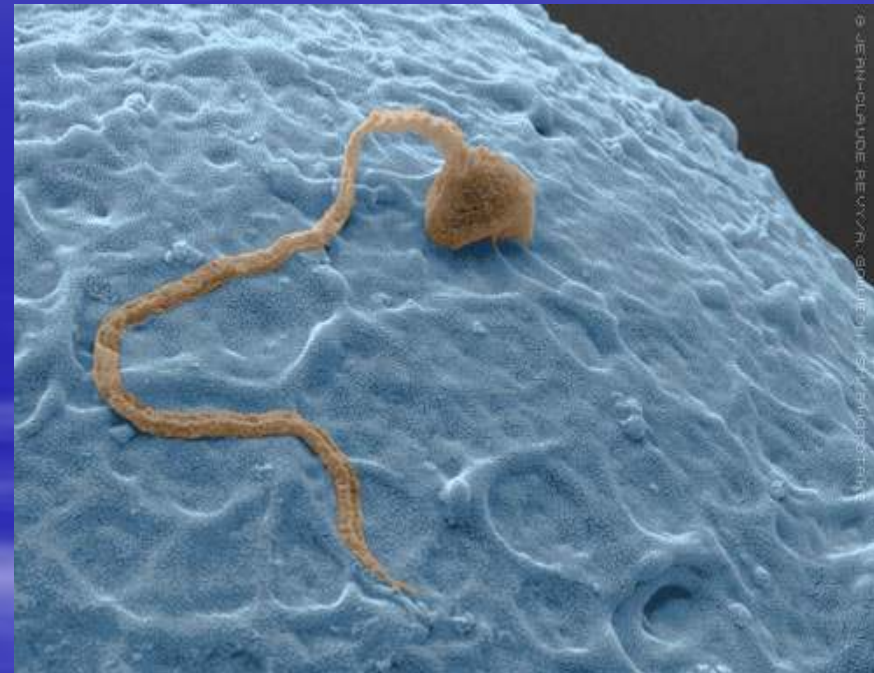


# Pictures and Images From Egg to Embryo

CONCEPTION PICTURES

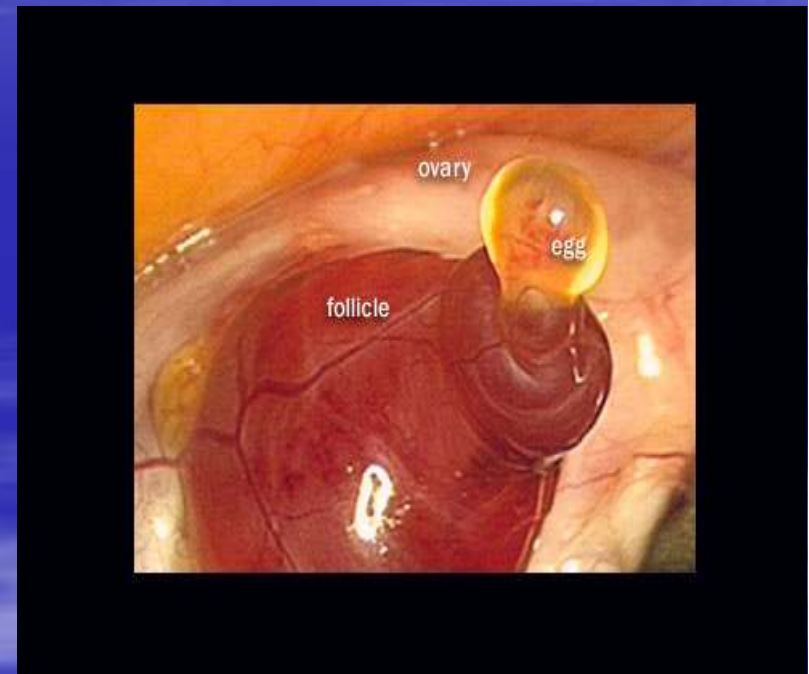
# Color-enhanced view of a sperm cell penetrating an egg

- **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.



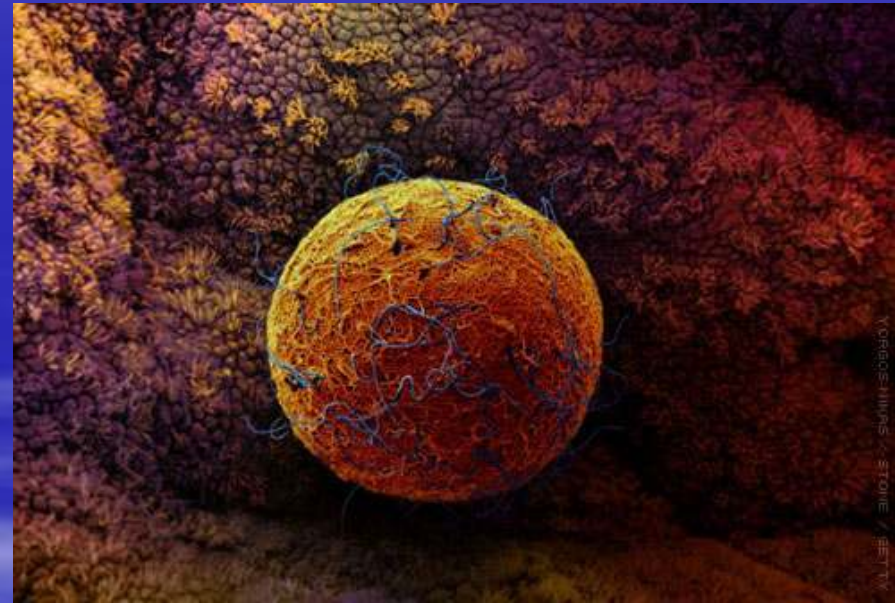
An egg being released from a mature follicle  
on the surface of the ovary.

