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QUESTION : Write a short note on IMPLANTATION

IMPLANTATION is a process in which a developing embryo, moving as a blastocyst through a utrerus, makes contact with the uterine wall and remains attached to it until birth. The lining of the uterus (endometrium) prepares for the developing blastocyst to attach to it via many internal changes. Without these changes, implantation will not occur, and the embryo sloughs off during menstruation. Before embryogenesis begins, the ovary releases an unfertilized egg cell, called an oocyte, which then travels down the fallopian tube. The egg is enveloped in an extracellular matrix called the zona pellucida. Sperm can fertilize the egg in the zona pellucid, which prevents the fertilized egg, called a zygote, from adhering to the wall of the fallopian tube.

If the zygote implants in any area besides the uterus, the result is an ectopic pregnancy. This condition prevents the complete development of the embryo, and it can cause fatal hemorrhaging in the pregnant female. As the zygote moves through the fallopian tube , it undergoes several rounds of cell division, a process called cleavage. These cell divisions produce the inner cell mass (ICM), which will become the enmbryo, and the trophoblast, which surrounds the ICM and interacts with maternal tissues. Together, the ICM and the trophoblast are called the blastocyst. A blastocyst successfully ipmplants in the uterus when , as the zona pellucida exits the fallopian tube, the blastocyst leaves the zona pellucida and binds to the endometrium.