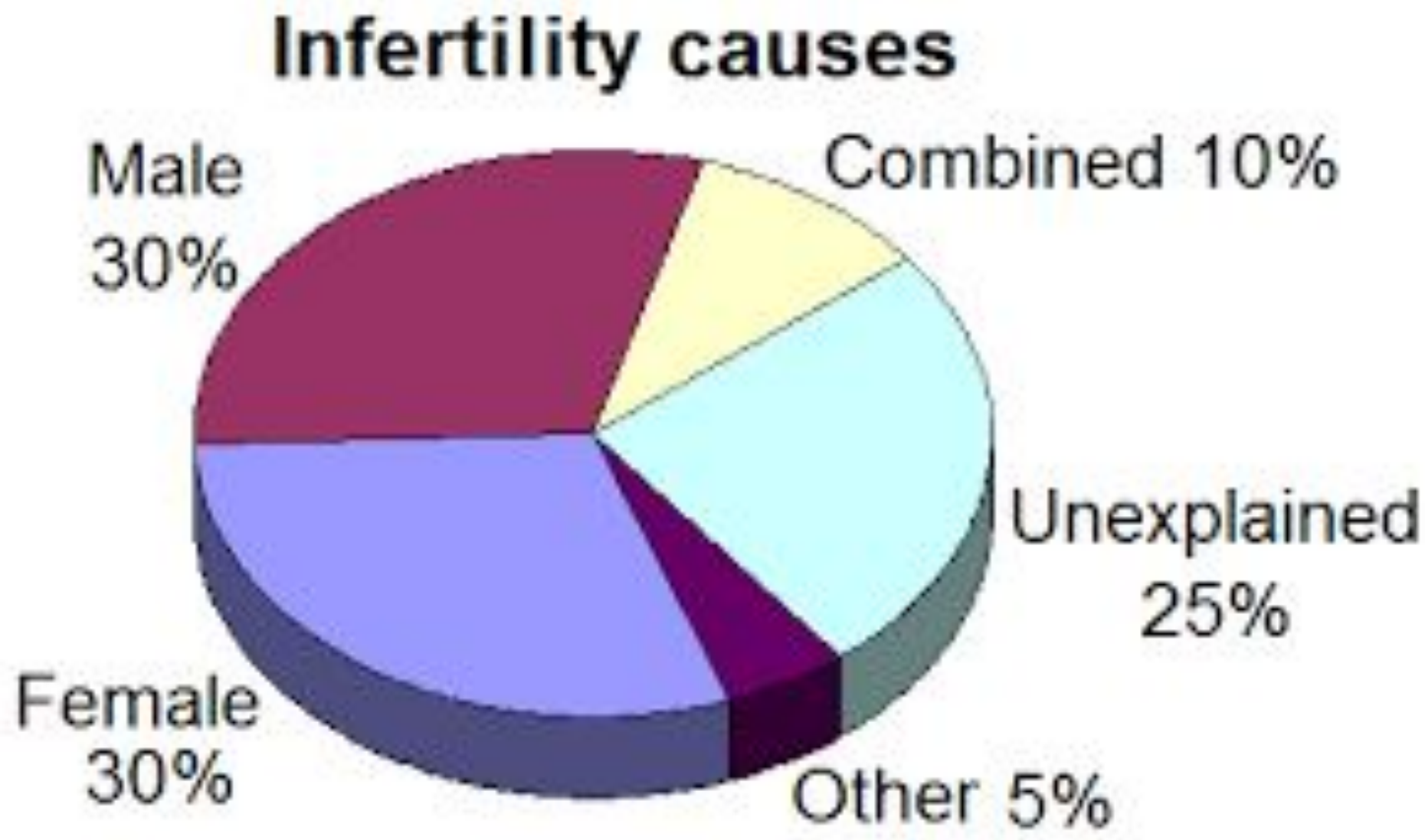
Family planning:

- **The use of education and birth control to limit the number of offspring and the population of a country.**
- **Involves the use education about reproduction and birth control in order to allow women to make decision about their fertility and family size.**

INFERTILITY IS DEFINED AS FAILURE TO CONCEIVE WITHIN ONE OR MORE YEARS OF REGULAR UN PROTECTED COITUS.


