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## TRADITIONS, ACHIEVEMENTS, PROSPECTS OF THE DEPARTMENT OF PEDIATRICS AND CHILDREN'S CARDIOLOGY OF THE NWSMU NAMED AFTER I.I. MECHNIKOV. ON THE 120<sup>th</sup> ANNIVERSARY OF THE DEPARTMENT'S ESTABLISHMENT

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**Abstract.** The article describes the 120-year history of the creation and development of the Department of Pediatrics and Pediatric Cardiology North-Western State Medical University named after I.I. Mechnikov. The historical aspects of the formation of pediatrics and pediatric cardiology are reflected through the activities of the heads of departments. It is noted that the practical orientation of all employees of the department is of particular value, and knowledge of the needs and requirements of practical healthcare contributes to the formation of the scientific direction of the department. Only the close relationship between the department and clinical bases provides the opportunity to integrate educational, clinical, scientific and innovative activities as a single pediatric school, so necessary for the development of domestic healthcare.

**Keywords:** *Department of Pediatrics and Pediatric Cardiology of the I.I. Mechnikov NWSMU, Russov A.A., Medovikov P.S., Shalkov N.A., Orlova N.V., Mutaфyan O.A., pediatric school, jubilee*

## ТРАДИЦИИ, ДОСТИЖЕНИЯ, ПЕРСПЕКТИВЫ КАФЕДРЫ ПЕДИАТРИИ И ДЕТСКОЙ КАРДИОЛОГИИ СЗГМУ ИМ. И.И. МЕЧНИКОВА. К 120-ЛЕТИЮ СО ДНЯ СОЗДАНИЯ КАФЕДРЫ

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**Резюме.** В статье изложена 120-летняя история создания и развития кафедры педиатрии и детской кардиологии Северо-Западного государственного медицинского университета им. И.И. Мечникова. Отражены исторические аспекты становления педиатрии и детской кардиологии через деятельность заведующих кафедрой. Отмечено, что особую ценность составляет практическая ориентированность всех сотрудников, а знание потребностей и требований практического здравоохранения способствует формированию научного направления кафедры. Только тесная взаимосвязь кафедры и клинических баз обеспечивает возможность интеграции образовательной, клинической, научной и инновационной деятельности как единой педиатрической школы, столь необходимой для развития отечественного здравоохранения.

**Ключевые слова:** *кафедра педиатрии и детской кардиологии СЗГМУ им. И.И. Мечникова, Руссов А.А., Медовиков П.С., Шалков Н.А., Орлова Н.В., Мутафьян О.А., педиатрическая школа, юбилей*

A teacher and a doctor are two professions for which love for people is an indispensable quality.

*N.M. Amosov,  
Corresponding Member of  
the Russian Academy of Medical Sciences.*

The connection of times is a living matter, let's take a walk on the route "Paediatrics of St. Petersburg — Leningrad — St. Petersburg". We will pass through epochs. Sometimes only a part of an event is preserved in the memory, but like a tip of a ball of thread that can lead to the depth of time. When you name your contemporaries and remember your mentors, memory will tell you the names and patronymics of their teachers. The chain stretches without a break, and it extends for centuries!

The Department of Paediatrics and Paediatric Cardiology (Head of the Department — Doctor of Medical Sciences, Professor I.Y. Melnikova) of the I.I. Mechnikov North-West State Medical University (NWSMU) was organized in 2011 by merging two independent institutions — St. Petersburg Medical Academy of Postgraduate Education (SPbMAPO) and St. Petersburg State Medical Academy named after I.I. Mechnikov. At the same time, the name of the department was changed due to three reasons: firstly, the urgent need to improve the qualification of paediatricians on topical issues of paediatric cardiology; secondly, the fact that scientific interests of a number of the department's staff are focused on the problem of cardiology; thirdly, teaching paediatric cardiology is a long-standing tradition of this departmental team.

