

# Difference Between Endometrium and Myometrium

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## Key Difference - Endometrium vs Myometrium

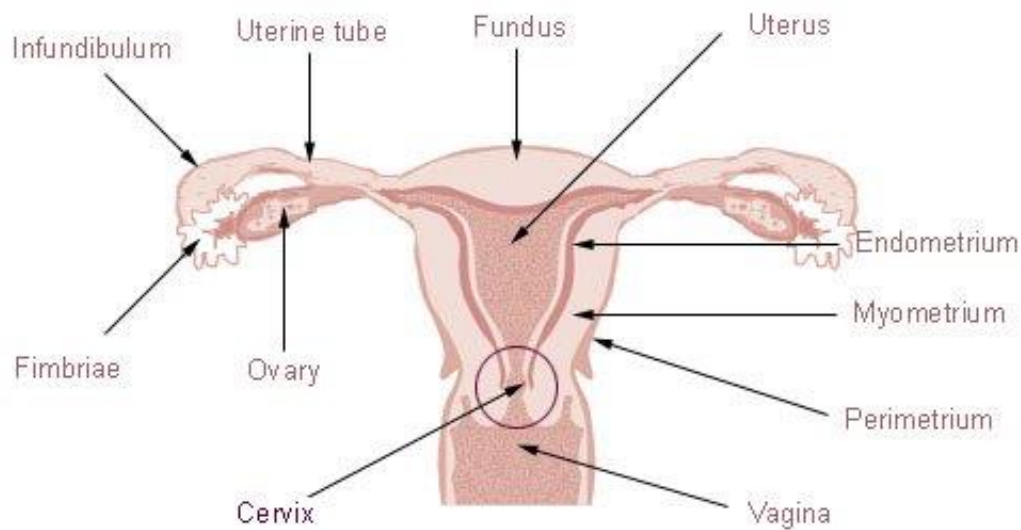
The uterus is considered to be one of the most important structures of the mammalian female reproductive system. It provides the environment for the development of the fetus once fertilization is completed and the zygote is formed. Therefore, the structure of the uterus is an important aspect to carry out the function mentioned above. Different regions of the uterus, especially the three layers of the uterine wall provide different functions for the growth and development of the fetus during pregnancy. Uterine wall is composed of three main layers, the endometrium, myometrium and the perimetrium. **The endometrium is present as the innermost lining layer of the uterine wall and is composed of columnar epithelium while the myometrium is present as the middle muscular layer and is composed of smooth muscle fibers.** This is the **key difference** between the endometrium and the myometrium.

## What is Endometrium?

In the context of three layers of the mammalian uterine wall, the endometrium is the innermost epithelial layer. Myometrium and perimetrium lead this to the outside. The endometrium is present as a layer of epithelial cells along with a mucous membrane. Since the endometrium acts as the basal layer of the uterine wall, it is considered to be the most functional layer out of the three layers. During the menstrual cycle, the endometrium gets thickens, and at the end of the cycle it is removed or shed.

During pregnancy, the size of different glands and the number of blood vessels that present within the endometrium increase. The thickness of the endometrium which is enriched with blood vessels and glandular tissue provides the optimum environmental conditions for the implantation process of the blastocyst (a structure developed from the zygote once fertilization is completed). Implantation and development of the blastocyst are considered to be the major functions of the endometrium.

