

**CONTEMPORARY DIAGNOSTIC TECHNIQUES IN THE ASSESSMENT OF  
PULMONARY DISORDERS**

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**Abstract:** This article explores the pathophysiology of pneumonia and its diagnostic principles. It discusses how both external environmental factors and internal physiological processes contribute to the acceleration of aging, with premature senescence initiating once an organism's growth and development cease[1,2].

**Keywords:** Fluoroscopy, Radiographic Imaging, Chest X-ray, Fluorographic Screening, Bronchial Imaging, Bronchoscopy, Thoracoscopic Examination, Pulmonary Function Assessment, Ventilatory Mechanics, Laboratory Diagnostics (Sputum Analysis).

## **INTRODUCTION**

Pulmonary diseases are highly prevalent, with statistics indicating that over half of chronic conditions affect the lungs and bronchi. The most frequently encountered respiratory pathologies include emphysema, lung carcinoma, chronic obstructive pulmonary disease (COPD), tuberculosis, asthma, and bronchitis. These ailments do not solely affect smokers or individuals living in environmentally compromised areas[3,4,5]; rather, anyone can be susceptible to pulmonary inflammation and neoplastic processes, which can prove to be life-threatening. Consequently, healthcare professionals advocate for regular pulmonary screenings as a crucial preventive measure.

Recent studies indicate that the incidence of pneumonia is influenced by a myriad of factors, including lifestyle, socioeconomic status, occupational conditions, interactions with animals, travel habits, the presence of detrimental behaviors, exposure to infected individuals, and various risk factors such as alcoholism, smoking, chronic obstructive pulmonary disease (COPD), heart failure, and living in densely populated environments[6,7,8,9]. Consequently, when implementing physiotherapeutic interventions for pneumonia, it is advisable to consider the greater susceptibility of the right lung, and therapeutic measures such as drainage massage and strict bed rest are recommended to optimize recovery.

A diverse array of techniques is currently employed to assess the lungs and respiratory tract, facilitating the detection of diseases and pathological conditions.

- **Rentgenoscopy:** This is the most prevalent technique for lung evaluation, enabling the visualization of structural alterations in pulmonary tissue, the identification of focal compressions or cavities, and the detection of fluid or air within the pleural space[10,11]. The image is generated using an X-ray apparatus and presented on a screen.

- **Radiography:** In this diagnostic procedure, the image is also produced via X-ray technology, but it is captured on film rather than being displayed on a monitor[12]. Radiography is a highly precise and informative modality for pulmonary diagnosis, capable of revealing even the most minute alterations in lung structure.

- **Fluorography:** This technique operates on principles akin to radiography, though the resulting image is either printed on a small-format film or projected onto a monitor. Digital fluorography offers the advantage of reduced radiation exposure to the patient, though it may yield slightly inferior image quality compared to conventional lung radiography.

- **Bronchography:** This X-ray procedure is conducted under local anesthesia and is employed to assess the status of the bronchi. A radiopaque contrast agent is introduced into the bronchial lumen, which impedes the transmission of X-rays, thereby enhancing visualization of the bronchial structures.

- **Bronchoscopy:** This diagnostic procedure is utilized to inspect the mucosal lining of the trachea and bronchi. It is conducted using a specialized instrument known as a bronchoscope, to which various attachments—such as forceps for biopsy or removal of foreign bodies and polyps, a miniature camera, and other surgical tools—are affixed.

To minimize patient discomfort, the procedure is carried out under local anesthesia, with the bronchoscope being introduced into the trachea via the oral cavity[13,14,15].

- **Thoracoscopy:** This is an endoscopic procedure used to inspect the pleural cavity, conducted with a specialized instrument called a thoracoscope. The device is inserted into the lungs through a small incision in the chest under general anesthesia. The technique shares many similarities in its operational principles with bronchoscopy.

- **Pulmonary Function Test: Pulmonary Ventilation:** This technique assesses lung respiratory volumes and evaluates the extent of respiratory insufficiency.

- **Pleural Puncture:** In this procedure, a sample from the pleural cavity is obtained for diagnostic analysis through a small puncture. The procedure is performed under local anesthesia. Key indications for pleural puncture include pleurisy, neoplasms, and abnormal accumulation of fluid or air within the pleural space.

### Laboratory Methods (Sputum Analysis)

Sputum analysis is conducted through two primary approaches: microscopic and bacterioscopic examination. The microscopic method enables the detection of parasites, mucus, bacteria, and other cellular formations, and is also instrumental in diagnosing tuberculosis. The bacterioscopic technique, on the other hand, identifies the pathogens responsible for various pulmonary infections.

