# Dr Mark Porter: Never mind the wonder drug: we need to use existing asthma tests better

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Breakthrough. Game-changer. Wonder drug. If only every medical advance so described lived up to its initial hype, but few do. It is too early to tell if fevipiprant — a new pill for asthma that reduces inflammation in the lungs — will be among them. Although the results of a recent trial look promising, it involved only 61 people; a trial involving 850 patients that will give a much more reliable picture of the likely impact of the twice-daily pill will not report for another two years. And there is many a slip ’twixt cup and lip.

Still, there are less newsworthy advances in the field of asthma that could make a difference simply by ensuring that doctors are prescribing the drugs that already exist as effectively as possible. And there are two well-established methods of doing just that — measuring nitric oxide (NO) levels in the breath, and taking a simple blood test.

The standard way of tailoring asthma medicines to an individual’s needs is to assess symptoms such as cough, wheeze and shortness of breath, and to measure peak flow (the speed at which they can breathe out). However, while both are helpful, they are surprisingly crude measures of the underlying state of their airways. And the primary problem in most people with asthma is inflammation of the lining of the airways.

Inflammation causes swelling and narrowing, increasing resistance to airflow and making the muscular airway walls irritable and prone to constricting, further exacerbating the problem. Treatment is aimed at relieving the inflammation through anti-inflammatories such as steroid inhalers (preventers), and relaxing the airway wall with drugs like Ventolin (a reliever). If the symptoms and peak flow aren’t always a reliable reflection of airway inflammation, how do you optimise a patient’s drug regimen to ensure that they are getting enough drugs to keep them free from coughs and wheezing, while not overdoing it and risking side-effects (a real problem when resorting to steroid tablets)? And there is no point in prescribing more preventers — the standard approach to troublesome asthma — if the airways aren’t particularly inflamed (as happens in some difficult to treat cases). This is where the NO and blood tests come to the fore.

NO is a by-product of inflammation and the amount on your breath is an accurate guide to the state of the lining of the airways. Testing takes a few minutes using a desktop device similar to a breathalyser. The National Institute for Health and Care Excellence (NICE) already advocates NO testing in the diagnosis and management of adults and children with asthma, but few GP surgeries have the equipment. Although this is likely to change soon if pilot studies testing the technology prove as successful as most experts expect. Expect to see NO testing at your surgery soon.

The blood test — which looks for tell-tale changes in white cells that accompany inflammation — exists in every GP surgery, but remains underused. I expect that to change too.

How do these tests help the millions of people in the UK taking asthma medicines? First, they confirm the diagnosis and allow doctors to treat the condition properly, reducing the impact of the disease. Just as importantly, they highlight why things are going wrong.

One in five cases of asthma are difficult to treat whatever therapy you use, and that is partly down to the patient not taking their medication properly. Sometimes they don’t understand their regimen, sometimes it is because they can’t use their inhalers properly, and sometimes it is because they are on the wrong drugs.

Whatever the reason, these new tests will pick up the problem and allow doctors to act accordingly. There is no point in increasing doses of drugs if they are not being taken properly. And there is no point in increasing steroids if there is no underlying inflammation (as happens in a less common form of asthma).

If you have poorly controlled asthma but are not sure why, ask your doctor about nitric oxide and blood tests.

### WHAT ARE THE OPTIONS FOR DIAGNOSING ASTHMA?

* Fractional exhaled nitric oxide (FENO) testing is widely used in hospital asthma clinics but has yet to trickle down into general practice. Each test costs about £10
* The blood test (full blood count) is readily available, and an increase in the number of white cells (eosinophils) also indicates inflammation that is not as well controlled as it might be
* For more information on tests used to diagnose and monitor, visit [asthma.org.uk](https://www.asthma.org.uk/)

**Q&A**

**Q I was intrigued to read that most Olympic athletes use caffeine to enhance their performance. While I am no Olympian, I am a keen runner. Would I notice any benefit?**

**A** There is evidence that caffeine boosts athletic performance and improves times. Put simply, it enables you to go harder and faster for longer, but only in endurance events such as running and cycling. It is unlikely to make you any quicker over 100m.

You need to take the right dose at the right time to derive any benefit. A review by the American College of Sports Medicine suggests that anywhere between 3 and 9 mg per kilogram of body weight is most effective, but I would stick to the lower end of that threshold. So if you are keen to experiment and weigh 70kg, try a strong double espresso two to three hours before a long run. Blood levels peak after an hour, but the metabolic effects take a bit longer to kick in.

It won’t help everyone and may hinder some (due to side-effects ranging from palpitations to abdominal cramps). And the more often you drink coffee, the less likely you are to get a boost because your metabolism quickly adjusts to it.  
**If you have a health problem, email**[drmarkporter@thetimes.co.uk](mailto:drmarkporter@thetimes.co.uk)