

Pregnancy



WHAT IS NORMAL,
WHAT CAN GO WRONG, AND HOW
CAN WE ASSIST INFERTILE
COUPLES?

PART 4



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What Can Cause Infertility?



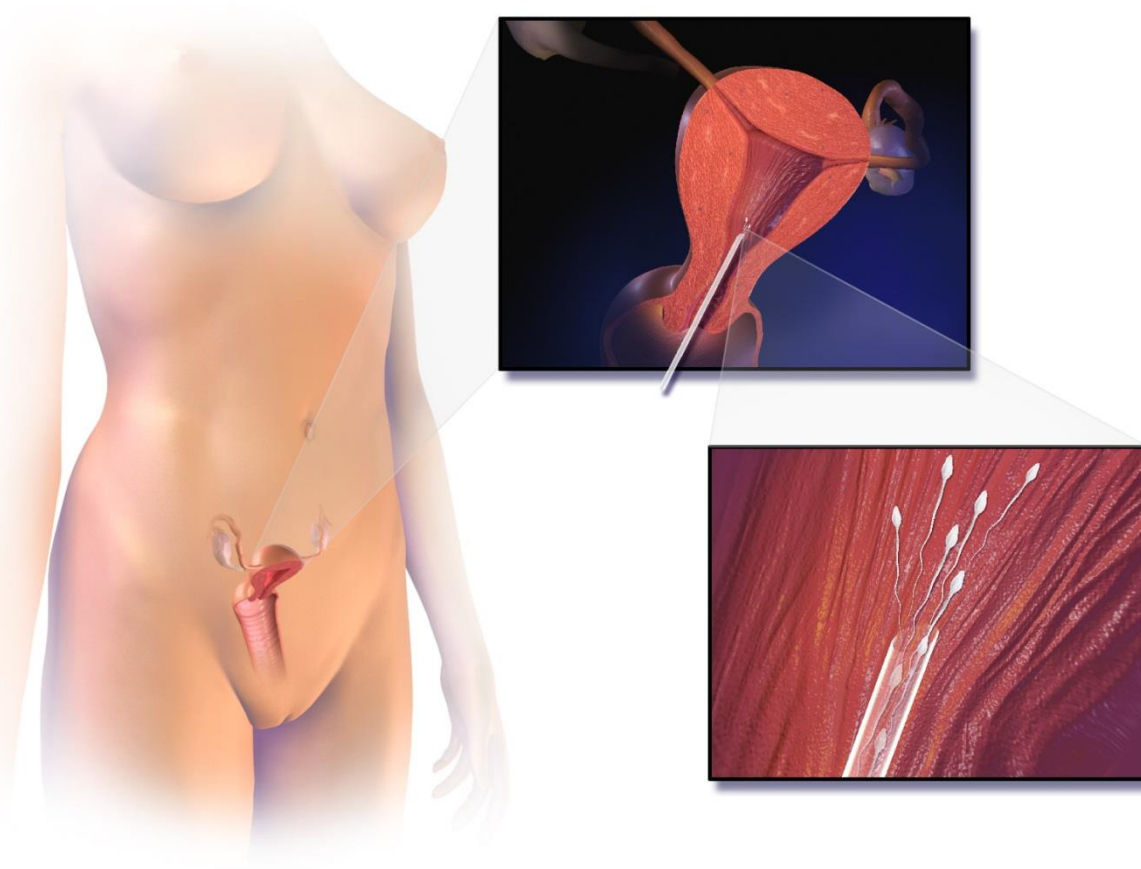
- Infertility can happen for many reasons.
- For females, the oocyte may not be able to be ovulated and the cause could range from anorexia to illnesses, such as pelvic inflammatory disease. Another cause of female infertility is that the oocyte is abnormal.
- In men, infertility could be due to a low sperm count, immotile sperm, and/or abnormal sperm. Tight clothing, denim jeans in particular, can cause low sperm count.
- Other cause of fertility in both sexes could be genetic, age, and environmental toxins.

How Can Infertility Be Treated?



- Assisted reproductive technologies (ART) can help treat couples who haven't had success having an offspring on their own.
- Methods include:
 - a) artificial insemination
 - b) *in vitro* fertilization (IVF)
 - c) intra-cytoplasmic sperm injection (ICSI).

Artificial Insemination



http://en.wikipedia.org/wiki/File:Blausen_0058_ArtificialInsemination.png Blausen.com staff. "[Blausen gallery 2014](#)". *Wikiversity Journal of Medicine*. DOI:[10.15347/wjm/2014.010](https://doi.org/10.15347/wjm/2014.010). ISSN [20018762](https://www.wikiversityjournalofmedicine.com/ISSN).

