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**MODERN EXAMINATION METHODS IN PULMONOLOGY**

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Pulmonology is known as chest medicine and respiratory medicine in some countries and areas. *Pulmonology* is considered a branch of internal medicine, and is related to intensive care medicine.

In addition to qualitative establishment of diagnosis the aim of modern investigational procedures is quantitative analysis of disease extension and of functional impairment. The most important endoscopic-bioptical techniques for establishment of diagnosis are bronchoscopy and thoracoscopy. In bronchology flexible bronchoscopy with a relative share of about 90% clearly holds now a dominant position versus the rigid technique. Suspected [cancer](http://europepmc.org/abstract/MED/8571494/?whatizit_url=http://europepmc.org/search/?page=1&query=%22cancer%22) is the most prominent indication (ca. 60%). Visible intrabronchial lesions can be diagnosed in more than 90%. In extrabronchial and peripheral [bronchopulmonary disease](http://europepmc.org/abstract/MED/8571494/?whatizit_url=http://europepmc.org/search/?page=1&query=%22bronchopulmonary%20disease%22) technical [aids](http://europepmc.org/abstract/MED/8571494/?whatizit_url=http://europepmc.org/search/?page=1&query=%22aids%22) like transbronchial needle aspiration (TBNA), bronchoalveolar lavage ([BAL](http://europepmc.org/abstract/MED/8571494/?whatizit_url_gene_protein=http://www.uniprot.org/uniprot/?query=BAL&sort=score)) or transbronchial biopsy ([TBB](http://europepmc.org/abstract/MED/8571494/?whatizit_url_gene_protein=http://www.uniprot.org/uniprot/?query=TBB&sort=score)) are required, resulting in a diagnostic yield, that may range between 30 and 90% depending on the particular disease entity. Thoracoscopy is the second most important endoscopic procedure and accounts for about 1/10 of the investigational frequency of bronchoscopy.

PROCEDURES

* Laboratory investigation of [blood](http://en.wikipedia.org/wiki/Blood) ([blood tests](http://en.wikipedia.org/wiki/Blood_test)). Sometimes [arterial blood gas](http://en.wikipedia.org/wiki/Arterial_blood_gas) measurements are also required.
* [Spirometry](http://en.wikipedia.org/wiki/Spirometry) (the determination of [lung volumes](http://en.wikipedia.org/wiki/Lung_volumes) in time by breathing into a dedicated machine; response to [bronchodilatators](http://en.wikipedia.org/wiki/Bronchodilatator) and [diffusion](http://en.wikipedia.org/wiki/Diffusion) of [carbon monoxide](http://en.wikipedia.org/wiki/Carbon_monoxide))
* [Bronchoscopy](http://en.wikipedia.org/wiki/Bronchoscopy) with [bronchoalveolar lavage](http://en.wikipedia.org/wiki/Bronchoalveolar_lavage) (BAL), endobronchial and [transbronchial](http://en.wikipedia.org/w/index.php?title=Transbronchial&action=edit&redlink=1) [biopsy](http://en.wikipedia.org/wiki/Biopsy) and [epithelial](http://en.wikipedia.org/wiki/Epithelium) brushing
* [Chest X-rays](http://en.wikipedia.org/wiki/X-rays)
* [CT scanning](http://en.wikipedia.org/wiki/Computed_tomography) ([MRI scanning](http://en.wikipedia.org/wiki/Magnetic_resonance_imaging) is rarely used)
* [Scintigraphy](http://en.wikipedia.org/wiki/Scintigraphy) and other methods of [nuclear medicine](http://en.wikipedia.org/wiki/Nuclear_medicine)
* [Positron emission tomography](http://en.wikipedia.org/wiki/Positron_emission_tomography) (especially in [lung cancer](http://en.wikipedia.org/wiki/Lung_cancer))

Devices Used: Spirometer, Bronchoscope, X-ray tubes, CT-Scanner, Scintigraph, PET-CT scanners etc.