

NAME: Atule Iye Favour

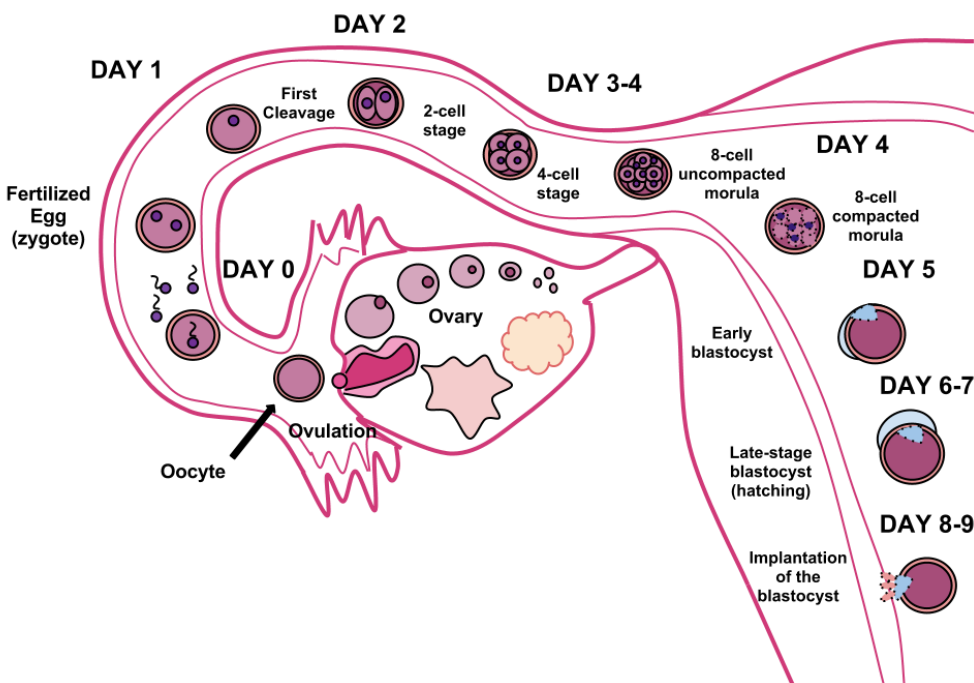
DEPARTMENT: Nursing Science

MATRIC NUMBER: 18/mhs02/049

LEVEL: 200 Level

IMPLANTATION:

Implantation is the stage of pregnancy at which the embryo adheres to the wall of the uterus. At this stage of prenatal development, the conceptus is called a blastocyst. It is by this adhesion that the embryo receives oxygen and nutrients from the mother to be able to grow. In humans, implantation of a fertilized ovum is most likely to occur around nine days after ovulation, however this can range between six and 12 days.