Infertility causes
Male 30%
Combined 10%
Unexplained 25%
Female 30%
Other 5%

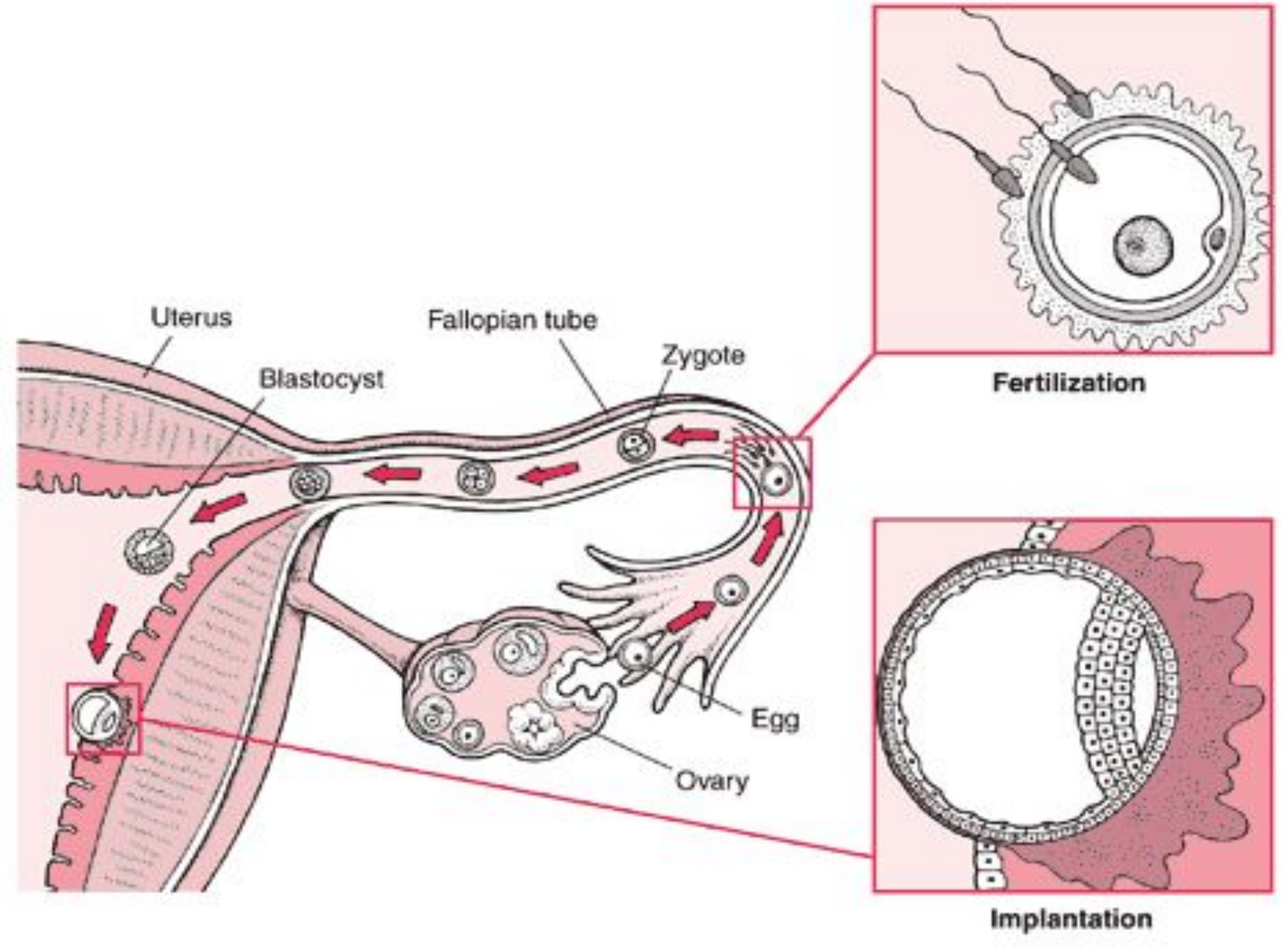
Types of Infertility

- Primary infertility
  - couple has never produced a pregnancy
- Secondary infertility
  - woman has previously been pregnant, regardless of the outcome, and
  - now is unable to conceive

FACTORS RESPONSIBLE FOR FERTILITY

- Healthy spermatozoa should deposited high in the vagina.
- Spermatozoa should undergo changes and acquire motility.
- The motile spermatozoa should ascend through the cervix into the uterine cavity and fallopian tube.
- There should be ovulation.
- The fallopian tubes should be patent and the oocyte should be picked up by the fimbriated end of the tube

- **The spermatozoa should fertilize the oocyte at the ampulla of the tube.**
- **The embryo should reach the uterine cavity after 3-4 days of fertilization.**
- **The endometrium should be prepared for implantation and corpus luteum should function adequately.**


Uterus
Fallopian tube
Zygote
Blastocyst
Egg
Ovary
Fertilization
Implantation

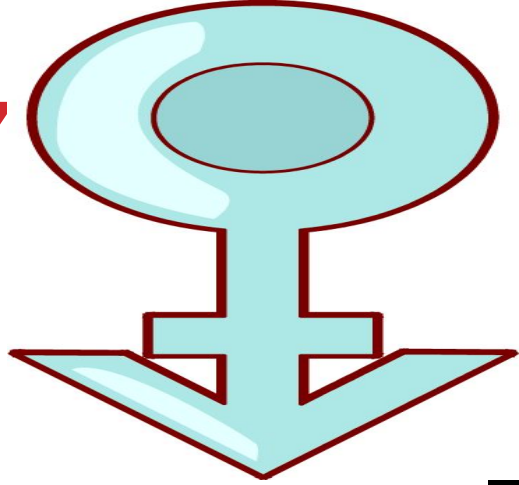
Cause of Male Infertility

- **OBSTRUCTIVE LESIONS OF THE EPIDIDYMIS AND VAS DEFERENS**

- **NUTRITIONAL DEFICIENCIES**

- **OTHER FACTORS**
  - Endocrine disorders
  - Genetic disorders
  - Psychologic disorders
  - Sexually transmitted infections
  - Exposure of scrotum to high temperatures
  - Exposure to workplace hazards such as radiation or toxic substances

