INTERNATIONAL HIGHER SCHOOL OF MEDICINE

DEPARTMENT OF PEDIATRICS

SYLLABUS BY PEDIATRICS

2025-2026 academic year
for students of medical faculty
3 course VI semester
8 credits (lectures 44h, practice class 100h, independent work – 96 h)

Lecturers:

Name: Alekseev V. P.
+996(505)350501 (Whatsapp)
Email: alekseev5507@mail.ru
Name : Zholdosheva I.M.
+996703150015(Whatsapp)
indiraneonatolog@mail.ru
Name: Sofia Rafikova
+996557 520193 (WhatsApp)
Email: sofia_rafikova@mail.ru
Name: Isakova Feruza
+996707932178 (Whatsapp)
Email: isakova.fb@gmail.com
Name: Beishebaeva Nasira
+996700627716 phone (Whatsapp)
Email: beishebaevanasira@gmail.com

Venue: Zoom

Practical classes: According to schedule

Venue: **National Center Maternity and Childhood Welfare**

Simulation Center , Str. L. Tolstoy 17A/1
Maternity Hospital №2, Str. Moskovskaya 255
City Childrens hospital №3, Str. Baytic Baatyra 8A
National Maternity and Childhood Welfare – Togolok Moldo1

The Syllabus is considered
at the meeting of the department of Pediatric
Protocol №__1___dated_26/08/2025
Head of the department_____

Course Objective of Pediatrics

To form students' understanding of the etiology, pathogenesis of the main diseases of the gastrointestinal tract in childhood, the features of their clinical manifestations and course in children of different ages.

To teach the skills and abilities of diagnosis, differential diagnosis, treatment and prevention of diseases of the digestive system

After study of the discipline the student must:

Knowledge:

- etiology, predisposing factors, pathogenesis, main clinical symptoms and syndromes
- methods of laboratory and instrumental examination, the most likely complications,
- methods of treatment and prevention taking into account the characteristics of the child's body

Attitude: to inform and demonstrate understanding of questions

Pre-requisites:

- Anatomy (macro- microanatomy)
- pathological anatomy
- Topographic anatomy
- normal physiology
- pathological physiology
- Biochemistry
- Microbiology, virology and immunology
- Basic pharmacology
- Bioethics

Post-requisites:

- Childhood diseases
- Pediatric surgery
- Children's infectious diseases
- Pediatric neurology
- Family medicine
- Medical genetics
- About public health

Grading policy and procedures for all types of work

For the period of studying the discipline, the student gains points for the relevant parameters (per unit):
current score - 40 points
independent work - 20 points
control score (final assessment of knowledge per unit) - 40 points
Maximum score - 100 (40+20+40)

Grading system for student's achievements

Criteria for grading for the discipline				
Maximum score	Intervals			
	«unsatisfactory»	«satisfactory»	«good»	«excellent»
Current control - 40	0-23	24-30	31-35	36-40
Interval Criteria	Does not complete the task, does not know and does not understand the lecture material of the lesson, which prevents further assimilation of the program; cannot apply the acquired knowledge to solving situational problems, test questions. Does not answer teacher's questions Does not have practical skills when examining a patient	Performs the task not in full, has gaps in the assimilation of lecture material, has difficulty in applying knowledge to solve situational problems, test questions; does not fully and accurately answer the questions of the teacher. When examining a patient, he has poor practical skills	Completes the task in full, knows the lecture material, but sometimes makes mistakes when solving situational problems and test questions, understands the main content of the lecture material, gives correct answers to the teacher's questions. When examining a patient, he partially possesses practical skills	Completes the task in full, easily applies knowledge and skills in solving situational problems and test questions, rarely makes mistakes, gives complete and correct answers to the teacher's questions. When examining a patient, he has full practical skills

Independent work - 20	0-11	12-14	15-17	18-20
Interval Criteria	Presentation, report, table, situational task are missing	The content of the presentation, report, tables partially correspond to the given topic, the sequence of presentation of theoretical issues is violated: etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnosis, treatment and prevention. Situational tasks contain little description of a clinical case	The content of the presentation, report, tables does not fully correspond to the given topic, the sequence of presentation of theoretical issues (etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnosis, treatment and prevention) is not fully preserved. Situational tasks incompletely contain a description of a clinical case	The content of the presentation, report, tables correspond to the given topic, the sequence of presentation of theoretical issues (etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnosis, treatment and prevention) is fully preserved. Situational tasks contain a description of the clinical case in its entirety
Line control (module) - 40	0-23	24-30	31-35	36-40
Interval Criteria	Does not know the answers to test questions and situational tasks	Poor knowledge of answers to test questions and situational tasks	Knows well the answers to test questions and situational tasks	Knows the answers to test questions and situational tasks

DISCIPLINE	TOPICS OF INDEPENDENT WORK FOR STUDENTS	HOURS
GASTROENTEROLOGY	Malabsorption in children: the etiology, pathogenesis , clinical features, management	6
	Acute/chronic hepatitis in children: the etiology, pathogenesis , clinical features, management	6
HEMATOLOGY	1. Prepare a review of the hematopoietic system, including its structure, function, and main disorders in children	2
	3. Acute post-hemorrhagic anemia: clinical features, blood loss assessment, diagnosis and management	2
	4. Protein-deficiency anemia in children: etiopathogenesis, clinical features, diagnosis and treatment	2
	5. Differential diagnosis of anemia in children	3
	6. Disseminated Intravascular Coagulation (DIC) in children: clinical manifestations, early diagnostic criteria, and differential diagnosis.	2
EARLY CHILDHOOD DISEASES	1. Prevention and treatment of rickets in child elder than 6 months of Age	2
	3. Basic principles of classification and clinic of rickets	1
	4. Diagnosis and treatment of rickets. Vitamin D dosage. Organization of therapeutic nutrition	2
	8. Hypervitaminosis D in children. Spasmophilia. Diagnosis and basic principles of treatment	4
	10. Malnutrition in children. Basic principles of treatment depend on severity	2
	12. Treatment and prevention of malnutrition	2
CARDIORHEUMATOLOGY	1. Differential diagnosis of arthritis in children. Reactive arthritis in children	4
	2. Mixed Connective Tissue disease	4
	3. Transposition of Great Vessels	4.
NEONATOLOGY	1. The modern artificial surfactant in newborns of prematurity. Assessment of prematurity. Management	4
	2. Perform Neonatal resuscitation on a manikin. Hypothermia in newborns. Complication. Management	6
	3. Hemorrhagic disease of the newborn. Role of Vitamin K	2
	4. Describe the etiology, clinical features and management of Respiratory distress in New-born including meconium aspiration and transient tachypnoea of newborn	2
	5. Necrotizing enterocolitis in newborns	2
	6. Identify clinical presentations of common surgical conditions in the newborn including TEF, esophageal atresia, anal atresia, cleft lip and palate, congenital diaphragmatic hernia and causes of acute abdomen	2
NEPHROLOGY	1. Side effects of steroids in case of Nephrotic Syndrome	3

	2. Complication of Nephritic Syndrome	2
	3. Secondary Nephrotic Syndrome in case of Lupus erythematosus	2
	4. "Enumerate the etio-pathogenesis, clinical features, complications and management of Chronic Renal Failure in Children"	2
	5. Enumerate the etio-pathogenesis, clinical features, complications and management of Wilms Tumor"	2
PULMONOLOGY	1. 1.Differential diagnosis of acute respiratory viral diseases in children	2
	2. 2.Foreign body of the upper respiratory tract - clinical features, diagnostics and management	2
	3. 3.Pneumothorax – etiology, pathogenesis, clinical features, diagnostics and treatment	2
	4. 4.Pleuritis – etiology, pathogenesis, clinical features, diagnostics and treatment	2
	5. Emphysema - etiology, pathogenesis, clinical features, diagnostics and treatment	2
ENDOCRINOLOGY	1. The obesity in adolescents: the etio-pathogenesis, clinical features and management 2.	2
	3. Interpret and explain neonatal thyroid screening report	3
	4. Precocious and delayed Puberty: the etio-pathogenesis, clinical features and management	4
	5. Identify deviations in growth and plan appropriate referral	2

Conduct Policy: (lateness, absence, behavior in the auditorium, late submission of work).
- Punctuality and completion of tasks.
- Mandatory attendance of classes.
- Attending class in a clean medical uniform.
- Eliminating conversations on a cell phone in the classroom.
- Active participation in the learning process.
- Doing homework on time.
- Academic detention at the time specified by the teacher.

For violations of the Conduct Policy, the total points for discipline might be reduced to 1-5 points.

Academic Ethics Policy.
- Be tolerant, respect the opinions of others.
- Formulate objections in the correct form.
- Constructively support feedback in all classes.
- Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the following: the absence of references when using printed and electronic materials, quotes, thoughts and works of other authors or students.
- Prompting and cheating during tests, exams, classes is unacceptable as well as passing an exam for another student, unauthorized copying of materials.

For violations of the Academic Ethics Policy, the total points for the discipline may be reduced to 1-5 points.

Methodological instructions for the implementation of independent work on the discipline
Each Student have to prepare the abstract /poster/essay/infographics/clinical case
Requirements for the implementation of the abstract/ essay presentation:

- ✓ Given by electronic and printed form / short notes,
- ✓ Typed in Times New Roman 12, 1.5 interval
- ✓ The first page should contain the full name of the student, group, semester, the name of the abstract, the data of teacher, the filing date of the abstract.
- ✓ Contain parts: introduction, main part, findings / conclusions, list of references, litearature.
- ✓ The total essay 6 - 7 pages.

