

AGE-RELATED FEATURES OF THE RESPIRATORY SYSTEM

Kudratova Zebo Erkinovna

Karimova Linara Alixanovna

the department of Clinical Laboratory Diagnostics of Samarkand State Medical University

<https://doi.org/10.5281/zenodo.7627303>

Annotation. Like any organ, the bronchopulmonary system of children differs significantly from that of adults and has its own characteristic and functional features. The respiratory organs are morphologically imperfect at the time of birth. During the first years of life, they grow and differentiate intensively. By the age of 7, the formation of the respiratory organs ends and thereafter there is only an increase in size.

Keywords: larynx, respiratory organs, oxygen, newborn, lungs, gas exchange, breathing.

ВОЗРАСТНЫЕ ОСОБЕННОСТИ ДЫХАТЕЛЬНОЙ СИСТЕМЫ

Аннотация. Как и всякий орган, бронхолегочная система детей существенно отличается от таковой взрослых и имеет свои характерные и функциональные особенности. Органы дыхания к моменту рождения морфологически несовершенны. В первые годы жизни они интенсивно растут и дифференцируются. К 7 годам заканчивается формирование органов дыхания и в дальнейшем происходит только увеличение размеров.

Ключевые слова: гортань, органы дыхания, кислород, новорожденный, легкие, газообмен, дыхание.

INTRODUCTION

In the newborn, the nasal cavity is narrow and low. The nasal passages are poorly developed. By 6 months of age, the height of the nasal cavity increases to 22 cm and the middle nasal passage is formed, by 2 years of age the lower and after 2 years the upper nasal passage is formed. The larynx of the newborn is relatively large: it is short, wide and funnel-shaped. There is no protrusion of the larynx, as the larynx is located above, the epiglottis is slightly above the root of the tongue, so when swallowing, the food lump passes to the side of the epiglottis. As a result, the baby can breathe and swallow at the same time, which is important in the act of sucking.

MATERIALS AND METHODS

Breathing is a set of processes that ensure that oxygen enters the body, uses it to oxidise organic matter, uses energy and releases carbon dioxide into the surrounding system. Breathing helps to provide energy to the body. The source of energy is organic compounds that come with food substances. Energy is released during tissue respiration, it is necessary for the activity of living cells, organs, tissues, the body as a whole. In the lungs, gas exchange takes place between the air entering the alveoli and the blood flowing through the capillaries.

As the musculoskeletal apparatus of the respiratory system matures, there are age-related, sex-specific differences in the type of breathing. In newborns, the ribs have a slight curvature and occupy an almost horizontal position. The upper ribs and the entire shoulder girdle are high and the intercostal muscles are weak. Because of this, newborns have a predominant diaphragmatic breathing pattern with little involvement of the intercostal muscles. The diaphragmatic type of breathing persists until the second half of the child's first year of life. As the intercostal muscles develop and the child grows, the thorax descends and the ribs become oblique. Infants' breathing becomes thoracic-abdominal, with predominance of diaphragmatic breathing. At 7-8 years of age, sex differences become apparent: boys have a predominantly abdominal type of breathing and girls

have a predominantly thoracic type. Sexual differentiation of breathing ends at 14-17 years. The type of breathing in boys and girls may change depending on sports and labour activity.

RESULTS AND DISCUSSION

The mechanoreceptors of the lungs and respiratory muscles are also involved in the regulation of breathing. Impulses from these receptors via the vagus nerve fibres reach the respiratory centre and inhibit the inhalation centre, while irritating the exhalation centre. This causes the respiratory muscles to relax, the thorax to lower, the volume of the rib cage to decrease, the diaphragm to form a dome and exhalation to occur. The exhalation stimulates the inhalation.

In the processes of regulation of breathing also take part in the overlying parts of the central nervous system, which provide the adaptation of breathing in various activities. An important role belongs to the cerebral hemispheres, which carry out the adaptation of respiratory movements during conversation, sports and work activities. By the time a baby is born, the respiratory centre is able to provide rhythmic alternation of inhalation and exhalation. After birth, the functional formation of the respiratory centre continues. In infants the excitability of the respiratory centre is low, so there is a high tolerance to oxygen deficiency, changing the frequency, depth and rhythms of breathing. During puberty, temporary respiratory dysregulation occurs.

