

## TOPICS FOR STUDY

### **Important concluding remark:**

**These are general topics for study, but pathology as the whole will be the subject of final exam, incl. the parts perhaps not mentioned here.**

**No excuse „it wasn't in the topics“ will be valid.**

## I. General Pathology

### **1. Methods of Pathology**

Biopsy: techniques of obtaining tissue samples, various kinds of bioptical specimens, tissue processing (incl. fixation), frozen sections

Cytology: techniques of obtaining tissue samples, various kinds of cytological specimens

Autopsy, its importance, the autopsy protocol and its parts

Histological methods, stainings, light and electron microscopy

Histochemistry, immunohistochemistry and other special techniques

### **2. Responses to Cellular Injury, Metabolic and Degenerative Disorders, Disorders of Growth**

Disease and its causes

Death and postmortal changes

Necrosis - types, causes and further evolution

Atrophy - types, causes and further evolution

Intracellular accumulations of lipids, proteins and carbohydrates, single-gene inborn disorders

Amyloidosis

Pigments and pigmentations

Icterus

Pathologic calcifications, stones

Pathology of nutrition

Hypertrophy, hyperplasia

Regeneration, reparation

Metaplasia, dysplasia

### **3. Hemodynamic Disorders**

Edema

Hyperemia, venous congestion

Focal disorders of blood supply, ischemia, infarction

Haemorrhage

Thrombosis incl. DIC

Embolisation, metastasis

Shock

Heart failure - types, causes, complications

#### **4. Inflammation**

Causes of inflammation  
Pathophysiology of inflammation  
Inflammation - microscopic and macroscopic changes  
Classification and morphologic patterns of inflammation  
Granulomatous inflammation  
Tuberculosis  
Syphilis

#### **5. Disorders of the Immune System**

Immune system and its functions  
Immune reactions  
Transplantation  
Primary and secondary immunodeficiency  
Autoimmune diseases  
HIV, AIDS

#### **6. The Response to Infections**

Mechanisms of bacteria and virus-induced injury  
Bacteremia, sepsis, pyemia  
Skin infections  
Respiratory system infections  
Gastrointestinal system infections  
Genitourinary system infections  
Nervous system infections  
Staphylococcal infections  
Streptococcal infections  
Infectious hepatitis

#### **7. Environmental Diseases**

Environmental pollution  
Injury by physical agents  
Injury by chemical agents  
Nutritional diseases

#### **8. Ageing and Death**

## II. Oncology

### 1. General Oncology

Definitions, preneoplastic lesions, pseudotumors  
Classification of tumors  
Structure, growth of tumors  
Invasion and metastases  
Characteristics of benign and malignant tumors  
Intraepithelial neoplasia, carcinoma in situ  
Carcinogenesis, etiology of tumors  
Effects of tumor on host  
Grading and staging of tumors, tumor prognosis  
Fibroma, myxoma, lipoma, angioma (+ sarcomas)  
Chondroma, chordoma, osteoma (+sarcomas)  
Leiomyoma, leiomyosarcoma, rhabdomyoma, rhabdomyosarcoma  
Neoplastic disorders of bone marrow  
Hodgkin's malignant lymphoma  
Non-Hodgkin's malignant lymphomas  
Tumors of the squamous stratified epithelium  
Tumors of transitional epithelium  
Benign tumors of the glandular epithelium  
Malignant tumors of the glandular epithelium  
Neuroendocrine tumors  
Neuroectodermal tumors of the CNS  
Tumors of the meninges and peripheral nervous system  
Tumors of melanocytes  
Mixed tumors, germinal tumors  
Choriocarcinoma, mesothelioma

### 2. Special Oncology

Tumors of the heart + vessels  
Tumors of the lymph nodes  
Tumors of the upper respiratory tract  
Bronchopulmonary tumors  
Tumors of the oral cavity, incl. salivary glands and odontogenic tumors  
Tumors of the esophagus and stomach  
Neoplasms of the small and large intestine  
Tumors of the liver, biliary tract and pancreas  
Tumors of the kidney and urinary tract  
Testicular tumors  
Tumors of the prostate and penis  
Vulvar, vaginal and cervical tumors  
Tumors of the endometrium and myometrium  
Tumors of the ovary  
Tumors of the breast  
Intracranial tumors  
Tumors of the endocrine system  
Tumors of the musculoskeletal system  
Skin tumors and pseudotumorous lesions

