

# Primary Care Respiratory Academy 2021



## Clinical Webinars 1 & 2 Q&A

### PEAK FLOW

**When doing peak expiratory flow rate (PEFR) diaries, do we work on the highest or lowest readings over a set period? Or is it the daily diurnal variation percentage we use? Is there a link for the calculation? How do I interpret variability tests?**

Here is a really useful article to explain peak flow which includes calculating variability: [https://www.pcrs-uk.org/sites/pcrs-uk.org/files/Spring\\_2017\\_PCRU\\_GTBR\\_PeakFlow\\_0.pdf](https://www.pcrs-uk.org/sites/pcrs-uk.org/files/Spring_2017_PCRU_GTBR_PeakFlow_0.pdf)

**Can we use the Asthma Control Test (ACT) score and 4 weeks of PEFR as evidence of asthma diagnosis (in the absence of spirometry and fractional exhaled nitric oxide (FeNO) accessibility)?**

The guidance for quality and outcomes framework (QoF) payment requires spirometry and one other objective test. However, the BTS guidelines do not say this is necessary to diagnose patients. NICE guidelines suggest that every adult patient diagnosed with asthma have both spirometry and FeNO to support a diagnosis of asthma. So, it depends what you are looking at in 'required evidence.' Here are the notes from QoF: AST006:

The percentage of patients with asthma on or after 1 April 2021 with either:

1. A record of spirometry and one other objective test (FeNO or reversibility or variability) between 3 months before or 6 months after diagnosis; or
2. If newly registered in the preceding 12 months with a diagnosis of asthma recorded on or after 1 April 2021 but no record of objective tests being performed at the date of registration, with a record of spirometry and one other objective test (FeNO or reversibility or variability) recorded within 6 months of registration.

**Sometimes a patient's peak flow gets worse when repeated. Could you explain why that happens (seen mostly in asthmatic when exacerbated)?**

This can be one of a number of things. It might be that the patient has not mastered the technique of peak flow, so repeated attempts achieve a variety of results. In the case of such a person who is symptomatic, particularly during an exacerbation, it is likely that the person simply does not have the stamina to produce consistent results.

Bear in mind that with spirometry, the suggestion is that you do not exceed 8 blows as that can induce bronchospasm but with peak flow, I would not expect that to be the case with 3 blows unless the patient is unwell.

**Should we be doing peak flows during asthma reviews during the COVID-19 pandemic? Can you provide some guidance on when we might potentially restart using PEFR & In-Check Dial in annual face-to-face asthma reviews?**

Peak flow can now be used provided it is safe for the clinician and the patient. That means using the patient's own peak flow meter (or supplying them with one to use), performing it outside if possible or through an open window with the force of the blow going outside. Bear in mind there is no filter being used to forced air will blow through.

With regards to In-Check, there is no guidance available, but as the patient must inhale through it with no filter, they cannot be used at present. Use other methods to check inhaler technique or to help decide on the best device for a patient. In-check does not check inhaler technique, it only checks inspiratory flow rate.



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### TESTING, FeNO, SPIROMETRY

#### How long after a course of oral corticosteroids (OCS) can FeNO be tested?

I am not aware of any evidence to support this. A raised FeNO is an indicator of eosinophilic airway inflammation, which OCS would suppress. So once OCS has stopped it there would need to be enough time for it to build back up again.

#### What other factors affect FeNO results?

Nitrous oxide is produced by the mucous membrane of the lungs (we all produce some) so those with a larger surface area are likely to produce slightly more. Men typically have larger lungs than women and taller people have larger lungs than those who are shorter. Therefore a tall man might produce more than a short woman.

Other factors include respiratory infection (inflames the mucous membrane), dietary nitrates (e.g., from celery, beetroot, leeks, leafy green vegetables which can increase levels probably within 3 hours of eating), as well as hot drinks, caffeine and alcohol (which can raise levels within an hour). Physical exertion and smoking can decrease levels.

An evidence review of these factors from 2014 concluded that most factors only had a small and clinically non-significant effect. It is worth noting these factors during a consultation and consider them when thinking about the result in a diagnostic context.

