

Spirometry Factsheet – October 2023

The following factsheet has been designed to support you as you progress through your spirometry learning. This factsheet will be provided to you every month after each tutorial.

New to the programme?

Please ensure that you have viewed the meet and greet video for those of you working through the Spirometry Online blended learning with ARTP and the Spirometry Refresher Programme with ARTP.

Support Available

We have changed the way you can contact us to ensure your questions and queries are managed effectively. If you have a question or query, please can we ask that you access the following link and complete the form rather than emailing us. A member of the team will contact you. Alternatively, you can use the form if you would like a particular topic to be covered at the monthly tutorial.

https://forms.office.com/Pages/ResponsePage.aspx?id=VsTAAthQqkWkgjh96Vc-WY9ZFgW_JFBDmuyqYm8_KopUMTBUNIIJMVVVRTZXSDY3R0JJCQ0xJUDZKVC4
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Your monthly tutorial

We are continually looking to review the way in which we deliver the course. We want to ensure that each monthly tutorial is catered to the learning needs of our learners. Therefore we are changing the names of the tutorial so that you can be really clear around which tutorial you would like to attend. These will now be:

- **Performing**

These sessions are designed to provide you with an overview of how to perform spirometry. Here we will be discussing key components such as calibration and verification as well as providing some key hints and tips to support your patient getting ready to undertake spirometry.

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- **Performing and Reporting (interpreting)**

These sessions are designed for those learners who will be involved in performing spirometry and reporting (interpreting) on spirometry traces. We will cover a step-by-step process on how to report (interpret) a basic spirometry trace. You should attend this tutorial if you are confident on performing spirometry and are ready to report (interpret) a spirometry trace.

- **Reporting and getting ready to undertake your ARTP certification**

These sessions are designed for those learners who are nearing completion of their spirometry eLearning and are ready to apply for their ARTP certification (assessment). Within this tutorial we will be covering how to report (interpret) more complex traces and providing you with hints and tips to the ARTP certification process.

Please ensure that you have attended the performing and performing and reporting tutorials.

Occupational Health

These sessions have been designed for those learners who are operating outside of primary and secondary care and are currently operating in the following area of practices Army, Ministry of Defence and occupational health settings.

Which tutorial to attend?

These tutorials are rolling and therefore as you work through your programme, you can move from one tutorial to another so for instance you can attend the performing tutorial initially. Once you are confident with performing spirometry then you can attend the performing and reporting tutorial and so on.

There will be an opportunity to ask questions during the monthly tutorials; any questions that may come in advance and are not covered on the rolling programme, will be addressed on the day.

How to I work through the Spirometry Online blended learning programme?

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The Spirometry online blended learning programme consists of eLearning units and monthly tutorials. We encourage you to work through the chapters in a linear format so that you gain a thorough understanding of the spirometry process. Depending on your role in spirometry you may wish to spend more or less time on some chapters versus others. Please check your welcome pack for further details. **Please note this does not apply to those of you on the Spirometry Refresher programme.**

I am completing the Spirometry Blended Online Programme with ARTP certification. Do we have to complete the eLearning before we access the ARTP certification?

Education for Health's learning is independent of the ARTP assessment. We would recommend that you apply for your ARTP once you have completed all the eLearning chapters and have undertaken practical training in your area of practice.

Frequently Asked Questions (FAQs):

The Association for Respiratory Technology and Physiology (ARTP) have put together a number of FAQs: <https://www.artp.org.uk/Spirometry-FAQs> **These were updated by the ARTP in February 2023 so please do access them.**

Spirometers

If you have any questions around spirometers, we encourage you to contact the manufacturers in the first instance. Education for Health does not endorse any particular spirometer for use in the clinical situation. For advice re: suitability of spirometers, please refer to the manufacture's website for detail of the variety and performance of their products.

Questions from October 2023 on-line Tutorial

Q. I am doing the biological control calculations - I am aware that you use the mean measurements from the best blows (FV, FEV1, FVC) - this isn't always the same as the highest PEF - do you need to use the PEF that corresponds to the best blow, or can you use the highest PEF to calculate your mean value and ranges?

