



# Spirometrija

## Spirometry

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### Apstrakt

*Uvod:* Spirometrija je metoda kojom se određuje sposobnost ventilacije pluća. Spirometrija je zlatni standard u dijagnostici plućnih bolesti. Spirometrijski test daje podatke koji pomažu dijagnostikovanje plućnih bolesti i omogućava praćenje zdravstvenog stanja pluća. To je bezbolna metoda koja se izvodi na aparatu spirometru na kom se dobija dijagramski zapis. Ovo je standardni test koji pulmolozi često koriste kako bi izmerili kolika je optimalna funkcija pluća pacijenta. Na taj način se otkrivaju i mnoge korisne činjenice u vezi sa plućima i njihovim radom. Rezultati spirometrije pružaju podatke koji pomažu praćenje zdravstvenog stanja pluća i dijagnostikovanje plućnih bolesti kao što su: HOBP, tumori pluća različite etiologije, bronhijalna astma, emfizem pluća itd.

*Cilj rada:* Spirometrijom možemo dokazati da li je uopšte reč o plućnim bolestima (srčana oboljenja, kao i psihički poremećaji, mogu da izazovu gušenje i ponekad liče na plućne smetnje), a ako je reč o plućnim poremećajima, imamo tačan nalaz i u kom se delu pluća poremećaj i desio.

*Izvođenje testa:* Savet je da nekoliko časova pre testa nema fizičke aktivnosti, da nema zadihanosti pri užurbanom dolasku, nema obilnih obroka, da se ne pije kafa, ne puši, ne konzumiraju lekovi. To je potpuno bezbolna metoda za pacijente koja se brzo radi. Najčešće traje 10 do 15 minuta. Pacijent drži u ustima usnik sa antibakterijskim filterom, dok nos zatvaramo nosnom štikaljkom. Lekar specijalista pulmolog daje instrukcije pacijentu kako da diše u cev i pacijent treba da ih ispoštuje kako bi rezultati bili što realniji.

Reference testa se razlikuju s obzirom na pol, godine starosti, visinu i telesnu težinu. Parametri koji se prate su:

- FVC (forced vital capacity) – najveća količina izdahnutog vazduha nakon najdubljeg udisaja (inspirijuma),
- FEV (forced expiratory volume) – količina vazduha koja se može izdahnuti iz pluća u jednoj sekundi.

Spirometriju treba izbegavati, ako je pacijent imao skoro anginozni napad, srčani udar, nekontrolisano visok krvni pritisak, operaciju na glavi, grudima, očima i sl. Tada je spirometrija nebezbedna.

*Zaključak:* Kada izabrani lekar ili pulmolog primete da postoje određene indikacije koje mogu ukazati na neku vrstu problema sa plućima (otežano disanje, gubitak daha, iskašljavanje sekreta različite prirode), uputiće osobu na testiranje. Dakle, ovaj test se radi kada se primeti problem sa funkcijom pluća, te ne spada u one testove koje bi svako morao da radi na određen vremenski period. Na ovaj način vidimo da li je protok vazduha očekivan ili smanjen i koliko (izraženo u procentima).

### Abstract

*Introduction:* Spirometry is a method used to determine the ventilatory capacity of the lungs. Spirometry is the gold standard in the diagnosis of lung diseases. The spirometry test provides data that help diagnose lung diseases and enables the monitoring of lung health. It is a painless method that is performed on a spirometer device, on which a diagrammatic record is obtained. This is a standard test that pulmonologists often use to measure how optimal a patient's lung function is. In this way, many useful facts about the lungs and their work are revealed. The results of spirometry provide data that help monitor the health of the lungs and diagnose lung diseases such as Chronic obstructive pulmonary disease (COPD), lung tumors of various etiologies, bronchial asthma, lung emphysema, etc.

*Aims of the work:* With spirometry, we can prove whether it is lung disease at all (heart disease, as well as mental disorders, can cause suffocation and sometimes look like lung disorders), and if it is a lung disorder we have an accurate finding and in which part of the lung the disorder had happened.

*Performance of the test:* The advice is to avoid physical activity a few hours before the test, shortness of breath when arriving in a hurry, heavy meals, drinking coffee, smoking, and taking medications. It is a completely painless method for patients that is performed quickly. It usually lasts 10 to 15 minutes. The patient holds a mouthpiece with an antibacterial filter in his mouth while the nose is closed with a nose clip. A specialist pulmonologist gives instructions to the patient on how to breathe into the tube and the patient should follow them so that the results are as realistic as possible.

Test references differ with regard to gender, age, height, and body weight. The parameters monitored are:

- FVC (Forced vital capacity) - the largest amount of exhaled air after the deepest inhalation (inspiration),
- FEV (Forced expiratory volume) - the amount of air that can be exhaled from the lungs in one second.

Spirometry should be avoided if the patient has had an angina attack, heart attack, uncontrolled high blood pressure, surgery on the head, chest, eyes, etc. Spirometry is not safe in these cases.

*Conclusion:* When the selected doctor or pulmonologist notices that there are certain indications that may indicate some kind of lung problem (difficulty breathing, loss of breath, coughing up secretions of a different nature), they will refer the person for testing. Therefore, this test is done when a problem with lung function is noticed, and it does not belong to those tests that one would definitely have to do for a certain period of time. In this way, we can see whether the airflow is expected or reduced and how much is expressed in percentages.

