

## **INFERTILITY – Investigations (tests)**

The woman and her partner should be present at the initial evaluation for infertility. The doctor will obtain a full clinical history from the couple and then proceed on to a physical examination. The initial investigations that need to be performed will be based on these assessments. Sometimes, the cause of the infertility may be found at this visit. Further evaluation and clinic visits may be necessary for other couples. An initial workup for a woman can take as little as six to eight weeks, or as much as three months or longer. This is because some of the tests may have to be repeated for verification at different specific times in her menstrual cycle. The initial workup of a man usually can be done faster, because men have no monthly cycles and because there are fewer tests for men.

### **COMMON INVESTIGATIONS IN FEMALE**

#### **1. Ultrasound:**

This technology relies on sound waves to produce images of internal structures. Ultrasound is used to detect abnormalities in the uterus (such as fibroids, polyps) or the ovaries (such as cysts). The ultrasound is usually done vaginally as this gives a better image quality and more sensitive in picking up abnormalities.

#### **2. Hormone tests:**

Laboratory blood studies are done to measure certain hormones that play a role in fertility. Tests such as luteinizing hormone (LH) and follicle-stimulating hormone (FSH) are done at the start of the menstrual cycle. Measurement of blood progesterone level is performed at day 21 of the menstrual cycle to confirm that ovulation has occurred. Other hormones measured include oestradiol, prolactin, thyroid and male hormones (such as testosterone).

#### **3. Screening for infections**

The couple should undergo screening for infections such as: syphilis, hepatitis B and C, human immunodeficiency virus (HIV).

#### **4. Hysterosalpingogram (HSG):**

Hysterosalpingogram (HSG) is an x-ray examination that is used to evaluate the uterine cavity and to check for patency of the fallopian tubes (whether the tubes are blocked). It is done just after a woman's menstrual period, so there is no danger of her being pregnant and thereby exposing the fertilized egg or embryo to radiation. A dye (technically called a contrast medium) is injected through the cervix. It spreads into the uterus and the fallopian tubes, allowing them to be visualized on x-ray. X-rays are taken during the injection of dye. There may be some cramping or discomfort felt as the dye is injected. You may be asked to change positions for different x-ray views.

The x-rays will show the outline of the uterus and fallopian tubes as the dye fills them and spills into the abdominal cavity. Conditions detected by the hysterosalpingogram may require further testing for confirmation; this may include a laparoscopy or hysteroscopy (use of a small lighted telescope to view internal organs).

#### **5. Hysteroscopy:**

The hysteroscope is a small-lighted telescope used for visual examination of the cervix and the uterus to help diagnose and treat abnormalities in the cervical canal or the uterine cavity. If it is used to look for the cause of the presenting problem, it is term as diagnostic hysteroscopy. If it involves some form of surgical procedures such as removal of growths (endometrial polyps or fibroids), removal of the lining or separation of adhesions, then it is called operative hysteroscopy. In many cases, both procedure are done concurrently – the so-called “see and treat” approach. Hysteroscope can be performed without any anaesthesia or analgesia. The hysteroscope is passed through the vagina and cervix into the uterine cavity for viewing. Saline fluid is used to distend (expand) the uterine cavity to improve visualization and allow any operative manipulations to

be achieved. Video monitoring is often used at the same time. It is sometimes performed in combination with a laparoscopy.

#### **6. Laparoscopy and tubal patency test:**

Laparoscopy is a procedure that allows visual examination and treatments of the pelvic and abdominal organs. The procedure is performed with a laparoscope, which is a small-lighted telescope. This is performed under general anesthesia. It is often necessary to place an instrument (tenaculum) on the cervix in order to help move the uterus around. A small incision is made in or below the patient's navel. A needle is inserted to inflate the abdomen with carbon dioxide. Following this, the laparoscope is inserted and used to examine the abdomen visually. It is connected to a high intensity light and a high-resolution television camera so that the doctor can see what is happening inside of you. Instruments are inserted through additional tiny incisions in the abdomen if necessary and are used to treat pelvic abnormalities. A colored solution (usually blue dye) is injected into the uterus via the cervix to assess whether the fallopian tubes are blocked.

#### ***Investigations that are not necessary anymore***

- Basal body temperature:
- Postcoital test:

### **COMMON INVESTIGATIONS IN MALE**

#### **1. Semen analysis:**

It is almost always the first test done on men and may be repeated several times. After abstaining from intercourse for about 3 – 5 days, the man collects a semen sample via masturbation, into a clean container that is provided by the laboratory. The sample is microscopically examined to determine the number, activity and shape of individual spermatozoa (sperm cells) and the characteristics of the fluid part of the semen. A normal and healthy ejaculate typically contains more than 2 ml of semen, and each ml will contain an average of 20 million sperm that look to be of normal size, shape and behavior. If the specimen markedly differs on any of these factors, further tests may be done.

#### **2. Hormone tests**

The commonest hormone tests include measurements of luteinizing hormone (LH), follicle-stimulating hormone (FSH) and testosterone levels.

#### **3. Screening for infections**

The couple should undergo screening for infections such as: syphilis, hepatitis B and C, human immunodeficiency virus (HIV).

#### **4. Testicular biopsy:**

This is a minor operation—performed with a local or general anaesthetic—in which a small amount of tissue from the testes is removed for laboratory studies. This test is done only when the semen analysis does not show any spermatozoa at all.

#### **Disclaimer**

This is for informational purposes only and is not intended to be a substitute for professional medical advice, diagnosis, or treatment. It is important for readers to seek proper medical advice when necessary.

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