Pictures and Images From Egg to Embryo

CONCEPTION PICTURES
Color-enhanced view of a sperm cell penetrating an egg

- **Conception: From egg to embryo**
- At the moment when a lone sperm penetrates a mature egg, conception or fertilization takes place. To better understand the incredible process of conception, take a journey with us from tiny egg to growing embryo.
An egg being released from a mature follicle on the surface of the ovary.

- **Ovulation**
  - Each month, a mature egg is released from one of the women's two ovaries -- this is called ovulation.
  - Ovulation takes place about two weeks after the first day of the last menstrual period.
  - The rare picture shown here is the clearest ever taken of human ovulation.
Sperm and egg meet inside the fallopian tube.

- Passage into the fallopian tube
- Once the egg is released from the ovary, it travels into the fallopian tube where it remains until a single sperm penetrates it during fertilization.
During their journey, many sperm run out of energy before reaching the egg.

The laborious journey of the sperm

- An average ejaculate discharges 40-150 million sperm which eagerly swim upstream toward the fallopian tubes on their mission to fertilize an egg.

- Fast-swimming sperm can reach the egg in a half an hour, while other may take days. The sperm can live up to 48-72 hours. Only a few hundred will even come close to the egg, due to the many natural barriers and hurdles that exist in the female reproductive tract.
The moment of conception.

- **Fertilization:** Sperm penetrates egg
- If a sperm cell meets and penetrates an egg, it will fertilize the egg.
- The fertilization process takes about 24 hours.
- When fertilization happens, changes occur on the surface of the egg to prevent other sperm from penetrating it.
- At the moment of fertilization, the genetic makeup is complete, including the sex of the infant.
(Left) Fertilized egg undergoing cell division.
(right) Cells continue to divide.

The cells begin to divide

- The fertilized egg begins dividing rapidly, growing into many cells. It leaves the fallopian tube and enters the uterus three to four days after fertilization.
- Rarely, the fertilized egg does not leave the fallopian tube; this is called a tubal pregnancy or ectopic pregnancy and is a danger to the mother.
A fertilized egg implanted high on the endometrial wall.

**Implantation**

- After entering the uterus, the fertilized egg attaches to the uterine lining, or endometrium. This process is called implantation.
- The cells continue to divide.
Pregnancy tests detect a pregnancy hormone.

**Pregnancy hormones**

- **Human chorionic gonadotropin (hCG)** is a hormone present in the blood within about a week of conception.
- It is the hormone detected in a blood or urine pregnancy test, but it usually takes three to four weeks for levels of hCG to be high enough to be detected by pregnancy tests.
- It is secreted by cells that develop into the placenta.
A fetus at eight weeks of pregnancy.

Fetal development

- After implantation, some cells become the placenta while others become the embryo.
- About three weeks after ovulation, the baby's brain, spinal cord, heart, and others organs begin to form. The heart begins beating during week five.
- During week seven, the umbilical cord appears. At the eighth week the developing baby, now called a fetus, is well over 1/2 of an inch long -- and growing. A ‘full term’ delivery generally occurs around 40 weeks.