The history of the department reflects the difficult history of our country, which manifested itself in its repeated reorganization in accordance with requirements of the time. The political events that took place in our country during the XX and the first decade of the XXI century, have left an imprint on the history of the department.

Let us outline the main historical milestones, going back in time. The Department of Paediatrics and Paediatric Cardiology of I.I. Mechnikov NWSMU is the successor of the Department of Paediatrics N 1 of SPbMAPO (since 1998), earlier — LenGIDUV (since 1924), which, in its turn, was the successor of the Department of Paediatrics of the Eleninsky Clinical Institute (since 1917), and before that — the Department of Paediatrics of the Imperial Clinical Institute of the Grand Duchess Elena Pavlovna.

At the end of the XIX century, paediatrics was not an independent medical discipline, and the

specialty of paediatrician did not officially exist. Despite the fact that the oldest Russian department of paediatric diseases named after M.S. Maslov at the Military Medical Academy in S.M. Kirov Military Medical Academy (formerly the Medical and Surgical Academy) was the first in Russia, it did not prepare future paediatrics. At that time it was possible to become a paediatrician only within the framework of postgraduate education.

The Clinical Institute of the Grand Duchess Elena Pavlovna was opened in St. Petersburg in May 1885 (in old style, 3 June in new style) on the initiative of the famous general practitioner, professor, physician in ordinary E.E. Eichwald (1837–1889). The Clinical Institute was established for scientific research and scientific and practical improvement of Russian doctors in various specialties.

The course on children's diseases began in autumn 1885. Famous physicians were invited to teach zemskiy doctors, among them were MD, V.N. Reitz, director of the Elizabeth Clinical Hospital for Young Children, and Doctor of Medicine K.A. Raukhfus, director of the Prince Peter Oldenburgsky Children's Hospital (since 1919 — the K.A. Raukhfus Children's City Hospital N 19 named after Dr. K.A. Raukhfus, since 2019 — the Children's City Hospital No. 19., since 2019 — SPbGBUZ Children's City Multidisciplinary Clinical Centre of High Medical Technologies named after K.A. Raukhfus, Chief Medical Officer — Doctor of Medical Sciences, V.Y. Detkov).

The hospital headed by K.A. Raukhfus was the center of scientific medical thought. In 1904, under these unique conditions, the Department of Paediatrics at the Imperial Clinical Institute was established. The Institute was headed by Professor Alexander Andreyevich Russov, a successor of Professor V.N. Reitz as chief physician of the Elizabethan Children's Hospital, then by Dr K.A. Raukhfus as chief physician of the Prince P. Oldenburgsky Hospital. Later the department was headed by remarkable paediatric scientists who left a rich legacy in the field of science and teaching methods. Until 1933 the department was headed by Professor P.S. Medovikov. From 1933 to 1952 the Department of Paediatrics of Leningrad University of Pediatrics was transferred to LPMI under the supervision of Professor E.I. Fridman, and from 1945 — Professor, Academician of the Academy of Medical Sciences of the USSR M.S. Maslov. After the return of the Pediatrics Department N 1 in 1957 to Leningrad University of Pediatrics, it was headed by Professor N.A. Shalkov, who was a col-

league of Professor M.S. Maslov at the Department of Pediatrics of the Kirov Military Medical Academy, where he defended his doctoral thesis on "External respiration in healthy and sick children". The materials of this thesis formed the basis of his monograph "Issues of Physiology and Pathology of Respiration in Children" (1957). Having headed the department, N.A. Shalkov widely unfolded scientific research on physiology and pathology of respiration and blood circulation in children. Under his supervision 18 candidate dissertations and 1 doctoral thesis were carried out.

In addition to the cycles held for local paediatricians, heads of departments of children's hospitals and polyclinics, Professor N.A. Shalkov proposed to hold cycles on paediatric cardio-rheumatology and pulmonology.

The first cycle "Cardiology and Rheumatology in Children" in our country was conducted by the staff of the Department of Paediatrics N 1 in 1965. Since 1967 the Department began to conduct field cycles of advanced training in paediatrics, on pathology of children of early and older age, on cardiology and rheumatology (in Barnaul, Vologda, Arkhangelsk, etc.).

