

## **СЕКЦІЯ 13. ЗАСТОСУВАННЯ КОМП'ЮТЕРНИХ ТЕХНОЛОГІЙ ДЛЯ ВИРІШЕННЯ НАУКОВИХ І СОЦІАЛЬНИХ ПРОБЛЕМ У МЕДИЦИНІ**

### **NASAL AERODYNAMICS WITH TYPICAL BREATHING DISORDERS**

**Ibrahim Younouss Abdelhamid., Avrunin O.G.**  
*Kharkiv National University of Radio Electronics,*  
*Kharkiv*

An enlarged nasopharyngeal tonsil, curvature of the nasal septum and chronic rhinosinusitis and other disorders causing difficulty in nasal breathing, but the violation of breathing through the nose can be in the usual runny nose, and when foreign bodies get into the nasal passages. Objective information about the physiological processes occurring in the nasal airways allows us to select a suitable treatment strategy based on functional information.

Under normal conditions the healthy nasal anatomy forms special aerodynamic elements that control the air flux by way that all respiratory functions can be fulfilled adequately [1]. It is thus interesting to study the most important aerodynamic processes occurring in the nasal airway specifically with nasal breathing disorders, and to identify the most important respiratory functions of the upper respiratory system [2].

Performing aerodynamic which can be measure by using Reynolds method, for the conditional norm and pathologies with functional disturbances of nasal breathing, only the combination of the results of functional rhinomanometric studies and topographic and anatomical data from computed tomography makes it possible to achieve correct anatomical and physiological interpretation in testing nasal breathing disorders, when carrying out rhinomanometric measurements, as with any method of functional diagnostics, it is necessary to follow the survey protocol methodically and to monitor the correctness of the received data in order to avoid gross mistakes.

It is necessary to take into account not only the maximum coefficient of aerodynamic nasal resistance, but also the values of pressure drop and air flow in the region of transition to the turbulent quadratic flow mode. It is necessary to take into account the relative roughness of the mucous membrane of the nasal cavity, which allows not only to calculate the critical values of Reynolds numbers, but in the future to assess the effect of air flow on the walls of the nasal cavity at the micro level, that is why leading to increased tendency to develop methods to detect such diseases of the upper respiratory tract.

#### **References:**

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