THE USE OF NEBULISERS

WHAT ARE NEBULISERS?
■ The word nebuliser comes from the Latin word *nebula*, meaning mist.
■ A nebuliser is a small plastic device that contains a drug in solution. By means of a compressor/compressed gas source, the device converts the drug into an aerosol form.
■ The drug is then inhaled during tidal breathing over a period of between five and 15 minutes at a flow rate most appropriate to the drug being administered (usually 6–8l/min).
■ It is the responsibility of the NHS to provide an adequate nebuliser service if the prescribing physician decides that it is a necessary part of a patient’s NHS treatment.

ADVANTAGES
■ Nebulisers deliver large doses of drug simply and effectively.
■ Using a nebuliser, drugs for inhalation can be administered rapidly to people who are too ill to use hand-held devices such as metered-dose inhalers.

SUITABLE MEDICATIONS
■ Bronchodilators (beta 2 agonists such as salbutamol).
■ Anticholinergics (such as ipratropium bromide).
■ Corticosteroids (such as beclometasone).
■ Antibiotics and anti-fungals (such as tobramycin, amphotericin).
■ Mucolytics (such as dornase alfa).
■ Saline.
■ Other solutions can be delivered to assess airway responsiveness (for example, histamine to measure bronchoconstriction and citric acid to examine the cough response).

DELIVERY METHODS
■ Jet nebulisers are the type most commonly used. A flow of gas passing through a very small hole creates a negative pressure that sucks the solution from its reservoir, forming a mist for the patient to inhale.
■ These nebulisers are used in conjunction with either compressed gas (wall-mounted or cylinder) or a compressor and filter for home use. Nebulisers are also available for use when travelling abroad. These models use dual voltage batteries and can run from a 12V car battery.

MASK OR MOUTHPIECE?
■ A mouthpiece is recommended when nebulising steroids, anticholinergics or antibiotics. When nebulising antibiotics a filter system should be used to ensure they are not released into the atmosphere.
■ Face masks are better for infants, young children, and emergencies.
■ Masks must fit closely to the face.
■ Children’s faces should be washed after nebulising steroids.
■ A mouthpiece is preferable for patients with glaucoma as pupillary dilation can occur if bronchodilators come into contact with the eyes.

INFECTION CONTROL AND MAINTENANCE
■ In hospital nebulisers should be for single-patient use. After use the compressor should be washed in warm soapy water.
■ To avoid cross infection, separate compressors should be allocated to patients who are methicillin-resistant *Staphylococcus aureus* (MRSA) or *Pseudomonas cepacia* positive.
■ Durable nebulisers are available for home use. After each use, the nebuliser, tubing and compressor should be washed in warm soapy water.
■ The compressors have a small air inlet filter that should be changed every nine to 12 months.
■ Many trusts have policies regarding servicing of nebuliser equipment. Maintenance should adhere to manufacturer’s guidelines.

REFERENCES

WEBSITES
General Practitioners in Asthma Group: www.gpiag-asthma.org/opinion5.htm
National Asthma Campaign: www.asthma.org.uk

FURTHER READING


The information given serves as a general reference. Nurses should consult their individual trust policies on clinical procedures.