- **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.

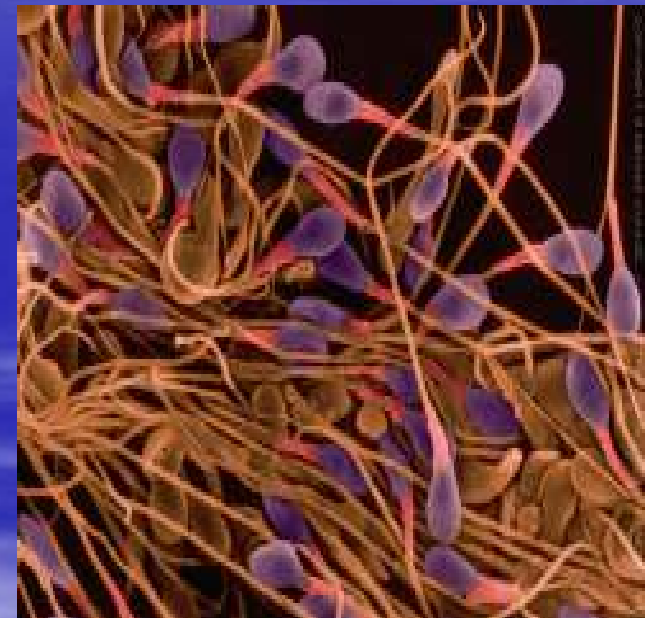


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# During their journey, many sperm run out of energy before reaching the egg.

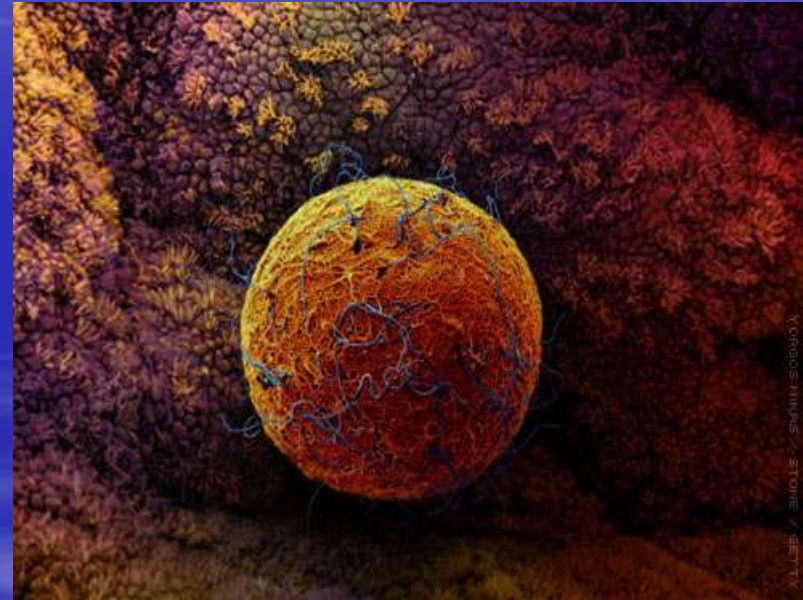
## The laborious journey of the sperm

- 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.

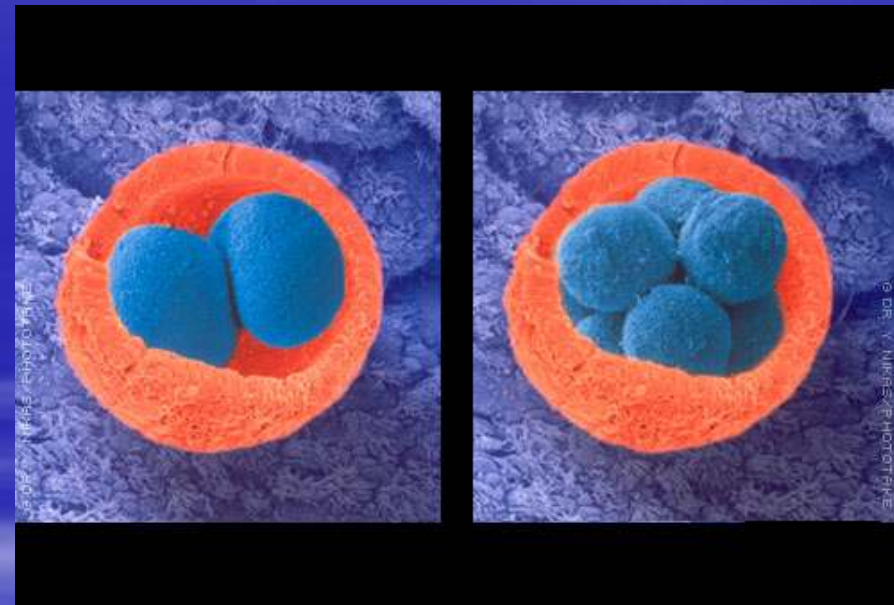


(Left) Fertilized egg undergoing cell division.

(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.