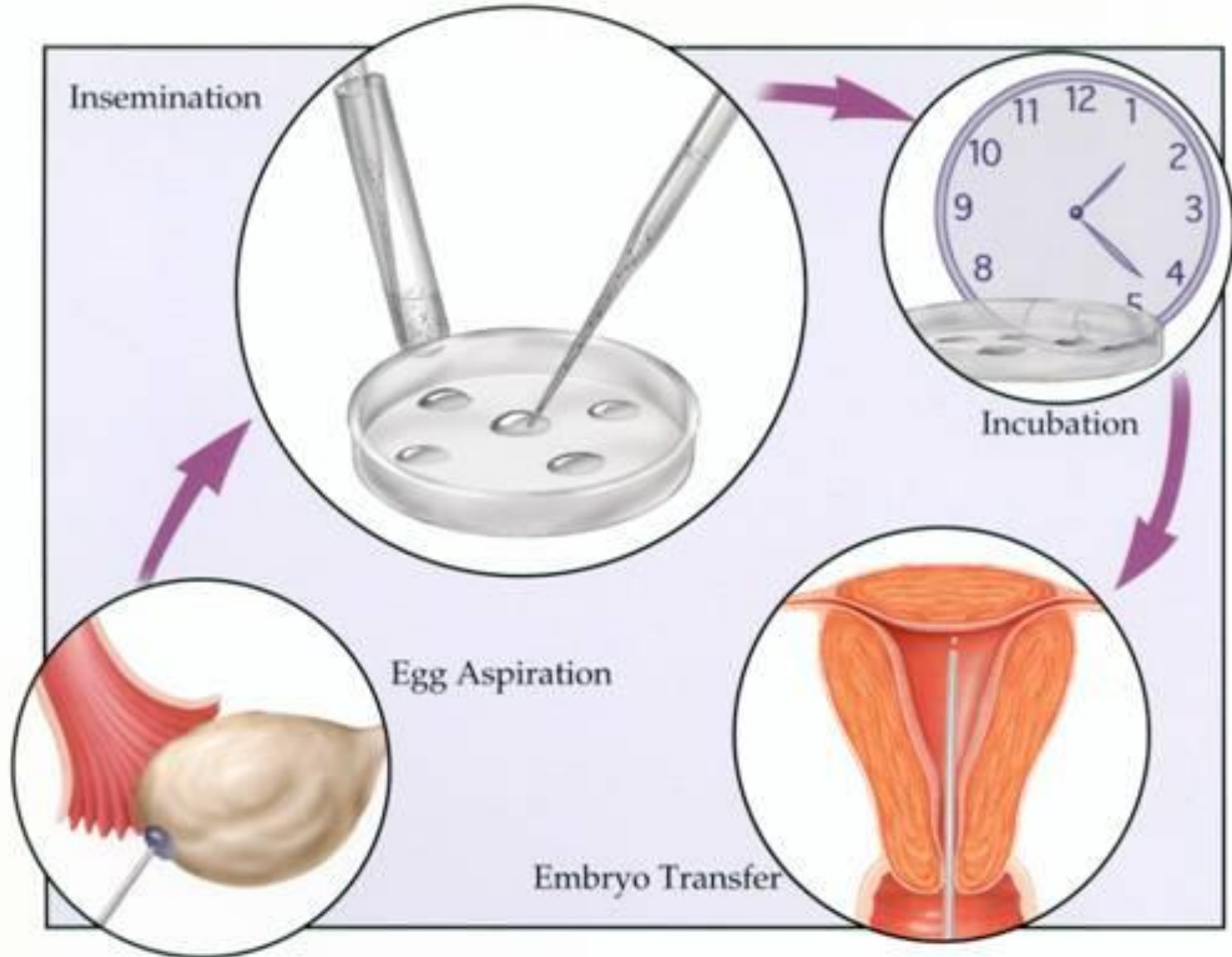
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In Vitro Fertilization (IVF)

