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## White Paper

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## The importance of good inhaler technique

For a medication to work it has to be taken effectively by the patient. This sounds obvious, but for practitioners prescribing inhalers it is not as simple as writing out a prescription. Evidence shows that many patients continue to suffer symptoms unnecessarily and that poor inhaler use and compliance is one of the main reasons for this. There is a wealth of evidence that misuse of inhalers is associated with decreased disease control. Several studies have reported decreased bronchodilator response in patients not using their inhaler correctly. Incorrect use of inhalation drug delivery devices has been reported in the range 46% to 59% – that's half of these patients having critical errors in their inhaler use, which means that they are not receiving the dose of medicine prescribed or often, none at all.

Correct use of inhalers is important because misuse is associated with asthma instability, increased hospital visits, and increased short-acting b2-agonist use. Practitioners must check that patients have mastered the correct use of their inhaler prior to their first prescription for any type of inhaler. The patient's inhaler technique needs to be re-checked at each periodic disease review, especially if there is poor symptom control.

## Choosing the correct inhaler

Selecting the correct device for an individual patient from the many that are available is not easy. There seem to be new combination compounds being released all the time and, of course, the new ones are likely to replace the old ones. Another level of complexity is added by the wide choice of inhaler device and concerns regarding whether the patient can use one type of inhaler more easily than another. If a patient is unable to master the required inhalation technique for a specific delivery device, there are usually other choices for inhalers delivering equivalent drug doses and providing the same clinical efficacy. The most common types of inhaler device available are:

1. Dry powder inhalers (DPI)
2. Pressurised metered-dose inhalers (MDI or pMDI)
3. Breath-actuated MDI (BApMDI)
4. Aerosol holding chamber (commonly called a 'spacer' is often prescribed for use with pMDI inhalers, especially with ICS medicines)

Each type of device requires a different pattern of inhalation for optimal drug delivery to the lungs.

## Common errors by metered-dose inhaler users

- Not exhaling fully before inhaler user
- Inhaling too fast
- Not inhaling fully
- Inhaling through the nose
- Not inhaling for over 5 seconds
- Firing before inhaling (good co-ordination not critical on inhalation but dose has to be released within 1s after the start of the inhalation)
- Stopping inhalation when cold spray hits the throat

## Some ways of solving these problems

- Proper demonstration and training
- Adding a spacer (spacers score low in patient preference)
- Switching to breath-actuated MDI
- Switching to ultrafine particle inhaler

## Common errors by dry powder inhaler users

- Inadequate acceleration on inhalation
- Not inhaling long enough (inhaling too fast)
- Not inhaling all the dose (If the dose is supplied in a capsule then two inhalations may be required to empty the dose)

## Some ways of solving these common problems

- Proper demonstration and training
- Using a mobile phone video to show and correct errors
- Using a sophisticated tester/trainer device to ascertain the patient's inspiratory acceleration

Practitioners must take patient preference into account when choosing the appropriate inhaler device. It is important that a regime is simple for the patient to follow and it is not good practice to mix inhaler device types. Steroid inhaler choice is most important, because of the narrower therapeutic window, so start with this inhaler if more than one inhaler is being prescribed.

## Value of inhaler training

It is vitally important to invest the time to train each patient in proper inhaler technique; this involves one or more of the following:

- Demonstrating the correct techniques with a placebo inhaler of the same type
- Emphasising the important steps (see table below).
- Observing technique
- Getting the patient to observe themselves (e.g. mobile phone video)
- Ensuring the device chosen suits the patient
- Re-checking the inhaler technique on each revisit

## The role of trainer devices

Is there a need for sophisticated inhaler training devices? It is obvious that no inhaled drug can be effective unless it reaches the airways. The GINA guidelines acknowledge that inhalers should be prescribed only after patients have been trained to use them properly and have demonstrated this ability. Incorrect inhaler usage may be a direct consequence of poor instruction and could be improved by effective training and it is here that inhaler training devices can play a valuable role.