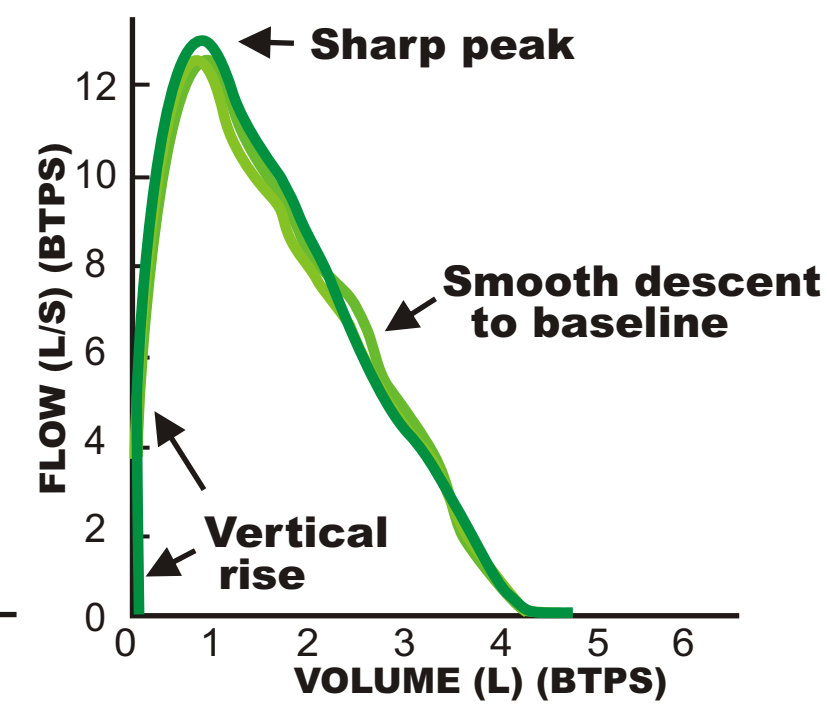
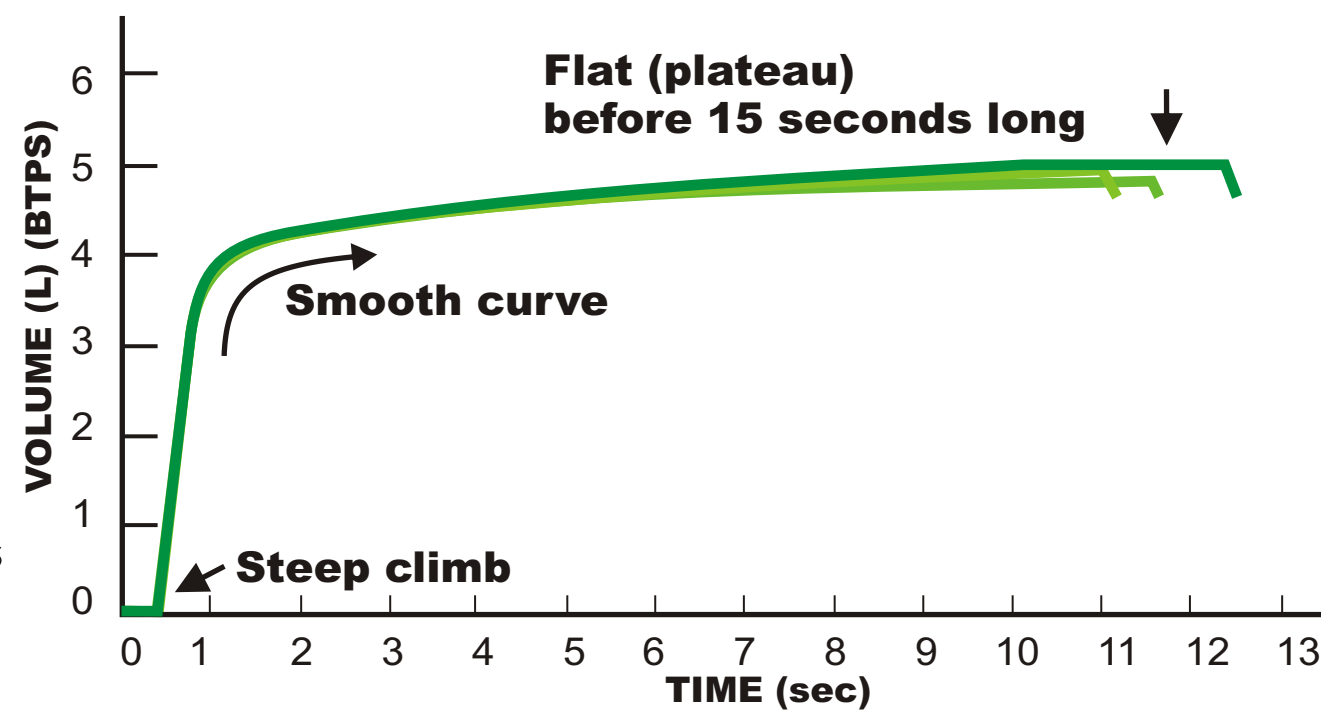