A person with a well-developed chest breathes evenly and correctly. Children should be taught to breathe through the nose and to walk and stand with an upright posture. The child's hunched working posture squeezes the chest and impairs respiratory function. Breathing through the nose improves cerebral blood circulation, lesions in the nose and throat lead to impaired nasal breathing, which in turn impairs higher nervous activity, contributes to cardiovascular disease.

CONCLUSION

To improve breathing and health, there are breathing exercises, sports, swimming, skating and skiing.

References

1. Кудратова З. Э., Мухаммадиева Л. А., Кувандилов Г. Б. Особенности этиопатогенеза обструктивного бронхита и ларинготрахеита, вызванных атипичной микрофлорой //Достижения науки и образования. – 2020. – №. 14 (68). – С. 71-72.
- 2.Возрастная анатомия, физиология и гигиена: учебное пособие / Т.А. Аникина и др.; - Казань: 2013., С-134.
3. Kudratova Z.E., Rustamova G.R., Hamedova F.S. F. Laboratory markers of perinatal hypoxic damage to the central nervous system in newborns //Наука, техника и образование. – 2020. – №. 10 (74). – С. 102-104.
4. Камалов Т. М. и др. Клинико-гормональная характеристика первичного гипогонадизма у мальчиков дошкольного возраста //Медицина и фармацевтика. – 2019. – №. 9. – С. 17-20.
5. Сабирова Д. Ш., Юлдашев У. К., Камалов Т. М. Структурные изменения сосудисто-стромального комплекса щитовидной железы при эутиреоидной и токсических формах зоба //Научный журнал. – 2019. – №. 10 (44). – С. 67-69.
6. Бахриев Н. Р. и др. Изменения уровня хГ в системе мать-плацента-плод при резуснесовместимой беременности //Academy. – 2020. – №. 4 (55). – С. 93-95.
7. Бахриев Н. Р. и др. Особенности эндокринной функции фетоплацентарной недостаточности при резус-отрицательной беременности //european research: innovation in science, education and technology. – 2019. – с. 101-104.

8. Kudratova Z. E. et al. The Role of Cytokine Regulation in Obstructive Syndrome of Atypical Genesis in Children //Annals of the Romanian Society for Cell Biology. – 2021. – С. 6279–6291-6279–6291.
9. Kudratova Z.E. et al. Bronchial obstruction syndrome in young children with respiratory infections of different etiology: features of clinical manifestations and immune response //Проблемы науки. – 2021. – №. 1 (60). – С. 60-62.
10. Kudratova Z. E. et al. Chlamydial Infections (Intracellular Infection) in the Development of Bronchitis //TJE-Tematics journal of Education ISSN. – 2021. – С. 2249-9822.
11. Набиева Ф. С., Ибрагимова Н. С., Умарова С. С. Инструментальные и лабораторные методы исследования для ранней диагностики эхинококкоза //Вестник науки и образования. – 2020. – №. 24-4 (78). – С. 47-49.
12. Набиева Ф. С., Душанова Г. А., Бобокулов О. О. Значение иммуноферментного анализа в диагностике инфекционных заболеваний //Вестник науки и образования. – 2021. – №. 4-1 (107). – С. 54-56.
13. Набиева Ф. С., Кудратова З. Э., Кувандиков Г. Б. Роль *Saccharomyces cerevisiae* в развитии современной биотехнологии //Достижения науки и образования. – 2021. – №. 5 (77). – С. 57-60.
14. Бердиярова Ш.Ш., Юсупова Н.А., Murtazaeva N.K., Ibragimova N.S.. " Clinical and laboratory features of chronic hematogenic osteomyelitis ". // Central Asian Research Journal For Interdisciplinary Studies (CARJIS) Issue 1 | 2022. (35-43 ст)
15. Бердиярова Ш.Ш., Юсупов Ш.А., Назарова Г.Ш. "Клинико-лабораторные особенности хронического гематогенного остеомиелита". //Central Asian Research Journal For Interdisciplinary Studies (CARJIS) Issue 5 | May, 2022. (116-125 ст)