Professor N.A. Shalkov organized consultative assistance to various medical institutions of practical health care in Leningrad and the region: in particular, to the children's department of the

Central Regional Hospital of Gatchina, the children's pulmonary department in Kolchanovo, the children's cardiology and rheumatological sanatorium "Trudovye Reserves" of the North-West Administration of health resorts of the USSR, as well as to a number of children's polyclinics in the city and the region.

From 1974 to 1996, the Department of Paediatrics N 1 was headed by Professor, Honored Worker of Science of the Russian Federation Nina Vasilievna Orlova, a student and follower of N.A. Shalkov's ideas in the field of physiology and pathology of cardiovascular and respiratory systems in children. In 1975, N.V. Orlova defended her doctoral thesis "The interrelation and interdependence of changes in heart and vascular functioning of children with rheumatism", in 1977 she was awarded the degree of Doctor of Medical Sciences, and in 1978 she was awarded the academic title of Professor. N.V. Orlova always considered that the most important duty of the department was professional training of doctors in different branches of the health care system, including interns and clinical residents, so she paid special attention to the organization of educational processes.

At the end of 1975, N.V. Orlova organized advanced training cycles on clinical electrocardiography in children.



Fig. 1. Head of the Department, Professor I.Yu. Melnikova

Рис. 1. Заведующая кафедрой, профессор И.Ю. Мельникова



Fig. 2. Corresponding Member of the Russian Academy of Sciences, Professor R.R. Movsesyan

Рис. 2. Член-корреспондент РАН, профессор Р.Р. Мовсесян



Кафедра педиатрии  
и детской кардиологии

## 120-ЛЕТНЯЯ ИСТОРИЯ КАФЕДРЫ

### КЛИНИЧЕСКИЙ ИНСТИТУТ ВЕЛИКОЙ КНЯГИНИ ЕЛЕНЫ ПАВЛОВНЫ



В.Н. Рейтц



К.А. Раухфус



А.А. Руссов



П.С. Медовиков



Н.А. Шалков



Н.В. Орлова



О.А. Мутафян

Fig. 3. History of the department

Рис. 3. История кафедры

From 1996 to 2004, the department was headed by Professor Oleg Amayakovich Mutaфян, who was a student of N.A. Shalkov and the author of more than 110 scientific papers, mainly devoted to the issues of paediatric cardiology. Five PhD theses were defended under his scientific supervision. His books include "Carditis in Children and Adolescents", "Paediatric Cardiology", "Heart Defects in Children and Adolescents", "Emergency Cardiology of Children and Adolescents". They are devoted to topics which are considered to be very difficult for paediatricians.

Since 2005, the Department of Paediatrics N 1 (renamed the Department of Paediatrics and Paediatric Cardiology of the I.I. Mechnikov North-Western State Medical University in 2010) has been headed by Doctor of Medical Sciences, Professor Irina Yurievna Melnikova (Fig. 1). Formulating tasks and requirements for the staff, she tirelessly emphasizes that it is important to observe the leading university principle — the scientific imperative, which should permeate all aspects of departmental activity, without which the educational process easily degenerates into scholasticism.

Traditions of the department are ensured by 120-year history and highly professional team of like-minded people (Fig. 3), which consists of 5 professors, 7 associate professors, 9 assistants and 3 laboratory assistants. The staff of the de-