# Get Valid Spirometry Results EVERY Time

**A Valid Test has:  
3 or More Good Curves  
and Repeatable FVC and FEV1 \***

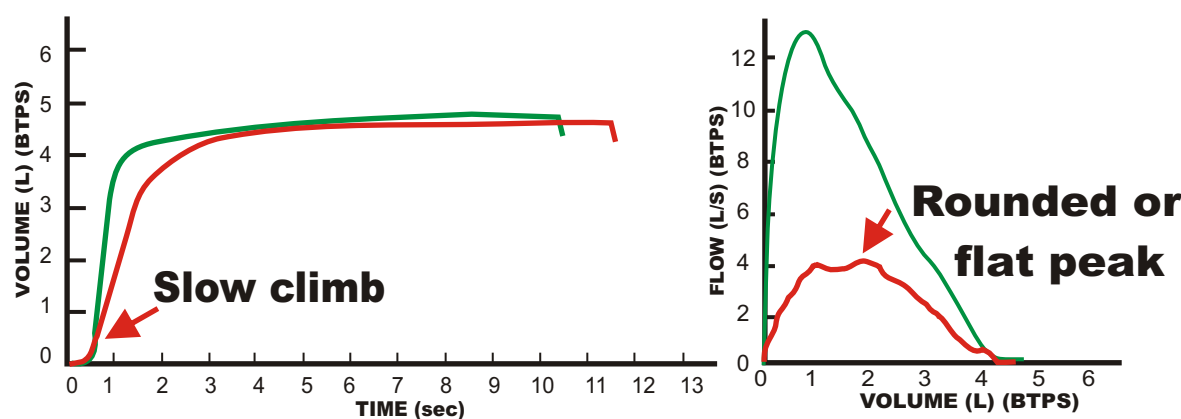
\*Use most current American Thoracic Society/  
European Respiratory Society (ATS/ERS) standards



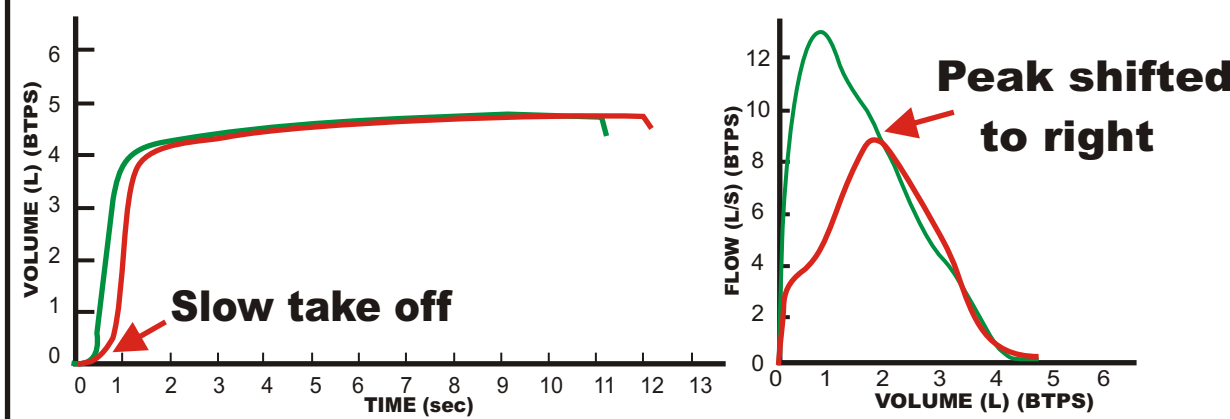
**KEY**  
Green = Good Curve  
Red = Error