Bjermer L, et al. Current evidence and future research needs for FeNO measurement in respiratory diseases. *Resp Med*. 2014 Jun;108(6):830-41. <https://pubmed.ncbi.nlm.nih.gov/24636813/>

#### How long should a patient stop their inhaled corticosteroid (ICS) before FeNO or spirometry?

I would not routinely stop ICS. Instead, I would try to record FeNO before starting ICS. By stopping there is a risk the patient will become symptomatic. If it is stopped, FeNO will rise as eosinophilic airway inflammation builds up. This usually begins within 48 hours of stopping ICS. To return a patient to levels pre-ICS, this article suggests two weeks:

Lipworth BJ, Jabbal S. Un-diagnosing persistent adult asthma. *Eur Respir J*. 2017 Nov 2;50(5):170143. <https://pubmed.ncbi.nlm.nih.gov/29097435/>

#### What guidance could we put forward to GPs for restarting spirometry?

The PCRS/ARTP guidance can be found here: <https://www.pcrs-uk.org/news/new-update-spirometry-guidance>.

#### What are your opinions on the latest QoF recommendations and requirements that spirometry must be done to diagnose asthma between 3 months prior and 6 months after diagnosis? How realistic is this?

This will be difficult whilst we are trying to restart spirometry and are dealing with the huge backlog of patients waiting for spirometry. A move to local diagnostic hubs for diagnosis of breathlessness at the PCN level (currently being called spokes) will ensure people with symptoms get the right diagnosis in a timely fashion.

#### What level of eosinophils are considered a red flag and what are the likely causes?

The normal range for eosinophils is 0–0.4 so anything outside of this needs considering in the context of the patient. Here is some useful information on eosinophilia: <https://patient.info/doctor/eosinophilia>.



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### EXERCISE & ASTHMA

#### Is exercise induced laryngeal obstruction (EILO) a similar pattern to the same as vocal cord dysfunction?

Inducible laryngeal obstruction (ILO) is the more recent name for what was termed vocal cord dysfunction (VCD). This can be triggered by exercise as well as stress or inhaled irritants.

#### Would you say anyone needing salbutamol before exercise has poorly controlled asthma?

In general, if someone is having to use an inhaler before exercise that would indicate that their asthma is not well controlled or that they are using the inhaler as a placebo. If using a short-acting beta agonist (SABA) very regularly, this might also suggest hyper-responsiveness.

#### Is exercise-induced bronchoconstriction (EIB) different from asthma? Or do they always co-exist?

Exercise-induced bronchoconstriction (EIB) is defined as a transient narrowing of the lower airway *after exercise* in the presence or absence of clinically recognized asthma. EIB is thought to occur in 5–20% of the general population and is reported to occur in almost all people with asthma, especially those with more severe or uncontrolled asthma.

#### For EIB, when should SABA be used?

EIB typically develops within 15 minutes following at least 5–8 minutes of high-intensity (>85% of maximal voluntary ventilation) aerobic training and spontaneously resolves within 60 minutes. It will not be prevented by SABA before. It would be important to assess carefully – manage asthma appropriately to gain control. If purely EIB with no asthma, some people may use a beta agonist or a short-acting muscarinic antagonist.

#### Does EILO affect peak flow?

The use of a peak flow for diagnosing inducible laryngeal obstruction is not reliable. Remember that a peak flow reading is effort-dependent and EILO may be present in someone with asthma.

### ALLERGIES

#### When should we test for allergies?

A very good question – but not one that is easily answered with a fully day education event! However, I would suggest checking the advice from the BTS/SIGN on asthma and the BSACI on allergic rhinitis:

<https://www.sign.ac.uk/sign-158-british-guideline-on-the-management-of-asthma>

<https://www.bsaci.org/guidelines/bsaci-guidelines/rhinitis-2017-update/>

#### Where does grass pollen desensitisation/immunotherapy fit into treatment of asthmatics who are allergic to grass pollen (or dust mites)? HDM immunotherapy is mentioned in GINA steps 3/4 but if someone is allergic, would it not make sense to desensitise?

Another good question. The GINA strategy is a global strategy – though most of use are using guidelines in the UK and we have good guidelines with NICE and BTS/SIGN. If you have a patient who has difficult-to-control asthma that is clearly linked to a specific allergen, it would make sense to manage this appropriately. In primary care, we would refer to a specialist colleague for this type of consideration.