partment includes Ruben Rudolfovich Movsesyan, the Chief Consultants paediatric cardiac surgeon of the St. Petersburg Health Care Committee, Doctor of Medical Sciences, Professor, Corresponding Member of the Russian Academy of Sciences, Head of the Cardiac Surgery Department of the St. Petersburg DGMCCC VMT (Fig. 2). The department focuses on providing medical care to children with complex heart pathology. For 25 years more than 10,000 operations have been performed here and unique experience in surgical treatment of patients with extremely low birth weight has been accumulated. Ruben Rudolfovich personally performed more than 2500 operations, among them many unique ones conducted with thermal imaging control. R.R. Movsesyan performed a number of corrections for the first time: atrioventricular valve prosthetics using frameless mitral homografts; cone reconstruction in patients with Ebstein's anomaly in the first months of life, Norwood-Sanno operation with homograft; correction of coarctation of the aorta in patients with body weight less than 800 g; arterial switch operation and Norwood operation in patients with body weight less than 1600 g. Ruben Rudolfovich generously shares his unique experience with clinical residents, physicians, and students of the Faculty of Paediatrics. Seven PhD theses were defended under his scientific supervision.



The direction of cardiology and cardio-rheumatology at the department was headed by Professor Vladimir Vladimirovich Yuryev from 2010 to 2014, he gave lectures to doctors and carried out therapeutic and advisory activities. He wrote 225 papers on the pathology of early childhood and topical issues of paediatric cardiology and rheumatology. Professor V.V. Yuryev was the chief paediatric cardiologist-rheumatologist of Leningrad and the Leningrad region for more than 15 years. Since 2014, Vitolda Ivanovna Belyakova, PhD in MS, was one of the first to study the clinical and immunological features of the course of acute rheumatic fever in children in our country. She participated in the pedagogical process at the department for two years. Today the cardiological direction at the department is supervised by Dr. R.R. Movsesyan, Doctor of Medical Sciences, Professor, Corresponding Member of the Russian Academy of Sciences, Head of the department; I.Yu. Melnikova, PhD of Medical Sciences, Professor; S.N. Chuprova, PhD of Medical Sciences, Associate Professor; pulmonological direction: E.G. Khrantsova, Associate Professor; S.V. Starevskaya, Doctor of Medical Sciences, Associate Professor; assistants S.I. Melnik, I.O. Shmeleva; adolescent medicine — A.M. Kulikov, Doctor of Medical Sciences, Professor.

Within the first years after the organization of I.I. Mechnikov NWSMU, the Department had to re-

vise and optimize the teaching and methodological process in accordance with new requirements of the University management. In particular, a curriculum for the new officially introduced specialty "Paediatric Cardiology" was developed and approved.

The department was one of the first in the Russian Federation to start professional retraining of doctors in the specialty "Paediatric Cardiology". A two-year residency "Paediatric Cardiology" was introduced for the first time. A notable feature of additional professional education (APE) at the department is the variety of disciplines taught. Educational programs cover the whole spectrum of modern paediatrics: from neonatology to adolescent medicine. In addition to paediatrics itself, practical doctors have the opportunity to improve their competence in paediatric cardiology, pulmonology and functional diagnostics. Thematic cycles of continuing medical education address the issues of early childhood, nutrition of children of different ages, paediatric pulmonology, gastroenterology, nephrology, cardiology, adolescent medicine, adolescent reproductive health and clinical genetics. Such a wide range of opportunities of the department in the system of APE is based on a highly professional and versatile staff.

It is significant that some of the educational programs of the NMO are actually author's, as they



Fig. 4. Head of the Department Professor I.Yu. Melnikova and Professor V.N. Buryak with clinical residents at the DGMTC VMT named after K.A. Raikhfus

Рис. 4. Заведующая кафедрой профессор И.Ю. Мельникова и профессор В.Н. Буряк с клиническими ординаторами в ДГМКЦ ВМТ им. К.А. Раухфуса



Fig. 5. Professor's round

Рис. 5. Профессорский обход

include their own textbooks, monographs, manuals, and study guides which have been published by the department's staff in recent years.

Special attention has always been paid to the methodology of teaching. The experience of the department was reflected in the manual "Didactics and competence in the professional activity of a teacher of a medical university". In 2011, a cycle on the methodology of teaching adolescent medicine was held in cooperation with the Faculty of Medicine of the University of Lausanne (Switzerland). The simulated patient methodology was applied for the first time in the practice of the department.

