
4. Tubulointerstitial kidney disorders and pyelonephritis (acute, chronic)
5. General manifestations and causes of kidney diseases (in. hematuria, proteinuria); Urolithiasis

F. ENDOCRINOLOGY AND DIABETES

1. General etiology and classification of endocrine diseases
2. Disorders in hypothalamo-pituitary gland system. Hyperpituitarism, hypopituitarism
3. Hyperthyroidism and hypothyroidism, goiter
4. Hypoparathyroidism, hyperparathyroidism; Application in dentistry
5. Hypocorticism and hypercorticism (Cushing and Addison disease) ; Application in dentistry
6. Primary and secondary hyperaldosteronism
7. Diabetes mellitus – etiopathogenesis, classification; Application in dentistry
8. Pathogenesis of diabetes mellitus type 1; causes, manifestations, ketosis
9. Pathogenesis of diabetes mellitus type 2; causes, manifestations, insulin resistance
10. Acute complications of diabetes mellitus; hypoglycemia, hyperglycemia
11. Chronic complication of diabetes mellitus; Application in dentistry

G. GASTROINTESTINAL SYSTEM, LIVER, PANCREAS AND GALL BLADDER

1. Manifestations of systemic diseases in oral cavity
2. Pathophysiology of oesophagus, reflux disease, dysphagia; Application in dentistry
3. Malabsorption and maldigestion; Celiac disease; Application in dentistry
4. Constipation, diarrhoea; irritable bowel syndrome; enterorrhagia
5. Peptic ulcer disease of stomach and duodenum - etiopathogenesis
6. Crohn disease, ulcerative colitis; Application in dentistry
7. Acute and chronic pancreatitis; pancreatic insufficiency
8. Disorders of gall bladder and bile ducts
9. Icterus – characteristics, types, manifestations; Application in dentistry
10. Hepatic insufficiency – liver cirrhosis, portal hypertension, ascites; Application in dentistry

H. DISORDERS OF BONES AND JOINTS

1. Osteoporosis and osteomalacia; vitamin D insufficiency; Application in dentistry
2. Rheumatoid arthritis and arthritis urica (gout)