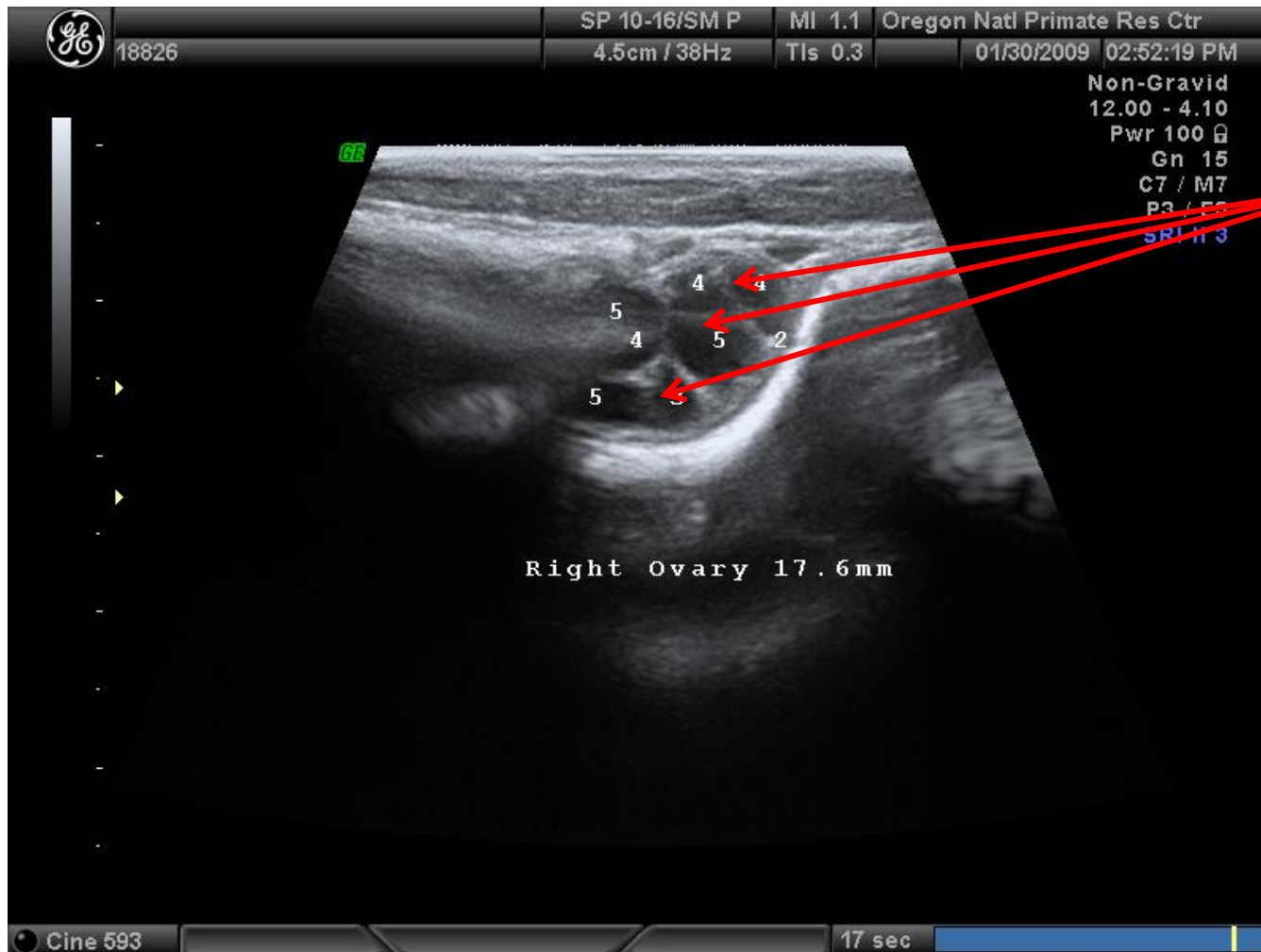


- IVF is a procedure in which the offspring is produced by combining in a Petri dish the egg and sperm harvested from the couple, growing the zygote to the 4- or 8-cell stage, and then implanting it into the uterus of the mother to further develop.
- The first IVF baby was Louise Brown and she was born on July 25, 1978 in England from an 8-cell embryo that was developed in a Petri dish. Her mother had blocked fallopian tubes so couldn't conceive naturally.
- She has a younger sister, Natalie, who also was a IVF baby. Natalie was the first IVF baby to herself give birth to a child- her daughter was born in 1999. Louise later had naturally conceived children of her own.

