The Endometrium on Ultrasound

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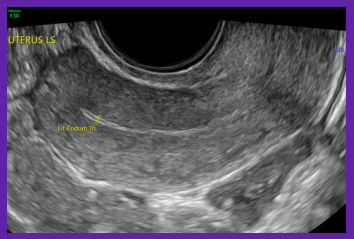
Endometrial Assessment

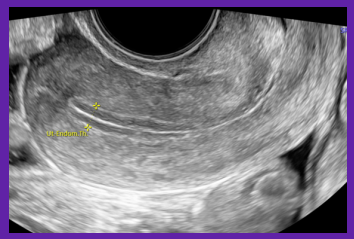
The endometrium undergoes cyclical changes in keeping with the menstrual cycle. Ultrasound plays an important role in assessing endometrial receptivity.

Endometrial thickness and pattern can provide vital information about stage of the cycle as illustrated. An endometrial thickness of at least 7-8 mm is used in our clinic to determine progression forward to embryo transfer.

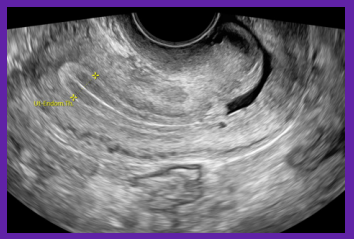
Currently, we are conducting an endometrial receptivity research study to evaluate the prognostic value of endometrial patterns.



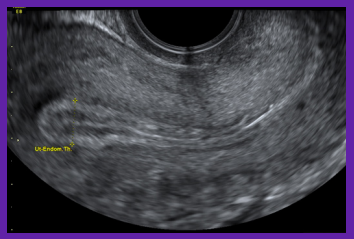
Post Menstruation: Thin Endometrium
Small amount of menstrual blood can be seen.



Early Proliferative Phase: Thin Endometrium Triple pattern of endometrium demonstrated.



Late Proliferative Phase: Triple Pattern of Endometrium
Cervical mucous can be seen. Effect of estrogen demonstrated by increasing endometrial thickness.

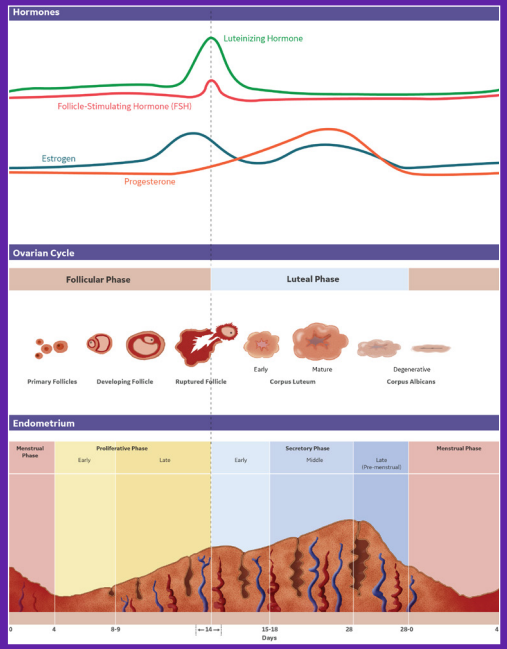


Early Intermediate Endometrium: Hyperechogenic Areas
Start to see the effect of progesterone on endometrium.

Mature Endometrium: Endometrium Almost Completely Homogenous
Effect of progesterone seen as demonstrated by the shape and echogenicity of the endometrial stripe.

Late Luteal Phase: Homogenous Endometrium
Effect of progesterone seen as demonstrated by the homogenous pattern of the endometrium.

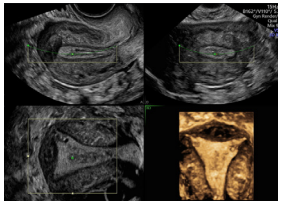
The Menstrual Cycle



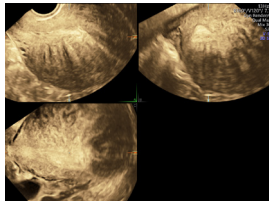
Correlation of hormone levels to associated ovarian cycle and endometrium phase

Benefits of 3D Uterus and Endometrial Cavity Assessment

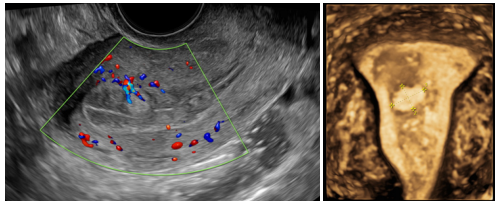
Incorporating 3D ultrasound provides access to the coronal plane and so a more comprehensive and anatomically true view of the endometrial cavity. Shape, congenital malformations and associated pathologies can be visualized and their location within the cavity clearly demonstrated. The improved spatial awareness allows more diagnostic confidence in the detection of endometrial pathology including polyps, submucosal fibroids, and intrauterine adhesions. It also allows visualisation of the junctional zone which cannot be seen on 2D ultrasound, thereby facilitating the detection of adenomyosis without recourse to MRI.



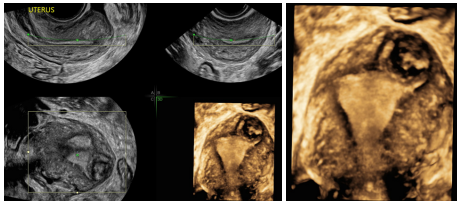
Normal Cavity – Endometrial myometrial border clearly defined



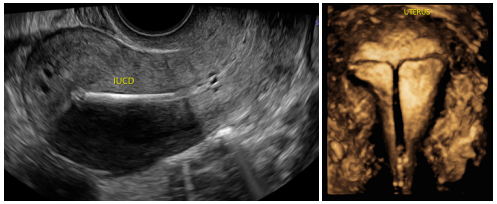
Adenomyosis



Endometrial Polyp



Fundal Intramural Fibroid



IUCD in situ

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