Today, the staff implements training programs for advanced training and professional upgrading of paediatricians, paediatric cardiologists and other specialists in child and adolescent health care, as well as specialty programs in "Medicine" (4<sup>th</sup> year students of the Faculty of Medicine), bachelor's degree in "Nursing", clinical residency in "Paediatrics" and "Paediatric Cardiology" and postgraduate studies in "Paediatrics". Since 2020, the department has developed and implemented a training program for students of the Faculty of Paediatrics on the specialty "Paediatrics".

The Department does not have a paediatric clinic at the University, but it actively cooperates with modern unique clinical bases: Children's City General Hospital of Hight Medical Technologies (CCGH HMT) named after K.A. Raukhfus, Children's City Hospital of St. Mary Magdalene, Children's City Hospital N 3, Children's City Hospital named after N.F. Filatov, Children's Pulmonology Centre of St. Petersburg Research Institute of Phthisiology and Pulmonology (Fig. 4). Chief physicians (E.V. Plotnikova, Doctor of Medecine, Dr. V.Yu. Detkov, Honored Physician of the Russian Federation, A.G. Mikava, PhD in Medical Sciences, , K.A. Papan, L.N. Isankina, Honored Physician of the Russian Federation, P.K. Yablonsky) understand and appreciate the necessity of mutual beneficial connection of practical health care and the department.

The Student Scientific Society (SSS) (supervisor — PhD in Medical Sciences, Associate Professor E.G. Khramtsova) is actively working at the department. The main direction of SSS: study of multidisciplinary aspects of paediatrics, the influence of infectious diseases on the cardiovascular system, the study of rare hereditary diseases with heart and kidney damage based clinical cases. Gastroenterological pathology, paediatric aspects of socially significant diseases (tuberculosis, arterial hypertension) are also among the subjects of study.

Special attention is paid to work with clinical residents. Residents are trained at the department on two basic educational programs — "Pediatrics" (supervisor — assistant of the department S.I. Melnik) and "Children's cardiology" (supervisor — Doctor of medical sciences, prof. V.N. Buryak). Residents take an active part in clinical analyses, present patient case histories, participate in joint research work with physicians of clinical bases under the guidance of faculty members of the department (Fig. 5).

In 2019, Children's Clinical and Diagnostic Centre was opened in at the Medical and Preventive Centre of the Mechnikov Northwestern State Medical University (Professor I.Yu. Melnikova is the Head of the Centre). This allowed to expand the educational process, to conduct federal interdisciplinary consultations with geneticist, Dr. V.I. Laktionova in different regions of the Russian Federation (Kaluga Region, Samara, Stavropol Territory, Tomsk, Leningrad Region), to diagnose and solve questions on the tactics of managing patients with such complex diseases as tyrosinemia, fatty acid metabolism disorders, sphingolipidosis:





Fig. 6. Department staff, from left to right: bottom row — Assoc. Prof. V.Yu. Chistyakova, Head department Prof. I.Yu. Melnikova, Prof. V.N. Buryak, Assoc. Prof. E.G. Khrantsova, second row — Prof. A.M. Kulikov, Ass. I.O. Shmeleva, Assoc. Prof. T.D. Loskucheryavaya, Assoc. Prof. N.E. Luppova, Assoc. Prof. O.V. Ryabykh

Рис. 6. Коллектив кафедры, слева направо: нижний ряд — доц. В.Ю. Чистякова, зав. кафедрой проф. И.Ю. Мельникова, проф. В.Н. Буряк, доц. Е.Г. Храмцова, второй ряд — проф. А.М. Куликов, асс. И.О. Шмелева, доц. Т.Д. Лоскучерявая, доц. Н.Е. Луппова, доц. О.В. Рябых

Fabry disease (Fabry-Anderson), Niemann–Pick disease, homocystinuria (remethylation defect) in order to solve the issue of Cystadane therapy prolongation.