GASTROENTEROLOGY

THEMATIC PLAN OF LECTURES

№	Theme of lectures	hours
1.	Gastritis and gastroduodenitises in children. Peptic ulcer and duodenal ulcer.	2
2.	Hepatobiliary Disorders diseases	2
2.	Colitis (NEC, IBD: ulcerative colitis and Crohn's disease)	2
	Total:	6

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical classes	hours
1	Gastritis and gastroduodenitises in children. Peptic ulcer and duodenal ulcer.	4
2.	Hepatobiliary Disorders diseases	2
3.	Colitis (NEC, IBD: ulcerative colitis and Crohn's disease)	2
4.	Malabsorption syndrome in children	4
	Total:	12

Recommended reading for the discipline:

Basic:

No	Authors	Title	The year of publishing	publishing house	Availability in the IHSM library (number)
1	Kliegman RM, Geme III JW	Nelson textbook of pediatrics.Vol.1.-21th ed.	2020	9 996 128 296	50
2	Ghai OP, Paul VK, Bagga A.	Essentials of pediatrics.-8th ed.	2013	978-81-239-2334-5	9
3	Rafikova S., Alekseev V.	Children's Nutritional Abnormalities	2013	978-9967-27-179-1	109
4	Alekseev.V ., Starodubetz.U ., Isakova F.	Introduction to Pediatrics: Compendium for foreign student	2012	978-9967-26-670-4	342
5	Ghai OP, Paul VK, Bagga A.	Essentials Pediatrics.-6th ed.	2005	81-239-1163-7	94
6	Behraman RE	Nelson essentials of pediatrics. -4th ed.	2002	0-7216-9406-3	12
7	Nelson., Richard E. Berhman , Robert M. Kliegman	Essentials of Pediatrics	2000	4th	12
8	A Parthasarathy	Case Scenarios in Pediatric and Adolescent Practice	2014	1st edition –	http://library.ism.edu.kg/Online_Library/eBookDetails.aspx?id=288
9	Graham TP	Recommendations for Training in Pediatric Cardiology	2005	7th -E d –	http://library.ism.edu.kg/Online_Library/eBookDetails.aspx?id=938
10	William W. Hay Jr, et al By McGraw	Current Pediatric Diagnosis & Treatment	2002	16th Ed	http://library.ism.edu.kg/Online_Library/eBookDetails.aspx?id=57
11	Kenneth B Roberts MD By Lippincott Williams & Wilkins Publishers	Manual of Clinical Problems in Pediatrics	October 2000	5th edition	http://library.ism.edu.kg/Online_Library/eBookDetails.aspx?id=230

1 2	Pervez Akber Khan	"Basis of Pediatrics"	2000	7th -E d –	https://ketabton.com/book/14837

Able to (Skills):

1. Examine a patient with diseases of the digestive system,
2. gastric probing, collecting and analyzing gastric juice,
3. washing the stomach and intestines,
4. determining the boundaries (sizes) of the liver and spleen,
5. preparing the patient for studies of the gastrointestinal tract,
6. interpreting data obtained from endoscopic, x-ray examination of the patient,
7. prescribing a diet for various disorders of the gastrointestinal tract,
8. calculating the dosages of the necessary drugs in accordance with the weight and age of the child.

Guidelines for the lessons of the discipline

Key questions covered in lesson #1.

1. Anatomical and physiological features of the structure and functioning of the upper gastrointestinal tract in children (oral cavity, esophagus, stomach, duodenum).
2. Definitions: gastritis and peptic ulcer disease.
3. The main causative factors of acute gastritis in childhood. Clinical manifestations, diagnosis and treatment of acute gastritis and duodenitis in children.
4. Chronic gastritis in children. Etiology and pathogenesis: disbalance between aggressive and protective factors.
5. Helicobacter pylori-associated gastritis in children. Clinical picture of the H.pylori gastritis, course of disease, endoscopic parameters. Methods of detecting H. pylori infection and methods of therapy (two-, three - and quadruple therapy).
6. History taking in children with a stomach diseases and duodenal ulcer. Characteristics of the main symptoms and syndromes.
7. Etiopathogenesis of acute and chronic gastritis, peptic ulcer disease in childhood. Classification of gastritis (Sydney 1990).
8. H. pylori gastritis in children. Main features of the pathogen. The role of bacterial enzymes in the pathogenesis.
9. Clinical manifestations of gastritis and peptic ulcer disease in children. Basic and advanced diagnostic methods. Evaluation of gastric acidity .
10. The management of gastritis and peptic ulcer disease in children. Mechanisms of action and dosage of drugs regulating gastric acidity (H2 inhibitors, PPIs, antacids).
11. Eradication therapy of acute gastritis and peptic ulcer disease. Inefficiency of the eradication therapy in children with chronic gastritis.
12. Chronic autoimmune gastritis . B12-deficiency anemia as a complication of chronic gastritis.
13. Indications for surgical treatment of the peptic ulcer disease. Approaches and complications (dumping syndrome).
14. Perform NG tube insertion in a manikin

Recommended reading for this discipline:

1. Lecture “GIT dis” materials Alekseev Vladimir P
2. O.P. Ghai. Essential Pediatrics- 6th Edition 2004 y.
3. Nelson. Essentials of Pediatrics / Richard E. Berhman, Robert M. Kliegman – 4th ed.2002
4. Case Based Pediatrics For Medical Students and Residents/ Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, 2003
5. http://emedicine.medscape.com
6. http://medline.com
7. www.aap.org

Key questions covered in lesson #2.

1. The bile: composition, properties and functions.
2. Biliary dyskinesia. Definition and clinical manifestation. Predisposing factors. Types of dyskinesia and methods of their correction.
3. The cholecystitis in children. Etiology and pathogenesis of cholecystitis. Acute and chronic cholecystitis.
4. Chronic calculous cholecystitis: causes, clinical manifestation.
5. Mechanisms of stone formation. The role of hemolysis and congenital metabolic disorders in the gallstone formation. Types of gallstones.
6. Diagnostic methods of gallbladder diseases and bile ducts disorders in children.
7. The management of gallbladder diseases and bile ducts disorders in children. Correction of eating habits and dietary recommendations.
8. Treatment of cholecystitis in children. Mechanisms of action and dosage of drugs used in cholecystitis in children.
9. Complications of cholecystitis.

10. Indications for surgical treatment. Types of surgery in gallbladder diseases and bile ducts disorders.
:

Recommended reading for this discipline:

1. Lecture “GIT dis” materials Alekseev Vladimir P
2. O.P. Ghai. Essential Pediatrics- 6th Edition 2004 y.
3. Nelson. Essentials of Pediatrics / Richard E. Berhman, Robert M. Kliegman – 4th ed.2002
4. Case Based Pediatrics For Medical Students and Residents/ Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, 2003
5. Strasberg, S. M. Acute Calculous Cholecystitis. New England Journal of Medicine 358 (26), 2008: 2804–2811.
6. http://emedicine.medscape.com
7. http://medline.com
8. www.aap.org

Key questions covered in lesson #3.

1. Anatomical and physiological features of the small and large intestine in children.
2. Predisposing factors to the inflammatory bowel disease in children. The functional and morphological immaturity of the intestine as a main predisposing factor to IBD.
3. The characteristics of the immune response and nonspecific resistance in young children. Mechanisms of autoimmune inflammation.
4. Acute and chronic forms of the inflammatory diseases of the large intestine.
5. Etiology, pathogenesis, epidemiology and risk factors for the IBD in childhood.
6. Classification of the IBD in children. Pathophysiological differences.
7. Necrotizing enterocolitis. Causes, pathogenesis, main clinical forms. Laboratory and instrumental methods of diagnosis of NEC. Radiographic features in NEC. The management of the NEC.
8. Infectious colitis in children. Causes, pathogenesis, clinical manifestations of the most common forms. Diagnosis and treatment.
9. Idiopathic inflammatory bowel disease: ulcerative colitis and Crohn's disease. The idiopathic inflammation - definition.
10. Ulcerative colitis. Causes, pathogenesis and histological findings of the main clinical forms. Laboratory and instrumental methods of diagnosis.
11. Crohn's disease. Causes, pathogenesis, histological picture. The clinical manifestations, laboratory and instrumental methods.
12. The complications of chronic inflammatory bowel diseases.
13. Treatment and prevention of inflammatory bowel disease. The basic medications, dosage and mechanism of action.
14. Step-by-step treatment of chronic colitis, depending on the severity and the effectiveness of previous therapy.

Recommended reading for this discipline:

1. Lecture “GIT dis” materials Alekseev Vladimir P
2. 1 O.P. Ghai. Essential Pediatrics- 6th Edition 2004 y.
3. Nelson. Essentials of Pediatrics / Richard E. Berhman, Robert M. Kliegman – 4th ed.2002
4. Case Based Pediatrics For Medical Students and Residents/ Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, 2003
5. http://emedicine.medscape.com
6. http://medline.com
7. www.aap.org

Key questions covered in lesson #4.

