

Kharkiv National Medical University  
Department of Propedeutics to Internal Medicine No.1,  
Basis of Bioethics and Biosafety

***International scientific students' conference***

**MODERN EXAMINATION  
TECHNIQUE IN PULMONOLOGY**

***Abstract book***

Kharkiv, Ukraine  
4<sup>th</sup> of December 2014

DIAGNOSTICAL USE OF BRONCHOGRAPHY	25
<i>Honchar O., Ashcheulova T., Kovalyova O., Ivanchenko S.</i>	
POSITRON EMISSION TOMOGRAPHY (PET SCAN)	26
<i>Honchar O., Ashcheulova T., Kovalyova O., Ivanchenko S.</i>	
PULMONARY ANGIOGRAPHY IN MODERN CLINICAL PRACTICE	27
<i>Honchar O., Ashcheulova T., Kovalyova O., Ivanchenko S.</i>	
BRONCHOSCOPY IS THE MODERN EXAMINATION METHODS IN PULMONOLOGY	28
<i>Khalid Abdi Hassan, Pytetska N.</i>	
THORACIC RADIOGRAPHY	29
<i>Khariat Titilope Salavu, Kompaniiets K.N.</i>	
REGIONAL LUNG FUNCTION AND MECHANICS USING IMAGE REGISTRATION	30
<i>Kochubiei O., Ashcheulova T., Isaac Precious Adaora</i>	
LUNG CAPACITY AND STUDY OF LUNG FUNCTIONS	31
<i>Kochubiei O., Ashcheulova T., Saloum Ibrahim</i>	
EXAMINATION TECHNIQUE IN PULMONOLOGY. SPIROMETRY	33
<i>Komal Takhi, Pytetska N.</i>	
PLETHYSMOGRAPH OR PULMONARY FUNCTION TEST (PFT S)	34
<i>Mahdi Al Kharsa, Pytetska N.</i>	
APPLICATION OF POLYSOMNOGRAPHY IN DIAGNOSIS OF THE SLEEP DISORDERS	35
<i>Mbabazi Solomon, Pytetska N.</i>	
ENDOBONCHIAL ULTRASOUND	36
<i>Mohadoowa Akrish, Kochubiei O.</i>	
THE USE OF SPIROMETRY IN THE DIAGNOSIS OF LUNG DISEASES	37
<i>Mohamed Musse, Pytetska N.</i>	
THE USE OF ULTRASOUND IN PULMONOLOGY EXAMINATION	38
<i>Muulu Tileinge Elina, Pytetska N.</i>	
APPLICATION OF TRACHEOSCOPY IN PULMONOLOGY PRACTICE. THE BASIC PRINCIPLES OF THE METHOD	39
<i>Naluzze Doreen M., Pytetska N.</i>	
BRONCHIAL THERMOPLASTY – THE MODERN METHOD OF TREATMENT OF BRONCHIAL ASTHMA	40
<i>Nkan Idiongo E., Pytetska N.</i>	
MODERN EXAMINATION METHODS IN PULMONOLOGY	42
<i>Nongo Tersoo, Pytetska N.</i>	

## **POSITRON EMISSION TOMOGRAPHY (PET SCAN)**

*Honchar O., Ashcheulova T., Kovalyova O., Ivanchenko S.*

Positron emission tomography (PET) is a specialized radiology procedure used to examine various body tissues to identify certain conditions. PET may also be used to follow the progress of the treatment of certain conditions. PET is most often used in neurology, oncology, and cardiology. However, as advances in PET technologies continue, this procedure is beginning to be used more widely in other areas.

PET is a type of nuclear medicine procedure. This means that a tiny amount of a radioactive substance, called a radionuclide (radiopharmaceutical or radioactive tracer), is used during the procedure to assist in the examination of the tissue under study. Specifically, PET studies evaluate the metabolism of a particular organ or tissue, so that information about the physiology (functionality) and anatomy (structure) of the organ or tissue is evaluated, as well as its biochemical properties. Thus, PET may detect biochemical changes in an organ or tissue that can identify the onset of a disease process before anatomical changes related to the disease can be seen with other imaging processes such as computed tomography (CT) or magnetic resonance imaging (MRI).

PET is also being used in conjunction with other diagnostic tests such as CT to provide more definitive information about malignant (cancerous) tumors and other lesions. The combination of PET and CT shows particular promise in the diagnosis and treatment of lung cancer.

Until recently, PET procedures were performed in dedicated PET centers. The equipment used in these centers is quite expensive. However, a new technology called gamma camera systems (devices used to scan patients who have been injected with small amounts of radionuclides and currently in use with other nuclear medicine procedures) is now being adapted for use in PET scan procedures. The gamma camera system can complete a scan more quickly, and at less cost, than a traditional PET scan.

Indications for use of PET scan in pulmonology may include:

- further identification of lung lesions or masses detected on chest x-ray and/or chest CT;
- detection of cancer spread to other parts of the body from the original cancer site;
- evaluation of cancer treatment effectiveness;
- assist in the management and treatment of lung cancer by staging lesions and following the progress of lesions after treatment;
- early detection of tumors recurrence.