### III. Special Pathology

#### 1. Pathology of the Heart, Blood and Lymphatic Vessels

Congenital heart disease  
Pericardial disease  
Endocarditis  
Acquired heart disease (vitia cordis acquisita)  
Myocarditis  
Cardiomyopathy  
Ischemic heart disease  
Hypertension  
Atherosclerosis and other arterial regressive changes  
Vasculitis, arteritis and other arterial inflammatory diseases  
Aneurysms  
Pathology of the veins and lymphatic vessels

#### 2. Pathology of the Hematopoietic and Lymphoid Systems

Posthemorrhagic and hemolytic anemia  
Anemias of diminished erythropoiesis, polycythemia  
Bleeding disorders  
Pathology of the spleen  
Nonneoplastic disorders of white cells  
Pathology of the thymus

#### 3. Pathology of the Respiratory System

Nose and paranasal cavities  
Larynx and trachea  
Pediatric lung diseases  
Bronchitis, asthma  
Bronchiectasia, localised obstructive airways disease  
Emphysema, atelectasis  
Venous congestion. Pulmonary edema  
Pulmonary embolism  
Pulmonary hypertension  
Acute and chronic interstitial lung diseases  
Classification of pulmonary infections, lobar pneumonia  
Bronchopneumonia  
Primary atypical pneumonias, fungal infections  
Pulmonary tuberculosis  
Pleura

#### 4. Pathology of the Digestive System

Diseases of the oral cavity  
Pathology of salivary glands  
Pathology of the esophagus  
Gastritis  
Peptic ulcers  
Developmental disorders, diverticulosis  
Intestinal vascular disorders  
Inflammatory diseases, obstructive disease, ileus  
Enteritis, appendicitis, colitis  
Malabsorption syndrome  
Pathology of the peritoneum

Liver: metabolism of the bilirubin, jaundice, hepatic failure  
Hereditary disorders of bilirubin metabolism, pediatric liver disease  
Circulatory disorders of the liver  
Chronic hepatitis, incl. viral; autoimmune disorders  
Drug- and toxin-induced liver disease  
Liver cirrhosis  
Hemochromatosis, Wilson's disease, alpha-1-antitrypsin deficiency  
Cholangitis, liver abscess, other infections  
Pathology of biliary tract incl. cholecystitis, cholelithiasis  
Pathology of exocrine pancreas

## **5. Pathology of the Genitourinary System**

Kidney - malformation, renal cysts  
Blood supply disorders of the kidney  
Glomerular diseases, pathogenesis and classification  
Primary and secondary glomerular disease  
Tubulointerstitial disorders incl. nephritis  
Acute tubular and diffuse cortical necrosis  
Hydronephrosis, renal stones, reflux  
Pathology of the renal pelvis, ureter, urinary bladder, urethra  
Pathology of the penis, scrotum and prostate  
Pathology of the testis, epididymis, cord  
Pathology of the vulva and vagina  
Pathology of the cervix uteri, endometritis, endometriosis  
Dysfunctional uterine bleeding and endometrial hyperplasia  
Pathology of Fallopian tubes and ovaries  
Pathology of the pregnancy  
Inflammations and proliferative disorders of the breast

## **6. Pathology of the Nervous System**

Inborn defects  
Age related defects, degenerative disorders incl. dementia  
Demyelinating and metabolic disorders, epilepsy  
Intracranial hypertension, cerebral edema, hydrocephalus  
Intracranial nontraumatic hemorrhage, ischemia  
Intracranial injuries  
Ischemic cerebral disease  
Pachymeningitis, leptomeningitis  
Viral and other encephalitis  
Pathology of the peripheral nervous system  
Pathology of the eye  
Pathology of the ear

## **7. Pathology of the Endocrine System**

Pathology of the pituitary, pineal gland  
Pathology of the thyroid gland  
Pathology of the parathyroid glands  
Pathology of the endocrine pancreas, diabetes mellitus  
Pathology of the adrenal glands

## **8. Pathology of the Musculoskeletal System**

Skeletal muscle pathology

Hereditary diseases of the musculoskeletal system

Metabolic, traumatic, degenerative and others disorders of the musculoskeletal system

Inflammatory disorders incl. osteomyelitis, tuberculosis, m. Paget

Joint pathology

Connective tissue diseases

## **9. Pathology of the Skin**

Eczema/dermatitis, bullous disorders

Infections and non-infectious inflammatory lesions of the skin

Granulomatous lesions, vascular lesions of the skin

Skin adnexa

Pathology of the dermal connective tissue, nerves