1. The physiological and biochemical regulating mechanisms of the digestion processes.
2. Factors predisposing to disorders of digestion in children.
3. The main phases of digestion and absorption of food, possible causes of disbalance at the different stages.
4. The definition of malabsorption syndrome.
5. Malabsorption syndrome classification: a) primary and secondary; b) a selective, partial and total; c) according to severity; d) depending on type of food intolerance.
6. The main causes and pathogenesis of malabsorption syndrome in children.
7. Pathophysiological phases. Histological picture in various forms of malabsorption.
8. Clinical manifestations of disorders in digestion and absorption of protein, carbohydrates, fats and vitamins.
9. Marazmus and kwashiorkor. Clinical manifestations. Evaluation of nutritional status (BMI, an index Chulitsky etc.). Assessment the severity of the condition.
10. Module

Recommended reading for this discipline:

1. Lecture “GIT dis” materials Alekseev Vladimir P
2. O.P. Ghai. Essential Pediatrics- 6th Edition 2004 y.
3. Walker-Smith J, Barnard J, Bhutta Z, Heubi J, Reeves Z, Schmitz J. "Chronic diarrhea and malabsorption (including short

gut syndrome): Working Group Report of the First World Congress of Pediatric Gastroenterology, Hepatology, and Nutrition". *J. Pediatr. Gastroenterol. Nutr*. 35 Suppl 2, 2002: S98–105.
4. Bai J.Malabsorption syndromes. *Digestion* 59(5), 1998: 530–46.
5. http://emedicine.medscape.com
6. http://medline.com
7. www.aap.org

HEMATOLOGY

THEMATIC PLAN OF LECTURES

№	Lecture	Hours
1.	Hemorrhagic diathesis in children. Hemolytic anemia	2
2.	Leukemia in children. Immune status and immune deficiencies in children	2
	Total	4

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours
1.	Hemorrhagic diathesis in children	4
2.	Hemolytic anemias in children	2
3.	Deficiency anemias in children	2
4.	Leukemia in children	2
5.	Control unit (Module)	2
	Total	12

Key questions covered in lesson #1-2: Hemorrhagic diathesis in children

1. To describe the clinical features of Hemorrhagic vasculitis
2. The approach to diagnosis of hemorrhagic vasculitis
3. The basic principles of treatment of hemorrhagic vasculitis
4. Complications of hemorrhagic vasculitis
5. To describe the clinical features of Thrombocytopenic purpura
6. The approach to diagnosis of Thrombocytopenic purpura
7. The basic principles of treatment of Thrombocytopenic purpura
8. Complications of Thrombocytopenic purpura
9. Indications for splenectomy in case of Thrombocytopenic purpura
10. Thrombocytopathies in children. Etiology. Classification.
11. Clinical features of Glanzmann disease (thrombasthenia), Bernard-Soulier syndrome
12. Diagnostic criteria, differential diagnosis and principles of therapy of thrombocytopathies in children.
13. To describe the clinical features of Hemophilia
14. The approach to diagnosis of Hemophilia
15. The basic principles of treatment of Hemophilia
16. Complications of Hemophilia
17. To prepare Recipes (in copybook) on Medicine on each theme according scheme, this must be prepared:

Standard form (solution/tab)	Calculation doses of medicine(mg/kg; ml/day….)	Group of Medicine
Methylprednizolon (IV)		
Methylprednizolon (oral)		
Heparin		
Warfarin		
Dexamethasone		

Recommended reading for this discipline:

1. Lecture “Hemostatic disorders” materials
2. Alekseev.V ., Starodubetz.U ., Isakova F. Introduction to Pediatrics: Compendium for foreign student
3. Kessler C. Hemorrhagic disorders: Coagulation factor deficiencies. In: Goldman L, Ausiello D, eds. *Cecil Medicine*. 23rd ed. Philadelphia, Pa: Saunders Elsevier; 2007:chap 180Kliegman RM, Geme III J.W. Nelson textbook of pediatrics.Vol.1.-21th ed.
4. Ghai OP, Paul VK, Bagga A.Essentials of pediatrics.-8th ed.

Key questions covered in lesson #3: Hemolytic anemias in children

1. Normal parameters of the blood cells
2. Physiology of the hematopoietic system.
3. Acquired and hereditary hemolytic anemia
4. Pathophysiology of hemolysis.
5. The approach to diagnosis of hemolytic anemia
6. Complications of hemolytic anemia
7. The basic principles of treatment of hemolytic anemia
8. Hereditary haemoglobinopathies: sickle cell anemia, thalassemia.
9. The approach to diagnosis of sickle cell anemia, thalassemia.
10. The basic principles of treatment of sickle cell anemia, thalassemia.
11. Complications of sickle cell anemia, thalassemia.
12. The approach to diagnosis of immune hemolytic anemia.
13. Complications and the basic principles of immune hemolytic anemia.
14. To prepare Recipes (in copybook) on medicine on each theme according scheme, this must be prepared:

Standard form (solution/tab)	Calculation doses of medicine(mg/kg; ml/day...)	Group of Medicine
Methylprednizolon (IV)		
Methylprednizolon (oral)		
Dexamethasone		
Ciclosporin		

Recommended reading for this discipline:

.1. GHAI. Essential pediatrics. Ninth edition.
2. Nelson. Textbook of pediatrics. 22nd edition.
3. Pervez Akbar. Basic of Pediatrics. Tenth edition.

Additional :

1. Powers A, Silberstein LE. Autoimmune hemolytic anemia. In: Hoffman R, Benz EJ, Shattil SS, et al., eds.*Hematology: Basic Principles and Practice*. 5th ed. Philadelphia, Pa: Elsevier Churchill Livingstone; 2008:chap 47.
2. Glader BE. Hemolytic anemia in children. *Clin Lab Med*. Mar 1999;19(1):87-111, vi. [Medline].
3. Palek J, Jarolim P. Hereditary spherocytosis, elliptocytosis, and related disorders. In: Beutler E, Lichtman MA, Coller BS, Kipps TJ, eds. *Williams Hematology*. 5th ed. New York, NY: McGraw Hill; 1995:557-63
4. Coller BS, Schneiderman PI. Clinical evaluation of hemorrhagic disorders: the bleeding history and differential diagnosis of purpura. In: Hoffman R, Benz EJ Jr., Shattil SJ, et al, eds. *Hoffman Hematology: Basic Principles and Practice*. 5th ed. Philadelphia, Pa: Churchill Livingstone Elsevier; 2008:chap 121.
5. Kessler C. Hemorrhagic disorders: Coagulation factor deficiencies. In: Goldman L, Ausiello D, eds. *Cecil Medicine*. 23rd ed. Philadelphia, Pa: Saunders Elsevier;2007:chap 180.
6. Schwartz RS. Autoimmune and intravascular hemolytic anemias. In: Goldman L, Schafer AI, eds. *Cecil Medicine*. 24th ed. Philadelphia, Pa: Saunders Elsevier; 2011: chap 163.
7. Campana D, Pui CH. Childhood leukemia. In: Abeloff MD, Armitage JO, Niederhuber JE. Kastan MB, McKenna WG, eds. Abeloff's *Clinical Oncology*. 4th ed. Philadelphia, Pa: Elsevier; 2008:2139-2169.
8. Silverman LB, Sallan SE, Cohen HJ. Treatment of childhood acute lymphoblastic leukemia. In: Hoffman R, Benz EJ, Shattil SJ, Furie B, Cohen HJ, Silberstein LE, McGlave P, eds. *Hematology: Basic Principles and Practice*. 4th ed. Philadelphia, Pa. Elsevier; 2005: 1163-1174.
9. http://www.merckmanuals.com
10. http://www.childrenshospital.org
11. http://emedicine.medscape.com

Key questions covered in lesson #4: Deficiency anemias in children

1. Definition and classification of anemias in children based on morphological, etiological and clinical criteria, including severity and clinical course.
2. The main reasons for the development of iron-deficiency conditions and anemia in children. Pathogenesis of iron-deficiency anemia.
3. Clinical manifestations and main syndromes of iron deficiency conditions and anemia: nervous system, epithelial, cardiovascular, muscular and secondary immunodeficiency syndromes. Laboratory criteria for iron deficiency anemia
4. Iron deficiency anemia treatment guidelines

5. CBC: interpretation of the basic indexes of "red blood": the quality and quantity of erythrocytes, hemoglobin, hematocrit and color index.
6. The basic principles of treatment of iron-deficient anemia. Iron preparations, release forms and methods of administration. Diet therapy. Prevention of iron-deficiency anemia.
7. Vitamin B12-deficiency anemia in children. Etiology, pathogenesis, classification. Clinical manifistations.
8. Differential diagnosis with folic acid deficiency anemia and other megaloblastic anemias.Possible complications.
9. Treatment strategy: vitamin B12 therapy, dosages in children.
10. Folic acid deficiency anemia in children. Etiology, pathogenesis, classification.Main clinical manifestations. Diagnostic criteria and methods.Treatment strategy: folic acid supplementation, dosages in children.

Recommended reading for this discipline:

1. GHAI. Essential pediatrics. Ninth edition. P. 390-392
2. Nelson. Textbook of pediatrics. 22nd edition.
3. Pervez Akbar. Basic of Pediatrics. Tenth edition. P. 243-270

Key questions covered in lesson #5: Leukemia in children

1. Acute lymphoblastic leukemia.
2. To describe the clinical features of acute lymphoblastic leukemia.
3. The approach to diagnosis of acute lymphoblastic leukemia.
4. Complications of acute lymphoblastic leukemia.
5. The basic principles of treatment of acute lymphoblastic leukemia.
6. Acute myeloid leukemia. Peculiarities. Differential diagnosis.
7. To prepare Recipes (in copybook) on medicine on each theme according scheme, this must be prepared:

Standard form (solution/tab)	Calculation doses of medicine (mg/kg; ml/day….)	Group of Medicine
Mycophenolate mofetil		
Dexamethasone		
Prednizolon		
Ciclosporin		

Recommended reading for this discipline:

1. Lecture “Leukemia” materials
2. Alekseev.V ., Starodubetz.U ., Isakova F. Introduction to Pediatrics: Compendium for foreign student
3. Ghai OP, Paul VK, Bagga A.Essentials of pediatrics.-8th ed
4. Campana D, Pui CH. Childhood leukemia. In: Abeloff MD, Armitage JO, Niederhuber JE. Kastan MB, McKenna WG, eds. Abeloff’s *Clinical Oncology*. 4th ed. Philadelphia, Pa: Elsevier; 2008:2139-2169.

