Interpretation of Spirometry: Beyond the Numbers

Roy McKay, Ph.D.
University of Cincinnati
www.DrMcKay.com
513-558-1234
Roy@DrMcKay.com

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Elevate your understanding of spirometry interpretation to a new level!

This annual, 1-day comprehensive course is designed for health professionals who want to **master** the art and science of spirometry interpretation. If you've ever wondered why relying on the "three best tracings" leads to errors, or how to spot subtle patterns others miss, this course is for you.
You'll explore **multiple interpretative strategies**, including the 2022 ATS/ERS guidelines, while uncovering their omissions and inconsistencies. We'll also review other approaches (Gold-Hardie, NLHEP, NICE, ACOEM) and the most recent revision to **Dr. McKay's Spirometry Interpretation Algorithm**© 2024, the only comprehensive algorithm consistent with spirometry guidelines.

Through **hands-on practice problems**, you'll learn to identify and understand patterns such as:
- Upper, central, lower, early and small airway obstruction
- Restrictive and mixed disorders
- Artifacts from sub-maximal effort

We'll show you **when to ignore misleading measurements**, how to extract usable data from imperfect maneuvers, and how to recognize poor technique or subject effort. You'll also gain clarity on concepts like **FEV1Q, PRISm, SADI, and dysanaptic patterns**. Practical methods to identify potentially significant change in lung function will be presented. This information is helpful in regards to identifying persons with true lung disease versus variability in the test.

By the end of the day, you'll be equipped to:
- Reduce false positives and negatives in diagnosing obstructive, restrictive, and other patterns
- Interpret spirometry with confidence - even when results aren't perfect
- Apply strategies that improve clinical decision-making

This course is a must for anyone seeking a deeper understanding and practical mastery of spirometry interpretation.

Objectives: Subject to change depending upon experience and needs of attendees
- Recognize important components of spirometry standards that impact interpretation of results.
- Interpret spirometry graphs as to the type of pattern.
- Recognize external factors that affect spirometry results.
- Identify common errors in test procedures or testing equipment that affect results.
- Recognize factors that cause miss-classification of spirometry patterns (i.e., obstructive to normal, etc.).
- Recognize potentially significant change in spirometry testing.
- Explanation of **FEV1*Q*** and **PRISm**.

Course Content: See below (content subject to change depending upon experience and needs of attendees)

Brief Review of Interpretative Guidelines
ATS/ERS, OSHA, NIOSH, ACOEM, etc.

Definitions & Significance of FVC, FEV_1, FEV_6, $FEF_{50\%}$, $FEF_{25-75\%}$, Peak Flow, etc.
Should $FEF_{25-75\%}$ and instantaneous flows be used for interpretation?
Does a reduction in $FEF_{25-75\%}$ identify "small airways" disease?

Lower Limits of Normal and Occupational Standards
Which lower limits of normal should be used?
What is a *z*-score and how to use it?

Pitfalls When Reviewing the 3 Best or Fewer Trials:
Looking at the 3 best trials, can cause mistakes, such as:
Normal patterns that are actually Obstructive
Restrictive patterns that are truly Normal

Interpretation Schemes & Lung Disease Patterns
Comparison of common interpretation schemes. GOLD, ATS-ERS, Others, etc.
GOLD FEV1/FVC: Pro & Con
ATS-ERS FEV1/FVC: Pro & Con
Concerns using a "fixed" cutoff for the FEV_1/FVC ratio
Interpretation controversies

Obstructive, Restrictive, & Mixed Spirometry Patterns
Dr. McKay's Revised Interpretation Algorithm for Spirometry Interpretation
Which parameter best distinguishes obstructive patterns?
Most common causes of obstructive & restrictive patterns
What does an inflection point on F/V tracings tell you?
What is **PRISm** & **SADI**?
How testing technique can alter test interpretation
How to interpret tests that **don't** achieve a plateau
Interpretation of tests that don't meet acceptability criteria
Artifact that alters test interpretation
Pulmonary and non-pulmonary conditions that reduce FVC
Examples of real tests to familiarize the student to various spirometry patterns and false positives

How to Identify an Improperly Performed Test
Review of key spirometry pitfalls, recognition, and solutions.

What is a Significant Change in Lung Function with Time?
Advantages and limitations of common methods
ATS/ERS, ACOEM, & NIOSH age-adjusted methods
Dr. McKay's universal age-adjusted percent change formula
Explanation of FEV1*Q*
Other approaches for evaluating potentially significant changes with time

How to read Flow-Volume and Volume-Time Displays
Learn how to recognize obstructive & restrictive patterns, hesitating starts, coughs, and other artifact that may invalidate test results.

Location:

This program is usually held at a local hotel, located between downtown Cincinnati and the Cincinnati International Airport. After a registration request is received, the specific course location and host hotel will be revealed. Special arrangements will be made to reserve a block of rooms at a discounted rate. Your confirmation letter will have specific details; however, when in doubt identify yourself as a participant with the "University of Cincinnati".

Times:

8:00 Registration begins
8:30 Lectures begin
5:00 Program ends

5:15 - ? Optional topics for those willing to stay beyond the scheduled ending time.

Tuition: refer to online registration form for current fee.

Tuition includes a comprehensive student workbook. Students are enrolled in the order in which payment is received. After payment is received, a confirmation letter will be sent to each student. Students should **not** make non-refundable travel arrangements until the confirmation letter is received. In the unlikely event the program is canceled due to accident, injury, or other unexpected event, your registration fee will be refunded in full. Liability is however, limited to the course fee. After your registration request is submitted, an email reply should be received within 48 hours. If a reply is not received, send an email to info@DrMcKay.com

Prerequisites: Yes

Although the "Interpretation" class begins with a brief 12-minute review of spirometry parameters, a basic understanding of spirometry testing and test parameters (FVC, FEV_1, etc.), is a **prerequisite**.

For those wanting a stronger background in spirometry, prior to taking the Interpretation course, consider our online, self-paced **Fundamentals of Spirometry** course. This online spirometry training covers current ATS-ERS testing standards and is designed to teach essential spirometry practices, procedures, measurement parameters (FVC, FEV_1, etc.) and how to read graphic displays. This online class is very helpful for persons without a strong background in spirometry testing. For details, request a brochure or Click here for Fundamentals of Spirometry

An alternative for those needing a comprehensive review of spirometry parameters, acceptability & repeatability criteria, calibration check requirements, and how to read graphic displays, you may want to consider taking our 1-day in-person "**Spirometry Refresher**" class usually held the day before the "Interpretation" class. The Refresher class is designed primarily for persons who administer spirometry testing and is a requirement for test operators that must maintain NIOSH spirometry certification. While the in-person Refresher class is open to anyone, only those that meet NIOSH eligibility criteria will receive a NIOSH-approved Refresher certificate. For details about the in-person "Refresher" class:
Click Here or visit https://www.drmckay.com/spirometry-refresher.shtml

Refund & Transfer Policy

Refer to website or course information/confirmation letter for current policy.

Certificates & Continuing Education Credit:

Students who materially participate and attend the entire training program will receive a training certificate from the University of Cincinnati (Sponsor & Accreditor) indicating 7.5 Contact hours (0.75 CEUs).

On-Site Training:

This course can be given on-site at your location. There is no minimum class size, but 6 - 8 attendees is generally needed to make this cost-effective for most locations.

Registration:

To attend this course, submit a registration request online at: https://www.drmckay.com/

Payment is **not** required when submitting a registration request. However, it's important to submit a registration request to get into our system. Class size is limited.