

**ANATOMO-PHYSIOLOGICAL PECULIARITIES, METHODS OF EVALUATION,
PARACLINICAL METHODS OF INVESTIGATION AND SEMEIOLOGY OF THE
URINARY SYSTEM DISEASES IN CHILDREN**

Academic discipline «Pediatric Propedeutics»

Self-study guide for the 3rd year

English medium students

**АНАТОМО-ФІЗІОЛОГІЧНІ ОСОБЛИВОСТІ, МЕТОДИ ОБСТЕЖЕННЯ ТА
СЕМІОТИКА ЗАХВОРЮВАНЬ СЕЧОВИДІЛЬНОЇ СИСТЕМИ У ДІТЕЙ**

З дисципліни «Пропедевтика педіатрії»

Методичні вказівки

до самостійної роботи студентів 3-го курсу

медичного факультету

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
Харківський національний медичний університет

**ANATOMO-PHYSIOLOGICAL PECULIARITIES, METHODS OF EVALUATION,
PARACLINICAL METHODS OF INVESTIGATION AND SEMEIOLOGY OF THE
URINARY SYSTEM DISEASES IN CHILDREN**

Academic discipline «Pediatric Propedeutics»

Self-study guide for the 3rd year

English medium students

**АНАТОМО-ФІЗІОЛОГІЧНІ ОСОБЛИВОСТІ, МЕТОДИ ОБСТЕЖЕННЯ ТА
СЕМІОТИКА ЗАХВОРЮВАНЬ СЕЧОВИДІЛЬНОЇ СИСТЕМИ У ДІТЕЙ**

З дисципліни «Пропедевтика педіатрії»

Методичні вказівки

*до самостійної роботи студентів 3-го курсу
медичного факультету*

Затверджено
Вченою радою ХНМУ
Протокол № від

**Харків
ХНМУ
2016**

Anatomo-physiological peculiarities, methods of evaluation, paraclinical methods of investigation and semeiology of the urinary system diseases in children: self-study guide for the 3rd year English medium students / compiled by.: V.A Klymenko., T.V. Sirenko, J.V Karpushenko – Kharkiv: KhNMU, 2016. – 12 p.

Compiled by: Klymenko V.A.
Sirenko T.V.
Karpushenko J.V.

Анатомо-фізіологічні особливості, методи обстеження та семіотика захворювань сечовидільної системи у дітей: метод. вказ. до самот. роботи студентів 3 курсу медичних факультетів / упор. В.А.Клименко, Т.В. Сіренко, Ю.В.Карпушенко. – Харків, ХНМУ, 2016. – 16 с.

Упорядники: Клименко В.А.
Сіренко Т.В.
Карпушенко Ю.В.

Contents

The urinary system of children has certain anatomical and physiological peculiarities. It works in conjunction with the lungs, skin and intestines to excrete waste and keep body chemicals and water in balance. The urinary system is regulated by blood pressure, the nervous system, and hormones produced by the endocrine system. Problems of the urinary tract system can be a result of aging, illness or injury. Changes in kidney function due to aging can be caused by changes in kidney structure, affecting their ability to remove wastes from the blood. Knowledge of the features and the gradual maturing of the system required a doctor during the diagnosis, treatment and prevention of diseases of the urinary system in children of all ages.

Specific goals

- to collect anamnesis for a patient with diseases of the urinary system.
- to conduct an objective examination of the urinary system taking into account the child's age characteristics.
- to interpret the survey data.
- to prescribe the number of laboratory and instrumental investigations in case of urinary system diseases in children.
- to provide syndrome-based diagnosis of urinary system diseases in children

To know:

1. Embryogenesis of the urinary system in children
2. The main morphofunctional peculiarities of the urinary system in children.
3. Main symptoms and signs of the urinary organs affection in children.
4. How to interpret results of laboratory and instrumental methods of examination of the urinary system of children.

To be able to:

1. To demonstrate the technique of interrogation and inspection of the urinary system.
2. To interpret the results of clinical and paraclinical investigations.
3. To appoint laboratory and instrumental methods of investigations of the urinary system of children.
4. To conduct syndromic diagnosis of the urinary system diseases of children.
5. To get skills of care of children with diseases of the urinary system of children.

1. Basic skills and knowledge, necessary for the topic study (intradiscipline integration)

Name of the previous discipline	Skills
1. Normal human anatomy	Morphofunctional peculiarities of the urinary organs of children in different age.
2. Normal physiology	To know the features of functioning of the urinary system of children in different age.
3. Pathophysiology	To identify pathophysiological processes which arise in urinary system in children.
3. Biochemistry	To have idea of techniques of carrying out some laboratory investigation at pathology of the urinary system.
4. Care for children	Nursing of children with disease of the urinary system.

Graphical structures of individual issues of the topic.

The list of study materials:

Main:

1. Kapitan T. Propaedeutics of children's diseases and nursing of the child / T. Kapitan. – The state cartographical factory, 2006. – 734p.
2. Propaedeutics of Paediatrics: Manual for foreign students / V. A. Fjoklin, V. A. Klymenko, O. M. Plakhotna, T. V. Sirenko, A. I. Kojemiaka, O. V. Sharikadze. – Kharkiv: 2010. – 356 p.

Additional:

1. Nelson textbook of pediatrics.—18th ed./ edited by Robert M. Kliegman.

Test questions to the class:

1. What parts does the urinary system consist of?
2. What do you know about embryogenesis of the urinary system?
3. Describe morphofunctional peculiarities of organs of the urinary system of children.
4. Tell about nephron structure.
5. Tell about urine formation.
6. Describe methods of clinical and paraclinical examinations of the urinary system in children.
7. Describe the symptoms of affection of the urinary tract of children.
8. What do you know about main pathological syndromes of the urinary system affection of children?
9. What do you know about diseases of the urinary system in children?
10. What do you know about care of children with the urinary system diseases?

