

1. Principles of a patient's examination (Dr. Tomáš Pískovský, Ph.D.¹)

1.1. Anamnesis

- 1.1.1. Personal data*
- 1.1.2. Family anamnesis*
- 1.1.3. Epidemiologic anamnesis*
- 1.1.4. Social anamnesis*
- 1.1.5. Allergologic anamnesis*
- 1.1.6. Pharmacologic anamnesis*
- 1.1.7. Personal anamnesis*
- 1.1.8. Gynaecologic anamnesis*
- 1.1.9. Present condition*

1.2. Physical examination

- 1.2.1. Visual inspection*
- 1.2.2. Palpation*
- 1.2.3. Auscultation*
- 1.2.4. Percussion*

1.3. Status praesens

1.4. X-rays examination radiation exposure for children

2. Growth (Dr. Jana Černá¹)

2.1. Measurement of children

- 2.1.1. Body length*
- 2.1.2. Body height*
- 2.1.3. Body weight*

2.2. Percentile graphs

2.3. Bone maturation (skeletal maturation)

- 2.3.1. Tanner-Whitehouse method (TW2)*
- 2.3.2. Greulich-Pylea method (GP)*

2.4. Periodization of children's growth

- 2.4.1. Infantile growth period*
- 2.4.2. Children's growth period*
- 2.4.3. Pubertal growth period*

2.5. Short stature

2.6. Tall stature

3. Nutrition (Dr. Lenka Kosňovská¹)

3.1. Nutritional factors

- 3.1.1. Water*
- 3.1.2. Carbohydrates*
- 3.1.3. Lipids*
- 3.1.4. Minerals*
- 3.1.5. Vitamins*

3.2. Breastfeeding

- 3.2.1. *Breast milk production*
- 3.2.2. *Types of breast milk*
- 3.2.3. *The composition of breast milk*
- 3.2.4. *Contraindications of breastfeeding*
- 3.2.5. *Breastfeeding difficulties*
- 3.2.6. *Breastfeeding technique*

3.3. Artificial nutrition in infancy

- 3.3.1. *Types of infant formula*
- 3.3.2. *Infant feeding timeline*

3.4. Toddler feeding

4. Internal environment (Doc. Dr. Michal Hladík, Ph.D. ¹⁾)

- 4.1. Hydration
- 4.2. Ions
- 4.3. Acid-base balance
 - 4.3.1. *Physiological notes*
 - 4.3.2. *Acid-base disorders*

5. Nephrology (Doc. Dr. Michal Hladík, Ph.D. ¹⁾)

- 5.1. Renal functions of the fetus and newborn
- 5.2. Examination of kidneys and urinary bladder
 - 5.2.1. *Urine collection*
 - 5.2.2. *Urinalysis using urine test strips ("urine dipstick")*
 - 5.2.3. *Microscopic urinalysis*
 - 5.2.4. *Glomerular filtration*
 - 5.2.5. *Assessment of renal tubular functions*
 - 5.2.6. *Examinations related to the anatomy and bladder functions*
- 5.3. Overview of urinary tract symptoms
 - 5.3.1. *Hematuria*
 - 5.3.2. *Proteinuria*
- 5.4. Urinary tract imaging methods
 - 5.4.1. *Renal ultrasonography*
 - 5.4.2. *Radiologic imaging in nephrology*
 - 5.4.3. *Radioisotope imaging in nephrology*

6. Endocrinology (Dr. Jiří Strnadel¹⁾)

- 6.1. The types of hormones
- 6.2. Hormone production
- 6.3. Transport of hormones
- 6.4. Hormone metabolism and excretion
- 6.5. The mechanism of hormone action
- 6.6. Disorders of the endocrine system function
- 6.7. Etiology of endocrine disorders
 - 6.7.1. *Congenital*

- 6.7.2. *Acquired*
- 6.8. Examination of endocrine system in pediatrics
 - 6.8.1. *Physical examination*
 - 6.8.2. *Determination of hormones levels*
 - 6.8.3. *Functional hormone diagnosis*
- 6.9. Medical imaging techniques
 - 6.9.1. *Diagnostic ultrasound/sonography*
 - 6.9.2. *Nuclear magnetic resonance*
 - 6.9.3. *Scintigraphy*

7. Cardiology (Dr. Jan Pavlíček, Ph.D.¹)

- 7.1. History and clinical examination
 - 7.1.1. *History*
 - 7.1.2. *Clinical examination*
- 7.2. Key symptoms in cardiac conditions
 - 7.2.1. *Cyanosis*
 - 7.2.2. *Dyspnea*
 - 7.2.3. *Palpitations and chest pain*
 - 7.2.4. *Syncope*
 - 7.2.5. *Other symptoms of cardiac conditions*
- 7.3. Blood pressure measurement and hypertension
- 7.4. Examination tests used in pediatric cardiology
 - 7.4.1. *Electrocardiography*
 - 7.4.2. *Echocardiography*
 - 7.4.3. *X-ray imaging*
 - 7.4.4. *Auxiliary examination methods*
- 7.5. Prenatal cardiology

