

07

TNPSC GROUP II / IIA MAINS SCERT - SCIENCE & TECHNOLOGY QUESTION WITH ANSWER

7. Assisted Reproductive Technology (ART) :

- "Handling of gametes and / or embryos outside of the body to achieve pregnancy.

1. Intra Uterine Insemination (IUI) :

- To treat infertile men with low sperm count
- Treatment :
 - Semen collected from husband or healthy donor
 - Stimulate the ovaries to produce more ova
 - Semen introduced into uterus through vagina by catheter
 - Sperm swims towards fallopian tube - fertilize the egg - Normal pregnancy.

2. In vitro fertilization / Test tube baby (IVF)

- Sperms & eggs allowed to unite outside the body in a laboratory.
- To treat women with blocked, damaged or absent fallopian tubes, many causes of infertility.

Stages :



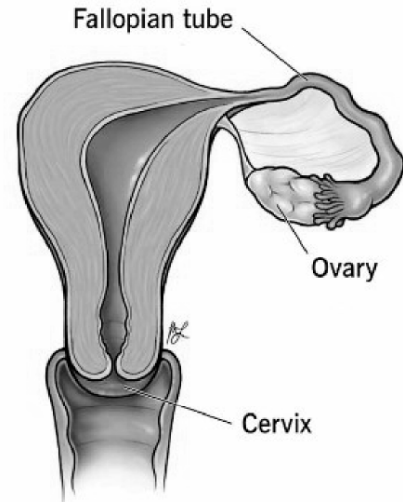
- Treatment
 - HCG - Human chorionic gonadotropin injection
 - Egg retrieval after 34 to 37 hours of injection
 - 10 k to 11 motile sperms needed for each egg.



- Zygote allowed to divide to form of celled Blastomere.
- Embryo transferred into uterus through embryo transfer technique

3. Zygote Intra-fallopian Transfer (ZIFT)

- a) zygote upto 8 blastomere stage -
transferred to fallopian tube by laparoscopy.



4. Intra Uterine transfer IUI :

- a) Embryo with more than 8 blastomeres - inserted into uterus.

5. Intra-cytoplasmic sperm injection (ICSI)

- a) Only 1 sperm injected into cytoplasm of egg
- b) Fertilization - 75-85%
- c) Zygote divided to form 8 celled blastomere, transferred to the uterus

6. Gamete Intra-fallopian transfer (GIFT) :

- a) Eggs collected from ovaries & sperms are placed in one of the fallopian tubes.
- b) Zygote travels to uterus & implanted in inner lining of uterus.

7. Surrogacy

- a) Embryos created through invitro fertilization (IVF)
- b) Transferred into surrogate mother's uterus
- c) Assisted reproduction / agreement, a woman carries a pregnancy for another person.

8. Micro-Testicular sperm Extraction :

- a) Microsurgical sperm retrieval from the testicles
- b) Improved sperm yield compared to traditional biopsy techniques.