

**AGE-RELATED CHANGES IN THE RESPIRATORY SYSTEM AND THEIR
PHYSIOLOGICAL SIGNIFICANCE****Irgasheva Dildora Ganiyevna**

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This thesis examines age-related changes in the respiratory system and their physiological significance. Aging is accompanied by structural and functional modifications in the lungs, respiratory muscles, airways, and thoracic cage. These changes affect pulmonary ventilation, gas exchange efficiency, and respiratory reserve capacity. Understanding the physiological mechanisms of respiratory aging is important for maintaining respiratory health and preventing chronic pulmonary diseases. The study highlights the major age-related alterations in respiratory function and their impact on overall health and quality of life.

Relevance of the Study

The aging process affects all organ systems, including the respiratory system. Age-related respiratory changes can reduce lung function, impair oxygen delivery, and increase susceptibility to respiratory diseases. As the global elderly population continues to grow, understanding these physiological changes becomes increasingly important for healthcare professionals and researchers.

Aim of the Study

To analyze age-related structural and functional changes in the respiratory system and evaluate their physiological significance in maintaining respiratory health.

Research Methods

The study was based on the analysis of scientific literature, textbooks, and research articles related to respiratory physiology and aging. Comparative and analytical methods were used to evaluate the effects of aging on pulmonary function, respiratory muscles, and gas exchange processes.

Results

The analysis showed that aging leads to a gradual decrease in lung elasticity, respiratory muscle strength, and chest wall compliance. These changes reduce vital capacity and increase residual lung volume. In addition, structural changes in alveoli and pulmonary capillaries decrease the efficiency of oxygen diffusion and gas exchange. As a result, older adults have reduced respiratory reserve and become more vulnerable to respiratory infections and chronic pulmonary disorders.

Regular physical activity, respiratory exercises, and healthy lifestyle habits can help maintain pulmonary function and slow age-related respiratory decline. Early diagnosis and preventive healthcare measures are also important for preserving respiratory health in older individuals.

Conclusion

Age-related changes in the respiratory system are natural physiological processes that significantly influence pulmonary function and overall health. Decreased lung elasticity, reduced respiratory muscle strength, and diminished gas exchange capacity contribute to a decline in

respiratory efficiency. Understanding these changes is essential for developing effective preventive strategies and improving the quality of life of aging populations. Promoting healthy lifestyles and respiratory health programs can help reduce the negative effects of aging on the respiratory system.

