

New Horizons in Respiratory Care Pulmonary Function Testing: Updates and Answers

Pulmonary function testing (PFT) involves a number of different procedures designed to characterize and quantify mechanical and gas exchange properties of the lung. The most common procedure is the simple spirogram: one of the oldest clinical tests still in use today. Other commonly done procedures include lung volume determinations, blood gas analyses, carbon monoxide diffusing capacity measurements, exercise testing, airway challenge testing, and ventilatory muscle strength assessment.

There are 2 primary goals of PFT. The first is to categorize patients in physiologic terms. Examples include describing patients as having “obstructive,” “restrictive,” or “neuromuscular” abnormalities. The second is to quantify the severity of the abnormality. This is generally done by comparing a measured value to a reference value obtained from a normal population. Quantifying the abnormality not only gives clinicians an idea of how limited a patient is at the current time but also provides a reference point for follow-up after various clinical interventions (eg, rehabilitation, chemotherapy, or surgery).

Although the concepts underlying the various tests have been understood for decades, testing devices have become increasingly complex in attempts to improve testing accuracy, repeatability, and data management. Along with this have been the attempts by professional societies to standardize methodologies and provide guidance in interpretation of data. In the following collection of papers a number of PFT issues are addressed, including technical, clinical, and laboratory management topics. This collection provides a useful review of the current state of the art in PFT and should serve as a valuable resource for both managers and providers.

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