

Review

■ What are the roles of FSH and LH in the reproductive system?

ASSISTED REPRODUCTIVE TECHNOLOGIES (ARTs)

Infertility

- Infertility is the inability to conceive a child after 12 months of sexual relations without using contraceptives
 - *To be eligible for ART in many places, a couple is considered to be infertile if they have not been able to conceive a child after 2 years of trying*

ARTs

- Assisted Reproduction consists of all the medical procedures used to help a woman become pregnant



Benefits of ARTs

- Infertile couples are able to have children
- Same-sex couples are able to have children

Concerns of ARTs

- Risk of multiple births
- Very expensive for couple or government
- Hormones increase the risk of ovarian cancer
- Many medical appointments and procedures
- 3% increase in birth defects
- Frozen embryos need to eventually be dealt with
- Risk of embryos being selected purely for desired traits (ex. gender, eye colour)**

TYPES OF ARTS

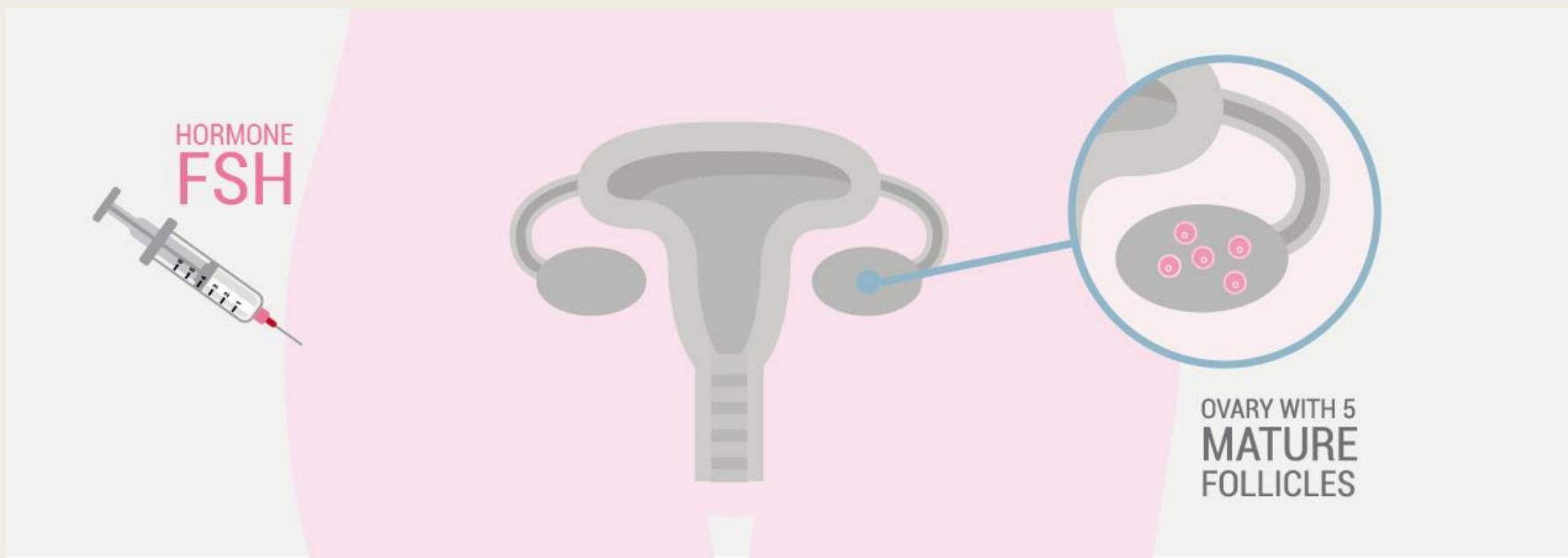


Ovarian Stimulation

- How does it work?
- Uses medication to stimulate the ovaries (female takes hormones in the form of needles or pills) which stimulate the production of ova.
- One or more follicles and eggs released each month

Ovarian Stimulation

- When is it used?
- Used when egg does not develop properly or for women who rarely or never ovulate



Artificial Insemination

- How does it work?
- Sperm is collected from a male, then washed and analyzed. It is then injected directly into the uterus on the day of ovulation
- Usually combined with Ovarian stimulation

