

## ⑥ Interpretation of your results

The interpretation of your results is mainly based on the **motility, sperm concentration** and **morphology** results. These main factors of sperm health **in this order** are the most important factors that are necessary for natural conception to take place. Interpretation of your results will appear as comments at the end of the results section.

## ⑦ What if you need to repeat the test?

If any of your results fall below the normal reference ranges you will be asked to repeat the test in order to confirm the findings from the first analysis. A comprehensive male fertility assessment is not possible from the evaluation of a single sample, therefore in some situations it is important that more than one sample is analysed. Other reasons why you may be asked to repeat the test include if your sample collection was incomplete; (the first fraction of the sample contains the most sperm rich portion of the ejaculate), or if some of the sample was spilt during transport to the laboratory, or if your abstinence period from intercourse/ejaculation was too short.

-For information regarding the reasons why your results are abnormal and for possible further investigations and tests please contact your clinician/GP and/or nearest NHS Fertility expert.

For any queries regarding any of the content within this leaflet please contact the Department of Andrology at the Norfolk & Norwich University Hospital:  
01603 646524 between 09:00am-16:00pm



Eastern Pathology Alliance	Your Basic Semen Analysis	EPA-ANDR-003
Revision 1	Issue Date: 09/12/19	Author: J. Kennett & K. Burton

# Your Basic Semen Analysis

## What we test your sample for & your results explained!

This leaflet is aimed at giving you some information on the following test:  
Basic Semen Analysis (BSA)

**\*\*Note: All results are to be obtained from your requesting Clinician/GP. The laboratory cannot give results directly to patients!\*\***

Eastern Pathology Alliance  
Norfolk & Norwich University Hospital  
Queen Elizabeth Hospital Kings Lynn  
James Paget University Hospital

## ① Why do you need this test?

A Basic Semen Analysis is the first test most men will need to have for fertility investigations, mainly when a couple are finding it difficult to conceive naturally after 1 year of trying. The results are used as indicators towards your clinician investigating a possible cause, and a physical examination may also be carried out by your GP along with the semen analysis. This test is required before a referral can be made for any further fertility investigations. This test is also required as a general fertility screen under a variety of circumstances for patients who are not trying to conceive with a partner.

## ② What do we test your sample for?

A semen analysis measures the major factors of **sperm health**, and also the **semen** in which the sperm cells are transported in will also be examined.

## ③ Sperm Health

The movement and speed at which the sperm cells are swimming, is described as “**sperm motility**”. The numbers of sperm present is described as “**sperm concentration**” and “**total sperm count**”. The shape and appearance of the sperm cells is described as “**sperm morphology**”.

**NOTE:** It is important that you have delivered your sample within 60 minutes of production and ensured it remains at body temperature as the **motility** of the cells may be affected - sperm cell motility will decline with sample age and when the cells are exposed to cold temperatures. If your motility results are reduced it is important that your doctor knows whether it is a genuine result or due to other factors, therefore it is

important that the information you provide us in the pre-analysis questionnaire is accurate.

**Progressive Motility %:** refers to sperm cells that are swimming progressively forward (either fast or slow).

**Non-progressive motility %:** refers to sperm cells that are moving but not progressing forward (these cells appear to either swim in circles or to twitch).

**Total Motility %:** (progressive + non-progressive) refers to the total number of sperm cells that are moving or ‘motile’.

**Immotile %:** refers to the remaining sperm cells that do not show any movement at all. Most specimens will exhibit a small population of immotile sperm - this is normal.

**Sperm Vitality %:** is an assessment of how many sperm cells are alive (vital) and how many are dead (non - vital). Note: A vitality assessment is only required if the total motility % is reduced.

**Sperm Concentration:** The number of sperm cells found in 1ml of semen.

**Total Sperm Count:** The number of sperm cells found in the entire ejaculate.

**Sperm Morphology:** Individual sperm cells are assessed for their physical appearance; the head, neck (midpiece) and tail are assessed for any abnormal features which could impair the sperm cells ability to swim to an egg and penetrate it. This is reported as normal and abnormal morphology.

## ④ Semen Assessments

Any abnormal findings associated with the semen observations can help clinicians identify other areas that may be a cause for concern.

Semen observations include the following:

**Appearance:** should appear greyish white with no strong odour. A pale yellow appearance is common

and can be caused by a number of different reasons and is not necessarily abnormal.

**Liquefaction:** Immediately after ejaculation semen is a semi-solid congealed mass. There are enzymes within the semen that break this mass down causing the sample to appear watery - this is normal liquefaction and usually takes approximately 15 mins to complete.

**Viscosity:** a measure of how thick or watery the semen is, reported as either normal (watery) or increased (thick and sticky).

**Semen Volume:** measures the total amount of semen produced in millilitres (ml).

**Semen pH:** Semen has a neutral pH and reflects the function of the two glands that produce the semen. A pH assessment is only required when the volume of the sample is low.

## ⑤ What are your results measured against?

Your results are compared against the reference ranges set by the World Health Organisation (WHO) and appear in worded format at the end of your report.

### WHO (2010) Reference Ranges:

- **Semen Volume:** above or equal to 1.5ml
- **Semen pH:** above or equal to 7.2
- **Sperm motility**
  - Total Motility: above or equal to 40%
  - Total Progressive: above or equal to 32%
- **Sperm Vitality:** above or equal to 58%
- **Sperm Concentration:**
  - above or equal to 15 million per ml
- **Total Sperm Count**
  - above or equal to 39 million per ejaculate
- **Normal Sperm Morphology:**
  - above or equal to 4%