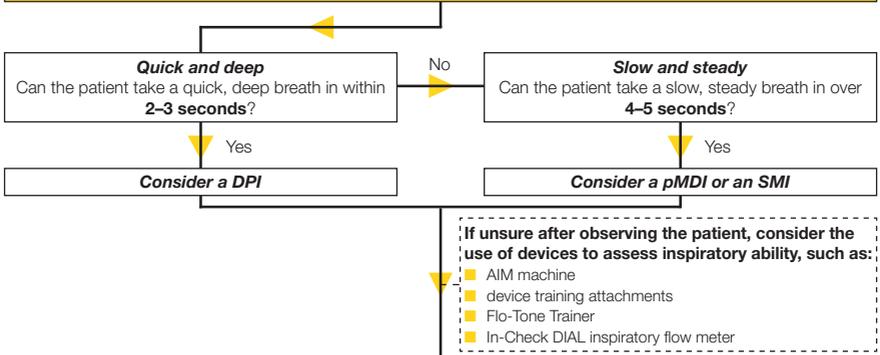


Choosing an appropriate inhaler device for the treatment of adults with asthma or COPD

• Development Group: Usmani, Capstick, Chowhan & Scullion •

This management algorithm was developed by a multidisciplinary expert panel: Usmani et al with the support of a grant from Chiesi Ltd. See page 3 for full disclaimer.

Action 1. Assess patient's inspiratory ability—observe the patient inhaling (using their own inhaler if available)

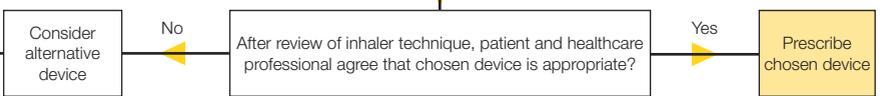


Select required drug formulation once inhaler device type has been chosen, in line with local formulary

Action 2. Patient engagement and inhaler technique

When selecting a specific inhaler device, and at every patient review, reinforce the following seven steps for correct inhaler technique:

- **Preparation:**
 - Check dose counter (where present)—to confirm sufficient doses are remaining, and when replacement may be needed
 - Shake inhaler (if applicable—refer to manufacturer's instructions)
- **Priming:**
 - Prime the device ready for use—refer to manufacturer's instructions for details on how to prime specific devices and how often they may need re-priming
 - Open inhaler/remove cap
- **Exhaling:** Exhale fully and away from mouthpiece
- **Mouth:** Place mouthpiece in mouth and close lips around it to form a tight seal
- **Inhalation:**
 - DPI: quick and deep inhalation (within 2–3 seconds)
 - pMDI/SMI: slow and steady inhalation (over 4–5 seconds)
- **Breath holding:** Remove inhaler from mouth and hold breath for up to 5 seconds, then breathe out slowly
- **Closing and repeating:**
 - close inhaler/replace cap
 - repeat as necessary



DPI=dry powder inhaler; pMDI=pressurised metered dose inhaler; SMI=soft mist inhaler



Inspiratory flow and device type

- Types of inhaler devices include:
 - dry powder inhaler (**DPI**)
 - single-dose (blister or capsule)
 - reservoir multi-dose
 - pressurised metered dose inhaler (**pMDI**)
 - breath-actuated **pMDI**
 - soft mist inhaler (**SMI**)
- Due to device resistance, **DPIs** require a high rate of inspiratory flow in order to deaggregate the powder and achieve the required dispersion for therapeutic effect¹
- Use informed judgement and look for signs that the patient may not be suitable for, or may not engage with, a **DPI** device:
 - discomfort when inhaling (e.g. coughing, exhausted)
 - patients with conditions such as COPD or emphysema, or who are elderly
- **pMDIs** and **SMIs** are aerosol-based devices of low resistance, and so a slow and steady inhalation is optimum to reduce oropharyngeal deposition and optimise delivery into the lungs^{1,2}
- Inspiratory ability may be assessed by using an inspiratory flow meter, for example In-Check DIAL

Patient engagement

Inhaler technique

- Poor inhaler technique is widespread, and is linked to poor clinical control of asthma and COPD³
- When prescribing inhaler devices:⁴
 - **inhaler technique should be reassessed at every opportunity, as part of a structured clinical review**
 - assessment of a patient's ability to use the prescribed inhaler should be carried out by a competent healthcare professional

- an alternative should be found if the patient is unable to use the device satisfactorily

- When discussing steps for correct inhaler technique, refer to manufacturer's instructions regarding steps required for priming and storage of specific devices

Patient dexterity and cognition

- Consider the following when selecting an appropriate inhaler device:
 - is the patient physically capable of carrying out each step of the inhaler technique correctly? For example:
 - do they have sufficient hand-breath coordination?
 - are they able to form a good seal over the mouthpiece?
 - are they able to open, manipulate, and prime the device?
 - does the patient have the ability to remember all necessary steps, and to remember when to take their inhaler? (consider the impact of cognitive impairment)

Key considerations

- Ensuring that patients are comfortable with their device can improve adherence to treatment⁴
- Support the patient in assessing whether they have received the dose, for example (if applicable):
 - checking the dose counter
 - listening for sound from device during correct inhalation
 - being aware of powder/spray taste
- If prescribing an inhaler as part of a treatment combination, aim to limit confusion by prescribing the same inhaler device where possible or, if not, by prescribing inhalers with the same inhalation manoeuvre, i.e. both 'quick and deep', or both 'slow and steady'

- Comorbidities (e.g. obesity or respiratory muscle weakness) and ageing can negatively affect inspiratory flow rate and may cause the patient to have difficulty with using a particular device
- If a patient demonstrates difficulty in using a particular device or with treatment adherence, consider an alternative device that may, for example, have a reduced number of operational steps, include a dose counter, or supports a formulation with a lower dosing frequency
- Make sure carers can assist with using the device if necessary (e.g. relatives, nursing home staff, or homecare team)
- Consider the use of stickers stating the inhalation manoeuvre (e.g. 'quick and deep' or 'slow and steady'), which can be affixed to the patient's inhalers, for example:



- For a list of currently available inhaler devices and their respective drug formulations visit www.arns.co.uk/inhaler-device-summary-resource

about this management algorithm...

sponsor—

This algorithm has been developed by MGP Ltd, the publishers of *Guidelines*, and the expert group was convened by them. Chiesi Ltd was able to suggest relevant experts to Chair the group, with final decisions on the Chair and remaining group members resting with MGP Ltd. Final editorial decisions rested with the Chair. Chiesi Ltd had the opportunity to comment on the technical accuracy of this algorithm but the content is independent of and not influenced by Chiesi Ltd

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