CAUSES OF INFERTILITY
FACTORS IN MEN

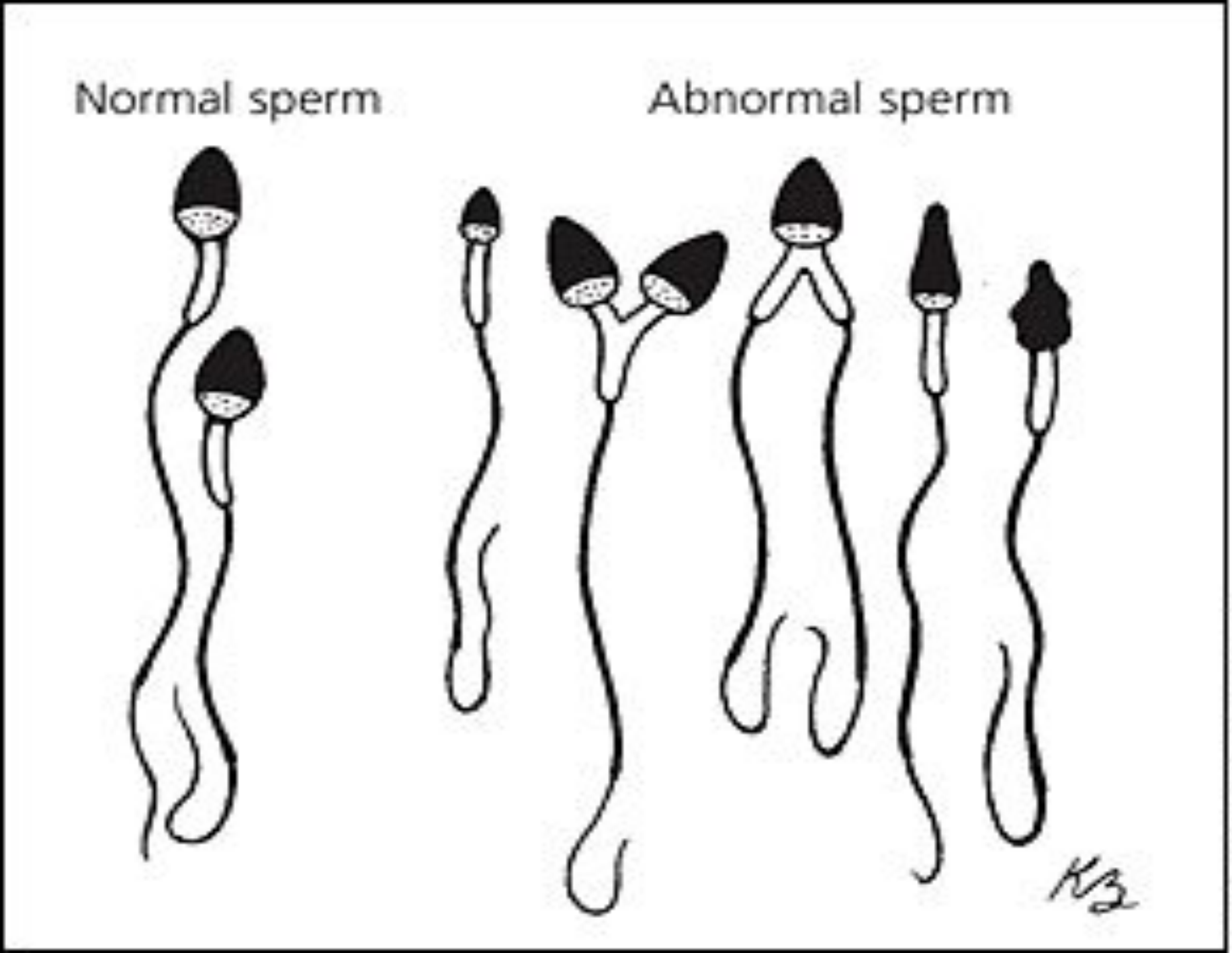


Abnormalities of the sperm.

Abnormal erections

Abnormal ejaculation

Abnormalities of seminal fluid.

