Understanding Your Semen Analysis Results

There are many causal factors for male-factor infertility or sub-infertility. Some include:

- Hypothalamic pituitary disorders
- Gonadal disorders
- Seminal tract obstruction
- Genetic/chromosomal abnormalities
- Sexual dysfunctions
- Chemotherapy treatments
- Unexplained reasons

Lifestyle factors also have a part to play in sperm quality. Since smoking, alcohol and recreational drugs have been shown to impair spermatogenesis (the production of sperm), it is advised that males undergoing fertility investigations reduce these habits. Additionally, taking vitamins such as Vitamin D, Coenzyme-Q10 or supplements such as Fertil Pro Male and Fertil Pro MTL for at least 3 months can improve sperm factors.

A typical semen analysis measures the following parameters:

Volume – The normal range of semen volume is between 1.5-5.5ml. Low semen volume may be a result of not collecting the entire ejaculate in the container. Once this is first ruled out, low semen volume may be due to retrograde ejaculation (partial or complete flow of ejaculate into the bladder), ejaculatory duct obstruction, congenital absence of the vas deferens, or unexplained reasons.

Viscosity – This refers to the seminal fluid's resistance to flow. It can be low, medium or high. Semen with high viscosity means the sample did not liquefy in the appropriate time. This may imply there is a pathology in the accessory sex glands responsible for making the ejaculatory fluid.

pH – The pH of semen samples falls within the normal range of 7.2-8.0. A low pH may indicate the seminal vesicles are blocked and a high pH may indicate infection is present.

Concentration – Concentration refers to the total number of motile and immotile sperm present in the ejaculate. A concentration of less than or equal to 15 million sperm cells per ml of ejaculate is abnormal (oligozoospermia). If there is a complete absence of sperm in ejaculate, the condition is named azoospermia.

Motility – Motility refers to the percentage of the moving sperm compared to the total number of sperm present. A count of less than 40% motile sperm is abnormal (asthenozoospermia). A total motile count is calculated based on the volume of sample produced, the concentration and the motility of the sperm.

Progression – This refers to the speed and the direction at which the sperm are swimming. Having poorly progressing sperm (<2) may affect the sperm's ability to swim to the egg.

Round Cells – This refers to the appearance of non-sperm cells and/or white blood cells in the semen sample. This can give an indication that infection is present within the body. If more than 1 million per ml of leukocytes are observed during the semen analysis, the sample is sent off for culture where a lab can look for infectious agents. Antibiotic treatments may be implemented at the clinic if results return positive.

Anti-Sperm Antibodies (ASA) – The presence of anti-sperm antibodies is suggestive of reduced fertility since ASAs on sperm can interfere with fertilization. An association has also been found between ASAs and reduced sperm concentration, motility and liquefaction. If more than 50% of the sperm cells counted are bound to antibodies this is considered abnormal.

Agglutination – This is noted if sperm are shown to adhere together in clumps. This can be indicative of anti-sperm antibodies, extremely high concentration of sperm and/or infection.

Morphology – This test measures the shape of the sperm and can provide information based on head/midpiece/tail abnormalities. Poor sperm morphology has an indication for Intra-Cytoplasmic Sperm Injection (ICSI) treatments, since the most morphologically normal looking sperm can be chosen at the time of injection into the egg. Having less than 4% morphologically normal looking sperm is considered abnormal (teratozoospermia).

DNA Fragmentation Index (DFI) – This is an extended semen analysis where the sperm most likely to reach the egg are assessed to see if they contain fragmented DNA. There are many reasons why a DFI test may be advised, for example: cases of failed In Vitro Fertilization (IVF), patients with high ASA index or if there is a medical history to suggest contributory factors like frequent sauna use. Greater than or equal to 25% fragmented sperm is considered abnormal. The motility of the sperm is also measured after 24 hours of incubation to measure how many sperm are still motile the following day. This investigative test may determine future fertility routes since sperm DNA fragmentation can contribute to failed fertilization and spontaneous pregnancy loss.

In order for us to ensure an accurate semen analysis report, here are some instructions to help with collection:

- We recommend abstaining for 2-3 days prior to a semen analysis appointment; no less than 2 days and no more than 4 days.
- The sample should be received within an hour from collection and it is advised to keep the container at body temperature during transportation.
- Condoms and lubricants should not be used for collection since they may contain spermicides (sperm killing chemicals). Non-toxic collection condoms can be purchased from the clinic if necessary.
- Interrupted intercourse should not be considered since the initial sperm rich drops of semen can be lost. This method also risks the transference of bacteria to the specimen container.
- Repeat testing at least 1-2 weeks apart may be suggested/recommended to ensure reliability of results.

Following semen analysis, patients should consult with the Doctor in a review appointment to discuss the results and consider any necessary treatment options.