

The Semen Analysis

WHAT IS A SEMEN ANALYSIS? A semen analysis is the macroscopic and microscopic observation of sperm which is ejaculated. A sperm sample is collected by masturbating into a sterile container either at the clinic or is brought to the lab. The amount of time required for the sample to turn from a gel to a liquid (called liquefaction) is determined. The sample is measured to evaluate the amount or total volume. The sample is passed through a pipet to measure the thickness or viscosity. A portion is examined under the microscope.

WHAT DOES THE: SEMEN ANALYSIS EXAMINATION SHOW? Under the microscope, the semen specimen is examined for the number of sperm present or sperm concentration (also called "sperm count"). The percent of actively moving sperm or motility is also assessed from examination of the same slide. The progression or degree of actively forward movement of the motile sperm is quantified. Another portion of the specimen is treated with a special stain and the morphology or number of sperm with normal and abnormal shapes is carefully counted. The presence and number of white blood cells is also determined.

WHAT ARE THE NORMAL VALUES FOR A SEMEN ANALYSIS? A normal time for liquefaction of the semen specimen is less than 60 minutes. The normal total volume of a specimen is between 2.0 and 5.0 mL. Viscosity is described as normal, slightly increased, or greatly increased. A normal sperm concentration is between 20 and 200 million sperm per mL. Normal motility is greater than 50% (i.e. more than 5 out of every 10 sperm should be moving). Sperm progression is described as 1 – 4+ with the highest number (4+) indicating the most forwardly moving sperm. A normal morphology is greater than 14% of the sperm present exhibiting a strict normal anatomic appearance. Large numbers of white blood cells are not normally present and are considered significantly abnormal if there are more than one million per mL in the sperm specimen.

WHY ARE REPEAT SPERM ANALYSIS SPECIMENS SOMETIMES NEEDED? All men will have significant variation in their sperm samples on different days. Important factors include length of time since previous ejaculation, recent fevers, prolonged heat exposure (such as hot tubs, etc.), time of year, and exposure to medications. Because sperm samples vary so much multiple samples are often necessary to get a clear picture of a man's true semen analysis.

DOES A SEMEN ANALYSIS TELL YOU EVERYTHING ABOUT A MAN'S FERTILITY? Unfortunately, the semen analysis is only a rough estimate of a man's fertility. If there are no sperm present or if all sperm are immobile, the prognosis for fertility is extremely poor. However, many men with low sperm counts or motility may be fertile and some men with totally normal sperm counts may have sperm which are incapable of fertilizing human eggs. In general, a normal semen analysis is usually reassuring, and an abnormal specimen may require further investigation including physical examination, hormone testing and imaging.