## HOW TO CORRECT TEST ERRORS

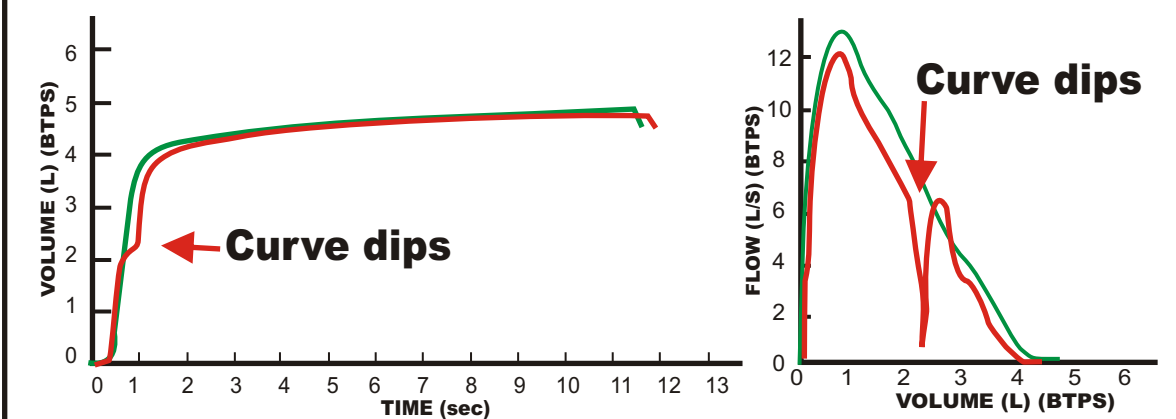
**Poor Initial Blast**  
Coach: Blast air out HARDER



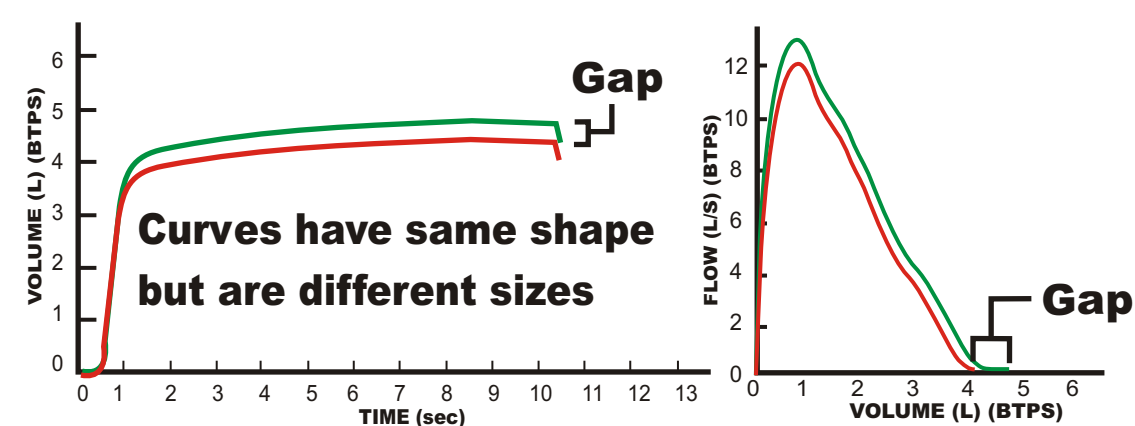
**Hesitation; Slow Start; Large Extrapolated Volume**  
Delete Curve; Coach: Blast FASTER