Artificial Insemination

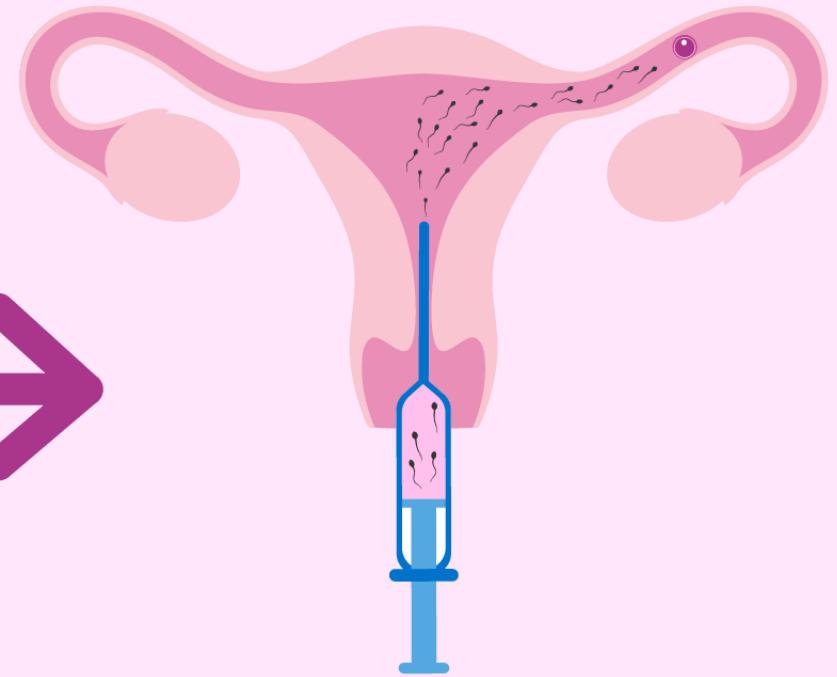
- When is it used?
- Used when the sperm cannot pass the cervix because female's cervical mucus kills sperm (too acidic) or when the males's sperm count (number) or motility (movement) is low



Sperm collection



Laboratory processing



Insemination

In Vitro Fertilization

- How does it work?
- The ovum is fertilized in a lab setting (outside the woman's body)
- After 2-8 days of growth in the lab, embryos are implanted in the uterus to continue development until birth

