

MINISTRY OF HEALTH OF UKRAINE  
ODESA NATIONAL MEDICAL UNIVERSITY

Faculty: international

*(faculty name)*

Department of Pediatrics

*(name of department)*

APPROVED

Vice-rector for scientific and educational work

Eduard BURIACHKIVSKYI

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09

2024

METHODICAL RECOMMENDATION  
FOR PRACTICAL LESSON  
FROM THE EDUCATIONAL COMPONENT

Faculty international, course 5 \_\_\_\_\_

Educational component - "PEDIATRICS"

*(name of the educational component)*

Approved:

Meeting of the Department of Pediatrics \_\_\_\_\_  
Odesa national medical university

Protocol № 1 of " 29 " 08 2024

Head of the department \_\_\_\_\_ (Mykola ARYAYEV)  
*(signature)* *(name, surname)*

2024

Перезатверджено:

Засідання кафедри педіатрії

Одеський національний медичний університет

Протокол № 1 від 26 08 2025 р.

Завідувач кафедри  Микола АРЯЄВ

**Developers:**

*(indicate surnames, scientific degrees, scientific titles and positions of developers; all those who teach the specified academic discipline must be among the developers)*

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*Note.* In the case of publication of methodological developments as an independent printed work, the academic council of the faculty provides a recommendation for publication in the presence of two reviews, one of which is external — from a reviewer of another institution of higher education.

## PRACTICAL LESSONS

### Content module 2 «Diseases of the blood system in children»

#### *Practical lesson № 14*

**Topic 6:** Anemia in children. Hemorrhagic diseases in children. Anemias in children (deficiency, posthemorrhagic, hemolytic, due to impaired hematopoiesis): definition, etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

#### *Practical lesson № 15*

**Topic 6:** Coagulopathies (hemophilia): in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Thrombocytopenia (thrombocytopenic idiopathic purpura) in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

#### *Practical lesson № 16*

**Topic 6:** Hemorrhagic vasculitis in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Emergency care for bleeding in children

#### *Practical lesson № 17*

**Topic 7:** Leukemia's and lymphomas in children. Leukemia in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis.

#### *Practical lesson № 18*

**Topic 7:** Leukemia in children: treatment, prevention, prognosis, palliative care.

#### *Practical lesson № 19*

**Topic 7:** Leukemia's and lymphomas in children. Lymphomas in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis, palliative care.

**Purpose:** Acquisition by the applicant of higher education of knowledge and formation of elements of professional competences in the field of pediatrics from the section of hematology

#### **Topic 6. Anemias in children. Hemorrhagic diseases in children**

Anemias in children (deficiency, posthemorrhagic, hemolytic, due to impaired hematopoiesis): definition, etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

Coagulopathies (hemophilia): in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Thrombocytopenia (thrombocytopenic idiopathic purpura) in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Hemorrhagic vasculitis in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Emergency care for

bleeding in children

**Topic 7. Leukemia's and lymphomas in children.**

Leukemia in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis, palliative care.

Lymphomas in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis, palliative care.

**Basic concepts:**

**Topic 6.** Determination of etiology, pathogenesis of anemia in children. Determination of the classification of anemia in children. Clinical definition of various types of anemia. Diagnosis of anemia. Determination of the principles of treatment of anemia in children. Determination of prevention and prognosis for anemia in children. Definition of hemorrhagic diseases in children. Establishing a diagnosis of hemophilia: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Diagnosis of thrombocytopenia (thrombocytopenic idiopathic purpura) in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Diagnosis of hemorrhagic vasculitis in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Providing emergency care for bleeding in children.

**Topic 7.** Establishing a diagnosis of leukemia in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis, palliative care. Diagnosis of lymphoma in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis, palliative care.

**Equipment:** a child's mannequin, a patient according to the topic of the lesson.

**Study time** of each lesson is 2 hours

**Plan:**

1. Organizational measures (greetings, checking those present, announcing the topic, the purpose of the lesson, motivating students to study the topic).

2. Control of the reference level of knowledge:

**Topic 6.** Causes and classification of anemias. Etiopathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment and prevention of iron deficiency anemia. Etiopathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment and prevention of B12-deficient anemia. Etiopathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment and prevention of folate deficiency anemia. Etiopathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment and prevention of hemolytic anemias and anemias due to impaired hematopoiesis. Etiopathogenesis, clinic, diagnosis, differential diagnosis, treatment, prognosis of hemorrhagic vasculitis. Etiopathogenesis, clinic, diagnosis, differential diagnosis, treatment, prognosis of thrombocytopenic purpura and thrombocytopathy. Etiopathogenesis, clinic, diagnosis, differential diagnosis, treatment, prognosis of

hemophilia in children.