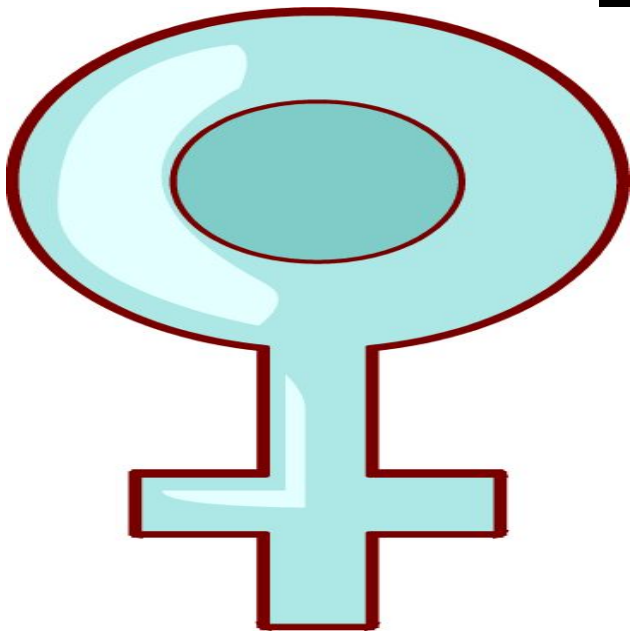

Normal sperm
Abnormal sperm
KB
KATHRYN BORN/AAFP

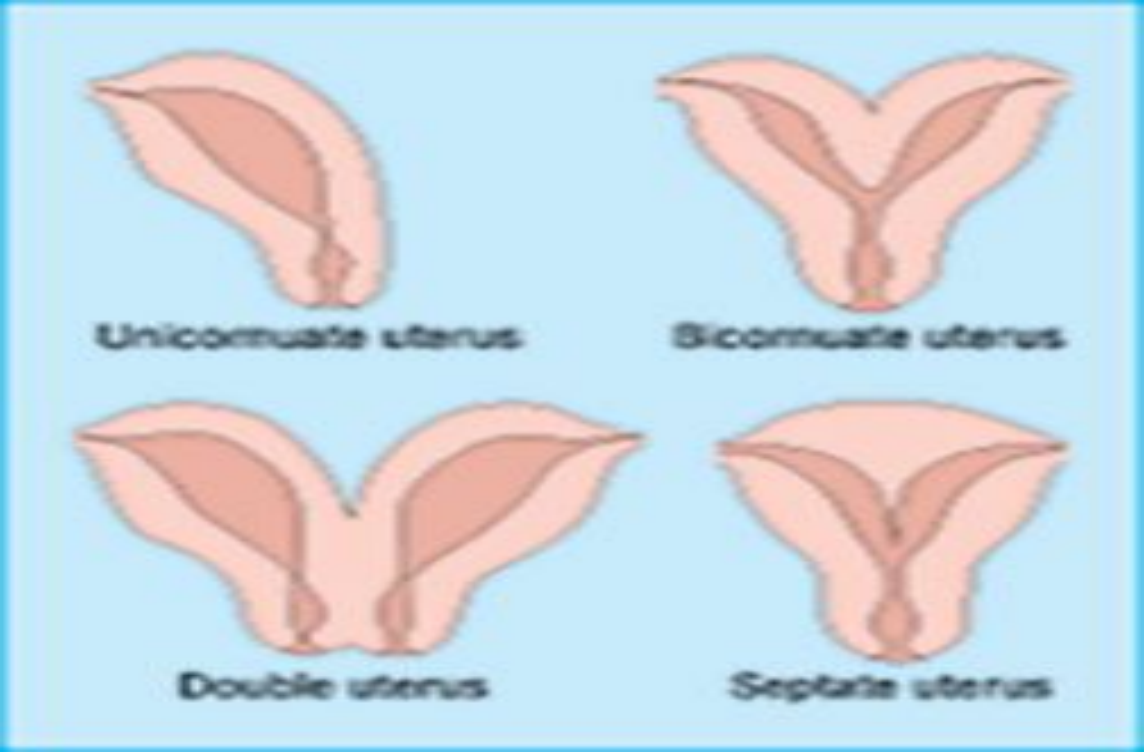
FACTORS IN WOMEN

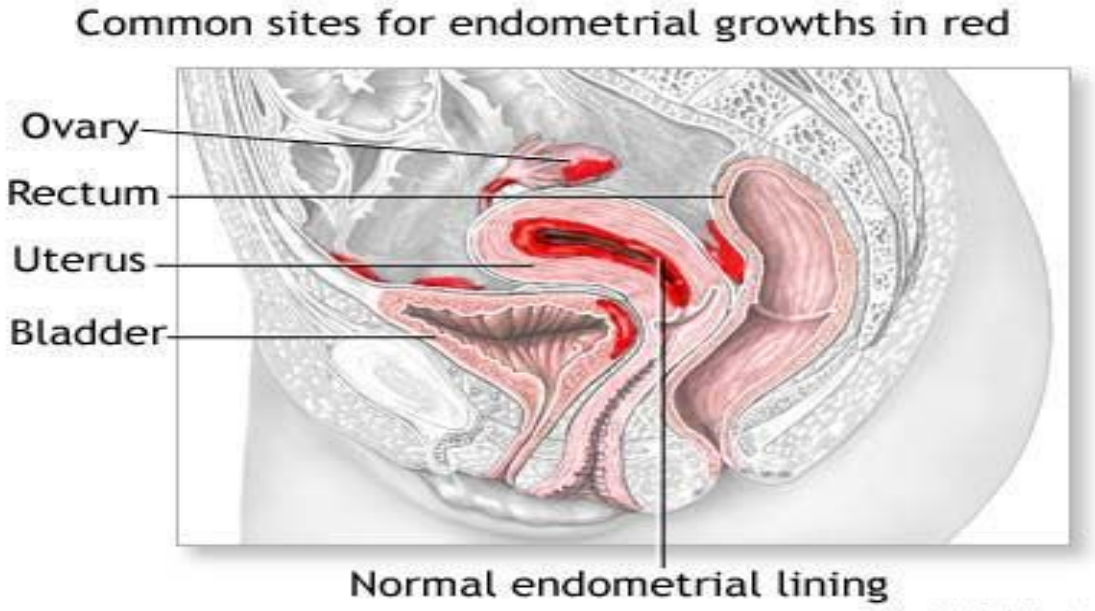
Disorders of ovulation

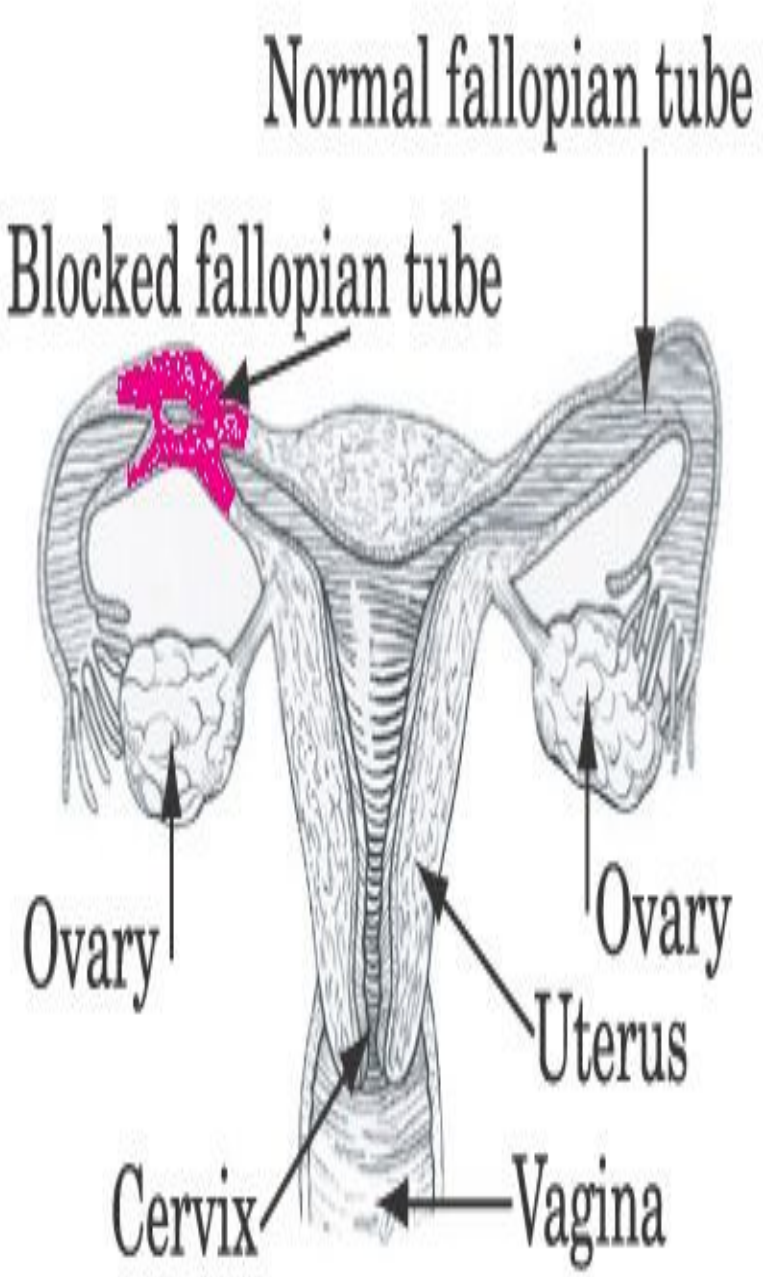
Abnormalities of fallopian tube.

