To perform a new breath test attach a new mouthpiece to the NObreathFlo™.

2. Attach the NObreathFlo™ and mouthpiece to the device. Ensure all connections are pushed firmly together.

**NOTE:** The monitor must be held upright at all times during a test.

3. To start a breath test, touch the or icon. The unit will beep once.

4. The or icon will appear and the sounder will beep, during which the patient should take a comfortable inhalation of air (DO NOT inhale through the mouth piece and DO NOT inhale through your nose).

5. The icon shall then change to or and the unit shall give a double beep to signal that the patient should start to exhale.

6. The patient should then exhale through the mouthpiece and NObreathFlo™, ensuring that the ball in the flow indicator is held in the middle of the band on the NObreathFlo™.

7. The exhalation time is approximately 12 seconds for an adult and 10 seconds for a child; a progress bar is shown at the bottom of the screen. Patients should continue to exhale until the progress bar has reached its limit. A double beep will sound and then the reading is displayed in ppb (see warnings, page 3).

8. After a patient test has been completed, remove the NObreathFlo™ and mouthpiece from the NObreath®.

9. Remove and dispose of the mouthpiece safely. This should be done in accordance with local waste disposal guidance.

10. The icon shall appear at the end of the test, 60 seconds after the reading is displayed. This allows time for the sensor to settle to zero before the next test.

11. Patients should wait 3-5 minutes between each breath test to allow NO to reform in the airway.

12. Touch to return to the main menu.

13. If no further tests are required, press and hold the on/off button for 3 seconds then release to turn off. The unit will also auto power-off after 5 minutes of inactivity.
Patient preparation

- Avoid alcohol consumption for 24 hours prior to test
- No smoking for 12 hours before the test
- No food or drink to be consumed for 1 hour before the test
- No strenuous exercise to be undertaken for 1 hour before the test

Factors directly relating to asthma

- Exacerbations
- Low ICS compliance
- Poor inhaler technique
- Low asthma control
- Poor adherence

Factors NOT directly relating to asthma

- Bronchial Hyper-Responsiveness (BHR)
- Height, male gender
- Allergen exposure
- Atopy
- Diet
- Holding breath before a test
- Upper and lower respiratory tract infections
- Exercise/hyperventilation
- Cystic fibrosis

Factors increasing eNO

- Increased ICS treatment
- Leukotriene receptor antagonists (LTRA) medication may have an effect on lowering eNO
- Alcohol decreases eNO in asthmatics but not in normal individuals
- Good adherence

Factors decreasing eNO

- Spirometry
- Smoke exposure
- Pulmonary hypertension
- Primary ciliry dyskinesia

Exhaled nitric oxide and the management of childhood asthma – yet another promising biomarker "has been" or a misunderstood gem Turner: Paed Respir Rev 2015; 16:88.


When taking the test:

- Ensure that the NObreathFlo™ and mouthpiece are fitted correctly to the front of the monitor.
- The NObreath® device should be held upright, this helps the patient to maintain the correct flow rate by keeping the ball elevated in the centre of the marked area on the NObreathFlo™.
- Two measurements, within 10% difference of each other, must be achieved before making a final result.
- Patients should wait 3-5 minutes between tests in order to allow NO levels to stabilise.
- Patients should not hold their breath before exhalation, they should take a deep breath in and then a long slow exhalation at 50ml/s as indicated on the NObreathFlo™.