Silverman LB, Sallan SE, Cohen HJ. Treatment of childhood acute lymphoblastic leukemia. In: Hoffman R, Benz EJ, Shattil SJ, Furie B, Cohen HJ, Silberstein LE, McGlave P, eds. *Hematology: Basic Principles and Practice*. 4th ed. Philadelphia, Pa. Elsevier; 2005: 1163-1174

Lesson #6: Control unit (Module)

EARLY CHILDHOOD DISAESES

THEMATIC PLAN OF LECTURES

№	Lecture	Hours
1.	Childhood Malnutrition Syndrome	2
2.	Rickets	2
	Total	4

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours
1.	Childhood Malnutrition Syndrome	4
2.	Rickets	2
3.	Hypovitaminosis in children	4
4.	Control unit	2
	Total	12

Guidelines for the lessons of the discipline

Key questions covered in lesson #1-2 Childhood Malnutrition Syndrome.
1.Differential diagnosis of malnutrition clinical forms in children.
2.Clinical manifestations of malnutrition.
3.Treatment of:
- •Hypoglycemia condition
- •Hypothermia
- •Dehydration
- •Electrolyte Disorders
- •Infections

4.Phased management, treatment and care of children with severe malnutrition.
Recommended reading for this discipline:
[1], [2], [3], [13-15]

Key questions covered in lesson #3 Rickets.
1. Epidemiology, etiology and predisposing factors for Rickets development.
2. The metabolism of calcium and phosphorus. Pathogenesis of Rickets
3. Bone changes in Rickets. Laboratory changes in Rickets.
4. Pathogenesis of rickets and its clinical forms.
5. Clinical features of Rickets
6. Methods of laboratory and instrumental examination.
7. Differential diagnosis with rickets-like diseases
8. Spazmofilia.
9. Treatment of rickets with vitamin D
10. Pharmaceutical forms of Vitamin D
11. Principles of prevention of rickets

Recommended reading for this discipline:
[1], [2], [3], [13-15]

Key questions covered in lesson #4 -5 Hypovitaminosis
1. The role of vitamins in the life of humanity
2. Etiology of Hypovitaminosis
3. Classification of vitamins
4. Water soluble vitamins
5. Comlications of hyper vitaminosis B, C)
6. Fat soluble vitamins
7. Comlications of hypervitaminosis (Vit E, A, K**)**

Recommended reading for this discipline:
1. GHAI. Essential pediatrics. Ninth edition.
2. Nelson. Textbook of pediatrics. 22nd edition.
3. Pervez Akbar. Basic of Pediatrics. Tenth edition.

Lesson 6 Module – 2 h

CARDIORHEUMATOLOGY

THEMATIC PLAN OF LECTURES:

№	Topic of lecture	Hours
1.	Rheumatic fever in children	2
2.	Congenital heart diseases. Congestive heart failure.	2
3.	Rheumatological disorders in children	2
	Total	6

THEMATIC PLAN OF PRACTICAL CLASSES:

№	Topic of practical class:	Hours
1.	Rheumatic fever in children: ARF & RHD	2
2.	Congenital heart diseases	2
3.	Non-rheumatic carditis in children	2
4.	Rheumatic diseases in children: SLE, Dermatomyositis, Scleroderma	2
5.	Rheumatic diseases in children: JIA, Vasculitis Syndromes	2
6.	Control unit	2
	Total	12

Guidelines for the lessons of the discipline

Key questions covered in lesson #1.

1. Etiopathogenesis of ARF & RHD.
2. Clinical features if ARF & revised Jones Criteria
3. Clinical features of RHD: mitral stenosis/regurgitation; aortic stenosis/regurgitation
4. Laboratory and instrumental diagnostics methods to recognize ARF & RHD
5. Differential Diagnosis with other diseases
6. Management and secondary prophylaxis

Recommended reading for this discipline:

1. Nelson. Textbook of pediatrics. 20th edition.
2. O.P. Ghai. Essential Pediatrics- 10th Edition, chapter 16
3. Pervez. Basis of pediatrics – 10th Edition, chapter 10
4. WHO guideline on the prevention and diagnosis of rheumatic fever and rheumatic heart disease
5. Consensus Guidelines on Pediatric Acute Rheumatic Fever and Rheumatic Heart Disease; Indian Academy of Pediatrics (shared in google classroom)

Key questions covered in lesson #2.

1. Embryology of Heart – key points
2. Classification of CHD on base of main clinical signs and circulatory disorders
3. VSD: location types and circulatory disorders. Clinical and instrumental signs.
4. ASD: location types and circulatory disorders. Clinical and instrumental signs.
5. PDA: types and circulatory disorders. Clinical and instrumental signs.
6. Coarctation of the aorta: types. Clinical and instrumental signs.
7. Tetralogy of Fallot. Circulatory disorders. Clinical and instrumental signs.
8. Differential Diagnosis of CHD
9. Congestive Heart Failure in CHD. Signs, development. Management of children with CHF
10. Tactics depending on the severity of the patient's condition.

Recommended reading for this discipline:

1. Nelson. Textbook of pediatrics. 20th edition.
2. O.P. Ghai. Essential Pediatrics- 10th Edition, chapter 16
3. Pervez. Basis of pediatrics – 10th Edition, chapter 10
4. https://www.indianpediatrics.net/july1996/571.pdf https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5105230/
5. https://emedicine.medscape.com/article/2069746-
6. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007037.pub3/epdf/standard

Key questions covered in lesson #3.

1. Etiopathogenesis of Infective endocarditis in children
2. Clinical features, laboratory and instrumental diagnosis of Infective endocarditis in children
3. Treatment pf Infective endocarditis in children
4. Etiopathogenesis of Myocarditis in children
5. Clinical features, laboratory and instrumental diagnosis of Myocarditis in children
6. Treatment of Myocarditis in children
7. Cardiomyopathies in children: Classification, Diagnosis, Clinical and instrumental methods of the diagnosis
8. Pediatrics ECG. Signs of arrythmias, HLV, HRV, RAD.
9. Classification of chronic heart failure in children.
10. Differential Diagnosis with other diseases

Recommended reading for this discipline:

1. Nelson. Textbook of pediatrics. 20th edition.
2. O.P. Ghai. Essential Pediatrics- 10th Edition, chapter 16

3. Pervez. Basis of pediatrics – 10th Edition, chapter 10
4. https://www.indianpediatrics.net/july1996/571.pdf https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5105230/
5. https://emedicine.medscape.com/article/2069746-guidelineshttps://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007037.pub3/epdf/standard
6. https://www.ahajournals.org/doi/10.1161/CIR.0000000000001001; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2805590/; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5814111/ ;
7. https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000000682
8. https://www.oatext.com/pediatric-cardiomyopathies-a-review-of-literature-on-clinical-status-and-meta-analysis-of-diagnosis-and-clinical-management-methods.php
9. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3903430/

Key questions covered in lesson #4.

1. Diffuse connective tissue diseases in children: causes, pathogenesis.
2. SLE: clinical criteria, laboratory and instrumental diagnosis
3. Scleroderma: clinical features, laboratory and instrumental diagnosis
4. Juvenile Dermatomyositis: clinical features, laboratory and instrumental diagnosis
5. Management of DCTD in children

Recommended reading for this discipline:

1. Nelson. Textbook of pediatrics. 20th edition.
2. O.P. Ghai. Essential Pediatrics- 10th Edition, chapter 22
3. Pervez. Basis of pediatrics – 10th Edition, chapter 21
4. Pediatric Systemic Lupus Erythematosus. Author: Marisa S Klein-Gitelman, MD, MPH; Chief Editor: Lawrence K Jung, MD – MEDSCAPE
5. Childhood-Onset Systemic Lupus Erythematosus. Anjali Sura, MD; Christopher Failing, MD; Dominic O. Co, MD, PhD; Grant Syverson, MD
6. Juvenile Dermatomyositis. Author: Ann M Reed, MD; Chief Editor: Lawrence K Jung, MD MEDSCAPE

Key questions covered in lesson #5.

1. Juvenile Idiopathic Arthritis: classification/subtypes and clinical features. Laboratory and instrumental findings
2. Differential diagnosis of arthritis in children
3. Management of JIA in children
4. Vasculitis Syndromes in children: SHP, Kawasaki disease. Clinical manifestations, laboratory and instrumental findings
5. Management of SHP

Recommended reading for this discipline:

1. Nelson. Textbook of pediatrics. 20th edition.
2. O.P. Ghai. Essential Pediatrics- 10th Edition, chapter 22
3. Pervez. Basis of pediatrics – 10th Edition, chapter 21

NEONATOLOGY

THEMATIC PLAN OF LECTURES

№	Lecture	Hours
3.	Introduction to neonatology. Asphyxia. Neonatal resuscitation	2
4.	Neonatal hyperbilirubinemia	2
5.	Intrauterine infection of the fetus and newborn	2
6.	Neonatal sepsis	2
	Total	8

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours
6.	Examination of newborns	2
7.	Asphyxia. Neonatal resuscitation	4
8.	Birth trauma of newborns	2
9.	Neonatal hyperbilirubinemia	2
10.	Intrauterine infection of the fetus and newborn	2
11.	Neonatal sepsis	2
12.	Module	2
	Total	16

Guidelines for the lessons of the discipline

Key questions covered in lesson #1. Examination of newborn

1. Definitions of following terms: newborn, term, preterm and post-term neonate, live and still-birth neonate, low-birth weight, very low-birth weight and extremely low-birth weight neonates.
2. Routine neonatal care after the birth.
3. General examination of healthy term newborn. Neonatal reflexes
4. Minor clinical problems in neonatal period.
5. Criteria of preterm neonate, main causes of preterm birth.
6. Prophylactic procedures in the maternity house (vaccination, vitamin K injection, screening programs in detection of congenital and hereditary disorders).

