

Environmental effect of Inhalers

Crib Sheet for health care professionals

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1. Information that can be shared with patients

The below information can be considered or used in conversations with patients when speaking about the environmental effect of Inhalers and the move to a Dry Powder Inhaler (DPI).

1. The propellants in Metered Dose Inhalers (MDIs) are hydrofluorocarbons and whilst they are not ozone depleting, they are still potent greenhouse gases, thousands of times more powerful than carbon dioxide.¹
2. The most commonly prescribed inhaler in the UK, Ventolin Evohaler has a carbon footprint equivalent(CO₂e) of 28kg of CO₂. That is the same carbon footprint as the greenhouse gas emissions of driving **175miles** from London to Sheffield in a small car. Dry powder inhalers on the other hand typically have a carbon footprint of less than 1kg.²
3. The propellants in MDIs alone contribute to nearly 4% of the *entire* NHS carbon footprint and about 25% of the General Practice prescribing carbon footprint.³
4. Some MDIs do not have a dose counter so patients are at risk of using either an empty inhaler or throwing away a half-used inhaler
5. DPIs do tend to have dose counters so reduced risk of using empty inhaler and waste
6. Spacing devices help make MDIs more effective at getting medication into patients lungs⁴ yet many patients do not use spacers.
7. If concerned about inspiratory flow (e.g. elderly or frail patient- use incheck device to see if a DPI is suitable)
8. MDI inhalers require patients to inhale **slowly** and **steadily** for 3-5 seconds whereas DPI inhalers require a patient to inhale **quickly** and **deeply**
9. NICE has produced a [patient decision aid](#) to help people with asthma and their healthcare professionals discuss their options for inhaler devices, which includes consideration of the carbon footprint of the inhaler.

2. Suggestions on areas to focus on within the GP practice

Further information can also be found in the Green Inhaler Guide on the CCG website (Page 4, Table 1) Data on practice level MDI prescribing (excluding Salbutamol) can be found on openprescribing. https://openprescribing.net/measure/environmental_inhalers/

1	<p>Focus on asthma patients at high risk or with poor control</p> <p>Search for</p> <ul style="list-style-type: none">• Patients who have been admitted or needed oral steroids for asthma in the last year• Patients who are overusing salbutamol (e.g. > 4-6 a year*) <p>Prioritise these patients for a respiratory review focussing on inhaler technique. Offer a DPI if not using spacer with MDI. Consider MART therapy if using one combination inhaler- could aid compliance.</p> <p><i>* Poor control is defined as needing to use a SABA inhaler more than three times a week. This means with good control, patients should need no more than 2-3 SABA inhalers a year. Sometimes patients want to keep inhalers in two different locations. 4 inhalers a year should allow for this.</i></p>
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2	<p>Focus on patients who are using highest carbon footprint inhalers</p> <p>Search for patients using Flutiform and Symbicort MDIs. These inhalers contain the propellant HFA227ea which has a very high global warming potential (GWP) 3,320 times that of CO₂. Have a conversation with patients about switching to a lower equivalent MDI or DPI and use the Green Inhaler Guide for suggestions of DPIs.</p>
3	<p>Focus on switching from Ventolin Evohaler to Salamol (Salbutamol)</p> <p>Salamol MDI has less propellant than Ventolin evohaler. Moving to a smaller volume inhaler means that less harmful propellant is released into the atmosphere (a CO₂ equivalent of 10kg for Salamol versus 28kg for Ventolin). Explain to patients they are receiving the same drug but this preparation is better for environment.</p>
4	<p>Focus on reducing waste:</p> <ul style="list-style-type: none"> • Encourage patients to return used inhalers to pharmacies for incineration which is far better than them going to landfill. • For those patients on separate ICS/LABA and LAMA, could they be put on a 3 in 1 inhaler (ensure all 3 medications are needed) such as Trelegy (DPI) or Trimbrow (MDI)? This reduces the number of inhalers dispensed, makes it easier for patients and is a more cost effective choice for the NHS.
5	<p>Focus on prevention through improved self-management:</p> <ul style="list-style-type: none"> • Download personal asthma management plan from asthma.org - type into it and send via an electronic messaging service such as Accurx • Send information on inhalers with annual review appointment electronically (greeninhaler.org, NICE Patient Decision Aid). • Consider routinely giving patients peak flow meter so they can self-manage better • Inform on links between asthma and air pollution ⁵ • Inform on benefits of exercise, singing⁶

References

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5. Air pollution and asthma <https://www.asthma.org.uk/advice/triggers/pollution/>
6. <http://www.themusicalbreath.com/singing-for-lung-health/>