

This blog will explain the investigative cycle, ultrasound and blood test monitoring.

If you have any questions, please don't hesitate to contact the nursing team for further clarification at 519-570-0090 x 2.

Under the endometrium column, ultrasound measures the thickness of the endometrial lining. The lining increases in thickness as you get closer to ovulation to prepare the lining for a potential pregnancy. The lining sheds every month with your menstruation when you are not pregnant. When you are pregnant, this is where the egg implants and the lining will remain complete.

The column under (ut art avg PI) measures the resistance to flow of the uterine artery that feeds blood to the uterus. A measurement less than 3 is optimal for this arterial pressure. If it is greater than 3, it could indicate decreased blood-flow to the uterus, which may cause the endometrial lining to be affected for implantation of a fertilized egg. The doctor or nursing team will discuss treatment for this if the value remains to be greater than 3 through your investigative cycle.

Right and Left Side Follicle columns show the number of follicles each ovary has. Follicles that are not growing but are accounted for are termed, antral follicles. These follicles have the potential to become a mature follicle. These numbers can change with each cycle. Normally, you will only have one follicle grow with a maturing egg inside. The significance of the number seen on cycle day 3 can be discussed with the doctor or nurse. When you return on cycle day 9 a follicle should be measurable. This is variable, depending on the length of your cycle between periods. The follicle tends to grow, between 0.1 and 0.2cm daily. Again, this is variable and will be discussed at your review appointment with the doctor. In this column, you will also see right and left cysts. If measurable, they will be listed here. Cysts are quite common and usually unremarkable. If there is any concern, this will be discussed at your review appointment with the doctor.

Oocytes (eggs) are too small for ultrasound to see. The blood work we draw every day determines the presence and the growth of the egg inside it. Here is a breakdown of the values tested at each visit:

LH or luteinizing hormone matures the follicle and when the LH value doubles, an egg matures and within 36 -42 hours the egg is released.

FSH or follicle stimulating hormone stimulates the ovaries to produce oocytes. Cycle day 3 is the best day to measure this value. The value indicates how much hormone your body is producing to try and stimulate the ovaries. A value of less than 10 is ideal. Results will be reviewed by the doctor once your cycle monitoring is complete.

E2 is estradiol. This is a form of estrogen produced by the follicle. This level can indicate egg quality and maturity. The level will rise as you get closer to ovulation, then drop once ovulation has occurred. If you are pregnant the level will rise again and stay elevated. If you aren't pregnant, the level will continue to drop which will begin another menstrual cycle.

Progesterone is the hormone responsible for maintaining the lining of the uterus for implantation of the embryo. The level increases after ovulation, and like estrogen, will drop if you are not pregnant; thus, bringing on your next menstrual cycle.

Prolactin is the hormone responsible for lactation when a mother is breastfeeding her infant. It stays elevated while breastfeeding and is nature's way of preventing another pregnancy too soon. Occasionally it is elevated for reasons such as stress. This can sometimes affect ovulation. Treatment would be discussed with you at your review with the doctor.

Ultrasound Terms:

Endometrial Echo (echotexture) refers to the brightness of the endometrium (uterine lining) relative to its surrounding tissues (ie. the uterus). We use three terms to describe the echotexture:

- Hyper-echoic is the term used when the endometrium is brighter than its surrounding tissues.
- Hypo-echoic is the term used when the endometrium is darker than its surrounding tissues.
- Iso-echoic is the term used when the endometrium is the same brightness as its surrounding tissues.

Early in the cycle the endometrium appears thin and bright or hyper-echoic, as a cycle approaches ovulation the outer edges of the lining become more hypo-echoic and the inner edge closest to the cavity remains hyper-echoic. After ovulation the endometrium becomes uniformly hypo-echoic or iso-echoic as it prepares to be sloughed off. We can relate the appearance of the endometrium with other factors throughout the cycle to determine whether or not the appearance is typical at each stage of the cycle.

Endometrial Contraction: At different stages of a cycle we may notice the endometrium contracting in different ways. Earlier in the cycle the lining will contract from the cervix all the way to the top of the uterus, or uterine fundus. This type of movement will draw the sperm in from the cervix and help them travel up toward the fundus of the uterus and out the fallopian tubes. We may also notice the endometrium moving back and forth or "to and fro" as it prepares for implantation. If a pregnancy does not occur the endometrium tends to flow from the fundus toward the cervix as it prepares to be sloughed off.

Free Fluid refers to fluid that is outside of the organs but still remains inside the pelvis. A small amount of fluid in the pelvis can be normal; however, it has been documented that when ovulation occurs a larger amount of fluid can be seen. This is because when the follicle ruptures, the fluid from inside leaks out and accumulates in the pelvis. We document this finding as it can sometimes be helpful when trying to determine if ovulation has occurred.