Recommended reading for this discipline:

1. Kattwinkel J (ed). Textbook of Neonatal Resuscitation, 8th Edition. 2021, Elk Grove Village, IL: American Academy of Pediatrics, American Heart Association..
2. Niermeyer S, et al. International Guidelines for Neonatal Resuscitation: An Excerpt From the Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: International Consensus on Science. Pediatrics 2000; 106(3):E29.
3. O.P. Ghai. Essential Pediatrics- 9th Edition 2019 y.
4. Nelson. Essentials of Pediatrics / Richard E. Berhman, Robert M. Kliegman – 4th ed.2002
5. Case Based Pediatrics For Medical Students and Residents/Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, 2003
6. Pervez Akber Khan "Basis of Pediatrics» 7thed. P. 507 – 556
7. General observation of healthy term newborn. https://www.youtube.com/watch?v=cracmPo3iYo
   https://www.youtube.com/watch?v=xeKvlFn6wjA

Key questions covered in lesson #2. Asphyxia. Neonatal resuscitation.

1. Apgar score, its place in diagnosing of neonatal asphyxia.
2. Main causes of law Apgar score, indication to newborn resuscitation.
3. Newborn resuscitation (ABCD), indications, technique, duration and possible complications. Team work.
4. Complications of neonatal asphyxia.
5. Features of resuscitation in case of meconium aspiration.

Recommended reading for this discipline:

1. Kattwinkel J (ed). Textbook of Neonatal Resuscitation, 4th Edition. 2000, Elk Grove Village, IL: American Academy of Pediatrics, American Heart Association..
2. Niermeyer S, et al. International Guidelines for Neonatal Resuscitation: An Excerpt From the Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: International Consensus on Science. Pediatrics 2000; 106(3):E29.
3. O.P. Ghai. Essential Pediatrics- 6th Edition 2004 y.
4. Nelson. Essentials of Pediatrics / Richard E. Berhman, Robert M. Kliegman – 4th ed.2002
5. Case Based Pediatrics For Medical Students and Residents/Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, 2003
6. Pervez Akber Khan "Basis of Pediatrics» 7thed. P. 507 – 556
7. https://www.glowm.com/resourcetype/resource/video/title/neonatal-resuscitation-%E2%80%93-maf/resource-doc/905
https://globalhealthmedia.org/videos/teaching-points-for-newborn-resuscitation/

Key questions covered in lesson #3. Birth trauma

1. Definition of birth trauma, classification, epidemiology, etiology.
2. Cefalohematoma, etiopatogenesis, clinical presentations, differential diagnosis, management.
3. Birth traumas affecting of CNS, etiology, clinical presentation, periods of diseases, treatment.
4. Birth traumas affecting peripheral nervous system and SMS.
5. Birth trauma affecting internal organs.

Recommended reading for this discipline:

1. Kattwinkel J (ed). Textbook of Neonatal Resuscitation, 4th Edition. 2000, Elk Grove Village, IL: American Academy of Pediatrics, American Heart Association..
2. Niermeyer S, et al. International Guidelines for Neonatal Resuscitation: An Excerpt From the Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: International Consensus on Science. Pediatrics 2000;

106(3):E29.
3. O.P. Ghai. Essential Pediatrics- 6th Edition 2004 y.
4. Nelson. Essentials of Pediatrics / Richard E. Berhman, Robert M. Kliegman – 4th ed.2002
5. Case Based Pediatrics For Medical Students and Residents/Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, 2003
6. Pervez Akber Khan "Basis of Pediatrics» 7thed. P. 507 – 556
7. http://emedicine.medscape.com
8. http://medline.com

Key questions covered in lesson #4. Hyperbilirubinemia

1. Features of bilirubin metabolism, causes of physiological jaundice.
2. Connection between the metabolism of bilirubin and methods of management of jaundice.
3. Differential diagnosis of jaundice in neonatal period.
4. Hemolytic disease, etiopatogenesis, clinical forms, diagnosis. Prophylaxis of hemolysis in case of rhesus-conflict pregnancy.
5. Hemorrhagic disease. Role of vitamin K.

Recommended reading for this discipline:

1. Kattwinkel J (ed). Textbook of Neonatal Resuscitation, 4th Edition. 2000, Elk Grove Village, IL: American Academy of Pediatrics, American Heart Association..
2. Niermeyer S, et al. International Guidelines for Neonatal Resuscitation: An Excerpt From the Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: International Consensus on Science. Pediatrics 2000; 106(3):E29.
3. O.P. Ghai. Essential Pediatrics- 6th Edition 2004 y.
4. Nelson. Essentials of Pediatrics / Richard E. Berhman, Robert M. Kliegman – 4th ed.2002
5. Case Based Pediatrics For Medical Students and Residents/Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, 2003
6. Pervez Akber Khan "Basis of Pediatrics» 7thed. P. 507 – 556
7. https://globalhealthmedia.org/videos/jaundice/
https://www.youtube.com/watch?v=rQ21vJmTDz4

Key questions covered in lesson #5. Intrauterine infection.

1. Definitions of "congenital" and "perinatal" infections, the main difference in resources, ways of acquiring and causative organisms.
2. Clinical manifestations of congenital and perinatal infections depending on time of acquiring: rubella, herpes simplex, cytomegalovirus, toxoplasmosis, syphilis and HIV-infection.
3. The main methods of investigation in case of congenital and perinatal infections: detecting of viruses, microscopic, PCR, immunological methods, ultrasound and X-ray examination.
4. Prophylactic procedures. The main groups of medicine for treatment of congenital and perinatal infections: indications, dosage, possible side-effects.

Recommended reading for this discipline:

1. Kattwinkel J (ed). Textbook of Neonatal Resuscitation, 4th Edition. 2000, Elk Grove Village, IL: American Academy of Pediatrics, American Heart Association..
2. Compendium Neonatal Care 2nd Edition, Mary Low White
3. O.P. Ghai. Essential Pediatrics- 6th Edition 2004 y.
4. Nelson. Essentials of Pediatrics / Richard E. Berhman, Robert M. Kliegman – 4th ed.2002
5. Case Based Pediatrics For Medical Students and Residents/Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, 2003
6. Pervez Akber Khan "Basis of Pediatrics» 7thed. P. 507 – 556

Key questions covered in lesson #6. Neonatal sepsis.

1. Neonatal sepsis: definition, early- and late-onset sepsis, the main causative organisms and clinical manifestation of early- and late-onset sepsis.
2. The main factors predisposing to sepsis. Features of the barrier and cellular immunity and immunological response in neonates.
3. Diagnostic criteria of neonatal sepsis: clinical and laboratory criteria.Treatment of neonatal sepsis: etiological and supportive
5. Module MCQ

Recommended reading for this discipline:

1. Kattwinkel J (ed). Textbook of Neonatal Resuscitation, 4th Edition. 2000, Elk Grove Village, IL: American Academy of Pediatrics, American Heart Association..
2. Niermeyer S, et al. International Guidelines for Neonatal Resuscitation: An Excerpt From the Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: International Consensus on Science. Pediatrics 2000; 106(3):E29.
3. O.P. Ghai. Essential Pediatrics- 6th Edition 2004 y.
4. Nelson. Essentials of Pediatrics / Richard E. Berhman, Robert M. Kliegman – 4th ed.2002
5. Case Based Pediatrics For Medical Students and Residents/Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, 2003
6. Pervez Akber Khan "Basis of Pediatrics» 7thed. P. 507 – 556
7. http://emedicine.medscape.com
8. http://medline.com

NEPHROLOGY

THEMATIC PLAN OF LECTURES

№	Lecture	Hours
1.	Glomerulonephritis in children. Acute kidney injury (AKI)	2
2.	Chronic kidney diseases (CKD)	2
	Total	4

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours
1.	Glomerulonephritis in children	4
2.	Chronic kidney disease	2
3.	Acute kidney injury (AKI) in children.	2
4.	Urinary tract Infections in children	2
5.	UNIT (Module)	2
	Total	12

Guidelines for the lessons of the discipline

Key questions covered in lesson #1, 4 hrs

1. List of investigation of primary glomerulonephritis
2. Enumerate the etio-pathogenesis, clinical features, complications and management of Acute Post-Streptococcal Glomerulonephritis in Children
3. Describe the approach and referral criteria to a child with Proteinuria
4. Describe the approach and referral criteria to a child with Hematuria
5. Definition and principles of diagnostics of secondary glomerulonephritis
6. List of investigation of secondary glomerulonephritis:

- lupus nephritis, Anti-GBM glomerulonephritis, poststreptococcal nephritic syndrome, Shenlein-Genoch nephritis

7. Definition and principles of diagnostics of Nephritic syndrome
8. Treatment of Nephritic syndrome in children
9. Definition and principles of diagnostics of Nephrotic syndrome
10. Treatment of first episodes of primary Nephrotic syndrome in children
11. Treatment of relapse of primary Nephrotic syndrome in children
12. Steroid depend nephrotic syndrome – definition, principles of treatment
13. Steroid résistance nephrotic syndrome – definition, principles of treatment
14. **To prepare Recipes (in copybook) on Medicine on each theme according scheme, this must be prepared:**

Standard form (solution/tab)	Calculation doses of medicine (mg/kg; ml/day….)	Group of Medicine
Prednisoloni		
Lasix		
Torasemidum		
Neoral		
Takrolimus\Prograf		
Sellsept		
Enalopril		
Amlodopini		
Lozartan		

Atorvastatins		
Methylprednisolony		

Recommended reading for this discipline:

1. Rodriguez-Iturbe B, Musser JM. The current state of poststreptococcal glomerulonephritis. J Am Soc Nephrol 2008; 19:1855.
2. Kanjanabuch T, Kittikowit W, Eiam-Ong S. An update on acute postinfectious glomerulonephritis worldwide. Nat Rev Nephrol 2009; 5:259.
3. Lewy JE, Salinas-Madrigal L, Herdson PB, et al. Clinico-pathologic correlations in acute poststreptococcal glomerulonephritis. A correlation between renal functions, morphologic damage and clinical course of 46 children with acute poststreptococcal glomerulonephritis. Medicine (Baltimore) 1971; 50:453.
4. Rodriguez-Iturbe B. Postinfectious glomerulonephritis. Am J Kidney Dis 2000; 35:XLVI.
5. https://link.springer.com/article/10.1007/s00467-022-05639-6#article-info
6. Nephrotic syndrome in children: prediction of histopathology from clinical and laboratory characteristics at time of diagnosis. A report of the International Study of Kidney Disease in Children. Kidney Int 1978; 13:159.
7. Veltkamp F, Rensma LR, Bouts AHM, LEARNS consortium. Incidence and Relapse of Idiopathic Nephrotic Syndrome: Meta-analysis. Pediatrics 2021; 148.