### CONCLUSION

Annually, approximately 17 million individuals worldwide are diagnosed with pneumonia. The mortality rate associated with respiratory diseases remains alarmingly high, ranging from 8-9%. In 2017 alone, 808,694 children under the age of five succumbed to pneumonia[16,17,18,19]. These statistics underscore the critical importance of prompt medical intervention, diagnostic testing, and appropriate therapeutic measures, as timely and effective treatment of pneumonia is essential to preserving life.

## REFERENCES

1. Dzhurabaev A. A. The role of endoscopic examinations in early diagnosis diseases of the esophagus, stomach, and duodenum //Innovations in technology and science education. – С. 264-269.
2. Мадаминов С. М., Джурабаев А. А. Влияние Микробиоты Толстого Кишечника На Развитие Язвенного Колита //Miasto Przyszłości. – 2024. – Т. 49. – С. 811-813.
3. Tishabaeva Nargiza Alimdjanovna. (2021). Torch-Infections As An Actual Problem In Obstetrics And Gynecology Practice. The American Journal of Medical Sciences and Pharmaceutical Research, 3(05), 27–33. <https://doi.org/10.37547/TAJMSPR/Volume03Issue05-05>
4. Palvanova M.S. Morphological changes in the bone tissue of the child's body in the age aspect. World Bulletin of Public Health, 94-96, 2023
5. Р.Т.Юсупова, О.Е. Шаланкова Репродуктивное здоровье девочек-подростков, проживающих в условиях Ферганской долины. Университетская наука: взгляд в будущее, 612-614, 2020
6. Palvanova M.S., Akhmatov B.K. Chronic myeloid leukemia epidemiology in the Fergana region over decade from 2010 until 2020. Science and innovation, Volume1, issue 8, pp. 1020-1025
7. Jaloliddinov Sh.I. "Treatment and prevention of caries disease in children". Ethiopian international journal of multidisciplinary research. volume 10, issue 12 . sjif 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980
8. Jaloliddinov Sherzodbek Ikromjon O'g'li. exploring non-surgical options for managing ventral hernia: a comprehensive guide to conservative approaches "Innovative achievements in science 2024". part 28 Issue 1 pp.113-118
9. Tilyaxodjayeva Gulbahor Botirovna. (2023). THE IMPORTANCE OF HYRUDOTHERAPY IN THE TREATMENT OF MIGRAINE. World Bulletin of Public Health, 29, 21-23.
10. Tilyaxodjayeva Gulbahor Botirovna. ЛЕЧЕНИЕ МИГРЕНИ ГИРУДОТЕРАПИЕЙ. Scientific Impulse Vol. 1 No. 5 (2022) 892-896.
11. N.A. Tishabaeva, Sh.D. Babajanova. Early and late preeclampsia - risk, factors of pregnancy and childbirth, Journal of clinical and preventive medicine 2023.-Т.4.-№4.-S-78-81
12. Isaqova N. et al. Microscopic examination of sputum //development and innovations in science. – 2024. – Т. 3. – №. 6. – С. 63-66.
13. Исакова Н., Усмонова Г. Лабораторная диагностика трихомониза //международная конференция академических наук. – 2024. – т. 3. – №. 6. – с. 59-65.
14. Исакова Н., Усмонова Г. Кишечный дисбактериоз //Models and methods in modern science. – 2024. – Т. 3. – №. 9. – С. 106-112.
15. Rahmatjonovna I. N. et al. Laboratory diagnostics of trichomoniasis disease //Ethiopian International Journal of Multidisciplinary Research. – 2024. – Т. 11. – №. 05. – С. 496-499.
16. Rahmatjonovna I. N. Fast foods are the potential of human health //Ethiopian International Journal of Multidisciplinary Research. – 2024. – Т. 11. – №. 05. – С. 365-369.
17. Makhmudova Kh.T. Features of providing highly specialized medical care to pregnant women with Covid-19 in obstetric practice. "Current problems of diagnosis and treatment of coronavirus infection" -2022

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18. А.А.Джурабаев. О роли выбора лечебной тактики при панкреонекрозе/ Xirurgik operatsiyalardan keyingi asoratlari ularni oldini olish va davolashda kompleks yondashuv -Respublika ilmiy-amaliy konferensiyasi, 2023, стр.32-35

19. Yuldasheva Moxigul Turdaliyevna, Boratova Mohidilxon Abdumajiq qizi. MORPHOFUNCTIONAL CHANGES OF CERVICAL SQUAMOUS EPITHELIUM AFTER CHEMOTHERAPY AND LIGHT THERAPY. International Multidisciplinary Journal for Research & Development 10 Vol. 10 No. 12 (2023).