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SEMEN ANALYSIS

What is a semen analysis? The semen analysis is the initial test for sperm problems in the male partner of a couple with infertility. A sperm sample is collected by masturbating into a sterile container and brought to the lab. The amount of time required for the sample to turn from gel to liquid (called liquefaction) is determined. The sample is measured to evaluate the amount or total volume. The sample is passed through a syringe 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 estimated. Another portion of the specimen is treated with a special stain (or coloring) 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 cc (0.5 to 1 teaspoon). Viscosity is described as normal, slightly increased, or greatly increased. A normal sperm concentration is between 20 and 200 million sperm per cc. 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 30% of the sperm present exhibiting a strict normal anatomic appearance. White blood cells should not normally be present and are considered significantly abnormal if there are more than one million per cc in the sperm specimen.

Why are repeat sperm analysis specimens often needed? All men 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 very rough estimate of a man’s fertility. If there are no sperm present or if all sperm are immobile (dead), 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 specimens may have sperm which are incapable of fertilizing human eggs. In general, a normal semen analysis is usually reassuring, and an abnormal specimen should be evaluated with other examinations. These may include advanced sperm testing such as the Sperm Survival Test, the IBT (immunobead test for antisperm antibodies), and the SPA (sperm penetration assay or Hamster egg test).