

MINISTRY OF HEALTH OF UKRAINE  
POLTAVA STATE MEDICAL UNIVERSITY

*Pokhylko V. I., Tsvirenko S. M., Cherniavska Yu. I*

**ALGORITHMS FOR  
PERFORMING MANIPULATIONS  
IN NEONATOLOGY**

**Textbook**

**Publishing “Magnolia 2006”**  
LVIV 2023

**UDC: 616-053.3(075.8)**

**P 64**

*The textbook is recommended by by the Academic Council of Poltava State Medical University as a textbook for foreign students - graduates of master's degree, studying in the specialty 222 "Medicine" in higher educational institutions of the Ministry of Health of Ukraine protocol №8, 14/04/2021*

**Authors:**

Professor of the Department of Pediatrics # 1 with propaedeutics and neonatology, Poltava State Medical University, Doctor of Medical Sciences, Professor **Pokhylko V. I.**

Head of the Department of Pediatrics # 1 with propaedeutics and neonatology, Poltava State Medical University, Candidate of Medical Sciences, Associate Professor **Tsvirenko S. M.**

Assistant of the Department of Pediatrics # 1 with propaedeutics and neonatology of Poltava State Medical University, Candidate of Medical Sciences **Chernyavska Yu. I.**

**Reviewers:**

Professor of the Department of Pediatrics #1 and Neonatology, Kharkiv National Medical University, Doctor of Medical Sciences, Professor **Riga O. O.**

Professor of the Department of Pediatrics # 3, Dnipro State Medical University, Doctor of Medical Sciences **Bolbot Yu. K.**

Head of the Department of Obstetrics and Gynecology # 1, Poltava State Medical University, Doctor of Medical Sciences, Professor **Gromova A. M.**

Head of the Department of Foreign languages with Latin language and medical terminology, Poltava State Medical University, Candidate of Pedagogical sciences, PhD, Associate Professor **Bieliaieva O. M.**

**P 64 Algorithms for performing manipulations in neonatology:** textbook / Pokhylko V. I., Tsvirenko S. M., Chernyavska Yu. I. — Lviv Publishing “Magnolia 2006”, 2023. — 132 p.

**ISBN 978-617-574-192-4**

The textbook discusses the algorithms for performing manipulations in neonatology in accordance with the curricula of pediatric disciplines, which are studied for 2 – 6 courses in higher medical education: "Care for patients. Practice", "Propaedeutics of Pediatrics", "Nursing Practice", "Pediatrics".

The textbook aims to help students of higher medical education in the formation of professional skills and abilities of objective examination of healthy and sick newborns of different gestational ages, mastering the basic principles of neonatal care, organization of newborn care. These algorithms are based on modern clinical guidelines for the care of newborns.

**UDC: 616-053.3(075.8)**

**P 64**

**ISBN 978-617-574-192-4**

© Kaskova L.F., Yanko N.V. 2023  
© “Magnolia 2006”,  
Publisher Marchenko T. V., 2023

# CONTENT

<b>LIST OF SYMBOLS, ABBREVIATIONS AND TERMS .....</b>	<b>6</b>
<b>PREFACE .....</b>	<b>8</b>
<b>1. Assessment of the child's adaptation after birth.....</b>	<b>9</b>
<b>2. Primary medical examination .....</b>	<b>9</b>
<b>3. General medical examination of a newborn.....</b>	<b>10</b>
<b>4. Neurological examination of a newborn child .....</b>	<b>13</b>
<b>5. Examination of the newborn by systems .....</b>	<b>20</b>
<b>6. Anthropometry .....</b>	<b>27</b>
6.1. Weighing a child on cup scales.....	27
6.2. Weighing a child on electronic medical scales .....	28
6.3. Measuring the body length of a newborn baby .....	29
6.4. Measurement of the circumference of the head and chest ..	29
<b>7. Evaluation of the big fontanelle in a newborn .....</b>	<b>30</b>
<b>8. Examination and evaluation of the hip joints .....</b>	<b>31</b>
<b>9. Measurement of blood pressure in newborns (non- invasive method).....</b>	<b>33</b>
<b>10. Primary care of the newborn baby .....</b>	<b>34</b>
<b>11. Principles of heat chain compliance.....</b>	<b>35</b>
<b>12. Care of the umbilical cord and umbilical cord residue.....</b>	<b>37</b>
<b>13. Determination of gestational age and morpho- functional maturity .....</b>	<b>39</b>
<b>14. Organization of breastfeeding .....</b>	<b>42</b>
<b>15. Feeding of low birth weight babies .....</b>	<b>46</b>
<b>16. Calculation of food volume .....</b>	<b>46</b>
<b>17. Breastfeeding of children with low birth weight.....</b>	<b>47</b>
<b>18. Feeding baby from a cup.....</b>	<b>48</b>
<b>19. Feeding a baby through a tube.....</b>	<b>48</b>
<b>20. Enemas in newborns.....</b>	<b>51</b>
<b>21. General algorithm of primary resuscitation .....</b>	<b>53</b>
<b>22. The first steps of resuscitation after the birth of a child:.....</b>	<b>53</b>
<b>23. A set of initial measures for pure amniotic fluid:.....</b>	<b>54</b>
<b>24. A set of initial measures for contamination of amniotic fluid with meconium in an inactive child .....</b>	<b>55</b>