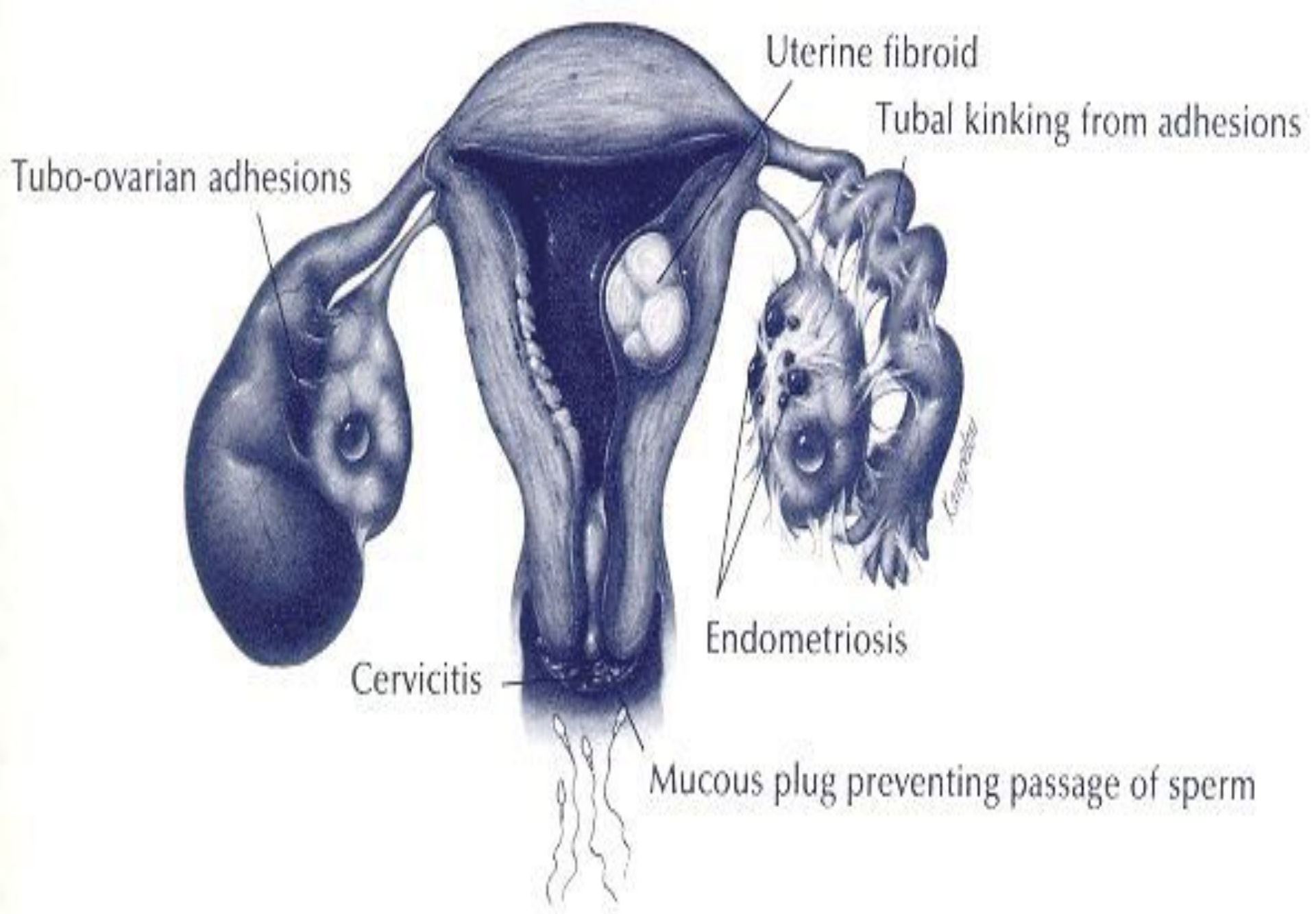
Abnormalities of the cervix or uterus




Unicornuate uterus
Bicornuate uterus
Double uterus
Septate uterus


Common sites for endometrial growths in red
Ovary
Rectum
Uterus
Bladder
Normal endometrial lining
©ADAM, Inc.


Normal fallopian tube
Blocked fallopian tube
Ovary
Ovary
Uterus
Cervix
Vagina


Uterine fibroid
Tubal kinking from adhesions
Tubo-ovarian adhesions
Endometriosis
Cervicitis
Mucous plug preventing passage of sperm

REPEATED PREGNANCY LOSS

Abnormalities of fetal chromosomes

Abnormalities of the cervix or uterus.

Endocrine abnormalities.

Immunologic factors

Environmental factors.

Infection

SPECIFIC INVESTIGATIONS

MALE

1. Semen analysis
2. Serum FSH, LH, testosterone, prolactin and TSH
3. Fructose content in seminal fluid
4. Testicular biopsy
5. Karyotype analysis
6. Immunological tests
7. Trans rectal ultra sound (TRUS)
8. Vasogram
9. Presence of pus cells

FEMALE

1. Basal body temperature
2. Cervical mucus study
3. Hormone estimation

Serum progesterone

Serum LH

Serum estradiol

4. Endometrial biopsy
5. Ovum transport: investigation of tube patency

Laparoscopy

Hysterosalpingography

Basic evaluation of infertile men

- Normal history
- Normal physical examination
- Normal semen analysis X 2
- Normal hormonal profile

Female factor evaluation

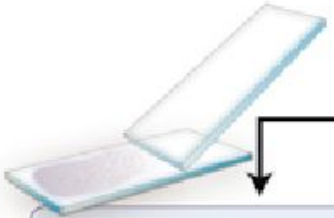
Abnormal → Treat female factor

Normal

Unexplained male infertility → Expectant management
Waiting period for 1-2 yr when
- Female age <35
- Duration of infertility is <3 yrs

Active

Sperm cervical fluid penetration test (postcoital test)

