

Background

Spirometry is one of the most common types of Pulmonary Function Tests (PFTs). It measures the ability of the lungs to inhale and exhale, by determining the volume and/or speed of air being inhaled and exhaled by the patient. The Midmark Digital Spirometer produces a graph, or Spirogram, for the provider to review and interpret. Spirometry is an important tool in the assessment, diagnosis and treatment of conditions such as asthma, pulmonary fibrosis, cystic fibrosis, and COPD.


Calibrating the Spirometer

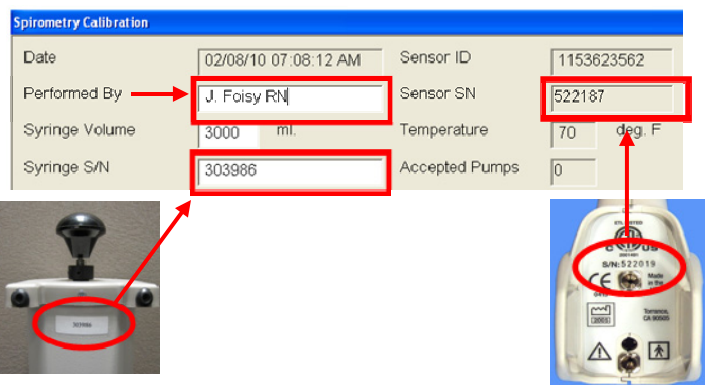
It is necessary to calibrate the spirometer on a daily basis. Various factors such as temperature changes can affect the calibration of your spirometer. The steps below will help you calibrate your spirometer. For additional information please refer to the manufacturer's product manual.

You cannot perform a calibration or Spirometry test without

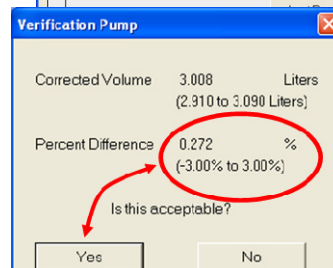
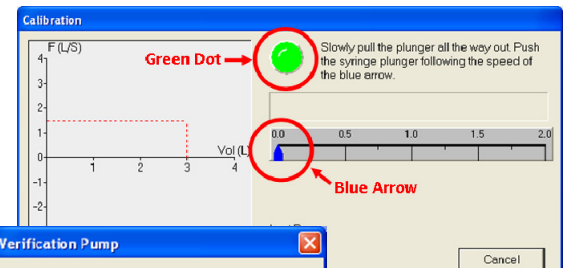
first selecting a patient for the case. You can select a test patient, or create a new test patient named "Spirometer, Calibration". If you are going to include the calibration report with a patient's telemedicine case, you can create a case using that patient's information and include the calibration report as part of the case

Steps -

1. Select a patient (see notes above).
2. Select the **Spirometer** from the add to case screen.
3. Select the **Calibrate** button from the spirometer screen.
4. Select the  from the next screen
5. Enter the information for the person performing the test, the calibration syringe number and sensor number
6. Place a mouthpiece on the sensor and securely place the mouthpiece into the end calibration syringe and select "Start Cal"






7. Wait for the Spirometer to zero out and the green dot to appear in the calibration window. Starting with the plunger all the way in, gently and smoothly pull the plunger out all the way and then push it back in the same manner. Try and follow the speed of the blue arrow on the calibration screen.
8. Three to five attempts will be required and then the Verification Pump window will open. Verify the Corrected Volume value is between (2.910 and 3.090 Liters) & click the "Yes" button. If the corrected volume is out of range, click the "No" button and repeat the calibration.
9. Click the Exit button. Ensure there is a green checkmark in the save box next to the Spirometry Calibration report thumbnail. Click the "Save" button to save the report to the case. Store reports per organizational policy



Patient Testing


Follow your local protocols for all medical testing procedures. The procedures below are only general guidelines based on the use of the MIDMARK IQ Mark Digital Spirometer.

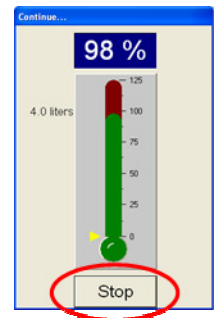
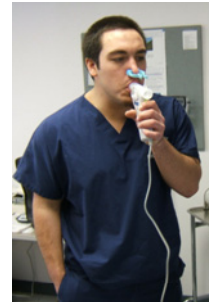
Steps -

1. Select a patient and then click the green Spirometer button. 
2. Select the green Start New Report button. 
3. Enter detailed patient information on the Patient Information screen; yellow asterisks are required information. Check smoker if the patient was ever a smoker, and add how many cig/day and # of years smoked. If patient has quit, check quit box and enter # of years ago that they quit. Click the green Continue Report button. 

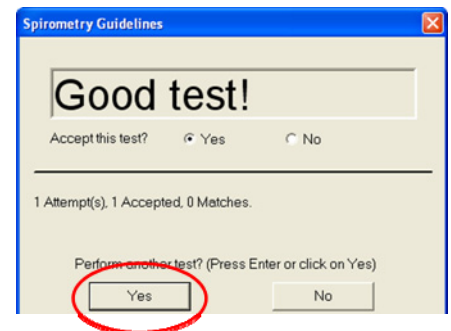
4. Apply the plastic mouthpiece to the Spirometer handle.
Note that the patient blows air in the direction of the arrow.



5. Demonstrate to the patient how to perform the test.
6. Click the Start New Test button  to perform Spirometry testing. Have patient sit or stand, apply the nose clip, and blow out as long and hard as they can. The patient must either inhale at the end of the test or you must click the stop button on the incentive screen.

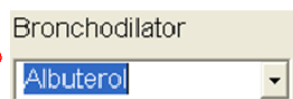


7. Perform testing per organizational policy. After each test the Spirometry Confirmation screen appears. Click "Yes" to accept test attempt, unless an error has occurred. Click the "Yes" button to continue patient test attempts or click the "No" button when all attempts are complete.

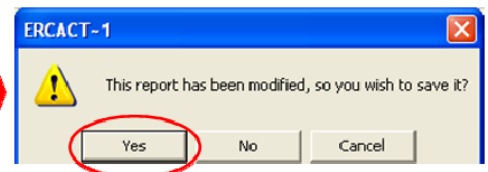




8. Click the Save Review button  & then the green "Save" button  to save the report to the case.

9. **If you want to do Post Bronchodilator testing, don't save the report to the case yet.** Click the Spirometry report thumbnail. Once in the report, click the Medication dropdown and select a medication, click the Perform Post BD button, and click "Yes" to amend the report.



Perform Post BD



10. Perform Spirometry testing per organizational policy. Click the Exit button  and the green "Save" button  to save the report to the case.