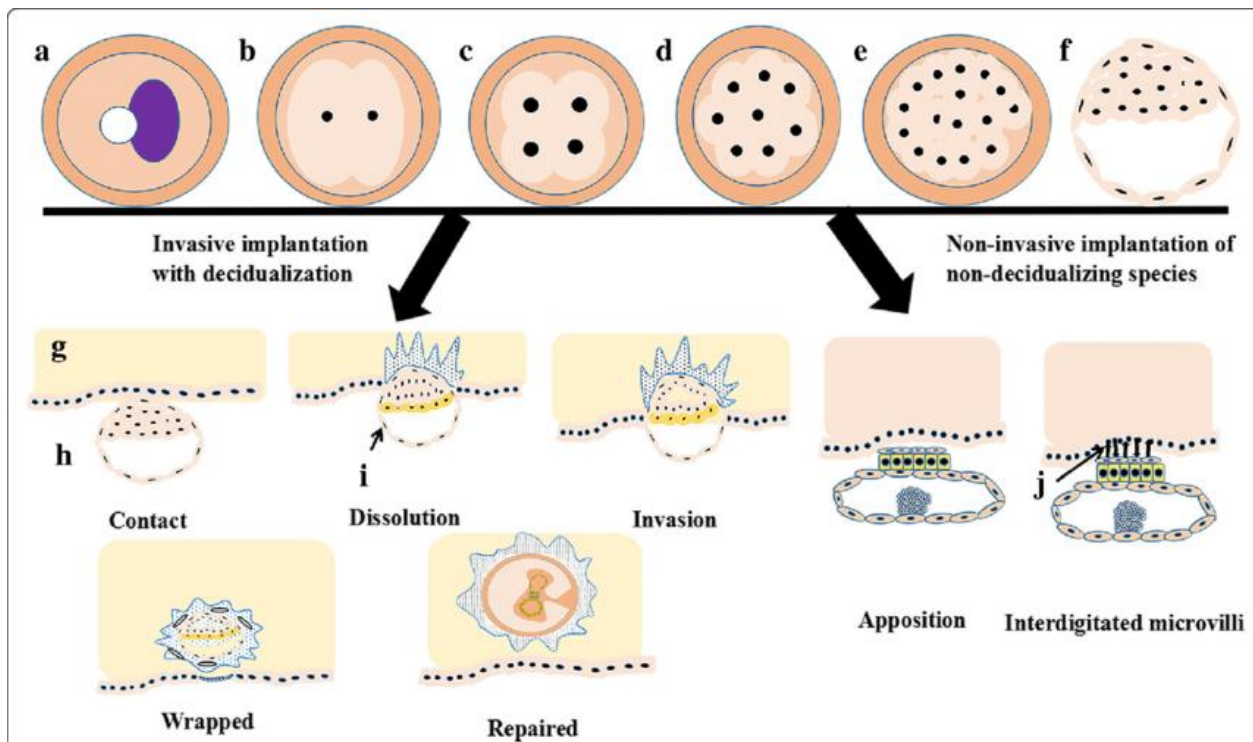


IMPLANTATION WINDOW:

The reception-ready phase of the endometrium of the uterus is usually termed the "implantation window" and lasts about 4 days. The implantation window occurs around 6 days after the peak in luteinizing hormone levels. With some disparity between sources, it has been stated to occur from 7 days after ovulation until 9 days after ovulation or days 6-10 post ovulation. On average, it occurs during the 20th to the 23rd day after the last menstrual period.

ADAPTATION OF UTERUS:

To enable implantation, the uterus goes through changes in order to be able to receive the conceptus.



Predecidualization – The endometrium increases thickness, becomes vascularized and its glands grow to be tortuous and boosted in their secretions. These changes reach their maximum about 7 days after ovulation. Furthermore, the surface of the endometrium produces a kind of rounded cells, which cover the whole area toward the uterine cavity. This happens about 9 to 10 days after ovulation. These cells are called decidual cells, which emphasizes that the whole layer of

them is shed off in every menstruation if no pregnancy occurs, just as leaves of deciduous trees. The uterine glands, on the other hand, decrease in activity and degenerate around 8 to 9 days

Decidualization – Decidualization succeeds Predecidualization if pregnancy occurs. This is an expansion of it, further developing the uterine glands, the zona compacta and the epithelium of decidua cells lining it. The decidua cells become filled with lipids and glycogen and take the polyhedral shape characteristic for decidua cells. After ovulation in absence of pregnancy.

Parts of decidua

The decidua can be organized into separate sections, although they have the same composition.

- Decidua basalis - This is the part of the decidua which is located basolateral to the embryo after implantation.
- Decidua capsularis - Decidua capsularis grows over the embryo on the luminal side, enclosing it into the endometrium. It surrounds the embryo together with decidua basalis.
- Decidua parietalis - All other decidua on the uterine surface belongs to decidua parietalis.

MECHANISM

Implantation is initiated when the blastocyst comes into contact with the uterine wall.

Zona hatching

To be able to perform implantation, the blastocyst first needs to get rid of its zona pellucida. This process can be called "hatching".

Apposition

The very first connection between the blastocyst and endometrium is called apposition.

Invasion

This is an even further establishment of the blastocyst in the endometrium.

Adhesion

Adhesion is a much stronger attachment to the endometrium than the loose apposition. The trophoblasts adhere by penetrating the endometrium, with protrusions of trophoblast cells.

FAILURE:

Implantation failure is considered to be caused by inadequate uterine receptivity in two-thirds of cases, and by problems with the embryo itself in the other third. Inadequate uterine receptivity may be caused by abnormal cytokine and hormonal signaling as well as epigenetic alterations.