

*Department of Pediatrics № 1, Odesa National Medical University  
Elective course "Critical conditions in neonatology.  
Practicing communication skills on simulation equipment"*

MINISTRY OF HEALTH OF UKRAINE  
ODESSA NATIONAL MEDICAL UNIVERSITY

Faculty: medical

*(faculty name)*

Department of pediatrics №1

*(name of department)*

APPROVE  
Acting pro-rector for scientific and educational work  
prof.  Svitlana KOTIUZHYNSKA  
" " 2022 y



**METHODICAL RECOMMENDATION OF THE SEMINAR LESSON  
FROM THE SELECTIVE EDUCATIONAL DISCIPLINE**

Faculty medical, course 5 \_\_\_\_\_

Selective educational discipline: ""Critical conditions in neonatology. Practicing communication skills on simulation equipment."  
*(name of academic discipline)*

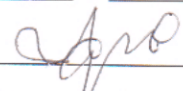
Seminar class № 3 **Topic:** Respiratory distress syndrome (RDS) in premature newborns \_\_\_\_\_  
*(topic name)*

Approve:

Meeting of the Department of Pediatrics №1 \_\_\_\_\_

Odessa national medical university

Protocol № 1 of " 29 " 08 2022 y .

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

*Department of Pediatrics № 1, Odesa National Medical University  
Elective course "Critical conditions in neonatology.  
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Developers:

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

Developers:

Prof. Mykola ARYAYEV as. of prof. PhD Ludmila SENKIVSKA, Irina TALASHOVA,  
Daria USENKO, Natali BYSHLEI

*(name of academic discipline)*

*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.

**Topic:** Respiratory distress syndrome (RDS) in premature newborns.

**Purpose:** Deepening of knowledge in the issues of etiology, pathogenesis, diagnosis, differential diagnosis, treatment, prevention of respiratory distress syndrome (RDS) and mastering the skills of providing emergency care to premature newborns with RDS, obtained in the course of studying the subject; promoting the development of creative thinking. The ability to logically express and argue one's thoughts, to listen to each other, to criticize productively.

**Basic concepts:** Surfactant, respiratory disorders, Kurosuf. Respiratory support. Spontaneous breathing under constant positive exhalation pressure.

**Equipment:** newborn baby dummy

**Study time:** 3 hours

#### **Plan**

- I. Organizational moment (greetings, checking those present, announcing the topic, the purpose of the lesson, motivating applicants to study the topic).
- II. Control of basic knowledge (frontal survey on basic terminology).

#### **Questions to check basic knowledge on the topic of the seminar:**

1. Adverse risk factors for RDS. Surfactant.
2. Clinic, diagnosis of RDS in premature newborns.
3. Assessment of the severity of respiratory disorders in newborns. Diagnosis and clinical signs of RDS.
4. Principles of RDS treatment. Respiratory support for RDS. Feeding.
5. Prognosis in RDS and complications.

#### **III. Discussion of theoretical issues:**

1. Prevention of RDS in premature newborns. Tracheal intubation technique and endotracheal administration of surfactant. Respiratory support in RDS.
2. Composition of pulmonary surfactant. Etiology of RDS. Pathogenesis and pathomorphology of RDS in premature newborns.
3. Assessment of the severity of respiratory disorders in newborns. Diagnosis and clinical signs of RDS.
4. Differential diagnosis of RDS with congenital pneumonia, transient tachypnea, congenital lung anomalies in premature newborns.
5. Principles of RDS treatment, technique of intubation and administration of surfactant, respiratory support in RDS.
6. Prevention of RDS in premature newborns, complications and prognosis in RDS.

Discussion of theoretical issues can take place in the form of role-playing, answers to questions, debates, discussions, presentations with reports, abstracts, discussion of reports and abstracts, review of applicant answers, etc.)

**Themes of role play/reports/ summeries**

1. Etiology of RDS. Pulmonary surfactant composition. Risk factors for pulmonary surfactant deficiency.
2. Clinical signs of RDS in premature newborns. Diagnosis. Assessment of the severity of respiratory disorders in newborns.
3. Differential diagnosis of RDS with congenital pneumonia, transient tachypnea, congenital lung anomalies.
4. Principles of treatment of RDS, respiratory support in RDS. Technique of tracheal intubation of premature newborns. Technique of surfactant administration.
5. Prevention of RDS in premature newborns, complications and prognosis in RDS.

When preparing a report, role-play, abstract, analytical review, etc., applicants can, along with this, prepare didactic visual aids in the form of tables, code diagrams, slides, drawings, portraits of famous specialists, preparations, etc.).

**IV. Summing up**

**List of recommended literature**

1. Nelson Textbook of Pediatrics / Edition 2 volume set. Edition: 21st, 2019.
2. Avery's Diseases of the Newborn Book Tenth Edition •2018. Copyright © 2018 Elsevier Inc. / No of pages 1656  
<https://www.sciencedirect.com/book/9781437701340/averys-diseases-of-the-newborn>
3. Whitsett JA, Alenghat T. Respiratory epithelial cells orchestrate pulmonary innate immunity. Nat Immunol. 2015 Jan;16(1):27-35. [PMC free article] [PubMed]
4. Reuter S, Moser C, Baack M. Respiratory distress in the newborn. Pediatr Rev. 2014 Oct;35(10):417-28; quiz 429. [PMC free article] [PubMed]
5. Committee on Fetus and Newborn; American Academy of Pediatrics. Respiratory support in preterm infants at birth. Pediatrics. 2014 Jan;133(1):171-4. [PubMed]
6. Ho JJ, Subramaniam P, Davis PG. Continuous distending pressure for respiratory distress in preterm infants. Cochrane Database Syst Rev. 2015 Jul 04;(7):CD002271. [PMC free article] [PubMed]
7. Lemyre B, Laughon M, Bose C, Davis PG. Early nasal intermittent positive pressure ventilation (NIPPV) versus early nasal continuous positive airway pressure (NCPAP) for preterm infants. Cochrane Database Syst Rev. 2016 Dec 15;12:CD005384. [PMC free article] [PubMed]
8. Roberts CT, Owen LS, Manley BJ, Frøisland DH, Donath SM, Dalziel KM, Pritchard MA, Cartwright DW, Collins CL, Malhotra A, Davis PG., HIPSTER Trial Investigators. Nasal High-Flow Therapy for Primary Respiratory Support in Preterm Infants. N Engl J Med. 2016 Sep 22;375(12):1142-51. [PubMed]

9. Göpel W, Kribs A, Ziegler A, Laux R, Hoehn T, Wieg C, Siegel J, Avenarius S, von der Wense A, Vochem M, Groneck P, Weller U, Möller J, Härtel C, Haller S, Roth B, Herting E., German Neonatal Network. Avoidance of mechanical ventilation by surfactant treatment of spontaneously breathing preterm infants (AMV): an open-label, randomised, controlled trial. Lancet. 2011 Nov 05;378(9803):1627-34. [PubMed]
10. Pinheiro JM, Santana-Rivas Q, Pezzano C. Randomized trial of laryngeal mask airway versus endotracheal intubation for surfactant delivery. J Perinatol. 2016 Mar;36(3):196-201. [PubMed]

#### **Electronic information resources**

1. <http://moz.gov.ua>
2. <http://pediacalls.com/e-books/nelson-textbook-of-pediatrics-21st-edition/>
3. <https://www.ama-assn.org/about>
4. <https://www.who.int/>
5. <https://www.ipa-world.org/>