ASSISTED CONCEPTION TECHNIQUES

- *In vitro* fertilization and embryo transfer **(IVF-ET)** involves the fertilization of gametes in the laboratory and transfer of embryos to the uterus. There are a number of related techniques that are carried out to overcome barriers to enhance fertilization.

- IVF *in vitro* fertilization
- DI donor insemination
- GIFT gamete intrafallopian transfer
- ZIFT zygote intrafallopian transfer
- ICSI intracytoplasmic sperm injection
- TESA testicular sperm aspiration
- PESA percutaneous sperm aspiration
- MESA micro-epididymal sperm aspiration

- **Indications of IVF include:**
- Tubal damage
- Unexplained infertility
- Severe endometriosis
- PCOS
- Moderate & severe male factor:

non-obstructive azoospermia

obstructive azoospermia

- Unsuccessful IUI

Typical IVF-ET cycle:

- **Initial consultation and tests**:
- **Pituitary down regulation** : To prevent the risk of spontaneous LH surge necessitating unplanned oocyte collection

  gonadotrophin-releasing hormone analogues (GnRH analogues)

  long protocol – Agonist cycle

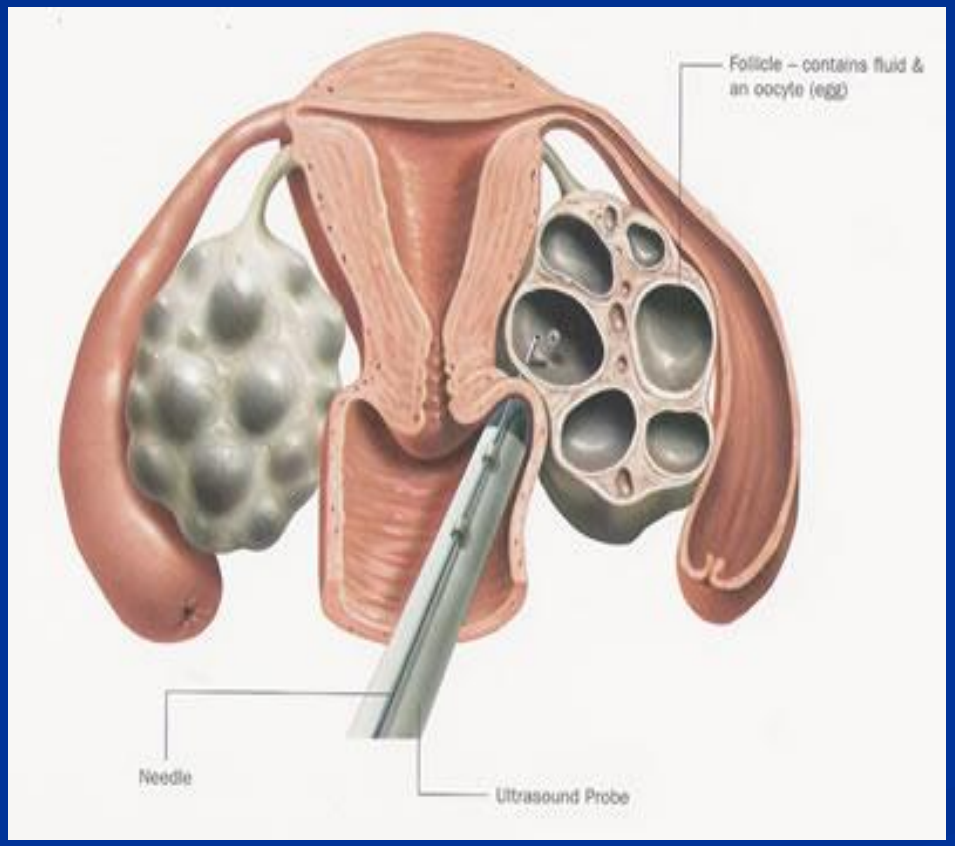
  short protocol & ultrashort – Antagonist cycle

