

Spirometry Factsheet – June 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
[u](#)

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.

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

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 June on-line Tutorial

Q. Please can you clarify Is the z score used for the ratio or is it only for the FEV1 severity?

ARTP Statement on Pulmonary Function Testing 2020

"Severity classification in airflow obstruction is a two-stage process:

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► The FEV1/FVC (or FEV1/VC) must be below the LLN (z-score < -1.645) to be classified as obstructive.

► Severity grading is then based on the FEV1 z-score with the exception that the mild classification would include any FEV1 z-score.

For more information, please see Table 2 Severity grading based upon z-score thresholds ARTP Spirometry Standards Document V3 May 2023

Q. For MCQ we use the Z-score and LLN in FEV1, FVC and ratio to support diagnosis of obstruction or restriction. But do we use the NICE guidelines to grade severity of obstruction?

The ARTP confirms:

“There will be 2 types of questions within this examination, questions that require a single choice answer and questions that require multiple answers”.

“The exam will refer to the most recent spirometry guidelines; this includes but is not limited to the ARTP statement on pulmonary function testing (2020) ...NICE Asthma ...COPD guidelines”

Q. z-scores diagnostic of COPD for instance

Spirometry is the recommended objective test performed to identify abnormalities in lung volumes and air flow.

It can detect the presence of airflow obstruction, as well as the degree of reversibility achieved with bronchodilator treatment.

It can also detect restrictive defects in lung function.

Respiratory diagnosis is based on a clinical assessment of the patient using a structured approach.

Q to get it clear in my head the LLN for the FEV1/FVC ratio is always a z score of -1.64?

ARTP Statement on pulmonary function testing 2020: “A Standardised Residual (SR) is a dimensionless number which states how many Standard Deviations the subject’s value is from predicted and this is identical to a z-score.

A negative SR means the result is below predicted.

An SR value of 0 means the result is identical to the predicted.

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So, an SR of -1.645 puts the result on the fifth percentile **and is at the LLN.**

Q So when doing pre and post bronchodilator, you compare the best from each? Rather than looking at them all collectively

NICE (2021)

Regard an improvement in FEV₁ of 12% or more, together with an increase in volume of 200ml or more, as a positive test (17 years and older). Regard an improvement in FEV₁ of 12% or more as a positive test (aged 5 to 16)

BTS/SIGN (2019)

In adults with obstructive spirometry, an improvement in FEV₁ of 12% or more in response to either β 2 agonists or corticosteroid treatment trials, together with an increase in volume of 200 ml or more, is regarded as a positive test, although some people with COPD can have significant reversibility.

An improvement of greater than 400ml in FEV₁ strongly suggests underlying asthma.

In children, an improvement in FEV₁ of 12% or more is regarded as a positive test.

Q Can I clarify for pebblepad portfolio - Our GP Practice and local hospital use the ARTP SOP May 2023 for performing spiro in adults. For the part where we need to submit local portfolio for performance, do we need to create a new one or can we upload that?

You can use the SOP; however, you must make changes to suit your local practice. Adapt the SOP to your own situation.

Q I have applied for the adult and child performing and reporting (interpretation) but I am not sure what differences I should be looking at for children

Please see Paediatric Lung Function Testing starting page 41 of ARTP Statement on pulmonary function testing 2020 and the following link:

<https://www.artp.org.uk/spirometry-adult-paediatric-reporting>

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Q I have heard there is a 2-year waiting list for OSCE?

OSCE assessments are available on various days per month between the hours of 9am and 5pm. Please see following link for more information

<https://www.artp.org.uk/spirometry-osce-bookings>

Q What kind of questions will we be asked on our OSCE?

ARTP: "The OSCE consists of two sections, a practical assessment and a technical viva.

The **Practical Assessment** will consist of assessment of calibration or verification of the spirometer and assessment of the performance of quality assured diagnostic spirometry.

The **Technical Viva** will include a number of pre-defined questions that either relate to the spirometry the candidate has performed or are general questions about technical aspects of spirometry".

For more information please visit: <https://www.artp.org.uk/spirometry-osce-bookings>

Q Can you clarify the latest ARTP guideline re FVC and VC and

Q ARTP email yesterday re portfolio, reg before May 23"portfolio will be marked against the marking scheme for technical acceptability for SVC and FVC", but I am confused as to what that is-not clear-sorry!

The ARTP have updated the standards document stating the reported FVC should not exceed the reported SVC by more than 150mls unless the subject has demonstrated a severe obstructive airways defect. Biological QC data must meet this reproducibility criteria.

Q. Do I need to wear nose clips for the forced blows?

The following refers to adults. In paediatric spirometry a nose clip should be worn to ensure mouth breathing, and in younger children a face mask with the spacer may be required (ARTP 2020).

The use of a nose clip in adults has caused a significant amount of discussion. As with all policies and procedures, it is prudent to discuss with senior colleagues and agree the protocol for the area where you work. There are many considerations other than applying a nose clip for relaxed vital capacity, such as

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age of patient, co-morbidities, cognition, and purpose of spirometry. For instance, is this for monitoring or diagnosis?

The following extracts may be helpful to inform your clinical decision making and protocol development.

- **ARTP Standard Operating Procedure (SOP) Performance of Spirometry in Adults**

Relaxed Vital Capacity:

Connect the mouthpiece and/or filter to the spirometer and use a nose peg (essential for SVC, optional for FVC)

Forced Vital Capacity:

Connect patient to the mouthpiece; nose clips are optional.

- **ARTP: Statement on pulmonary function testing (2020)**

A nose clip is not essential for the measurement of forced expiratory manoeuvres; however, it is required for forced inspiratory manoeuvres and for relaxed manoeuvres.

The tests are usually performed wearing tight-fitting nose clips to avoid unnecessary leaks.

- **ATS/ERS (2019) Technical statement: standardisation of spirometry**

Patients should be relaxed, seated erect with a nose clip in place, and asked to breathe normally until the end-expiratory lung volume is stable.

- **BTS (2013). A guide to performing quality assured diagnostic spirometry.**

Prepare patient and equipment to perform the baseline VC. Apply nose clip.

