

The Environmental Impact of Inhalers: Patient Information

South East London Responsible Respiratory Prescribing Group



Climate Change

Climate change is everywhere these days. We hear about how climate change damages the environment in the news, on the television or in magazines. We even see how it affects our weather here in the U.K.

Climate change is driven by greenhouse gases. Each time we light a fire, drive our car or take a plane to go on holiday, greenhouse gases are released into the air. These greenhouse gases contribute to global warming, and this is referred to as our “carbon footprint”.

Some Inhalers Produce Greenhouse Gases Which Harm the Environment

There are two main types of inhaler device: pressurised metred dose inhalers (pMDIs) and dry powder inhalers (DPIs). pMDIs have a much greater effect on the environment compared to DPIs.

Pressurised metred dose inhalers (pMDIs)



pMDIs need a special type of gas to help propel the medication out of the inhaler to create the spray. Whilst these propellant gases are entirely safe for the person using the inhaler, they are not good news for the environment. These gases are powerful greenhouse gases which contribute to climate change.

Because pMDIs need greenhouse gases to work, these inhalers have a **high** carbon footprint.

Dry powder inhalers (DPIs)



Not all inhalers need propellants. DPIs like Ellipta, Breezhaler and Genuair devices do not use harmful greenhouse gases so they are much kinder to the environment.

This type of inhaler has a **low** carbon footprint.

Some Interesting Facts

- pMDIs account for 70% of all UK inhaler prescriptions. The proportion in most other European countries is less than 50%¹
- 3.5% of the NHS's total carbon footprint comes from pMDIs²
- pMDIs have a carbon footprint approximately 18 times that of DPIs³
- If every patient currently prescribed a pMDI was switched to a DPI (where appropriate), this move alone would reduce carbon emissions in the NHS in England by 4%⁴
- Five doses from a pMDI is the equivalent of a nine-mile trip in a typical car⁵

I use a pMDI but I would like to switch to a more environmentally-friendly inhaler. What should I do?

If you use a pMDI but would like to switch to a more environmentally friendly inhaler device, discuss your treatment options with your doctor or respiratory nurse to see if changing would be a good idea⁶.

If you do change devices, you shouldn't notice any difference in your symptom control. However, if you do notice that your breathing control is getting worse, you can always switch back to your original inhalers⁶.

I use a pMDI: What does this mean for me?

There will be no changes to your inhaled treatment without a discussion with your specialist or GP first.

Many factors determine the most suitable inhaler for you⁷:

- The inhaler device must contain the correct medicines to treat your condition
- Your ability to use the device
- Your personal preferences, for example: Would you like to tell how many doses are left in your inhaler? Would you like feedback from your device that you have used it correctly?

Where there are several inhaler device options available to you, you may wish to choose the most environmentally-friendly device (usually a DPI). Cutting carbon emissions is better for the environment and means cleaner air for everyone.

You have a choice in deciding which inhalers you are prescribed. Your specialist will guide you, but the final decision is yours! You will not be forced to choose a particular inhaler device based on environmental impact and people who need to use pMDIs should continue to do so.

How you can help to reduce your carbon footprint from inhaled medicines

If you use a pMDI, make every puff count⁶: It is important to make sure you are using your inhaler correctly. Some people use lots of puffs because they are not using their inhaler properly – ask your community pharmacist or respiratory nurse to help you get the most from your medicines.

Do not over-order your inhalers⁸. Only order a new inhaler prescription when you need to. Do not stockpile because this adds to your inhaler carbon footprint. Use up existing medication first.

Not all pMDIs are equal! Salbutamol (blue) pMDIs with smaller canisters have a third of the environmental impact of salbutamol (blue) pMDIs with large canisters⁸. Speak to your doctor or respiratory nurse about amending your prescription to ensure you receive a salbutamol inhaler with a smaller canister.

References

1. Lavorini F., et al., (2011). Retail sales of inhalation devices in European countries: So much for a global policy. *RespirMed*. 105(7), 1099-103
2. Great Britain. House of Commons Environmental Audit Committee., (2018). *UK Progress on reducing F-gas Emissions* HC 469, 2017-2019 [online]. London: By authority of the House of Commons. Available at: <https://publications.parliament.uk/pa/cm/201719/cmselect/cmenvaud/>
3. Hillman, T., et al., (2013). Inhaled drugs and global warming: time to shift to dry powder inhalers. *BMJ* [online]. 346:f3359. Available from: DOI:10.1136/bmj.f3359
4. NHS., (2019). *The NHS Long Term Plan* [online]. NHS. Available from: <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-1.2.pdf>
5. BBC News., (2019). Use a “greener” inhaler if you can, patients told [online]. *BBC News*. Available from: <https://www.bbc.co.uk/news/health-47800415>
6. British Lung Foundation., (2019). Which inhalers are kindest to the environment? [online]. *British Lung Foundation*. Available from: <https://www.blf.org.uk/your-stories/which-inhalers-are-kindest-to-the-environment>
7. National Institute for Clinical Excellence [NICE], (2020). *Patient decision aid. Inhalers for Asthma* [online]. Available from: <https://www.nice.org.uk/guidance/ng80/resources/inhalers-for-asthma-patient-decision-aid-pdf-6727144573>
8. British Thoracic Society., (2020). Position Statement: The Environment and Lung Health 2020 [online]. *British Thoracic Society*. Available from: [file:///C:/Users/msavage/Downloads/Environment%20and%20Lung%20Health%20Position%20Statement%202020%20\(1\).pdf](file:///C:/Users/msavage/Downloads/Environment%20and%20Lung%20Health%20Position%20Statement%202020%20(1).pdf)



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