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ISSN: 0974-8369
Biology and Medicine

Perspective

# Human Placenta and its Role in Development of Foetus

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## DESCRIPTION

The placenta is an organ that develops inside the uterus. During pregnancy, this structure provides the growing baby with oxygen and nutrients. It also removes waste products from the baby's blood. The placenta attaches to the wall of the uterus, through which the baby's umbilical cord emerges. Organs of the baby are usually attached to the top, sides, anterior, or posterior of the uterus. In some pregnant women placenta remains in the lower part of the uterus it is known as low-lying placenta (placenta previa). Potential placental problems during pregnancy include placenta eruption, placenta previa, and placenta accreta. After birth, retained placenta can be a problem.

After the fertilized egg implants in the uterus about 7 to 10 days after conception, the placenta begins to form. Continue to grow and support baby during pregnancy. The placenta starts out as a few cells and grows to a length of several centimeters. The placenta takes over hormone production until the end of the first trimester (12 weeks of gestation). Up to this point, the corpus luteum has taken over most of the hormone production. Many people experience nausea and fatigue in their pregnancy. The placenta helps keep the baby alive and healthy during pregnancy. Blood flows through the placenta and carries oxygen, glucose, and nutrients to the baby through the umbilical cord. The placenta can also filter harmful waste products and carbon dioxide from baby's blood. The placenta allows oxygen and nutrients to pass back and forth between mother and baby's bloodstream without mixing. It functions as the baby's lungs, kidneys and liver until birth.

As labor approaches, the placenta releases antibodies to the baby, boosting the baby's immune system. This immunity stays in the baby for the first few months after birth. The placenta produces several important hormones during pregnancy such as lactogen, estrogen and progesterone. These pregnancy hormones are beneficial for both mother and baby. For example, the placenta produces hormones that suppress milk production during pregnancy.

The placenta looks like a blood vessel-rich disc of heterogeneous tissue and appears dark red at delivery. Most of the mature placental tissue is composed of blood vessels. They are connected to the baby through the umbilical cord and branch out through the placental disc like the branches of a tree. The placenta has two sides. The side that attaches to the uterus and the side that is closest to the baby. The side facing the uterine wall is dark red-blue and the side facing the baby is gray. The placenta is about 10 inches long and 1 inch thick in the middle. Babies weigh about 16 ounces at birth. Once the fertilized egg implants itself in the wall of the uterus, the placenta begins to develop. The placenta mainly contains blood vessels contained in structures called "villi". Blood vessels are connected to the baby's bloodstream through the umbilical cord. The remaining placental tissue primarily connects the villi to the umbilical cord, allowing blood to bathe the villi and providing oxygen and nutrients to the baby.

### Placental problems during pregnancy

**Placental abruption:** If the placenta peels away from the inner wall of the uterus before delivery either partially or completely a condition known as placental abruption develops. This can deprive the baby for oxygen and nutrients and causes pregnant women to bleed heavily. Placenta abruption could result in an emergency situation requiring early delivery.

**Placenta previa:** This condition occurs when the placenta partially or totally covers the cervix the outlet for the uterus. Placenta previa is more common early in pregnancy and might resolve as the uterus grows. Placenta previa can cause severe vaginal bleeding during pregnancy or delivery. The management of this condition depends on the amount of bleeding, whether the bleeding stops, how far along pregnancy is, the position of the placenta, and the health of that mother and baby. If placenta previa persists late in the third trimester, health care provider will recommend a C-section.

**Placenta accreta:** Typically, the placenta detaches from the uterine wall after childbirth. With placenta accreta, part or all of the placenta remains firmly attached to the uterus. This condition occurs when the blood vessels and other parts of the placenta grow too deeply into the uterine wall. This can cause severe blood loss during delivery. In aggressive cases, the placenta

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**Received:** 27-Oct-2022, Manuscript No. BLM-22-18730; **Editor assigned:** 31-Oct-2022, Pre QC No. BLM-22-18730 (PQ); **Reviewed:** 15-Nov-2022, QC No. BLM-22-18730; **Revised:** 22-Nov-2022, Manuscript No. BLM-22-18730 (R); **Published:** 29-Nov-2022, DOI: 10.35248/0974-8369.22.14.516.

**Citation:** Twesigye D (2022) Human Placenta and its Role in Development of Foetus. Bio Med. 14:516.

invades the muscles of the uterus or grows through the uterine wall. Health care provider will likely recommend a C-section followed by removal of uterus.

**Retained placenta:** If the placenta isn't delivered within 30 minutes after childbirth, it's known as a retained placenta. A retained placenta might occur because the placenta becomes trapped behind a partially closed cervix or because the placenta is still attached to the uterine wall. Left untreated, a retained placenta can cause severe infection or life-threatening blood loss.