25. The initial steps of resuscitation measures in premature infants with a gestational age less than 32 weeks .....	56
26. Clearing secretions of upper airways.....	57
27. Ensuring airway patency in an "inactive" newborn in case of contamination of amniotic fluid with meconium .....	58
28. Oxygen therapy.....	59
29. Artificial lungs ventilation (ALV) with a bag and a mask ...	60
30. Tracheal intubation .....	63
31. Indirect heart massage (IHM).....	66
32. Usage of drugs in the delivery room .....	68
33. Refusal or termination of resuscitation .....	70
34. Algorithm of resuscitation for a child with gestational age over 32 weeks .....	71
35. Algorithm of resuscitation for a child with gestational age, less than 32 weeks.....	72
36. Assessment of the newborn on the Apgar scale .....	73
37. Assessment of the severity of respiratory disorders .....	74
38. Administration of surfactant .....	76
39. "Foam test" .....	80
40. Umbilical vein catheterization.....	80
41. Algorithm for installing a peripheral venous catheter.....	83
42. Emergency therapy for convulsive syndrome.....	86
43. Traumatic injury of the clavicle in newborns .....	87
44. Cephalohematoma. Therapeutic tactics .....	90
45. Phototherapy in newborns with jaundice.....	91
46. Exchange blood transfusion.....	95
47. Lumbar puncture.....	98
48. Emergency care for hypoglycemia in newborns .....	101
49. Emergency care in case of hemorrhagic syndrome in newborns.....	102
50. Apt test (Apt-Downer test).....	103
51. Transportation of the newborns .....	103
REFERENCES .....	107
TASKS FOR SELF-CONTROL .....	110
APPENDIX 1.....	119
APPENDIX 2.....	126

**APPENDIX 3..... 127**  
**APPENDIX 4..... 128**  
**APPENDIX 5..... 129**  
**APPENDIX 6..... 130**  
**APPENDIX 7..... 130**  
**APPENDIX 8..... 131**

## PREFACE

In the context of reforming the medical sector of Ukraine, practice-oriented training aimed at improving the quality and training of specialists who would receive not only theoretical knowledge but also significantly upgrade practical skills. The ultimate goal of training is the formation of clinical thinking, which allows the doctor to work independently in the specialty.

The textbook aims to help in mastering and increase the effectiveness of learning practical skills related to the organization of medical care for newborns. The highlighted algorithms are based on the approved standards of care and provision of medical care to newborns in Ukraine: "Primary, resuscitation and post-resuscitation care for newborns in Ukraine", "Protocol of care for a newborn child with respiratory disorders", "Protocol of medical care for a healthy newborn", "Protocol for medical care of a newborn child with low birth weight".

The use of algorithms during the examination, treatment and determination of tactical actions in various pathological conditions in newborns promotes the development of clinical thinking, discipline, full implementation of the necessary appointments, develops the independence of students.

The textbook is intended for students of higher medical educational institutions. It can also be useful for interns and paramedics.

*Навчальне видання*  
**Похилько Валерій Іванович**  
**Цвіренко Світлана Миколаївна**  
**Чернявська Юлія Ігорівна**

## **АЛГОРИТМИ ВИКОНАННЯ МАНІПУЛЯЦІЙ В НЕОНАТОЛОГІЇ**

Навчальний посібник (англійською мовою)

Формат 60×84/16. Папір друк. № 2. Гарнітура Tinos.  
Умовн. друк. арк. 6,98.

ПП "Магнолія 2006"  
а/с 431, м. Львів-53, 79053, Україна, тел.+380503701957  
e-mail: picha1938@ukr.net

Свідоцтво про внесення суб'єкта видавничої справи  
до Державного реєстру видавців, виготівників і розповсюджувачів  
видавничої продукції: серія ДК № 2534 від 21.06.2006 року,  
видане Державним комітетом інформаційної політики,  
телебачення та радіомовлення України

Видавець Марченко Т. В.

Свідоцтво про внесення суб'єкта видавничої справи  
до Державного реєстру видавців, виготовлювачів і розповсюджувачів  
видавничої продукції: серія ДК № 6784 від 30.05.2019 року,  
видане Державним комітетом інформаційної політики,  
телебачення та радіомовлення України

Надруковано у друкарні видавця ФОП Марченко Т. В.

У підручнику обговорюються алгоритми виконання маніпуляцій у неонатології відповідно до навчальних програм педіатричних дисциплін, які вивчаються протягом 2-6 курсів вищої медичної освіти: "Догляд за пацієнтами. Практика", "Пропедевтика педіатрії", "Практика сестринської справи", «Педіатрія».

Підручник має на меті допомогти студентам вищої медичної освіти у формуванні професійних умінь та навичок об'єктивного обстеження здорових та хворих новонароджених різного гестаційного віку, оволодінні основними принципами догляду за новонародженими, організації догляду за новонародженими. Ці алгоритми ґрунтуються на сучасних клінічних рекомендаціях по догляду за новонародженими.