IVF Procedure



Ultrasound View of Follicles in the Ovary of a Rhesus Macaque after 7 Days of Fertility Drugs (FSH)



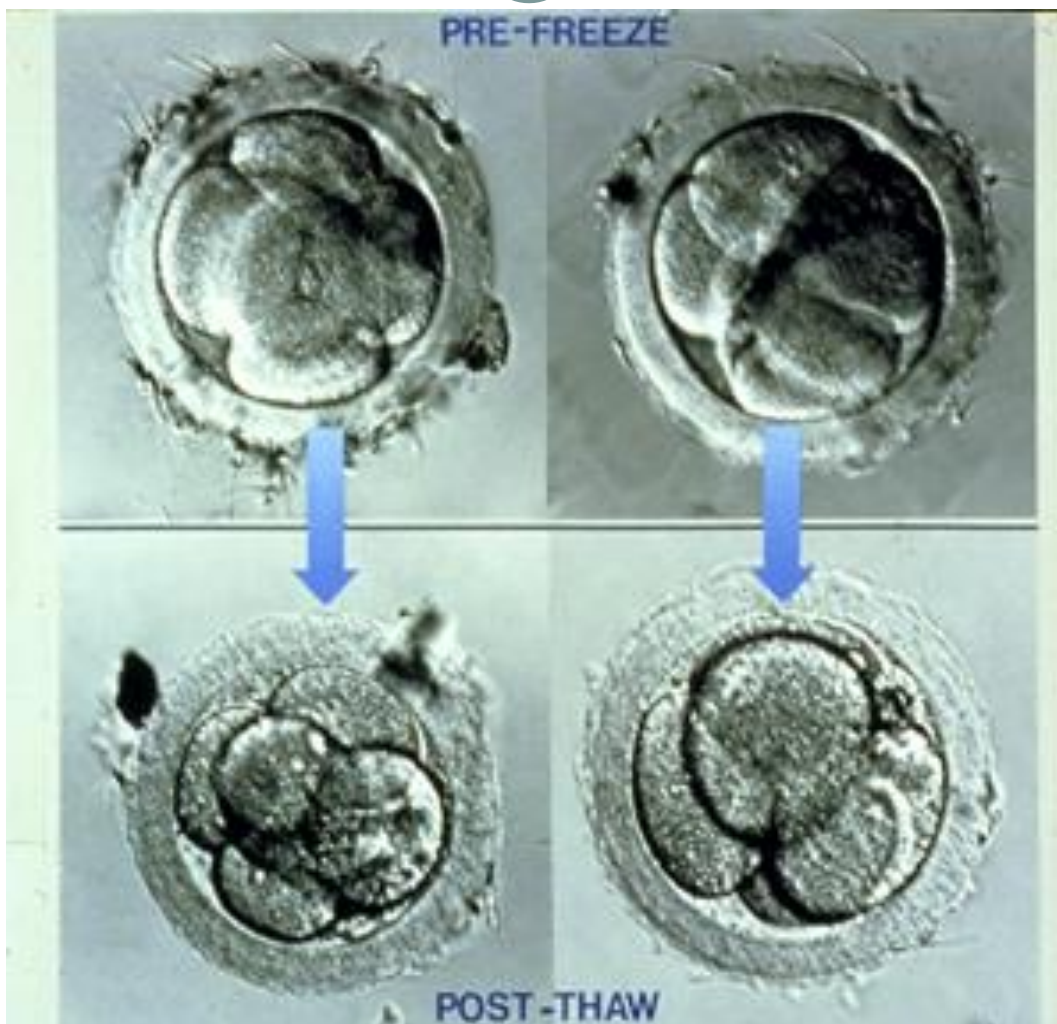
Multiple
Follicles
Ready to
Ovulate

IVF From Frozen Embryos

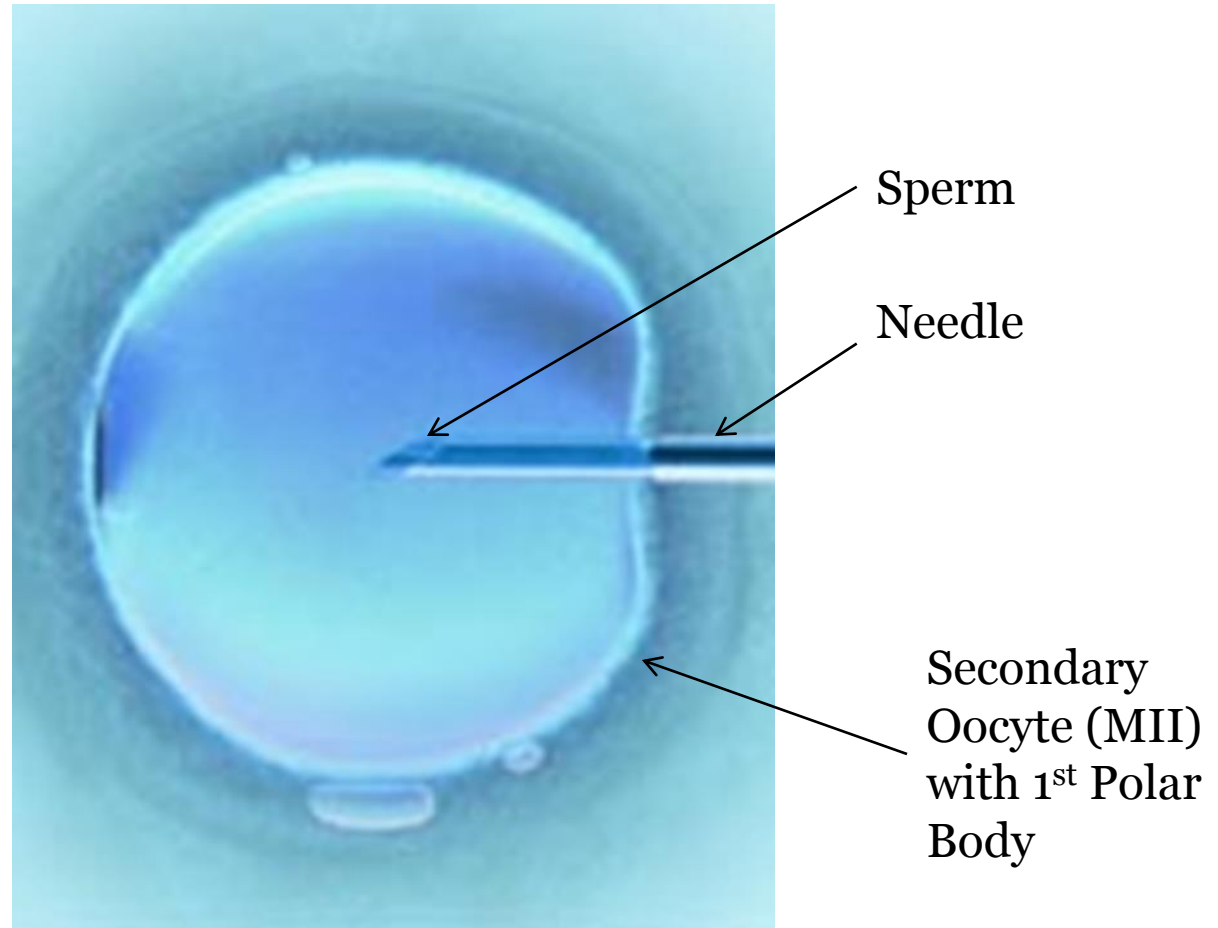


- During IVF, human embryos that are not implanted will be frozen in liquid nitrogen until a later time. 4- to 8-cell stages have been successfully unfrozen and implanted to produce live births.
- It was found in 1989 with non-human primates that the IVF 4-cell stage could be frozen and then thawed, implanted in the uterus, and produce a live birth.
- The first Rhesus monkey IVF baby in the world was born on October 31, 1989 at ONPRC and was named Shiver. The first Rhesus monkey twins, Arnold and Danny, were born from in vitro fertilization, frozen-thawed 4-cell stage embryos at ONPRC.

Transfer Embryos to Surrogate Rhesus Monkey Mother



Intra-Cytoplasmic Sperm Injection (ICSI)



Endangered Species and ART



Timu, the first
Western
lowland gorilla
born through
IVF in 1996 at
the Cincinnati
Zoo



How Can Pregnancy Be Prevented

Effectiveness of Birth Control



More effective
Less than 1 pregnancy per 100 women in one year



Implant



Vasectomy



Female Sterilization



IUD



Injectables



LAM



Pills



Patch



Ring



Male Condoms



Female Condoms



Diaphragm



Sponge



Fertility-Awareness Based Methods



Withdrawal



Spermicide

Less effective
About 30 pregnancies per 100 women in one year

How to make your method most effective

After procedure, little or nothing to do or remember

Vasectomy: Use another method for first 3 months

Injectables: Get repeat injections on time

LAM (for 6 months): Breastfeed often, day and night

Pills: Take a pill each day

Patch, ring: Keep in place, change on time

Condoms, diaphragm, sponge: Use correctly every time you have sex

Fertility-awareness based methods: Abstain or use condoms on fertile days. Newest methods (Standard Days Method and TwoDay Method) may be the easiest to use.

Withdrawal, spermicide: Use correctly every time you have sex

Source WHO 2006 [17], adapted with permission

Contraceptive Use