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### TREATMENT

#### **What advice can you give for pregnant patients that are still symptomatic despite treatment, good technique and adherence?**

Pregnancy can cause people with asthma to become more symptomatic and whilst many remain well, those with increasing symptoms will need to be reviewed. If the person has good inhaler technique and is adherent with treatment, then an increase or step up in medication is likely required. If poor control persists and the person remains symptomatic despite increased treatment, referral to a respiratory specialist may be necessary. Some areas offer joint antenatal/respiratory clinics.

#### **What group of patients would you recommend for a maintenance and reliever therapy (MART) regime and where can I find a good MART care plan?**

MART is a useful regime for many patients. The key to success is to make sure the person is given a clear explanation of the regimen and why they no longer need a separate inhaler.

People already prescribed an inhaled steroid but with poor control (having checked inhaler technique, adherence to prescribed inhaled steroid regime, and the presence of new or increased triggers) can be prescribed a MART regime as can those on a fixed dose of a combination inhaler.

People who would require a more cautious approach to using a MART regime would be those who, despite being given a clear explanation, do not understand the regime, those who are habitual rescue inhaler users (although with education can be considered) or those who, having been given the information on MART chose not to use it.

Some companies who manufacture inhalers with a MART license will offer a clear self-management plan or the Asthma UK plan can be used. There are boxes at the bottom of each section of the plan for MART advice.

Asthma UK has information for patients on their site: <https://www.asthma.org.uk/advice/inhalers-medicines-treatments/inhalers-and-spacers/mart/>

#### **For patients who use a spacer, how many breaths would be needed to get the best from the inhaler?**

This depends on the inhaler technique (slow tidal breathing or breath holding), the size/lung capacity of the patient (infant, adult or child) and the spacer used (large or small volume). An adult patient using a small volume spacer such as an Aerochamber and a breath-holding technique should only need 1 breath per puff. An infant using a spacer would need to breath in and out more times.

Advice on inhaler techniques for spacers can be found here:

<https://www.asthma.org.uk/advice/inhaler-videos/tidal-breathing/>

<https://www.asthma.org.uk/advice/inhaler-videos/single-breath-and-hold/>

#### **If started on Montelukast, can they stay on it for a long time if it is effective?**

Yes, they can but as with all asthma medications, they should be regularly reviewed with consideration to reducing or stopping unnecessary medication if appropriate. Asthma is a variable condition so reducing or stopping any medications can be considered if the person has been stable or asymptomatic for some time.



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### TREATMENTS (continued)

#### What is an acceptable number of SABA inhalers per year for a patient?

One of the indicators of good asthma control is that a person needs to use little (< 2 doses a week) to no rescue medication. Anyone needing 2 or more rescue inhalers a year could have poor asthma control. Practice searches may indicate numerous patients being prescribed more than 2 inhalers so it would be sensible to start by reviewing the highest users (> 12 inhalers a year) and working down through the patient list in order of use.

An excellent resource to calculate doses per day/week/month/year is the PCRS Asthma Right Care slide rule: <https://www.pcrs-uk.org/asthma-right-care>

#### If SABA is recommended and they are using 3 or 4 times a week as they exercise, would you not initiate ICS?

Exercise induced asthma is likely to be linked to underlying airway inflammation so starting a low dose inhaled steroid would be an appropriate action.

It is worth asking why the person uses a SABA when they exercise – is it because they have symptoms of asthma that don't settle after a couple of minutes of rest? Or that they are simply breathless from exertion and this settles if they rest (normal physiological reaction)? Or that they routinely use SABA pre-exercise because that is what they were advised to do?

If the person has symptoms that are likely to be features of asthma and the doses are to relieve symptoms, then an inhaled steroid is likely to be beneficial.

#### Would you prescribe a SABA after an initial consultation of suspected asthma or together with an ICS?

The priority treatment for suspected asthma is to start regular inhaled steroids to control the airway inflammation. For those with milder symptoms this may be sufficient but consideration for the safety of the person presenting has to be made. Are they likely to suffer an acute episode? The guidelines suggest we begin with an inhaled steroid with the option of a PRN SABA.

