

I. Differential diagnostic

1. The unconscious child
2. Causes and treatment of convulsion in childhood
3. Headache in childhood
4. Febrile infant
5. Rash and fever in children (incubation periods as well!)
6. Fever of Unknown Origin (FUO) and Kawasaki syndrome
7. Differential diagnosis and treatment of neonatal respiratory distress
8. Neonatal jaundice
9. Neonatal cyanosis
10. Hypoglycaemia and hyperglycaemia
11. Differential diagnosis of lymphadenopathy
12. Arthralgia
13. Causes and differential diagnosis of bloody stool in children
14. Upper gastrointestinal bleeding in children (hematemesis)
15. Proteinuria and leukocyturia (pyuria)
16. Macroscopic and microscopic haematuria
17. Causes of enuresis in childhood
18. Polydipsia, polyuria
19. Differential diagnosis and treatment of hypertension. Pheochromocytoma.
20. Differential diagnosis and treatment of cough in children
21. Sore throat (viral versus bacterial pharyngitis) and upper respiratory tract infection
22. Inspiratory stridor, croup syndrome
23. Hemolytic anemias in childhood
24. Nonhemolytic anemias
25. Causes of failure to thrive
26. Hepatomegaly and splenomegaly
27. Differential diagnosis of diarrhea
28. Differential diagnosis of vomiting
29. Acute abdominal disorders in children
30. Differential diagnosis of palpable abdominal mass in childhood
31. Chronic abdominal pain
32. Differential diagnosis of edema
33. Differential diagnosis of dehydration in childhood
34. Principles of fluid therapy in childhood. Maintenance fluid therapy plan for a 3kg neonate and for a 20kg child.
35. Disorders of sexual differentiation
36. Disorders of sexual development/maturation
37. Arrhythmias
38. Obesity in childhood
39. Causes of short stature
40. Muscle weakness, paralysis and other myopathies

41. Disorders of coagulation
42. Behavioral disorders (ADHD, autism spectrum disorder)
43. Acid-base disorders
44. Hypo- and hypernatremia
45. Hypo- and hyperkalemia
46. Causes of polyhydramnios and oligohydramnios
47. Neonatal and infant resuscitation
48. Pediatric resuscitation
49. Fever, management of fever, antipyretics, pain relief
50. Causes of shock in childhood
51. Neonatal birth injuries
52. Poisoning in childhood (toxicology)
53. Child abuse and shaken baby syndrome
54. Airway foreign bodies in children, aspiration
55. Pediatric imaging techniques

II. Thesis line

1. Standard and recommended immunizations for children and adolescents
2. Normal psychomotor development in childhood (different age groups). Child growth percentiles. Anthropometry.
3. Anthropometry of a newborn. Intrauterine growth restriction (IUGR). Characteristics of a premature baby.
4. Nutrition of the healthy infant: breastfeeding and weaning. Breastmilk composition. Energy requirements.
5. Psychosomatic diseases. Anorexia nervosa. Bulimia nervosa.
6. Newborn screening tests. Preventive care.
7. Sudden infant death syndrome. Infantile and pediatric mortality data.
8. Clinical symptoms of infections, laboratory diagnostics, normal parameters.
9. Antimicrobial therapy
10. Borreliosis (Lyme-disease) and parotitis epidemica
11. Clinical manifestations of Epstein-Barr Virus infection.
12. Measles, rubella, scarlat fever
13. Helminthic and protozoan infections
14. Clinical manifestations of Herpes simplex virus, Parvovirus, Coxsackie virus
15. Varicella infection, herpes zoster
16. Skin infections
17. Staphylococcus aureus infections. Toxic shock syndrome
18. Neonatal and childhood tetanus. Botulism.
19. Inflammatory joint and bone diseases
20. Congenital bone and joint disorders
21. Juvenile idiopathic arthritis
22. Causes, diagnostic and treatment of acute viral hepatitis
23. Tuberculosis
24. Disorders of the humoral immune system
25. Cellular immunodeficiencies
26. Role of the complement system and diseases of the complement system
27. HIV infections
28. Opportunistic infections
29. Poststreptococcal diseases
30. Pertussis infection
31. Salmonella infection
32. Influenza in children
33. Routine management of the healthy newborn infant. Disorders of the newborn adaptation.
34. Respiratory Distress Syndrome (RDS)
35. Meconium aspiration syndrome
36. Primary Pulmonary Hypertension of the Newborn (PPHN)
37. Perinatal infections
38. TORCH infections