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The biological control provides the parameters of verification of the equipment, rather like the verification /calibration syringe. Obtain 10 measurements over 10 sessions on consecutive working days. Record the mean and upper and lower limit 5% for each index. This establishes the upper and lower limits for each index within which all subsequent values should fall. The PEF is no different, calculate the mean and use the 5% upper and lower limits. The biological control is setting the parameters.

<https://www.artp.org.uk/resources/827270f6-0d65-4c4d-ac4f-e27d08d5bf41>

Q. Our spirometer does show the z score but doesn't print this on the test. Will this be OK for submissions for biological control and patients tests? I have contacted spiro lab and it can't be changed for it to include this when printing.

Both the ECCS and GLI prediction values are acceptable, though the ARTP encourage the use of GLI prediction values using the z-score. You will have the ECCS on your reports.

Q. How do we calculate the z-score if our machine doesn't calculate it?

There are many examples of how to calculate the z-score using an excel spreadsheet available online. Education for Health are not able to recommend one above another.

Q. For positive reversibility they talk about 400mls or 12%, what percentage are you looking for?

It is important not to confuse the two examples. BTS/SIGN (2019) "In adults with obstructive spirometry, an improvement in FEV1 of 12% or more in response to either β 2agonists or corticosteroid treatment trials, **together with** an increase in volume of 200 ml or more, is regarded as a positive test.

Some people with COPD can have significant reversibility. An improvement of greater than 400 ml in FEV1 strongly suggests underlying asthma. In children, an improvement in FEV1 of 12% or more is regarded as a positive test".

Q. What would it mean if the FEV1/FVC and the FEV1/VC were normal, but the FEV1 is reduced – z-score below -1.645.

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Typical spirometry findings in restrictive lung disease include:

- Reduced FEV1
- Reduced FVC
- FEV1/FVC ratio normal.

Q. Our spirometer specifies the quality of the blows, do they all need to say good blow to be able to use? Often get them saying things like slow filling, low final inspiration etc.

To confirm quality assured spirometry, it is important to look at the quality of the blows. If the patient is not able to perform a blow which is free from errors, the person performing the spirometry should record why it was not possible; this ensures the person reporting the spirometry results is aware of the clinical situation and circumstances.

Q. I don't do any inspiratory blows – is there ever any need for this in a primary care setting.

This is not routinely undertaken in primary care settings

<https://www.england.nhs.uk/wp-content/uploads/2020/03/spirometry-commissioning-guidance.pdf>

Q. So with a z-score, would I just report with the LLN 63?

Please revisit the ARTP statement on pulmonary function testing (2020), to remind yourself of the importance of the z-score, the mean value, standard deviation (SD) and the LLN 1.645.

Q. If not all 3 PEF within 40mls, should you omit from portfolio?

It is important that both in clinical practice and for the ARTP portfolio, quality assurance is confirmed. The 3 best PEF should all be within 40L/min.

Q. I'm confused about the verification log, what is it that we have to document?

Please see the link below for an example of a verification log for clinical practice and for your portfolio.

<https://www.artp.org.uk/2020-conference-presentations/spirometry-assessment-portfolio---calibration-log-with-3-flow>

Q Should I use the BEST PEF of the three blows, even though it's not the same blow as the VC?

The best VC, FVC, PEF should be reported from whichever blow measured the best. They do not have to come from the same blow.

Q For the spirometry refresher course with access to ARTP accreditation, do I need to do a portfolio?

If you are applying for ARTP certification, the portfolio is mandatory for candidates undertaking all certificate levels.

Q Our report doesn't include all three blows of VC and FVC. Can I print out or hand write these results in the portfolio?

You will be required to print as evidence of the quality of the VC. It is not acceptable to hand write the results as evidence.

Q So if I have FEV1/FVC z-score 0.44, but FEV1 -1.65, VC 1.7 and FVC 1.9 and PEF -2.59 does this show restrictive picture? Even though % pred all above 80%

It is important that you do not extrapolate results from one set of reference equation i.e., ECCS which uses % predicted with z-score which refers to LLN.