An important area of the department's work is educational activities among patients' parents. For this purpose, since 2020 the Department has been running the "School of Paediatrics" and "School of Pulmonology, Allergology" (supervisor — assistant S.I. Melnik). Using social networking sites, the department staff answer patients' questions related to treatment and vaccination, inform about the peculiarities of diagnostic search, nuances of nebulizer therapy and skin care for patients with atopy. The audience of the groups "School of Paediatrics", "School of Pulmonology, Allergo-

logy", located not only in different cities, but also in different countries. Parents can get answers to their questions, which often arise after the end of a doctor's appointment. Keeping a patient and treating physician connected allows to increase compliance to treatment.

Scientific work is carried out within the framework of the complex theme "Development of modern technologies of preservation, development and restoration of reproductive health of women, newborns, children and adolescents for creation and introduction of innovative products" and includes several directions: cardiosurgical (development of a technique for performing Norwood's operation in the modification of R. Mi-Sanno with a homograft, in hypoplasia syndrome



of the left heart); cardiological (heart damage in drop infections in children; differential diagnosis of syncopal states, hereditary heart rhythm disorders; assessment of the functional state of the myocardium of primary school children, and neonates depending on birth weight, myocardial remodeling depending on a number of comorbid conditions: diabetes mellitus, arterial hypertension); pulmonological (bronchoscopy in complex examination and treatment of children with lung diseases); gastroenterological (pathomorphology of chronic gastritis in children with juvenile chronic arthritis). The authority and accumulated experience of the department allowed it to become a regional branch of the European Centre for Training of Adolescent Health Professionals EuTEACH (European Training in Effective Adolescent Care and Health). The results of research work are patents and their implementation in practical health care, publications of articles, presentations at scientific and practical conferences in St. Petersburg, other cities of the Russian Federation and abroad.

The Department annually holds conferences with international participation: EuTEACH Summer Schools 'Adolescent Health Protection (2015), Apostolov Readings: "Modern problems of paediatric gastroenterology" (2015–2017), "Hereditary diseases in paediatrics and gastroenterology". Modern methods of diagnostics and personalized therapy' (2018), Russian Congress with international participation "Molecular bases of clinical medicine — possible and real" (2016, 2018), "Traditions and achievements of Russian paediatrics" (2015–2024), scientific-practical international conference "Modern biotechnologies for science and practice" (2019), scientific conferences of SSS (2014–2024 annually), schools-seminars for paediatricians with clinical cases.

Over the last decade, the department team has published 14 monographs and chapters of guidelines: National manual "Paediatrics" in two

volumes, manuals "Paediatric Cardiology", "Paediatric Gastroenterology", "Adolescent Medicine", "International Handbook on Adolescent Health and Development", textbooks "Propaedeutics of Paediatric Diseases" and "Paediatric Diseases" in two volumes, "Consultant in 5 minutes", Basic Paediatrics (2023), Norms for the assessment of physical development of children and adolescents of the Russian Federation: A textbook for doctors: in two parts (2022), Nelson's Paediatrics in four volumes (2024).

16 dissertations for the degree of PhD in Medical Sciences and 1 for the degree of Doctor of Medical Sciences were successfully defended under the guidance of the professors of the department. Since 2011, 14 patents have been confirmed.

Prospects of development of the department are connected with preservation of traditions, integration of achievements in science and practice and constant development of scientific directions in paediatrics. The establishment of the paediatric faculty is associated with the development of curricula for theoretical and practical training of junior students, improvement of distance learning methods for all programs: from specialist courses to the training of doctors in advanced training and professional training programs. Practical orientation of all department staff is especially valuable (Fig. 6), each member of the department is a highly professional clinician, who makes daily complex decisions related not only to health, but also to patient's lives. This fact determines the possibility of organizing and conducting educational processes at the highest level.

The history of the Department of Paediatrics and Paediatric Cardiology of the St. Petersburg State Medical University named after I.I. Mechnikov is an integral scientific paediatric school based on high standards in medicine and education focused on the well-being of children. The traditions of the past continue to inspire the modern team for new achievements and success.