

PHARMACOLOGY

Implantation is a process in which a developing embryo, moving as a blastocyst through a uterus, 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. Such implantation is unique to mammals, but not all mammals exhibit it. 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. In humans, this process begins at the end of week 1, with most successful human pregnancies the conceptus implants 8 to 10 days after ovulation, and early pregnancy loss increases with later implantation. The implantation process continues through the second week of development.

The initial phase of the implantation process is "adplantation". This first phase requires the newly hatched blastocyst to loosely adhere to the endometrial epithelium, often "rolling" to the eventual site of implantation where it is firmly adhered. This process requires both the blastocyst adhesion interaction with the endometrium during the "receptive window". Abnormal implantation is where this process does not occur in the body of the uterus (ectopic) or where the placenta forms incorrectly.