**Topic 7.** Hemoblastosis in children. Etiopathogenesis, classification, clinic, diagnosis, treatment and prognosis of acute leukemia in children. Etiopathogenesis, classification, clinic, diagnosis, treatment and prognosis of chronic myeloblastic leukemia in children. Etiopathogenesis, classification, clinic, diagnosis, treatment and prognosis of lymphoma in children

**Formation of professional skills, skills (mastery of communication skills, clinical examination, determination of a treatment scheme, laboratory research, etc.) mastery of skills:**

1. Examination and clinical examination of a child with a disease of the hematopoietic system
2. Assessments of the child's physical development according to nomograms of sigmoidal deviations according to age
3. Palpation of the skin, subcutaneous tissue, soft tissues, abdomen, blood vessels
4. Palpation of peripheral lymph nodes
5. Determination of pulse characteristics and frequency
6. Percussion of lungs, heart, abdomen
7. Auscultation of lungs, heart, abdomen
8. Measurement of blood pressure on the upper and lower extremities
9. Assessments of the state of consciousness
10. Assessments of laboratory data (total blood analysis, level of iron, ferritin, folic acid, cyanocobalamin in blood serum, level of total iron-binding function in blood serum, level of total bilirubin and its fractions in blood serum, myelogram, coagulogram, level of factors blood coagulation, general analysis of urine).
11. Solving clinical situational problems, practicing patient examination skills, demonstrating and practicing the skills of performing manipulations according to list 5, instruction and practicing skills on simulation dummies, training exercises on the diagnosis of the most common hemorrhagic diseases in children.

**Summing up: testing, differential test (at the end of the module).**

**List of recommended literature (basic, additional, electronic information resources):**

**Basic:**

1. Nelson textbook of pediatrics, 2 volume set. Edition: 21st, 2019. PDF format.  
<http://pediacalls.com/e-books/nelson-textbook-of-pediatrics-21st-edition/>
2. Nelson Pediatric Antimicrobial therapy. 2022  
URL: <https://apps.apple.com/ru/app/nelson-pediatric-abx-2022/id1611269134>

3. Nelson textbook of pediatrics with access code 2 vol set 22ed (hb 2025) (25 April 2024); Elsevier  
<https://www.amazon.in/NELSON-TEXTBOOK-PEDIATRICS-ACCESS-CODE/dp/0323883052>

### **Additional**

1. O'Brien S. Approach to the child with bleeding symptoms: Literature review. - UpToDate: Sep 19, 2019. - [https://www.uptodate.com/contents/approach-to-the-child-with-bleeding-symptoms?search=Approach%20to%20the%20child%20with%20bleeding%20symptoms&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1](https://www.uptodate.com/contents/approach-to-the-child-with-bleeding-symptoms?search=Approach%20to%20the%20child%20with%20bleeding%20symptoms&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1)
2. Order of the Ministry of Health of Ukraine dated September 14, 2021 No. 1945 "On approval of the Unified clinical protocol of primary medical care "Integrated management of childhood diseases""
3. Order of the Ministry of Health of Ukraine No. 1269 dated June 5, 2019 "Emergency medical care: pre-hospital stage. New clinical protocol"

### **Electronic information resources:**

1. <http://moz.gov.ua> – Міністерство охорони здоров'я України
2. [www.ama-assn.org](http://www.ama-assn.org) – Американська медична асоціація / American Medical Association
3. [www.oapn.od.ua](http://www.oapn.od.ua) - ГО "Одеська Асоціація лікарів-педіатрів та неонатологів"
4. [www.who.int](http://www.who.int) – Всесвітня організація охорони здоров'я
5. [www.dec.gov.ua/mtd/home/](http://www.dec.gov.ua/mtd/home/) - Державний експертний центр МОЗ України
6. <http://bma.org.uk> – Британська медична асоціація
7. [www.gmc-uk.org](http://www.gmc-uk.org) - General Medical Council (GMC)
8. [www.bundesaerztekammer.de](http://www.bundesaerztekammer.de) – Німецька медична асоціація
9. [https://www.who.int/workforcealliance/members\\_partners/member\\_list/ipa/en/](https://www.who.int/workforcealliance/members_partners/member_list/ipa/en/) - Міжнародна асоціація педіатрів / International Pediatric Association (IPA).
10. [https://ginasthma.org/wp-content/uploads/2024/05/GINA-2024-Strategy-Report-24\\_05\\_22\\_WMS.pdf](https://ginasthma.org/wp-content/uploads/2024/05/GINA-2024-Strategy-Report-24_05_22_WMS.pdf) GINA Global Initiative For Asthma. 2024
11. <https://kdigo.org/wp-content/uploads/2017/02/KDIGO-2021-Glomerular-Diseases-Guideline-English-LN-2024-Update.pdf> KDIGO 2021 Clinical Practice Guideline for the Management of Glomerular Diseases
12. <https://aamsmedacademy.com/> American Academy of Medical Sciences (AAMS)
13. <https://nam.edu/> The National Academy of Medicine (NAM)
14. <https://www.amazon.com/Averys-Neonatology-Pathophysiology-Management-Pathophusiology/dp/1451192681>