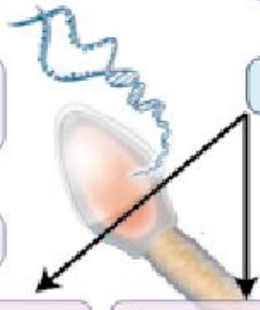


No sperm in the cervical fluid

- Improper coital technique or
- Failure to ejaculate inside

Treatment → Proper counselling

Normal postcoital test → Sperm function tests



ROS testing

Treatment

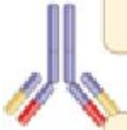
- Antioxidant therapy
- Avoid smoking and alcohol use
- ART

Sperm chromatin defects

Asessment of fertilization potential
- Sperm-zona pellucida binding
- Competence of capacitation
  - Hyperactivation assessment and
  - Acrosome reaction
- Zona free hamster egg penetration assay

Treatment → ART (ICSI)

Shaking motility or poor sperm motility



Antisperm antibody determination

Immune infertility

Treatment

- Steroid therapy
- ART

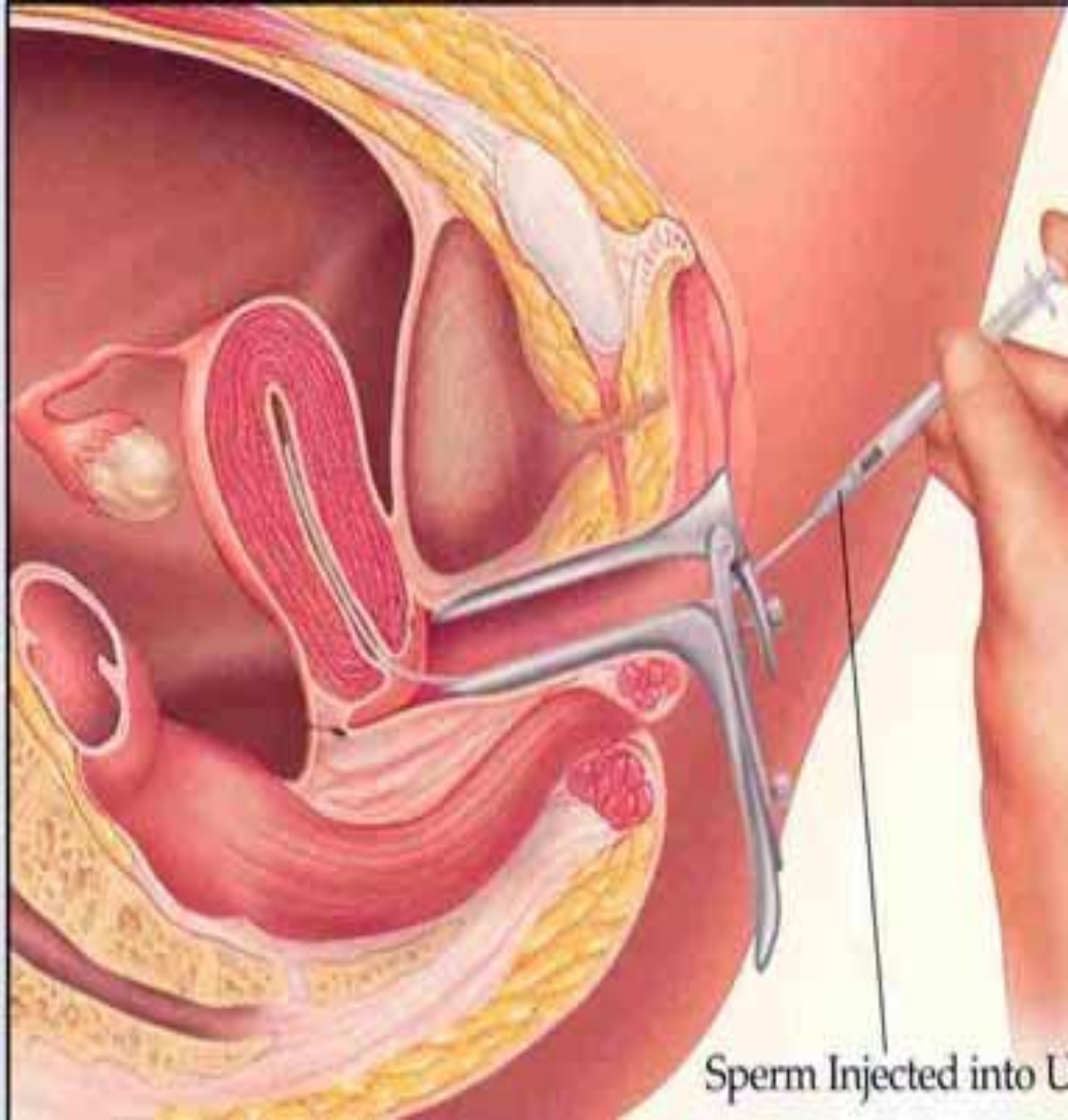
THERAPIES TO FACILITATE PREGNANCY

1. Stimulation of ovulation
   - Clomiphene citrate (clomid)
   - Human chorionic gonadotrophin (HCG)
   - Human menopausal gonadotrophin (HMG)
   - Bromocriptine (parlodel)
2. Surgical procedures
3. Egg donation
4. Surrogate parenting

