

Top tips – greener respiratory prescribing care in children and young people

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The NHS has committed to a reduction of 4% of its environmental impact to meet the Climate Change Act and reduce its carbon footprint by 51% by 2025. One of the ways we can respond to this commitment is to review and prescribe more environmentally sustainable inhalers. Traditional pressurised metered dose inhalers (pMDIs), though lifesaving, use propellant gases and are single use plastic devices that contribute to environmental pollution and global warming.

Dry powder inhalers (DPIs) do not contain hydrofluoroalkanes (HFA) propellants, so from this perspective have less global warming potential in comparison to traditional pMDIs. However, they still incur environmental costs in relation to their production and disposal (sometimes referred to as the life-cycle) and contain plastics that may be hazardous to the environment.

DPIs require children to adapt to a new way of using an inhaler (from tidal breathing via a spacer) and will require appropriate technique. Children ≥ 10 years may be more likely to have the sufficient inspiratory force needed for a DPI.

Safety First - Blanket switching of inhaler devices to more environmentally friendly devices is not good practice. Treatment with inhalers should only be initiated or changed where clinically warranted and with appropriate assessment of inhaler technique by a competent healthcare professional.

Where a new device is prescribed, inhaler technique should always be checked and corrected by a competent healthcare professional. **The greenest inhaler is the one the patient can and will use.**

The following top tips provide some suggestions which may help (adapted from the NHS London Respiratory Network guide and materials from South West London CCG).

1. Ensure correct diagnosis

- In older children where spirometry and peak flow values are available, look for variability to help confirm the diagnosis of asthma.
- Consider anxiety and breathing pattern disorders

Optimal treatment requires early and accurate diagnosis. This is particularly challenging in pre-school wheezers. Patients without a clear diagnosis of asthma should have a clinical review regarding appropriateness of inhaler prescription

2. Review short acting beta agonist (SABA) prescribing

- **SABA over-reliance** must be addressed in patients with asthma. Good control = no more than 2 reliever inhalers used a year¹. Patients with asthma using 3 or more reliever inhalers a year need a thorough asthma review².
- Additional SABAs for schools or alternative homes should be prescribed as one-off acute issues. More information can be found [here](#).
- Initiate new patients on the lower carbon brands of salbutamol – e.g. Salamol®
- If an older child (≥ 10 years) is not using their spacer, consider a salbutamol DPI if they have appropriate inspiratory flow and are assessed and trained to use those devices

In an asthma attack, a child may be unable to use a DPI effectively and may require a spacer with a pMDI.

[According to the PCRS](#), there are advantages of separating out the routine inhaled treatment of asthma from that needed in more acute situations.

When to use MART (Maintenance & Reliever Therapy)

- In a child ≥ 12 years if there's poor adherence to inhaled corticosteroids (ICS), SABA over-reliance is identified, or where you consider it to be most appropriate.

¹ <https://www.pcrs-uk.org/asthma-right-care-slide-rule>

² Bloom CI, Cabrera C, Arnetorp S, etc. Asthma-Related Health Outcomes Associated with Short-Acting β_2 -Agonist Inhaler Use: An Observational UK Study as Part of the SABINA Global Program (2020)

3. Inhaler technique teaching by an appropriately trained inhaler coach

- **ACT: Assess, Choose and Train inhaler and spacer technique:**
 - **Assess** inhaler and spacer technique before starting treatment and regularly throughout treatment.
 - Is the CYP patient ≥10 years and can they take a quick/deep breath in within 2-3 seconds? If yes, then consider a DPI as an option, see your local formulary for inhaler options for information on licensed preparations.
 - For CYP <10 years a pMDI via a spacer is preferred. For children above the age of 4 use a spacer without a mask, except in children with neuromuscular complications, or learning disabilities.
 - **Choose** the right inhaler for the right patient - formulary and patient/carer involvement guiding the decision. Consider reasons for possible non-adherence or difficulties with using inhalers appropriately, such as dexterity, comorbidities, or the impact of cognitive impairment. Consider prescribing a low carbon footprint device and avoid prescribing large volume hydrofluoroalkane (HFA) inhalers such as [Flutiform](#), [Symbicort MDI](#) or [Ventolin pMDI](#).
 - **Train/Teach/Coach** inhaler technique and encourage the use of a spacer whenever possible if using a pMDI (usually a spacer without a mask in children >4). Signpost the parent/carer to available patient training resources such as the [RightBreathe app](#) and [website](#) or [Asthma and Lung UK website](#).
- Offer all patients self-management education that focuses on individual needs and reinforce with a written personalised asthma action plan (PAAP)
- Patients should be reviewed after 4-6 weeks to monitor device satisfaction and symptom control. Refer to the Community Pharmacy New Medicines Service and Discharge Medicines Service when applicable.

Treatments initiated in secondary/tertiary care should not be changed without discussion with the respiratory specialist.

4. Before stepping up or adjusting medications

- Review the child's prescription uptake and adherence to preventer therapy. Your patient should use at least 80% of their prescribed dose (around 10 ICS inhalers a year for those inhalers with enough doses to last one month).
- Check inhaler technique and appropriateness of inhaler as below ([Make Every Contact Count](#)).
- Check cleaning strategy for spacers
- Check smoking/vaping and second-hand smoking exposure and provide advice to parents/child, making appropriate referrals for smoking cessation.
- Check allergen exposure and advice on house dust mite prevention, pets that may exacerbate asthma, mould, housing and living close to major polluting roads.
- Check immunisation status for influenza and Covid vaccine
- Empower patients by helping them to understand their condition and how their treatments work.
- Manage other multi-morbidities e.g. allergic rhinitis

Aim to get good maintenance and control of asthma.

5. Ensure appropriate use and disposal of inhalers

- Reduce waste by ensuring that the repeat prescription only allows one inhaler at a time. [Additional inhalers may be provided as one-off for school or if child's parents live separately](#).
- Where possible use inhalers with dose counters. Where these are not available, educate parents on number of doses in an inhaler and when repeats would be required. The [NHS app](#) may be useful for ordering repeat prescriptions and determining when the next one is due.

Used and unwanted inhalers should be returned to a [community pharmacist for safe disposal](#) in an environmentally friendly way.

6. Steroid Emergency Card

- Emergency steroid card should be issued to patients using high dose ICS depending on age and dose
- The need for high dose ICS should be reviewed unless advised by respiratory specialists

More details can be found [here](#).