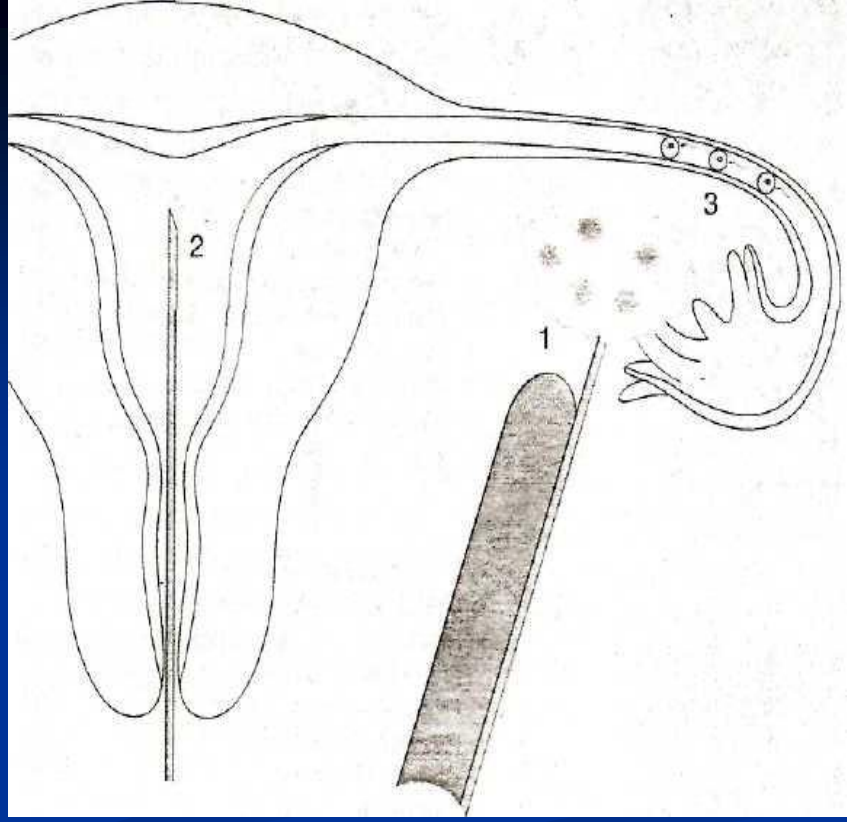
- **Ovarian stimulation: FSH (either recombinant or urinary) or menopausal gonadotrophins injections :**

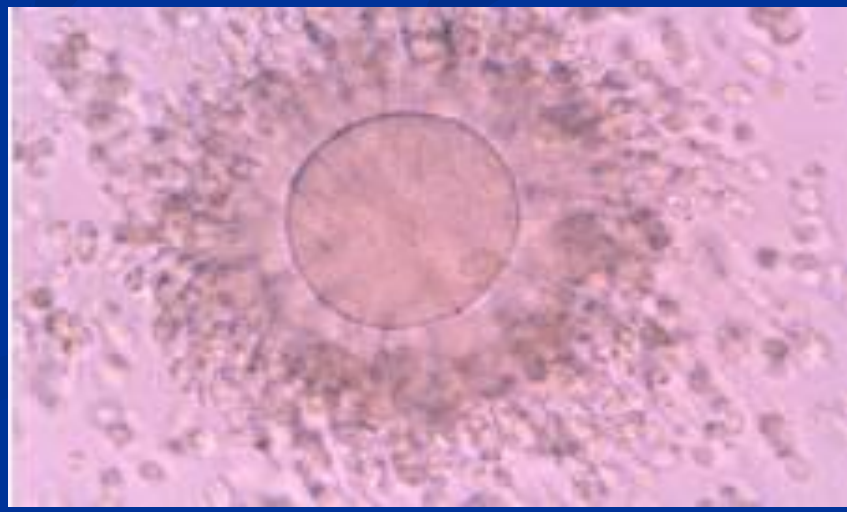
try to get about 8-15 eggs (18 mm)