8. Gastroenterology (Dr. Astrid Šuláková, Ph.D.¹)

- 8.1. Abdominal pain
 - 8.1.1. *Abdominal pain assessment*
 - 8.1.2. *Aggravating and relieving factors*
- 8.2. Regurgitation, vomiting
- 8.3. Gastroesophageal reflux
- 8.4. Hiccups
- 8.5. Evacuation disorders
 - 8.5.1. *Constipation*
 - 8.5.2. *Diarrhea*
- 8.6. Meteorism
- 8.7. Icterus
- 8.8. Objective examination of the gastrointestinal tract in children
 - 8.8.1. *Physical examination of the abdomen*
 - 8.8.2. *Specific methods used in pediatric gastroenterology*
- 8.9. Examination of the liver in children

8.9.1. *Liver biopsy*

9. Hematology (Dr. Mgr. Tomáš Kuhn¹)

- 9.1. Prenatal and postnatal hematopoiesis
- 9.2. Examination methods in pediatric hematology and oncology
 - 9.2.1. *History*
 - 9.2.2. *General symptomatology*
 - 9.2.3. *Physical examination*
 - 9.2.4. *Laboratory tests*
- 9.3. Red blood cells - erythrocytes
 - 9.3.1. *Diseases of red blood cells*
- 9.4. White blood cells - leukocytes
 - 9.4.1. *Causes of leukopenia*
 - 9.4.2. *Causes of leukocytosis*
 - 9.4.3. *Examples of conditions with impaired leukocyte functions*
- 9.5. Platelets - thrombocytes
- 9.6. Coagulation factors and their disorders
 - 9.6.1. *Inherited coagulation factor disorders*
 - 9.6.2. *Acquired coagulation factors disorders*
- 9.7. Blood products and principles of hemotherapy
 - 9.7.1. *Overview of blood products*
 - 9.7.2. *Irradiation of blood products*
 - 9.7.3. *Leukocyte depletion (leukodepletion) of blood products*
 - 9.7.4. *Administration of blood products*
 - 9.7.5. *Transfusion reactions*

10. Neurology (Dr. Hana Medřická²)

- 10.1. Procedures of the neurological examination
- 10.2. Structure of history-taking and the most common areas of inquiries
- 10.3. Neurological examination
 - 10.3.1. *Head examination*
 - 10.3.2. *Cranial nerves examination*
 - 10.3.3. *Examination of the neck*
 - 10.3.4. *Examination of the upper and lower extremities*
 - 10.3.5. *Examination of posture and gait*
 - 10.3.6. *Meningeal signs*
 - 10.3.7. *Cerebellar examination*
 - 10.3.8. *Examination of phatic, practic and gnostic functions*
- 10.4. Neurologic examination of the newborn
 - 10.4.1. *Examination of the overall condition*
 - 10.4.2. *Primitive (newborn) reflexes*

- 10.5. The most important developmental milestones in the early age
- 10.6. Psychomotor development of the infant according to phases
 - 10.6.1. *1st phase*
 - 10.6.2. *2nd phase*
 - 10.6.3. *3rd phase*
 - 10.6.4. *4th phase*
- 10.7. Selected developmental skills from 12 months of age and above
- 10.8. Neurologic examination of the patient with impaired consciousness
 - 10.8.1. *Diagnostic approach*
 - 10.8.2. *Own neurological examination*
 - 10.8.3. *Evaluation of the brainstem functions*
 - 10.8.4. *Evaluation of the pupils in comatose patients*
 - 10.8.5. *Examination of reflexes in unconscious patients*
 - 10.8.6. *Evaluation of mobility and muscle tone*

11. Immunology (Dr. Olga Škopková¹)

- 11.1. Ontogenetic development of the immune system
- 11.2. Immunological examination
 - 11.2.1. *History*
 - 11.2.2. *Manifestations of immunodeficiencies and their clarification*
- 11.3. Autoimmune disorders
- 11.4. Allergies
- 11.5. Laboratory and functional tests used in immunology and allergology
 - 11.5.1. *Allergy tests*
 - 11.5.2. *Pulmonary fiction testing*
 - 11.5.3. *Nonspecific antibody testing*
 - 11.5.4. *Specific antibodies testing*
 - 11.5.5. *ECP test*
 - 11.5.6. *Cellular immunity testing*

12. Vaccination (Dr Olga Škopková¹)

- 12.1. Vaccine types
 - 12.1.1. *Live attenuated (weakened) vaccines*
 - 12.1.2. *Inactivated (killed) vaccines*
 - 12.1.3. *Subunit vaccines*
 - 12.1.4. *Toxoids*
 - 12.1.5. *Simple vaccines*
 - 12.1.6. *Conjugated vaccines*
 - 12.1.7. *Combined vaccines*
 - 12.1.8. *New types of vaccines*
- 12.2. Postvaccination reactions
- 12.3. Contraindications of vaccination
- 12.4. Mandatory vaccination

- 12.4.1. Hexavaccine*
- 12.4.2. Measles, mumps, rubella*
- 12.5. Optional vaccination
 - 12.5.1. Influenzal vaccine*
 - 12.5.2. Vaccine against the tick-borne encephalitis*
 - 12.5.3. Vaccine against the meningitis caused by meningococcus*
 - 12.5.4. Vaccine against pneumococci*
 - 12.5.5. Vaccination against the chickenpox*
 - 12.5.6. Vaccine against the rotaviruses*
 - 12.5.7. Vaccination against human papillomavirus*
 - 12.5.8. Vaccine against the virus of hepatitis A*
 - 12.5.9. Vaccine against rabies*
- 12.6. *Vaccination of allergic patients*
- 12.7. *Vaccination of immunodeficient patients*