International GINA Guidelines also offer the option of starting a patient on a MART regime along with other options that are not currently licensed in the UK.

The priority for all people being prescribed asthma medication has to be understanding what asthma is and how the different inhaled medications work. This is especially important at the beginning of the journey as a clear understanding will help the person to manage their condition in the longer term and is likely to encourage adherence with any preventative treatment.

#### What is an indication for specialist referral in occupational asthma?

All patients with suspected occupational asthma should be referred to a respiratory specialist for confirmation of the diagnosis, treatment and occupational advice.

You can find additional information here: <https://www.brit-thoracic.org.uk/quality-improvement/clinical-statements/occupational-asthma/>



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### TREATMENTS (continued)

#### **When should we use dry powder inhaler (DPI)? Given the climate crisis, do we have a duty to do this as standard practice? Who should not use DPI?**

Climate change is a problem we all need to consider. Inhaled medications account for 4% of the NHS carbon footprint. That said, DPIs are not appropriate for all patients at all times. A person needs to be able to perform the right inhalation technique consistently to use any device. DPIs require a forceful, deep, fast inhalation and a breath hold and not all people will be able to use them (e.g., some elderly patients and most young children).

Mass switching of inhaler devices without reviewing people to explain and check inhaler technique is not a recommended strategy as there will be patients who are unable to use DPIs and could suffer poor control as a result.

The environmental effect of the device should be considered at the points of initial prescribing, reviewing symptomatic patients that need a prescription for a new medication, or at face-to-face/virtual review after discussion with the patient. As with all prescribing decisions, we should be coming to shared decisions with our patients once they have the correct information on which to base a decision.

The environmental impact of respiratory care is much wider than the inhalers we prescribe – prevention, diagnosis and treatment are all areas where we can deliver greener respiratory care without detriment to our patients.

Check out the PCRS Greener Respiratory Healthcare for information and resources:  
<https://www.pcrs-uk.org/greener-respiratory-pathway>

### UNCONTROLLED OR SEVERE ASTHMA

#### **Do some patients have to live with severe asthma? Or should you always be able to achieve control?**

In the current environment at national level asthma interested clinicians would recommend that anyone who is not controlled is seen by a respiratory specialist with an interest in severe asthma (there are a few regional centres around the UK).

#### **In already diagnosed patients with asthma, how do you differentiate between severe asthma and other causes of respiratory disease? When would you start investigating other causes?**

This is really about using clinical judgement. If we see a patient in primary care with an asthma diagnosis and ongoing symptoms, we need to think:

- a) Do they really have asthma?
- b) Are there other reasons for their symptoms?

If you are not sure and patients have significant symptoms, then it would be appropriate to investigate or refer.



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### REFERENCES & RESOURCES

Article to explain peak flow including calculating variability:

[https://www.pcrs-uk.org/sites/pcrs-uk.org/files/Spring\\_2017\\_PCRU\\_GTBR\\_PeakFlow\\_0.pdf](https://www.pcrs-uk.org/sites/pcrs-uk.org/files/Spring_2017_PCRU_GTBR_PeakFlow_0.pdf)

PCRS/ARTP guidance : <https://www.pcrs-uk.org/news/new-update-spirometry-guidance>.

Useful information on eosinophilia: <https://patient.info/doctor/eosinophilia>.

BTS/SIGN on asthma: <https://www.sign.ac.uk/sign-158-british-guideline-on-the-management-of-asthma>

BSACI on allergic rhinitis: <https://www.bsaci.org/guidelines/bsaci-guidelines/rhinitis-2017-update/>

Asthma UK resources:

<https://www.asthma.org.uk/advice/inhalers-medicines-treatments/inhalers-and-spacers/mart/>

<https://www.asthma.org.uk/advice/inhaler-videos/tidal-breathing/>

<https://www.asthma.org.uk/advice/inhaler-videos/single-breath-and-hold/>

PCRS Asthma Right Care slide rule: <https://www.pcrs-uk.org/asthma-right-care>

Occupational asthma: <https://www.brit-thoracic.org.uk/quality-improvement/clinical-statements/occupational-asthma/>

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