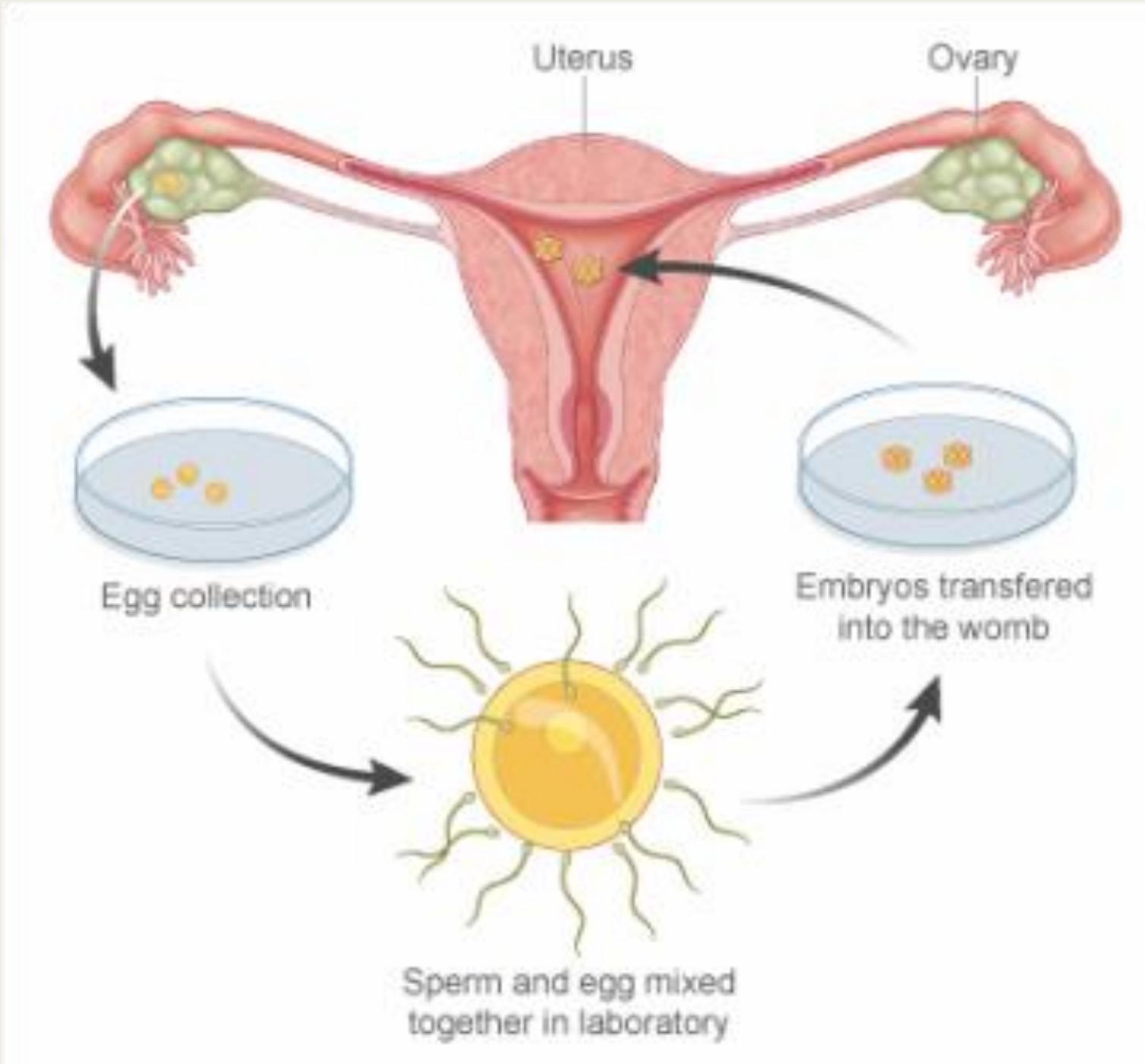
In Vitro Fertilization

- When is it used?
- Used when the fallopian tubes are damaged, older woman, or other methods have not worked

In Vitro Fertilization

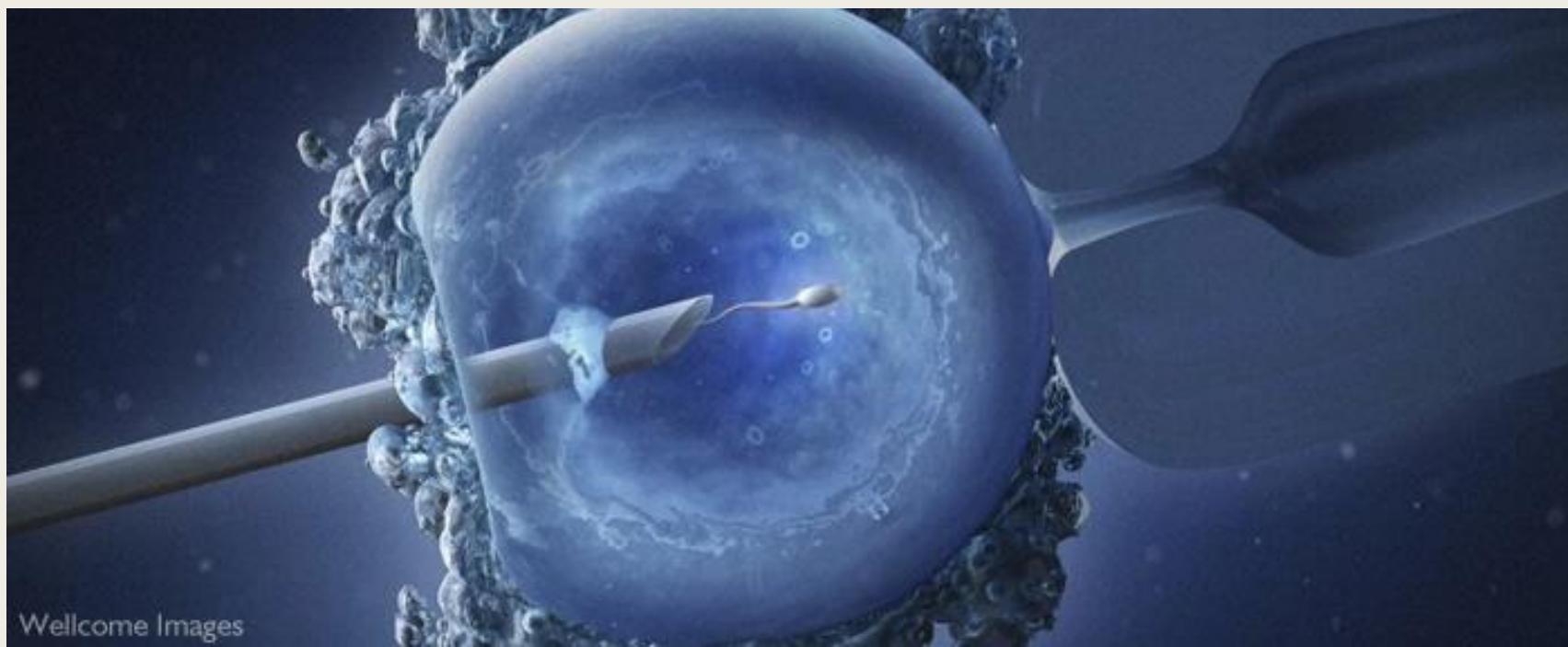
■ Steps

- 1) Ovarian stimulation – the woman produces multiple mature ova which is collected
- 2) Retrieval and washing of sperm
- 3) Fertilization in the lab – ova and sperm placed together in a test tube where fertilization occurs
- 4) Transfer of embryos to uterus – after 2-7 days the most developed embryos are transferred to the uterus (usually 2-4 at a time). Un-transferred embryos can be frozen to be used later



Fertilization through Micro Injection

- How does it work?
- Uses the same steps as In Vitro Fertilization BUT
the sperm cells are inserted directly into the ova



Fertilization through Micro Injection

- When is it used?
- Used when there is low sperm count/motility or fertilization poses a problem or other methods have not worked.