## Uterus and Uterine tubes



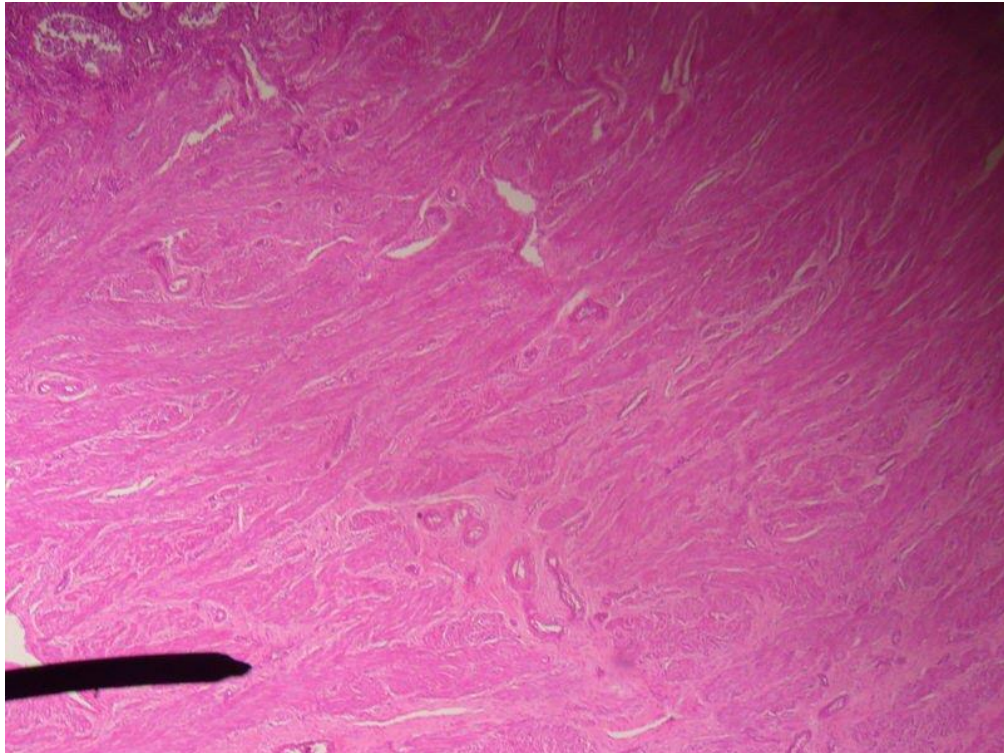
**Figure 01: Endometrium**

The endometrial epithelial layer is composed of a single layer of the columnar epithelium. It consists of a stroma on which the epithelial layer rests. The stroma is a layer of connective tissue that could vary its thickness according to different hormonal signals. When a woman attains reproductive age, two distinct layers of the endometrium namely, the functional layer and the basal layer can be identified. The functional layer is present adjacent to the uterine cavity. This layer is completely sloughed during menstruation. The basal layer is present below the functional layer and adjacent to the myometrium. This layer is not sloughed during menstruation but is kept intact for the regeneration of the functional layer.

## What is Myometrium?

Myometrium is the middle layer of the uterine wall. It is mainly composed of a smooth muscle layer which developed by the uterine myocytes; a special type of cells that are unique to the uterus. Myometrium provides adequate support to the stromal and vascular tissue. Nevertheless, the induction of uterine contractions is considered as the main function of the myometrium.

Myometrium is located between endometrium and perimetrium of the uterine wall. In its ultrastructure, myometrium possesses 03 distinct muscle layers. An outer most layer of the myometrium is composed of longitudinal smooth muscles while the middle layer consists of 08 muscle fibers with a crisscrossing structure. The innermost layer of the myometrium consists of circular muscle fibers. The presence of crisscrossing structure in the mid layer helps in the prevention of blood loss from the uterus and is responsible for the development of uterine convolutions.



**Figure 02: Myometrium**

The smooth muscles present in the myometrium are similar to that of a typical smooth muscle that is present in other regions of the body. Actin and myosin are the two main contractile proteins present in the smooth muscle. The smooth muscles of the myometrium are composed of more actin fibers than myosin. This is to facilitate the uterine contraction in different directions during the menstrual cycle. All the muscle structures are developed to serve the main function of the myometrium which is a uterine contraction.

## What are the Similarities Between Endometrium and Myometrium?

- Both are structural layers of the uterine wall.
- Both help in the functioning and development of the uterus.

## What is the Difference Between Endometrium and Myometrium?

Endometrium vs Myometrium	
The endometrium is the innermost layer of the uterine wall.	Myometrium is the middle layer of the uterine wall.
Structure	
Endometrium is composed of columnar epithelium.	Myometrium is composed of muscle layer which developed by the uterine myocytes.

Function	
Endometrium provides optimum environmental conditions for the implantation of the blastocyst.	Myometrium is involved in facilitating of uterine movements.

## Summary - Endometrium vs Myometrium

Different regions of the uterus, especially the three layers of the uterine wall provide different functions for the growth and development of the uterus and as well as the fetus during pregnancy. The endometrial epithelial layer is composed of a single layer of columnar epithelium. The two distinct layers of the endometrium; the functional layer and the basal layer could be identified once a woman attains her reproductive age. The functional layer is completely sloughed during menstruation. The main function of the endometrium is to provide optimum environmental conditions for the implantation of the blastocyst. Myometrium is considered the middle layer of the uterine wall. It is mainly composed of a smooth muscle layer which is developed by the uterine myocytes. The main function of the myometrium is to induce uterine movement. This is the difference between endometrium and myometrium.

### Reference:

- 1.“6.1 Role and functional anatomy of the endometrium.” Role and functional anatomy of the endometrium. [Available here](#)
- 2.“Endometrium.” Encyclopædia Britannica, Encyclopædia Britannica, inc. [Available here](#)
- 3.“Myometrium.” Encyclopædia Britannica, Encyclopædia Britannica, inc. [Available here](#)

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