



# Andrology Update

## WHO Manual for the Examination & Processing Of human semen (2010), Fifth Edition

The WHO introduced new guidelines in 2010 to improve the quality of semen analysis and comparability of results. Data characterizing the semen quality of fertile men, whose partners had a time to pregnancy of 12 months or less, provided the reference ranges for this manual.

*"The most complete text to date on the creation of a conventional semen profile and includes invaluable reference limits based on the analysis of over 1 900 recent fathers" Aitken (2010)*

"Essential tool to disseminate good practice in andrology" Ford (2010)

Prior to these new guidelines the WHO (1999) standards were commonly used in laboratories across the UK. These are the guidelines we have used and still use in The Hull Andrology Laboratory. We are however, **aiming to switch to the new guidelines in January 2012**, to ensure we are working in line with the current best practice standards and offering a high level of service to our users.

**Please read the following information regarding important changes to the structure and reference values used in our semen analysis.**

### Sperm Concentration

Total number of sperm per ejaculate and the sperm concentration are related to time to pregnancy and pregnancy rates.

**The lower reference value for sperm concentration is  $15 \times 10^6$  sperm per ml (95% CI 12-16).** This replaces the current limit of  $20 \times 10^6$  ml

The total number of spermatozoa per ejaculate can be calculated by multiplying the sperm concentration by the volume of the ejaculate. This will not be reported directly as a test parameter but may be commented on in the report if deemed significant.

**The lower reference value for total sperm concentration is  $39 \times 10^6$  sperm per ejaculate (95% CI 33-46).**

### Volume

**Lower reference limit for semen volume will be 1.5 ml (this will be changing from the current value of 2ml).**

Please note – Low semen volume can be an indicator of obstruction/absence of the vas deferens, incomplete collection, partial retrograde ejaculation or androgen deficiency. High semen volume may reflect inflammation of accessory glands.

### Motility

The way we grade motility will be changing. We will be studying the % of progressive motile (PR) sperm, non-progressive motile (NP) sperm and immotile (IM). We will report the % total motility (PR+NP) and the % of progressive sperm (PR) on the new reports.

**The lower reference limit for total motility will be:**

**Total Motility (PR+ NP) is 40% (95% CI 38-42%)**

**Progressive motility (PR) is 32% (95% CI 31-34)**

These reference limits will replace the existing limit of 50%. We will no longer comment on whether forward progression is good, moderate or poor.

### Morphology

Spermatozoa consist of a head, neck, middle piece (midpiece), principal piece and endpiece. For a spermatozoon to be considered normal, both its head and tail must be normal. All borderline forms should be considered abnormal. **Strict criteria**, as set out in the new manual will be adhered to, to ensure this reference limit is valid.

**The lower reference value for normal forms is 4% (95% CL 3-4).** This replaces the current limit of 15%.

To review the new WHO manual 2010 an electronic copy can be downloaded from:

<http://www.who.int/reproductivehealth/publications/infertility/9789241547789/en/index.html>

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