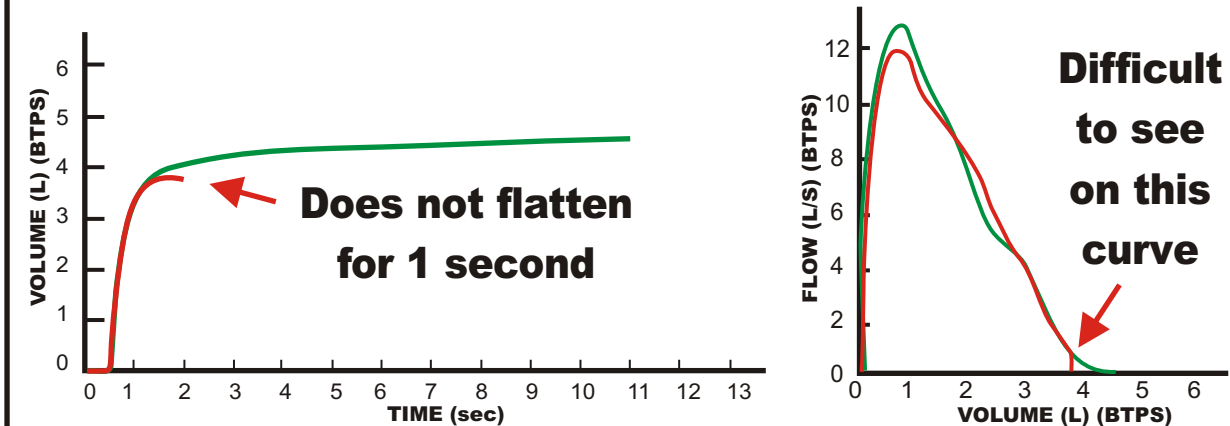
**Cough in First Second**  
Delete Curve; Correction: Try a drink of water



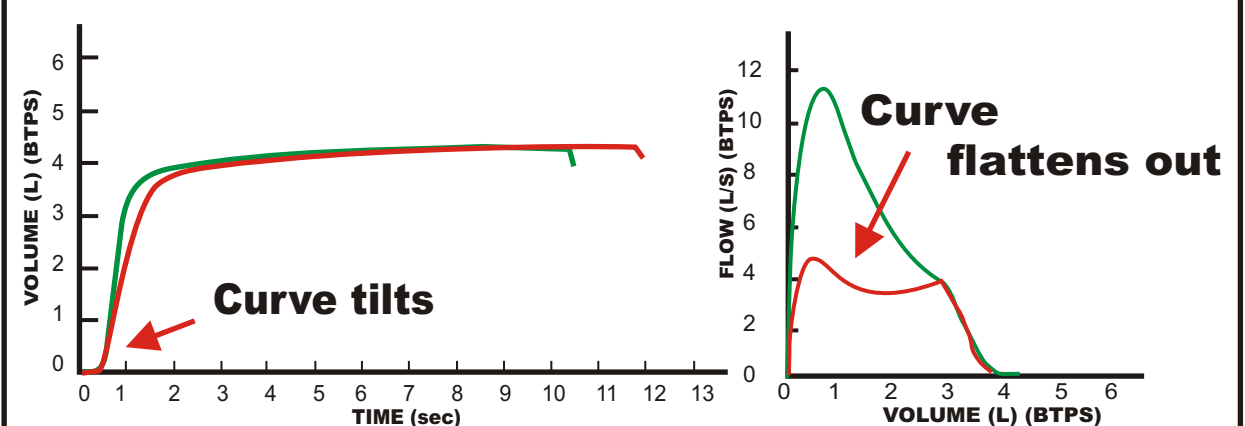
**Incomplete Inhalation**  
Coach: Take a DEEPER breath