Key questions covered in lesson #2, 2 hrs.

1. Describe and discuss the differences between primary and secondary hypertension in children
2. Definition of CRONIC KIDNEY DISEASE (CKD)
3. Describe and discuss the morphological characteristics, aetiology and prevalence of renal anemia in case of CKD
4. Describe the indications for blood transfusion and the Appropriate use of blood components
5. Clinical, laboratory signs and principles treatment of CKD I-II-III-IV-V
6. Define, describe, classify, differentiate between the pathophysiologic causes of acute and chronic renal failure
7. Describe the aetiology, clinical manifestations, diagnosis and clinical approach to secondary hyperparathyroidism
8. Counsel patients on a renal diet
9. Describe and discuss supportive therapy in CKD including diet, anti- hypertensives, glycemic therapy, dyslipidemia, anemia, hyperkalemia, hyperphosphatemia and Secondary hyperparathyroidism
10. Describe and discuss the indications for renal replacement therapy
11. Describe discuss and communicate the ethical and legal Issues involved in renal replacement therapy
12. **To prepare Recipes (in copybook) on Medicine on each theme according scheme, this must be prepared:**

Name of theme		
Erythropoietin Recormon		
Calcitriol		
VENOFER		
Ketosteril		

Recommended reading for this discipline:

1. Pediatr Clin North Am. 2013 Jun;60(3):669-88 - PubMed
2. Pediatr Crit Care Med. 2014 Jun;15(5):417-27 - PubMed
3. Crit Care Med. 1996 May;24(5):743-52 - PubMed
4. Intensive Care Med. 2012 Apr;38(4):542-56 - PubMed
5. Crit Care Med. 2010 Mar;38(3):933-9 – PubMed
8. Kidney Disease: Improving Global Outcomes (KDIGO) CKD work group. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. *Kidney Int Suppl* 2013; 3: 1–150 [Google Scholar]
9. Kidney Disease: Improving Global Outcomes (KDIGO) Glomerulonephritis Work Group. KDIGO clinical practice guideline for glomerulonephritis. *Kidney Int Suppl* 2012; 2: 139–274 [Google Scholar]
10. Seikaly MG, Salhab N, Gipson D et al.. Stature in children with chronic kidney disease: analysis of NAPRTCS database. *Pediatr Nephrol* 2006; 21: 793–799 [PubMed] [Google Scholar]
11. Rodig NM, McDermott KC, Schneider MF et al.. Growth in children with chronic kidney disease: a report from the chronic kidney disease in children study. *Pediatr Nephrol* 2014; 29: 1987–1995 [PMC free article] [PubMed] [Google Scholar]
12. Keithi-Reddy SR, Singh AK. Hemoglobin target in chronic kidney disease: a pediatric perspective. *Pediatr Nephrol* 2009; 24: 431–434 [PubMed] [Google Scholar]

Key questions covered in lesson #3, 2 hrs.

1. Enumerate the etio-pathogenesis, clinical features, complications and management of Acute Renal Failure in children
2. Rapidly Progressive glomerulonephritis - definition, principles of treatment
3. Inspection and evaluation of URINE OUTPUT (oligouria, anuria).
4. Definition and principles of diagnostics of Acute Kidney Injury (AKI) according AKIN

5. Definition and principles of diagnostics of Acute Kidney Injury (AKI) according pediatrics RIFLE-criteria's
6. Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis
7. Principles of DIAGNOSTIC PRERENAL AKI
8. Principles of treatment of PRERENAL AKI
9. Principles of DIAGNOSTIC RENAL AKI
10. Principles of treatment of RENAL AKI
11. Principles of DIAGNOSTIC POSTRENAL AKI
12. Principles of treatment of POSTRENAL AKI
13. DIAGNOSTIC OF AKI'S COPLICATION
14. TREATMENT OF AKI'S COPLICATION
15. Indication to Acute dyalisis in case of AKI
16. Variant of outcomes of AKI

Recommended reading for this discipline:

6. Pediatr Clin North Am. 2013 Jun;60(3):669-88 - PubMed
7. Pediatr Crit Care Med. 2014 Jun;15(5):417-27 - PubMed
8. Crit Care Med. 1996 May;24(5):743-52 - PubMed
9. Intensive Care Med. 2012 Apr;38(4):542-56 - PubMed
10. Crit Care Med. 2010 Mar;38(3):933-9 – PubMed

Key questions covered in lesson #4, 2 hrs.

1. Perform and interpret the common analytes in a Urine examination
2. Interpret report of Plain X Ray of KUB (Kidney,Ureter,Bladder)
3. Enumerate the etio-pathogenesis, clinical features, complications and management of Urinary Tract infection in children
4. Determination and tactics therapy in asymptomatic /non pathological bacteriuria
5. Determination and tactics therapy in symptomatic / pathological bacteriuria- Indication to take urine culture by catheterization method, methodology of this test
6. Diagnosis of complicated urinary tract infections
7. Diagnosis of uncomplicated urinary tract infections
8. Determination of the starting antibiotic at a urinary tract infection
9. The concept and definition of a stepped of antibacterial therapy at a urinary tract infection
10. **To prepare Recipes on Medicine on each theme according scheme, this must be prepared:**
11. **Module**

Name of theme		
Standard form (solution/tab)	Calculation doses of medicine (mg/kg; ml/day….)	Group of Medicine
Clotrimaxazoli		
Gentamycini		
Cephtriaxoni		
Amoxacillini		

Recommended reading for this discipline:

1. Subcommittee on Urinary Tract Infection, Steering Committee on Quality Improvement and Management, Roberts KB. Urinary tract infection: clinical practice guideline for the diagnosis and management of the initial UTI in febrile infants and children 2 to 24 months. Pediatrics 2011; 128:595.
2. Williams G, Craig JC. Long-term antibiotics for preventing recurrent urinary tract infection in children. Cochrane Database Syst Rev 2011; :CD001534.
3. SUBCOMMITTEE ON URINARY TRACT INFECTION. Reaffirmation of AAP Clinical Practice Guideline: The Diagnosis and Management of the Initial Urinary Tract Infection in Febrile Infants and Young Children 2-24 Months of Age. Pediatrics 2016; 138.

PULMONOLOGY

THEMATIC PLAN OF LECTURES

№	Lecture theme	hours
1.	ARI of the upper respiratory tract. Acute rhinitis. Acute otitis media in children. Epiglottitis. Acute laryngotracheobronchitis.	2
2.	ARI of the lower respiratory tract. Bronchitis and bronchiolitis in children. Aspiration of a foreign body of the respiratory tract	2
3.	Acute pneumonia. Empyema in children	2
4.	Asthma in children.	2

	Total:	8

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical lesson	hours
1.	ARI of the upper respiratory tract. Acute rhinitis. Acute otitis media in children. Epiglottitis. Acute laryngotracheobronchitis.	2
2.	ARI of the lower respiratory tract. Bronchitis and bronchiolitis in children. Aspiration of a foreign body of the respiratory tract	2
3.	Acute pneumonia. Empyema in children	2
4.	Asthma in Children. Interpretation of Pulmonary Function Tests	2
5.	Cystic Fibrosis in children	2
6.	Control unit	2
	Total:	12

Be able (skills)

1. Counting the respiratory rate.
2. Define lower chest indrawing
3. Define wheezing (breathing in asthma and obstructive bronchitis).
4. Define stridor (laryngotracheitis, foreign body, retropharyngeal abscess).
5. Demonstrate The technique of using metered dose inhaler.
6. Demonstrate The technique of using MDI with a spacer (homemade).
7. Interpret of indicator of peak flowmetry.
8. Demonstrate Bronchodilator test.
9. Interpret Pulmonary function test

Key questions covered in lesson 1: ARI of the upper respiratory tract. Acute rhinitis. Acute otitis media in children. Epiglottitis. Acute laryngotracheobronchitis (2h)

1. **Acute Respiratory Infections (ARI) of the Upper Respiratory Tract**

- What are the most common viral and bacterial pathogens causing ARI in children?
- What risk factors increase the likelihood of ARI in young children?
- What are the main symptoms and signs of ARI in the upper respiratory tract?
- How can ARI be differentiated from lower respiratory tract infections?
- What are the principles of management and prevention of ARI in children?

2. **Acute Rhinitis**

- What are the typical clinical manifestations of acute rhinitis in children?
- Which viruses are most often responsible for acute rhinitis?
- How is acute rhinitis differentiated from allergic rhinitis?
- What complications can arise from untreated or recurrent rhinitis?
- What are the recommended symptomatic treatments for acute rhinitis in children?

3. **Acute otitis media**

- What are the common causative pathogens of acute otitis media?
- What anatomical and physiological features of the Eustachian tube predispose children to AOM?
- What are the cardinal symptoms and otoscopic findings in acute otitis media?
- When is antibiotic therapy indicated, and what is the first-line drug of choice?
- What complications can occur if AOM is left untreated?