Tests for self-control:

1. The functional unit of the kidney is:
 - A. Henle loop
 - B. Tubular system
 - C. Nephron
 - D. Renal corpuscle
 - E. Calyx
2. From which gestation age kidneys start to function?
 - A. At the 9 week
 - B. At the 22 week
 - C. At the 32 week
 - D. After the birth
 - E. At the 2-3 day after birth
3. What does not anatomical and physiological peculiarity of newborn's kidney?
 - A. Thin capsule
 - B. Lobular structure
 - C. Insufficient of ligaments development
 - D. Disposition at the 1 cm over the iliac born crest
 - E. Right kidney is on 0,5-1 cm lower then left one

4. How many physiological narrowing of ureter there is?
 - A. 1
 - B. 2
 - C. 3
 - D. 4
 - E. Narrow is absent
5. What can cause the cystic- ureteral reflux in infancy?
 - A. Insufficient of ligaments development
 - B. Short intracystic segment of uteter
 - C. Intensive growth of urinary bladder volume
 - D. Weaving form of ureter
 - E. Physiological narrowing of ureter
6. Which substance isn't secreted by the kidneys?
 - A. erythropoietin
 - B. Vitamin D active form
 - C. Calcitonin
 - D. Ammonia
 - E. Organic acid and alkali
7. Why it is easy for infection to move from the intestine to the kidney's tube?
 - A. Because of arterial anastomosis
 - B. Because of venous anastomosis
 - C. Because of lymphatic vessels connecting
 - D. Because of general embryonic germ
 - E. All mentioned above
8. Which effect of reabsorbtion function of the tubular apparatus?
 - A. Urine amount
 - B. Urine solidity
 - C. Urine osmolaris
 - D. Urine chemical structure
 - E. Vitamin D3secretion
9. Reabsorption and filtration process is going on the:
 - A. Renal corpuscle
 - B. Proximal part of the nephron
 - C. Henle loop
 - D. Distal part of the nephron
 - E. Small calyx
10. Where is the final urine formed?
 - A. In the renal corpuscle
 - B. In the tube system
 - C. In the collecting renal tubes
 - D. In the small calyx
 - E. In the large calyx
11. **Oliguria is the:**
 - A. Normal daily amount of urine

- B. Painful urination
- C. Daily amount of urine $\frac{1}{4}$ of normal and less
- D. Daily amount of urine in 1,5-2 times more than in normal
- A. Prevalence night diuresis at days one

12. Pollaciuria is the:

- A. Painful urination
- B. Increasing of urination frequency
- C. Decreasing of urination frequency
- D. Involuntary urination
- E. Reduction of distinguished urine amount up to 5%

13. Why appears the urine with color of «meat slops»?

- A. Because of a lot of karotin in food
- B. Because of presence of phosphates in the urine
- C. Because of presence of urates in the urine
- D. Because of pyelonephritis
- E. Because of presence of blood in the urine

14. Normal day and night diuresis correlation is:

- A. 2:1
- B. 2:3
- C. 1:2
- D. 3:1
- E. 2:0

15. What is the daily diuresis of a 3 year old child?

- A. 400
- B. 600
- C. 800
- D. 1000
- E. 1200

16. Which sign of acute renal insufficiency do you know?

- A. Oliguria, unuria
- B. Hyperpotassemia
- C. Uremia
- D. Vomiting, nausea
- E. Hypernatremia

17. Which sign is pathological in urine test of a 3 year old child?

- A. Protein 0,66 g/l
- B. Erythrocytes 2-3 in field view
- C. Leucocytes 8-10 in field view
- D. Specific gravity 1022
- E. Singular epithelial cylinders

18. How calls urine solidity which the same to the blood plasma?

- A. Hyposthenuria
- B. Hypersthenuria
- C. Isosthenuria
- D. Clearance

E. Dysuria

19. **What kind of tests define amount of regular urine elements, assignabled per 1 min?**

- A. Nechiporenko test
- B. Addis-Kakovsky test
- C. Amburge test
- D. Zimnitsky test
- E. General clinical test of urine

20. **Why acidosis is easy develop in infancy with different diseases?**

- A. Because of low urine osmolar concentration
- B. Because of low glomerular filtration
- C. Because of slow secretion process
- D. Because of low glucose reabsorption
- E. Because of immature mechanisms of renal regulation of acid-base balance

Tasks for individual work of students:

Work at the bedside, collection of complaints, medical case history, clinical examination of the patient. Analysis of paraclinical laboratory and instrumental methods.

Standards of responses to tests:

1-C; 2- A; 3-D; 4-C; 5- B; 6-C; 7- C; 8- B; 9- D; 10- C; 11- C; 12- B; 13- E; 14- A; 15- C; 16- A; 17- A; 18- C; 19- C; 20- E.

Educational edition

Навчальне видання

**Анатомо-фізіологічні особливості, методи обстеження та семіотика захворювань
сечовидільної системи у дітей**

Упорядники: Клименко Вікторія Анатоліївна
Сіренко Тетяна Вадимівна
Карпушенко Юлія Валентинівна

Відповідальний за випуск: Клименко В.А.

Комп'ютерна верстка

Ум. друк. арк. ____ . Тираж ____ прим. Зам. № ____ .