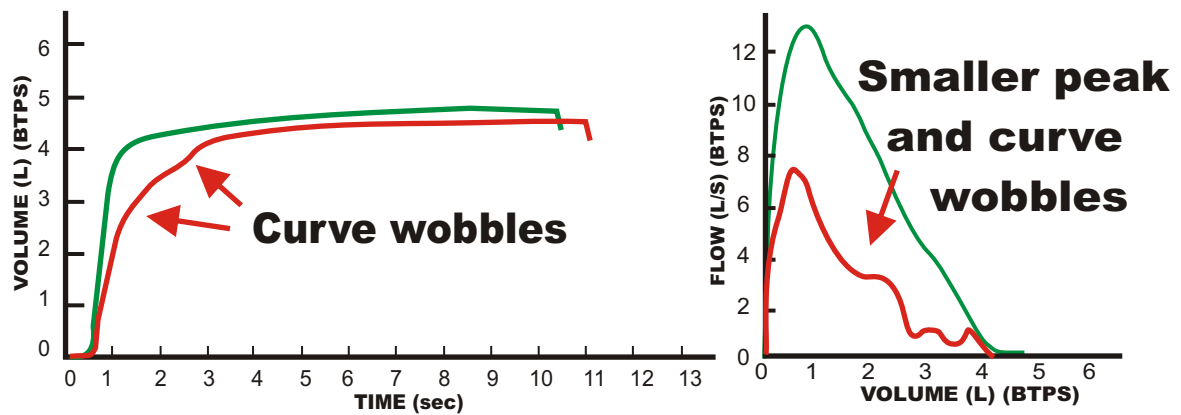
**No Plateau Before 15 Seconds**  
Coach: Keep blowing until told to stop



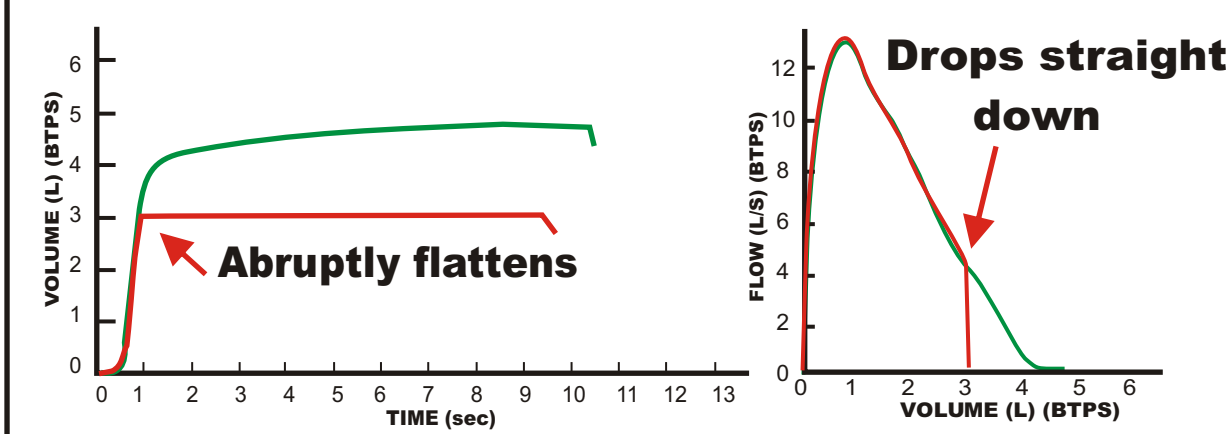
**Inconsistent Effort**  
Coach: One continuous blast and keep blowing