4. **Epiglottitis**

- What is the most common causative organism of epiglottitis in children?
- What are the characteristic clinical features and “red flag” signs of epiglottitis?
- Why is epiglottitis considered a medical emergency?
- What diagnostic procedures should be avoided due to risk of airway obstruction?
- What is the immediate management approach, including airway and antibiotic therapy?

5. **Acute Laryngotracheobronchitis (Croup)**

- What viruses are the most common causes of croup?
- What are the hallmark clinical signs and symptoms of croup?
- How is the severity of croup assessed (mild, moderate, severe)?
- What are the key differences between croup and epiglottitis?
- What are the mainstays of treatment for acute laryngotracheobronchitis?

Key questions covered in lesson 2: ARI of the lower respiratory tract. Bronchitis and bronchiolitis in children. Aspiration of a foreign body of the respiratory tract (2h)

1. Acute Respiratory Infections (ARI) of the Lower Respiratory Tract

- What are the most common causes (viral and bacterial) of lower respiratory tract infections in children?
- What clinical signs differentiate lower from upper respiratory tract infections?
- How do you assess the severity of pneumonia in children (WHO criteria)?
- What are the main complications of untreated pneumonia?
- What is the role of antibiotics vs. supportive care in lower ARI management?

2. Bronchitis and Bronchiolitis in Children

- What is the difference between acute bronchitis and bronchiolitis?
- Which age group is most affected by bronchiolitis, and why?
- What are the main viral agents responsible for bronchiolitis?
- What are the characteristic clinical signs of bronchiolitis?
- What is the recommended treatment for bronchiolitis — supportive vs. pharmacological?
- How do you differentiate bronchiolitis from asthma in infants?

3. Aspiration of a Foreign Body in the Respiratory Tract

- What are the most common objects causing aspiration in young children?
- What are the typical symptoms and signs of foreign body aspiration in the airway?
- Which investigations are most useful to confirm suspected aspiration?
- What is the gold standard for diagnosis and removal of a foreign body from the airway?
- What are the emergency first aid steps if a child suddenly chokes and develops severe airway obstruction?
- What complications can occur if foreign body aspiration is not promptly managed?

Recommended reading for the lesson 1 and 2

Basic:

1. GHAI. Essential pediatrics. Nine editions.
2. Nelson. Textbook of pediatrics. 21st edition.
3. Pocket book. WHO. Hospital care for children.2nd edition. 2013.
4. Pocket book. WHO/ Primary health care for children and adolescents. 2023.
5. Pervez Akbar. Basic of Pediatrics. Tenth edition
6. Management of Common Respiratory Infections in Children in India qps.nhsrcindia.org
7. Lections.

Additional:

1. "Prevalence and Associated Factors of Acute Respiratory Infections in Children": A study focusing on the prevalence and risk factors in different regions. ijcmph.com
2. "Hospital-Based Surveillance of Respiratory Viruses Among Children": Insights into the viral etiology of ARIs in pediatric populations. MDPI
3. **ICMR Recommendations on ARI Diagnosis and Surveillance** ScienceDirect

Key questions covered in lesson 3: Acute pneumonia and Empyema in children (2h)

Acute pneumonia

1. Etiology & Pathophysiology

- What are the most common bacterial and viral causes of acute pneumonia in children?
- What age-related factors make infants and young children more susceptible to pneumonia?
- What environmental and social risk factors contribute (e.g., malnutrition, passive smoking, overcrowding)?
- How does infection spread to the lower respiratory tract in children?
- What role do immature immune defenses play in pneumonia development?

2. Clinical Features and diagnosis

- What are the cardinal symptoms and signs of acute pneumonia in children?
- How do clinical features differ between viral and bacterial pneumonia?
- What WHO criteria are used to assess pneumonia severity (fast breathing, chest indrawing, hypoxemia)?
- What clinical findings are most important for diagnosing pneumonia in resource-limited settings?
- What is the role of chest X-ray and laboratory investigations in diagnosis?
- How can pneumonia be differentiated from bronchiolitis, asthma, or tuberculosis?

3. Management

- What is the first-line antibiotic for community-acquired pneumonia in children?
- When is hospitalization indicated for a child with pneumonia?
- What supportive therapies are essential (oxygen, hydration, fever control)?

4. Complications

- What are the possible complications of untreated or severe pneumonia (e.g., pleural effusion, empyema, sepsis)?
- How can complications be recognized early?

5. Prevention

- Which vaccines prevent the most common causes of childhood pneumonia (e.g., Hib, pneumococcal, measles)?
- What preventive strategies reduce pneumonia incidence (exclusive breastfeeding, nutrition, reducing indoor smoke)?

Empyema in Children

1. Etiology & Pathogenesis

- What is empyema, and how does it differ from simple pleural effusion?
- How common is empyema as a complication of pneumonia in children?
- What are the most common bacterial causes of empyema in children (pre- and post-vaccine era)?
- How does untreated pneumonia progress to empyema?
- What are the stages of parapneumonic effusion → empyema (exudative, fibrinopurulent, organizing)?
- Which children are at higher risk of developing empyema (age, malnutrition, immunodeficiency)?
- How do pneumococcal and staphylococcal infections increase risk?

2. Clinical Features and diagnosis

- What symptoms suggest empyema in a child with pneumonia?
- What are the typical physical exam findings in empyema?
- How can empyema be differentiated clinically from uncomplicated pneumonia?
- What is the role of chest X-ray in suspected empyema?
- How does chest ultrasound help in diagnosis?
- When is CT chest indicated?
- What laboratory tests of pleural fluid are most useful (protein, glucose, LDH, Gram stain, culture)?

3. Management

- What are the principles of medical management (antibiotics, supportive care)?
- When is chest tube drainage indicated?
- What is the role of fibrinolytic therapy (e.g., intrapleural streptokinase)?
- When should surgical interventions (VATS, decortication) be considered?

4. Complications

- What complications may occur if empyema is not treated promptly?
- How can chronic pleural thickening or fibrothorax be prevented?

5. Prognosis & Prevention

- What is the expected outcome in children with treated empyema?
- Which vaccines (e.g., pneumococcal, Hib) reduce the incidence of empyema?

Recommended reading for the lesson 3

Basic:

1. GHAI. Essential pediatrics. Eighth edition. P. 377-380.
2. Nelson. Textbook of pediatrics. 20th edition. Pneumonia 2089-2093.
3. Pocket book. WHO. Hospital care for children.2nd edition. 2013. Pneumonia P. 80-88.
4. Pervez Akbar. Basic of Pediatrics. Tenth edition. P. 243-270
5. Lections.

Additional:

1. Pneumonia. WHO. 2019. https://www.who.int/news-room/fact-sheets/detail/pneumonia

2. Pediatric Pneumonia Author Information Chiemelie Ebeledike; Thaer Ahmad. Last Update: August 12, 2021. https://www.ncbi.nlm.nih.gov/books/NBK536940/

3. **Indian Academy of Pediatrics (IAP) Guidelines (2022)** Available at: IAP Empyema Guidelines **https://www.iapindia.org/pdf/Ch-029-STG-Empyema.pdf?utm_source=chatgpt.com**

2. ICMR Standard Treatment Work (STW) on Empyema Thoracis (2022)
https://www.icmr.gov.in/icmrobject/uploads/STWs/1726569368_empyema_thoracis.pdf?utm_source=chatgpt.com

3. Empyema Thoracis in Children: A 5-Year Experience
https://pmc.ncbi.nlm.nih.gov/articles/PMC6568155/?utm_source=chatgpt.com

4. Clinico-Epidemiological Profile and Outcomes of Pediatric Empyema Thoracis in North India
https://link.springer.com/article/10.1007/s12098-025-05559-x?utm_source=chatgpt.com

5. Management of Thoracic Empyema in Children: A Survey of Indian Pediatricians.

https://pubmed.ncbi.nlm.nih.gov/39479415/

Key questions covered in lesson 4: Asthma in children (2h)

1. **Epidemiology and Pathophysiology**
   - Asthma definition
   - What are the main risk factors for developing asthma in children? (e.g., genetic predisposition, environmental triggers, early-life infections, atopy)
   - How do factors like family history of allergies, exposure to smoke, or urban living affect asthma risk?
   - What are the key pathological mechanisms of asthma in children?
   - How does airway inflammation contribute to symptoms like wheezing, cough, and shortness of breath?
   - What role do immune cells (eosinophils, mast cells, T-helper cells) play in pediatric asthma?
   - How does airway hyperresponsiveness develop in children?
2. **Clinical Presentation and diagnosis**
   - What are the common signs and symptoms of asthma in children of different ages?
     - Infants: recurrent cough, wheezing, feeding difficulties
     - Older children: episodic wheeze, chest tightness, exercise-induced symptoms
   - How do triggers (allergens, exercise, infections) affect symptom onset?
   - How to differentiate asthma from other causes of wheezing (bronchiolitis, foreign body aspiration)?
   - What criteria are used for diagnosing asthma in children?
   - What role do:
     - History and clinical examination
     - Pulmonary function tests (spirometry, peak flow)
     - Allergy testing
     - Exhaled nitric oxide (FeNO)

     play in confirming diagnosis?
   - How to recognize asthma exacerbations and their severity?
3. **Asthma Control and Monitoring**
   - How is asthma control assessed in children? (frequency of symptoms, nighttime awakenings, limitation of activity, rescue medication use)
   - What tools are used for monitoring (e.g., asthma control questionnaires, peak flow diaries)?
   - What are the indicators of poor control or worsening asthma?
4. **Treatment**
   - What are the main classes of asthma medications in children?
     - Controller medications: inhaled corticosteroids, leukotriene receptor antagonists, biologics
     - Reliever medications: short-acting β2-agonists
   - How is therapy tailored based on age, severity, and control level?
   - What is the stepwise approach to asthma management in children?
5. **Prevention and Education**
   - What strategies reduce the risk of asthma exacerbations? (trigger avoidance, vaccination, smoking cessation)
   - How to educate children and families on inhaler technique, adherence, and asthma action plans?
   - Role of school and community support in asthma management.