39. Neonatal and late onset neonatal sepsis
40. Central nervous system disorders of the neonates
41. Skin and umbilical disorders of the neonates
42. Necrotising enterocolitis (NEC). Meconium ileus
43. Congenital diaphragma hernia. Oesophageal atresia
44. Duodenal stenosis, bowel atresia, omphalocele, gastroschisis
45. Follow-up of the premature baby. Bronchopulmonary dysplasia (BPD). Retinopathia prematurorum (ROP).
46. Lymphomas
47. Leukaemia
48. Disorders of platelets, thrombocytopenia, thrombocytosis
49. Disseminated intravascular coagulation , hemolytic uremic syndrome (HUS)
50. Porphyrrias
51. Histiocytosis
52. Central nervous system tumors in children
53. Abdominal malignancies – Wilms tumor, neuroblastoma
54. Malignant bone and soft tissue tumors
55. Early and late onset adverse effects of chemotherapy

III. Thesis line

1. Diabetes mellitus. Management of diabetic ketoacidosis
2. Metabolic syndrome. Type 2 diabetes mellitus
3. Diabetes insipidus
4. Disorders of neuro- and adenohypophysis
5. Congenital adrenal hyperplasia (CAH)
6. Thyroid diseases
7. Disorders of calcium and phosphorus homeostasis. Rickets.
8. Systemic lupus erythematosus (SLE)
9. Dermatomyositis, scleroderma
10. Vasculitis. Henoch-Schönlein purpura
11. Urinary tract infections, localisation, course, treatment, complications, VUR
12. Nephrolithiasis in childhood
13. Glomerular diseases
14. Nephrotic syndrome
15. Acute and chronic kidney failure. Kidney transplantation.
16. Developmental abnormalities of the kidneys and the urinary tract
17. Renal tubulopathy
18. Chromosomal abnormalities
19. Mendelian inherited diseases (autosomal dominant and recessive), common disorders
20. X-linked inherited diseases, common disorders
21. Multifactorial and polygenic genetic disorders
22. Congenital metabolic disorders of amino acid metabolism
23. Congenital metabolic disorders of glucose and glycogen metabolism
24. Lysosomal storage diseases
25. Rhinitis, adenoiditis, tonsillitis
26. Acute upper respiratory tract infections, acute sinusitis, bronchitis
27. Infections of the ear
28. Pneumonia and complications in infants and children
29. Congenital lung malformations
30. Cystic fibrosis. Lung transplantation
31. Asthma bronchiale
32. Allergy in infants and children. Definition of atopy, atopic diseases.
33. Symptoms and treatment of decompensated heart failure
34. Cyanotic congenital heart disease
35. Non-cyanotic congenital heart disease
36. Cardiomyopathy
37. Myocarditis, pericarditis - symptoms and management
38. Infective endocarditis – risk factors, prophylaxis, management
39. Causes of malabsorption. Celiac disease.
40. Diseases of oral cavity. Diseases of the oesophagus.
41. Chronic liver failure in children

42. Biliary atresia. Liver transplantation in children.
43. Inflammatory bowel disease. Crohn disease and ulcerative colitis in childhood
44. Pancreatitis in childhood
45. Cleft lip and cleft palate
46. Ileus, intussusception
47. Diseases of the colon. Obstipation. Hirschsprung disease.
48. Acute appendicitis
49. Testis and ovarian torsion. Cryptorchidism.
50. Neural tube defects
51. Perinatal asphyxia, Hypoxic-ischemic encephalopathy (HIE)
52. Hydrocephalus. Infantile cerebral palsy
53. Meningitis, brain abscess
54. Encephalitis. Facial palsy.
55. Neurocutaneous syndromes