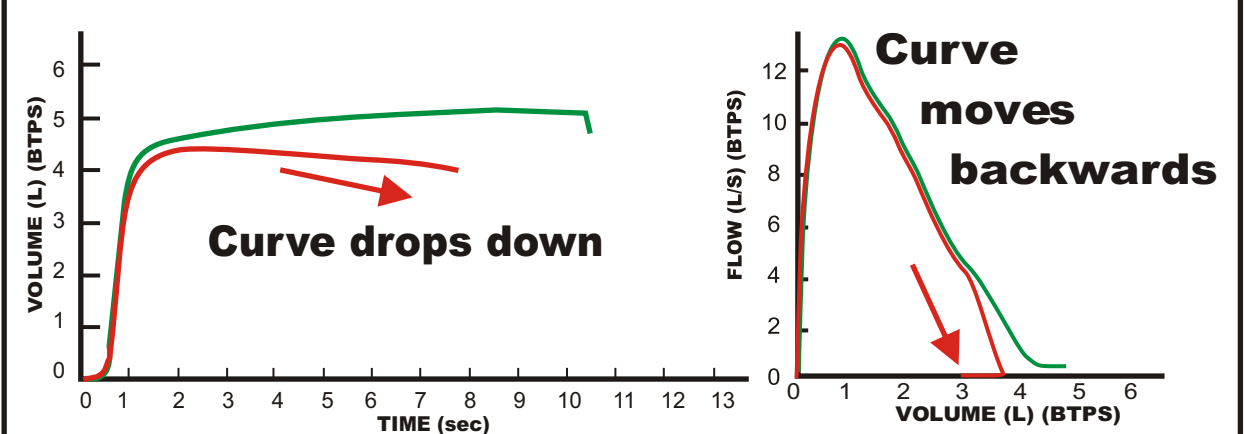
**Partially Blocked Mouthpiece**  
Coach: Position mouthpiece between teeth and on top of tongue; secure dentures



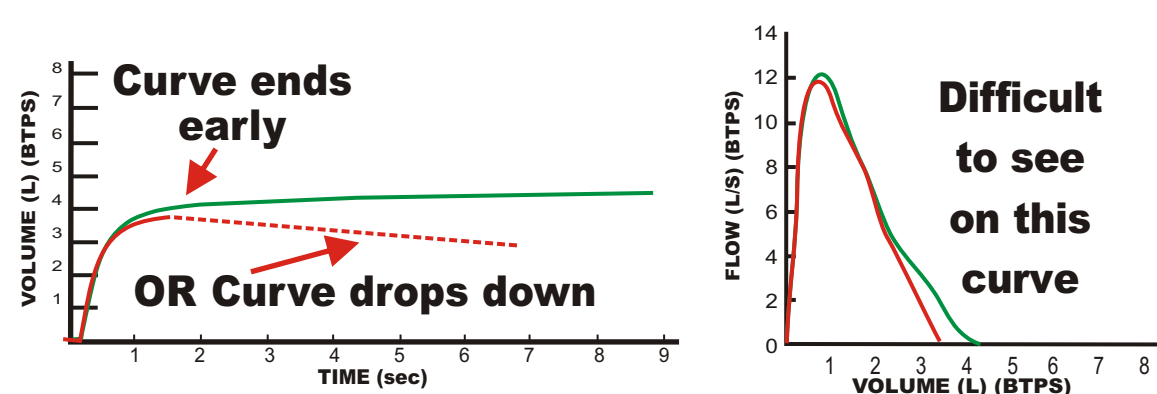
**Glottis Closure or Breath Holding**  
Coach: Initial BIG BLAST then RELAX and keep blowing