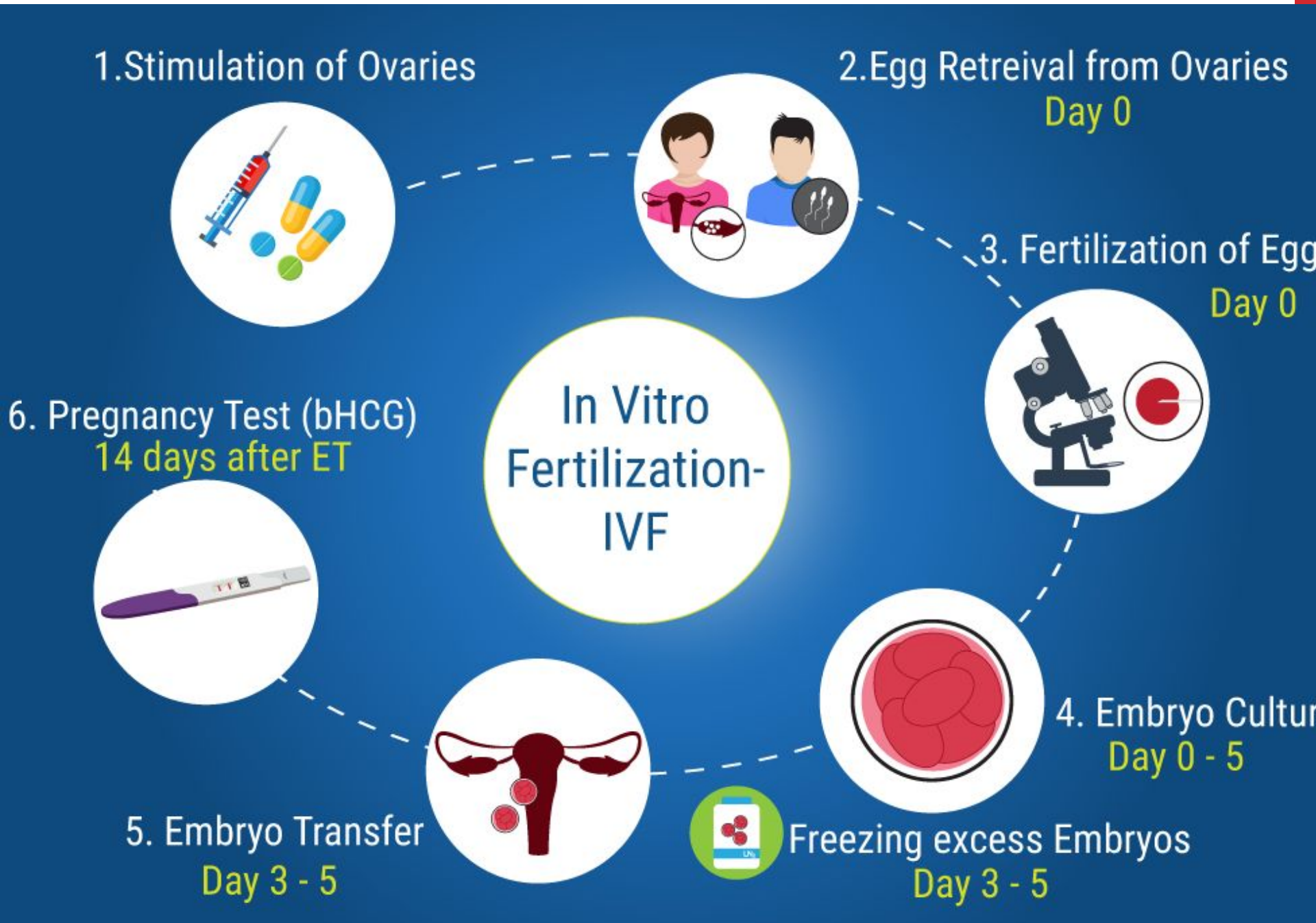
5. Assisted reproductive technology

- Artificial insemination by husband (AIH)
- Artificial insemination by donor (AID/DI)
- Invitro fertilization/ embryo transfer (IVF/ET)
- Gamete intrafallopian transfer (GIFT)
- Zygote intrafallopian transfer (ZIFT)
- Intracytoplasmic sperm injection (ICSI)

