



Measuring lung function in the management of asthma: Peak Expiratory Flow

Peak Flow Measurement

This guide is intended for all clinicians caring for people with asthma.

Objective measurement of lung function is important in the diagnosis and assessment of acute and chronic asthma. Asthma is a disease which is usually characterised by reversible airflow obstruction.

Therefore:

- i) Peak Expiratory Flow (PEF) should be measured at the onset of an acute asthma attack* and regularly during treatment, to assist decision making by; assessing severity; determining the effectiveness of treatment; and demonstrating resolution of the attack. Any improved peak flow rate after bronchodilator use, (>85% of the highest from predicted or previous best in adults and even higher in children), during an attack must be sustained for at least 4 hours after the dose. If not, continued hospital management is required until stabilisation.
- ii) Use PEF (or spirometry) to demonstrate variable airflow obstruction (changing with time, with exercise or with bronchodilator therapy) to confirm the diagnosis of asthma and to demonstrate that the patient has the treatable trait of β -2 agonist reversible bronchoconstriction.
- iii) Wherever possible patients should be encouraged to measure their PEF (or alternatively FEV₁ (first second forced expired volume)) regularly, as part of their personal asthma management plan and to show that preventer treatment is working; and to bring some readings to their asthma review.
- iv) There is no specific test to confirm the diagnosis of asthma and it is not always possible to demonstrate reversible airflow obstruction with Peak Expiratory Flow or spirometry.

References:

- i) BTS/SIGN (2016) <https://www.brit-thoracic.org.uk/document-library/clinical-information/asthma/btssign-asthma-guideline-2016/>
- ii) GINA (2018) <https://www.guidelines.co.uk/respiratory/gina-asthma-strategy/454150.article>

* In very severe attacks attempting lung function could worsen the situation. In such circumstances treatment comes first and when the patient has sufficient “breath” the testing can commence.