

## **Multiple Breath Washout - Site requirement for conducting tests**

1. Adequate and appropriate room to house the equipment
  - Table size approx. 1 x 0.5 m to accommodate the device, panel pc and printer. If possible with a hospital mounting rail.
  - Minimum space for equipment, patient space and operator space - Approx. 6m<sup>2</sup>
  - Mains power – 3 outlets
  - Room must be adequately ventilated and of a stable temperature (fluctuations in temperature should be avoided).
  - Ecomedics machine require oxygen and medical air to run. Options are:
    - Option 1: Piped – preferable. Compressed air and oxygen 3 to 6 bar, 1.5l/s min from a central gas supply within 2.5 metres from the device.
    - Option 2: Large cylinders with two stage pressure regulators: Please see appendix 1.
  - A quiet room where there will be no interruptions during the procedure. Needs to be free from distractions and noise. Availability of a TV would be of benefit as it is useful to distract the patient and encourage relaxed tidal breathing during testing.
2. Adequate room to store associated consumables (calibration syringes, filters, spirettes, mouthpieces). Approx. 1m<sup>2</sup>
3. It is necessary that users have completed adequate training and hold a qualification relevant to the population being studied (i.e. ECFS-CTN for Cystic Fibrosis, Belfast Qualification for Bronchiectasis).
4. It is desirable to have at least two trained operators per site. One person should be nominated to take on additional responsibilities such as: weekly synchronisation and ordering of consumables etc.

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## **Appendix 1**

Option 2: Large cylinders with two stage pressure regulators:

Large cylinders with two stage pressure regulators should only be considered when oxygen and medical air cannot be provided via piped source. A **dual stage** regulator for each cylinder (oxygen and medical air) with the capacity to deliver the required 4 bar pressure will be required (note :- the type that incorporates a flowmeter will not work), it is also recommended that a spare full cylinder is on hand just in case the contents should be used up during an assessment period.

Ordering of gas: Ordering of gas varies from country to country and hospitals normally have a preferred supplier for gases. The main gas suppliers are BOC, Messer Griesheim, Linde, Praxair. Compressed air and oxygen is available from all gas companies.

Storage of cylinders: Gas cylinders needs to be stored in such way, that it's protected from falling. Please contact your technical department.

Regulators for cylinders: Dual stage pressure regulator with adjustable output pressure 4 to 6 bars at min. 1.5 l/s output flow.

Number of tests per cylinder: A 50 l gas bottle (big cylinder) contains 10'000 l of gas. A normal trial takes in average 3 to 5 min, which results in approx. 30 to 40 trials or 10 to 20 complete patient tests for one cylinder of oxygen. The air cylinder may last 5 times longer.

Attachment of cylinders to device: The device is delivered with gas lines. The connection may be to the gas regulator from bottles, or connectors to the wall outlet. This will be done by our local partners during the installation.