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**Assignment; Write a short note on implantation**

### **A short note on implantation.**

Implantation refers to a series of cleavage divisions. By day 5 after fertilization, a blastocyst is formed. The blastocyst floats for 2-3days before implantation into the endometrial later of the uterus.

Implantation is the process of embryo apposition/hatching, adhesion and invasion into the endometrium. There is degeneration of the zona pellucida, adhesion of the trophoblast to the endometrium of the uterus. After attachment to the uterine epithelium, there is invasion of the endometrium by syncytiotrophoblast. The blastocyst penetrates deeper into the uterine stomach and develops an amniotic cavity. The fully implanted embryo invaded the maternal vasculature and the uterine epithelium grows over the implantation site and the uterine stomach undergoes desidualization .

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. 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.

The implantation window is characterized by changes to the endometrium cells, which aid in the absorption of the uterine fluid. These changes are collectively known as the plasma

membrane transformation and bring the blastocyst nearer to the endometrium and immobilize it. During this stage the blastocyst can still be eliminated by being flushed out of the uterus. Scientists have hypothesized that the hormones cause a swelling that fills the flattened out uterine cavity just prior to this stage, which may also help press the blastocyst against the endometrium. The implantation window may also be initiated by other preparations in the endometrium of the uterus, both structurally and in the composition of its secretions.

Possible signs of implantation include;

- Bleeding
- Cramps
- Discharge
- Bloating
- Tender breasts
- Nausea
- Headaches
- Mood swings
- Implantation dip