

Other tests which may be part of the male evaluation are:

- Measurement of circulating hormones in the blood
- Ultrasound studies to evaluate the testis, to confirm varicoceles or problems of the epididymis, and to examine the vas deferens and seminal vesicles for blockages in the ejaculatory ducts
- Testis biopsy, which is rarely necessary

Evaluating Male Infertility was adapted from materials prepared by Stanton C. Honig, MD and by Ellen Asprooth, MSJ. Dr. Honig is Assistant Clinical Professor of Urology at the University of Connecticut School of Medicine. He has a clinical practice in New Haven, CT. Ellen Asprooth is a free-lance journalist in Rochester, NY. All educational materials are reviewed by the Educational Materials Advisory Committee of Ferre Institute, Inc.

Ferre Institute, Inc.

124 Front Street
Binghamton, NY 13905
Phone: 607-724-4308
Fax: 607-724-8290
www.ferre.org

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INFERTILITY

I. Evaluating Male Infertility

Why test for male infertility?

Although people sometimes think of infertility as a woman's problem, a couple's infertility may be due to a male factor, a female factor, or both. In fact, research has shown that a male factor is involved in 20 to 40 percent of all cases of infertility. Because the correction of a small problem in either partner can lead to pregnancy, it is important that both partner in an infertile couple be evaluated. While male infertility testing is generally neither invasive nor painful; it is important to seek a sensitive provider who will offer supportive care.

When should the male evaluation be done?

The male evaluation should take place along with the evaluation of the female partner. Because the male evaluation involves fewer tests than the female evaluation, it can often be completed first.

Components of the male evaluation

Minimally, a male fertility evaluation should include three components: a thorough medical history, a complete physical examination by a physician familiar with male fertility disorders (usually a urologist), and a semen analysis.

Medical History

The history should begin with a review of the couple's fertility. How long has the couple been trying to achieve a pregnancy? Have they been timing intercourse appropriately with basal body temperature or ovulation kits? Have there been any previous pregnancies together or with other partners? Is the couple experiencing problems with intercourse? A thorough review of medical problems relating to the male partner is essential. Problems with sperm production, transport and delivery may result from undescended testes or childhood injuries to the testis for example:

(continued)

- Hernia, hydrocele, bladder, prostate or urethral surgery
- Changes in the valves at the base of the penis
- Disease of the colon, high blood pressure, mumps occurring after puberty, recent high fevers or viruses, disease of the kidney, diabetes, nerve disorders, cancer
- Medications for conditions such as heart disease or high blood pressure, as well as marijuana, tobacco, alcohol and other recreational drugs
- Chemotherapy or radiation
- Genetic abnormalities, cystic fibrosis and hormone imbalances
- Regular use of hot tubs
- Exposure to environmental toxins

Physical Examination

A thorough, simple and painless physical examination includes: an overall assessment of general appearance and male sexual characteristics including:

- Examination of lymph and thyroid gland abnormalities and previous surgical scars
- Complete genital exam including evaluation of the penis for a normal urine opening and signs of curvature or scarring; the testes for size, shape and consistency; and the epididymis and vas deferens for signs of obstruction or inflammation
- Examination in the standing position for varicocele (enlarged veins around the testis)

Semen Analysis

The semen analysis is the most important test for the evaluation of the male. One or more semen specimens should be obtained after 2—5 days of abstinence from ejaculation and examined within hours of collection by a laboratory technician with extensive experience in semen analysis. Semen is evaluated for volume, sperm concentration, total number of sperm, sperm movement (percentage moving and forward progression), and sperm morphology (shape). The average sperm count is 20 - 40 million/cc, though pregnancy can occur with lower sperm counts. If the semen appears to fall into the average range, more sophisticated testing may be necessary to better evaluate sperm function. These tests include:

- When there is low volume of ejaculate, an examination of the urine after ejaculation to check for evidence of retrograde ejaculation, or semen moving backward into the bladder
- A white blood cell evaluation to check for infection in the semen
- Antisperm antibody testing to see if sperm are coated with molecules that prevent normal function such as penetration through the mucous of the cervix or the zona pellucida
- A sperm penetration test to evaluate the ability of sperm to penetrate an egg
- A more critical evaluation of sperm morphology that correlates well with success with in vitro fertilization
- A hemizona assay to assess the ability of sperm to bind to the zona pellucida (the covering of the egg)