- **Ovulation trigger with hCG**

Oocyte collection





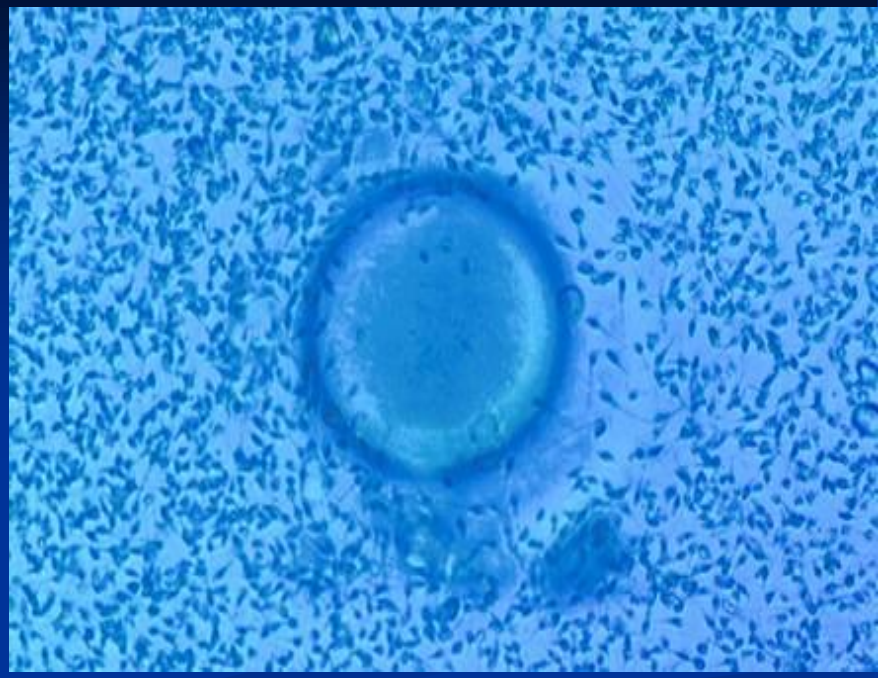


Egg retrieval

- **Semen preparation**
- **Sperm aspiration techniques**
- **Insemination :**

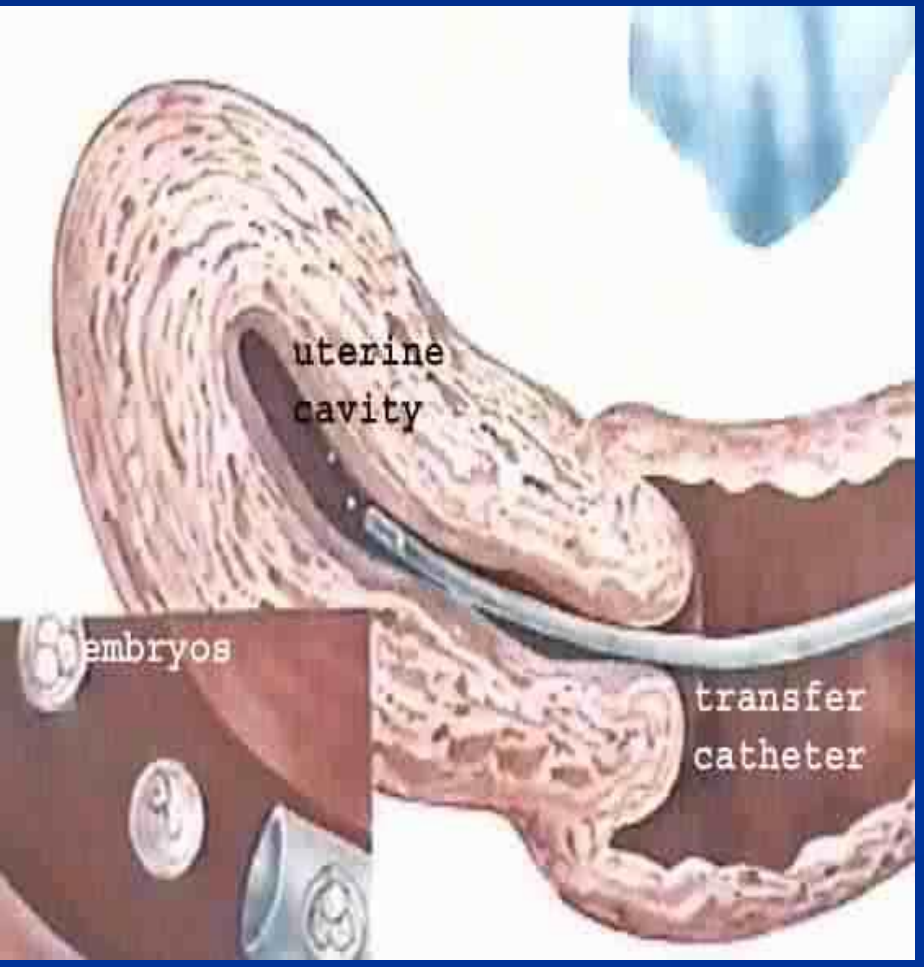
  Conventional IVF

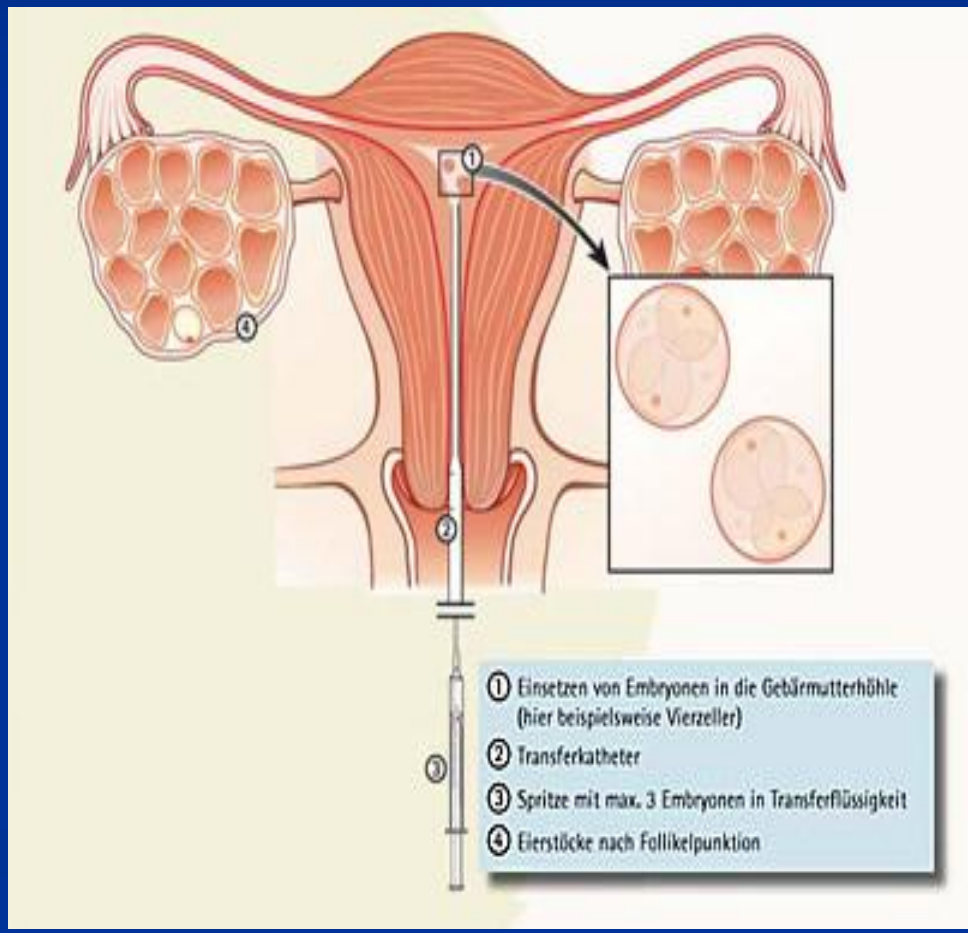
  ICSI



- Fertilization and embryo cleavage

Embryo transfer



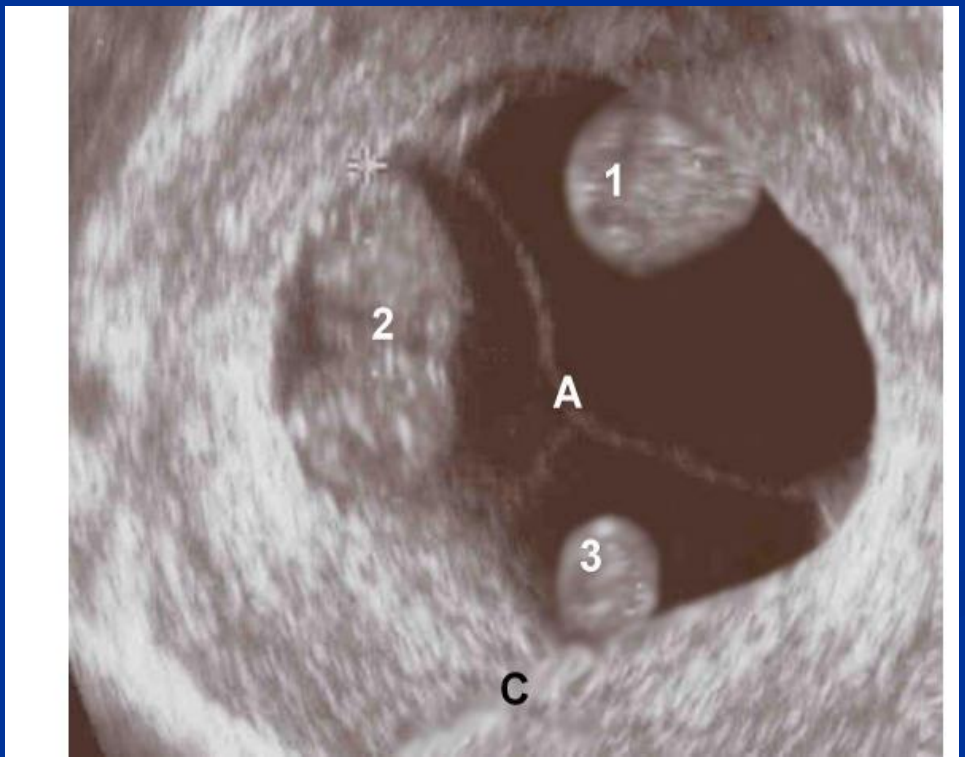


- Embryo cryopreservation

- **Luteal support and establishment of pregnancy**

Complications of IVF treatment

- Ovarian hyperstimulation syndrome
- multiple pregnancy



Ovarian hyperstimulation syndrome

- This syndrome is characterized by ovarian enlargement due to multiple ovarian cysts and an acute fluid shift into the extravascular space. Complications of OHSS include ascites, hemoconcentration, hypovolemia, and electrolyte imbalances