Sperm in Sterile Medium

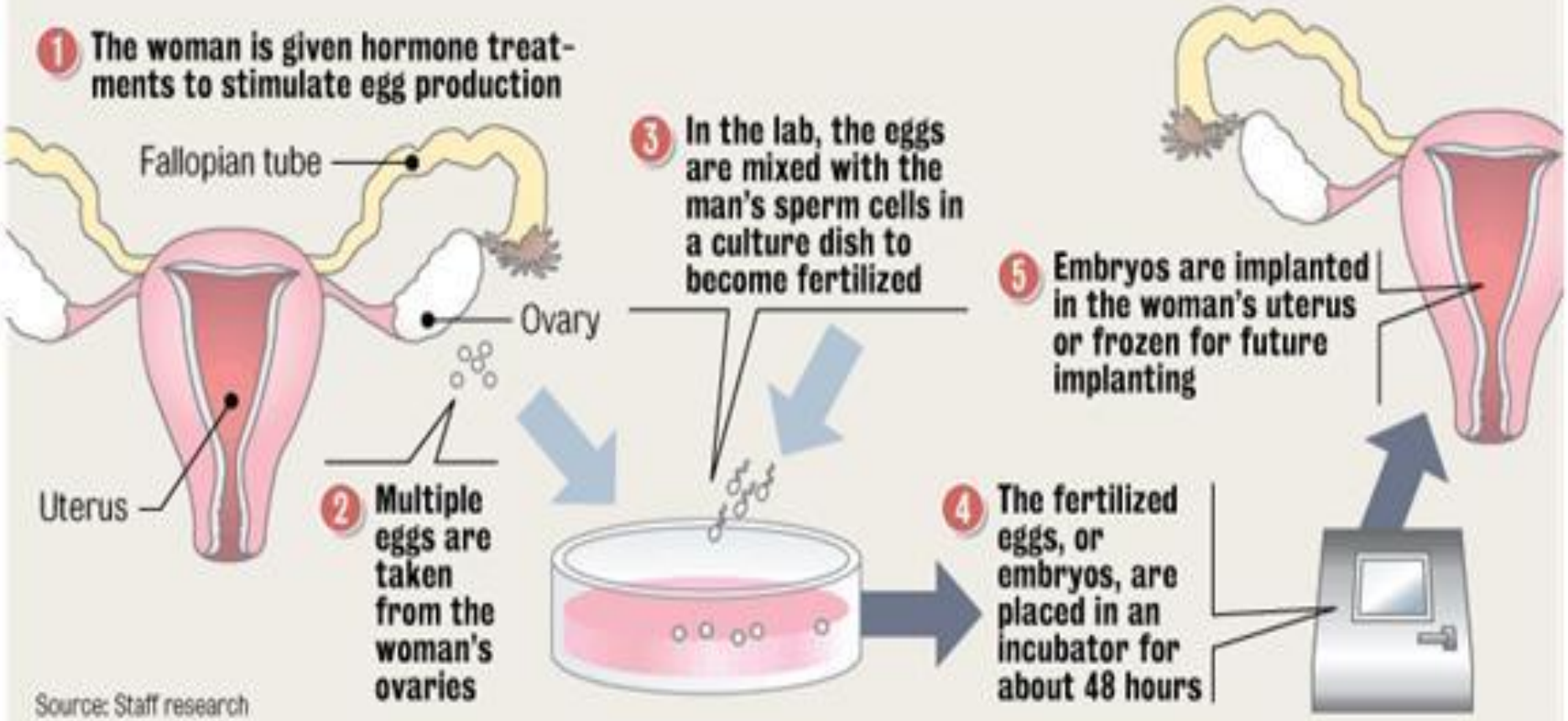


Sperm Injected into U

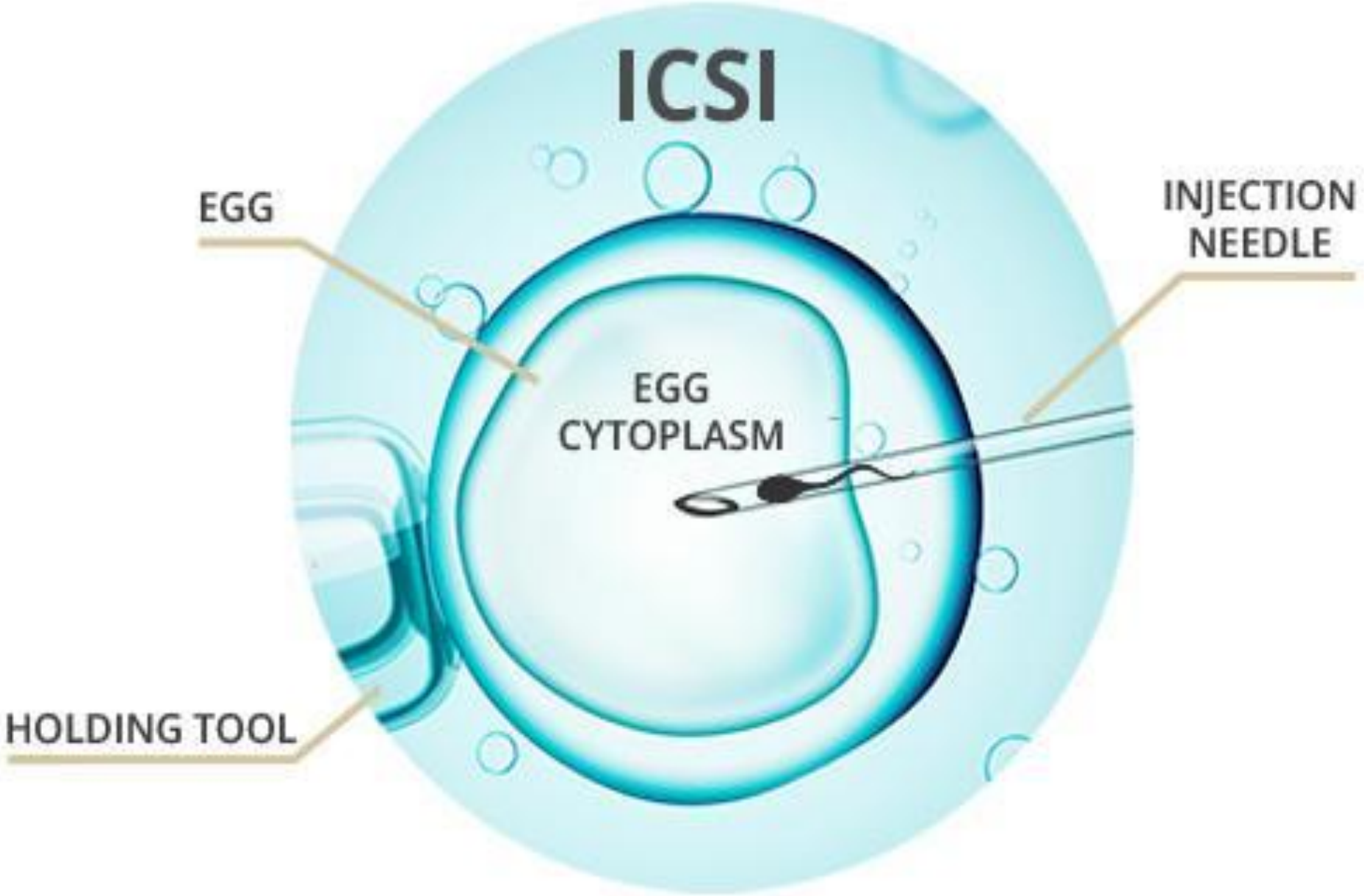

1.Stimulation of Ovaries
2.Egg Retreival from Ovaries
Day 0
3. Fertilization of Egg
Day 0
In Vitro Fertilization- IVF
4. Embryo Cultur
Day 0 - 5
Freezing excess Embryos
Day 3 - 5
5. Embryo Transfer
Day 3 - 5
6. Pregnancy Test (bHCG)
14 days after ET

THE IN VITRO FERTILIZATION PROCESS

Used as a remedy for infertility, a woman's egg cells are combined with a man's sperm cells outside the uterus. The fertilized egg is then implanted in the woman's uterus and, if successful, begins the pregnancy cycle. The first baby realized from this fertilization method was born in 1978.



EMMETT MAYER III / THE TIMES-PICAYUNE


ICSI
EGG
INJECTION NEEDLE
EGG CYTOPLASM
HOLDING TOOL
Sperm is injected into the cytoplasm of the egg using a fine needle

THANK YOU FOR YOUR ATTENTION!