Recommended reading for the lesson 4:

Basic:

1. GHAI. Essential pediatrics. Ninth edition. P. 382-390.
2. Nelson. Textbook of pediatrics. 20th edition.
3. Pocket book. WHO. Hospital care for children.2nd edition. 2013. Asthma P.96.
4. Pocket Guide for Asthma management and prevention. 2023. https://ginasthma.org/wp-content/uploads/2023/07/GINA-2023-Pocket-Guide-WMS.pdf
5. Pervez Akbar. Basic of Pediatrics. Tenth edition. P. 243-270
6. Lections.

Additional:

1. CDC. Publications on Asthma. https://www.cdc.gov/asthma/resources_professionals.html
2. Pediatric asthma. Jenna M. Lizzo:Sara Cortes. 2021. https://www.ncbi.nlm.nih.gov/books/NBK551631/
3. GINA. Global strategy for asthma management and prevention. Updated 2022. https://ginasthma.org/wp-content/uploads/2022/07/GINA-Main-Report-2022-FINAL-22-07-01-WMS.pdf

Key questions covered in lesson 5: Cystic Fibrosis in children (2h.)

1. Epidemiology and Pathophysiology

- What is the prevalence of cystic fibrosis in children worldwide and in your region?
- What is the mode of inheritance of CF?
- Which gene is mutated in CF, and what protein does it encode?
- How do different CFTR mutations affect disease severity?
- How does CFTR protein dysfunction lead to disease?
- How are the respiratory, gastrointestinal, and reproductive systems affected?
- Why does thick mucus accumulate in the lungs and other organs?

2. Clinical Presentation and diagnosis

- What are common early signs of CF in newborns? (meconium ileus, failure to thrive)
- What are the typical respiratory symptoms in children? (chronic cough, recurrent infections, wheezing, bronchiectasis)
- What are the gastrointestinal manifestations? (pancreatic insufficiency, malabsorption, steatorrhea, poor growth)
- How does CF affect the sweat glands?
- What are signs of complications, such as CF-related diabetes or liver disease?
- What newborn screening tests are used for CF?
- What is the gold standard diagnostic test for CF? (sweat chloride test)
- How are genetic tests used in CF diagnosis?
- What role do pulmonary function tests and imaging play in diagnosis and monitoring?

3. Management

- What is the role of airway clearance techniques in CF care?
- What medications are commonly used in CF?
  - Mucolytics, bronchodilators, antibiotics, pancreatic enzyme replacement, CFTR modulators.
- How is nutrition managed in children with CF?
- What are the indications for lung transplantation in pediatric CF?

4. Monitoring and Prognosis

- How is lung function monitored over time?
- What complications should be regularly screened for? (infection, diabetes, liver disease, growth failure)
- How has life expectancy changed with modern CF care?

5. Prevention and Family Counseling

- How is genetic counseling provided to families?
- What lifestyle or environmental measures can improve quality of life?
- How to educate families about adherence to therapy and infection control?

Recommended reading for the lesson 5

Essential:

1. GHAI. Essential pediatrics. Ninth edition. P. 392-393.
2. Nelson. Textbook of pediatrics. 20th edition. Cystic fibrosis P. 2098—2113.
3. Pocket book. WHO. Hospital care for children.2nd edition. 2013.
4. Pervez Akbar. Basic of Pediatrics. Tenth edition. P. 243-270
5. Lections

Additional:

Cystic fibrosis. 2024. **https://www.ncbi.nlm.nih.gov/books/NBK493206/?utm_source=chatgpt.com**

ENDOCRINOLOGY

THEMATIC PLAN OF LECTURES

№	Lecture	Hours
1	Diabetes mellitus in children	2
2	Congenital adrenal diseases in children	2
	Total	4

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours
1.	Diabetes mellitus in children	4
2.	Thyroid disorders in children	2

3.	Growth hormone deficiency Congenital adrenal diseases in children.	2
4.	Congenital adrenal diseases in children	2
5.	Module	2
	Total	12

Guidelines for the lessons of the discipline

Key questions covered in lesson #1. – 2 h

1. Normal values of plasma glucose – fasting, postprandial, mm/L, mg/dL
2. Symptoms and laboratory Criteria for Diabetes Mellitus
3. DKA:
   1) Etiology, clinical manifestation of mild, moderate, severe, laboratory diagnostic,
   2) Evaluation degree dehydration in DKA
   3) Assessment level of consciousness – Glasgow coma scale
   4) Calculation fluid and hourly rate for transfusion in different degree of dehydration in DKA
4. Hypoglycemia etiology (diabetic and nondiabetic), clinical manifestation, laboratory diagnostic, treatment according severity;

Key questions covered in lesson #2. – 2 h

Diabetes Mellitus. OGTT – indication, procedure, interpretation of results

1. Insulin therapy:
2. Rules for the insulin injection technique.
3. Side effect of injection technique.
4. Pharmacokinetics of recombinant and analogs of insulin: duration, onset and peak of the hypoglycemic effect. Fill the following table 1.
   1) **To prepare Recipes (in copybook) on Medicine on each theme according scheme, this must be prepared:**

	Standard form	**Onset**	**Peak**	**Duration**	**Time of injection**
Insulin Regular					
Insulin NPH					
LisPro					
Glargin					
Aspart					
Detemir					

Recommended reading for lesson #1-2:

1. Ghai O.P. Pediatrics. 8th ed. Pp – 541 – 548
2. ISPAD Clinical Practice Consensus Guidelines 2014 Compendium Diabetic ketoacidosis in children and adolescents with diabetes *Pediatric Diabetes 2014: 15(Suppl. 20): 154–179* https://c.ymcdn.com/sites/www.ispad.org/resource/resmgr/Docs/CPCG_2014_CHAP_11.pdf
3. Assessment level of consciousness – Glasgow coma scale
4. Calculation fluid and hourly rate for transfusion in different degree of dehydration in DKA

https://www.youtube.com/watch?v=r2tXTjb7EqU&ab_channel=AlilaMedicalMedia
https://www.youtube.com/watch?v=cD6ZL91CUMo&ab_channel=OPENPediatrics insulin DKA
https://www.youtube.com/watch?v=5T0q0DMAzbY&ab_channel=NEJMvideo – rehydration DKA
https://www.youtube.com/watch?v=fSYFsrurYKI&ab_channel=OPENPediatrics – development of T1DM

Key questions covered in lesson #3.- 2h

1. Congenital hypothyroidism – etiology, clinical manifestation, labs, treatment
2. Role of Iodine in thyroid function. Iodine deficiency disorders and its prevention.
3. Chronic lymphocytic thyroiditis: etiology, clinical manifestation, labs, treatment
4. Grave's disease - etiology, clinical manifestation, labs, treatment
5. Neonatal screening for congenital hypothyroidism and CAH – significance, procedure, screening tests
6. Complete the table of medicines

Standard form (solution/tab)	**Calculation doses of medicine** (mg/kg; ml/day) for children	**Group of Medicine**
Propylthiouracile		
Methimazole		
Propranolol		
Atenolol		
Sodium-levothyroxine (According age of child)	0-3 mo -	
	3-8 mo -	
	8-12 mo -	
	1-3y -	
	3-6 y -	
	6-10 y -	

Recommended reading for the lesson 3:

5. «Newborn Screening for Congenital Hypothyroidism: Recommended Guidelines», AAP Section on Endocrinology and Committee on Genetics, and American Thyroid Association Committee on Public Health, http://www.pediatrics.org
6. Setian N. Hypothyroidism in children: diagnosis and treatment. J Pediatr (Rio J). 2007;83 (5 Suppl):S209-216. http://www.scielo.br/pdf/jped/v83n5s0/en_v83n5Sa13.pdf

Key questions covered in lesson #4 – 2h.

1) Growth hormone deficiency - etiology, clinical manifestation, labs, treatment
2) CAH – etiology, clinical manifestation, labs, treatment
3) Complete the table of medicines

Standard form (solution/tab)	**Calculation doses of medicine** (mg/kg; ml/day) for children	**Group of Medicine**
Prednisone		
Genotropin		

Recommended reading for lesson #4:

1. Ghai O.P. Pediatrics. 8th ed. Pp 511 – 513, 516 – 521, 526 – 528.
2. «The Short Child» Maria G. Vogiatzi, MD, Kenneth C. Copeland, MD, *Pediatrics in Review Vol. 19 No. 3 March 1998*
3. «Consensus in Pediatrics: Growth Assessment and Growth Failure» http://jcem.endojournals.org/content/85/11/3990.full
4. «Congenital Adrenal Hyperplasia Due to Steroid 21-hydroxylase Deficiency: An Endocrine Society Clinical Practice Guideline» *Journal of Clinical Endocrinology & Metabolism*, September 2010, Vol. 95(9):4133–4160. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2936060/

Key questions covered in lesson #5- 2 h.

1. Define developmental delay. Describe the causes of developmental delay and disability including intellectual disability in children
2. Discuss the approach to a child with developmental delay
3. Counsel a parent of a child with developmental delay
4. Visit a Child Developmental Unit and observe its functioning

5. Perform genital examination and recognize Ambiguous Genitalia, counsel and refer
6. Define precocious and delayed Puberty, Perform Sexual Maturity Rating (SMR), Recognize precocious and delayed Puberty and refer
7. Identify deviations in growth and plan appropriate referral
8. -Demonstration skills

Key questions covered in lesson #6- 2 h

Module - MCQ □ Scoring