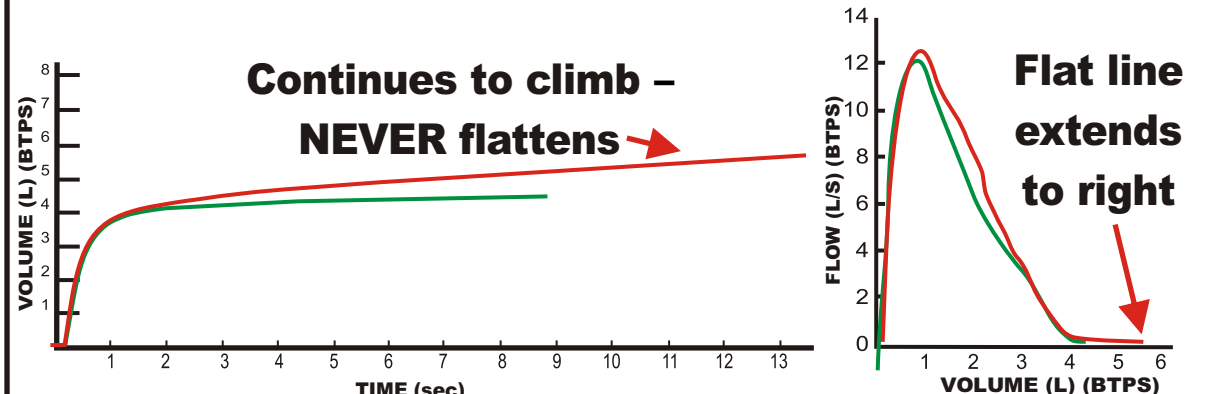
**Leak**  
Correction: Check equipment and connections



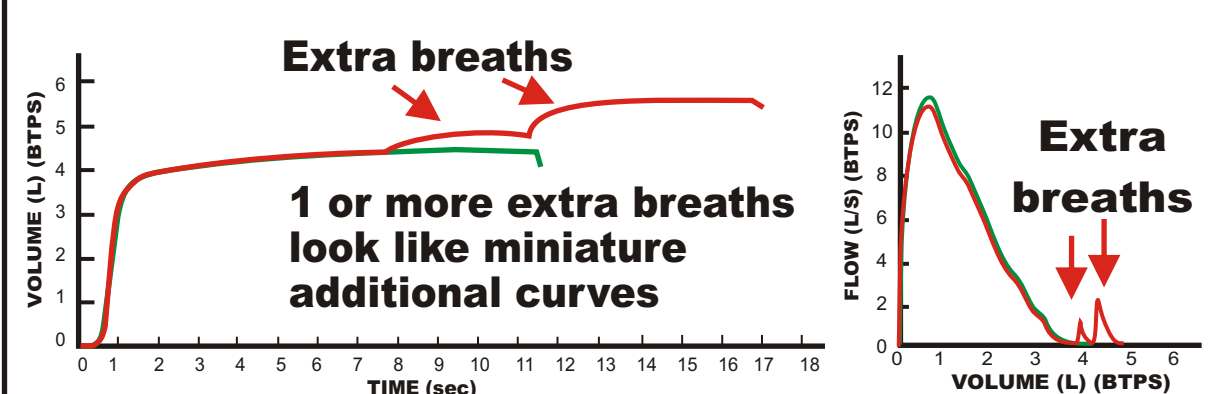
**Negative Zero Flow Error**  
Correction: No airflow through sensor when spirometer zeroing  
Hold sensor upright during test



**Positive Zero Flow Error**  
Correction: No airflow through sensor when spirometer zeroing  
Hold sensor upright during test



**Extra Breaths**  
Correction: DELETE CURVE; Use nose clips and lips tightly sealed



Delivering on the Nation's promise: Safety and health at work for all people through research and prevention.

To receive documents or more information about occupational safety and health topics, please contact NIOSH: 1-800-CDC-INFO (1-800-232-4636) TTY: 1-888-232-6348 email: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov) or visit the NIOSH Web site at [www.cdc.gov/niosh](http://www.cdc.gov/niosh)  
For a monthly update on news at NIOSH, subscribe to NIOSH eNews by visiting [www.cdc.gov/niosh/eNews](http://www.cdc.gov/niosh/eNews). For more information about NIOSH-Approved Spirometry Training go to <http://www.cdc.gov/niosh/topics/spirometry/training.html>