

Infertility Update

George R Attia, M.D

Director of IVF Program

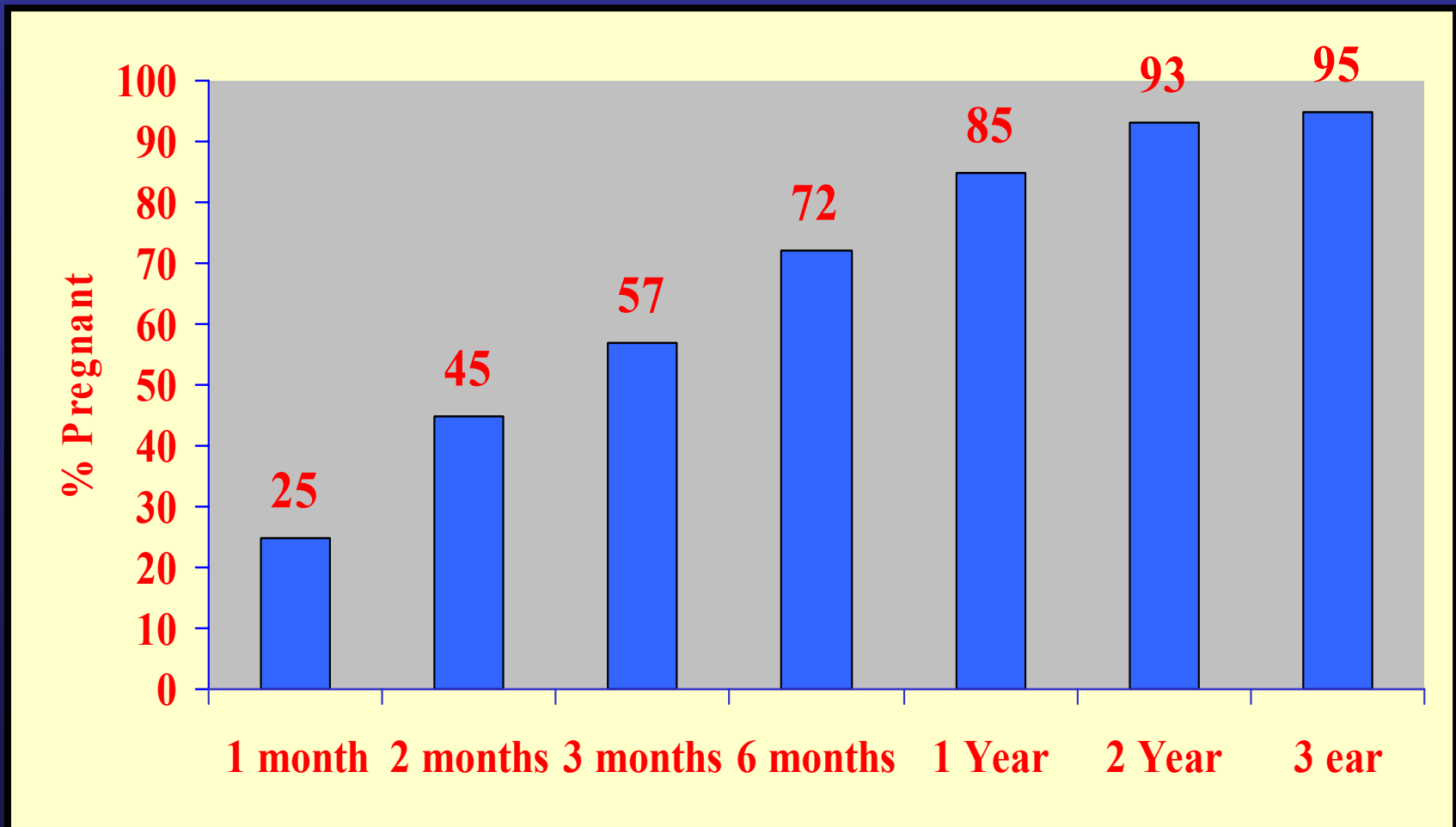
University of Texas Southwestern

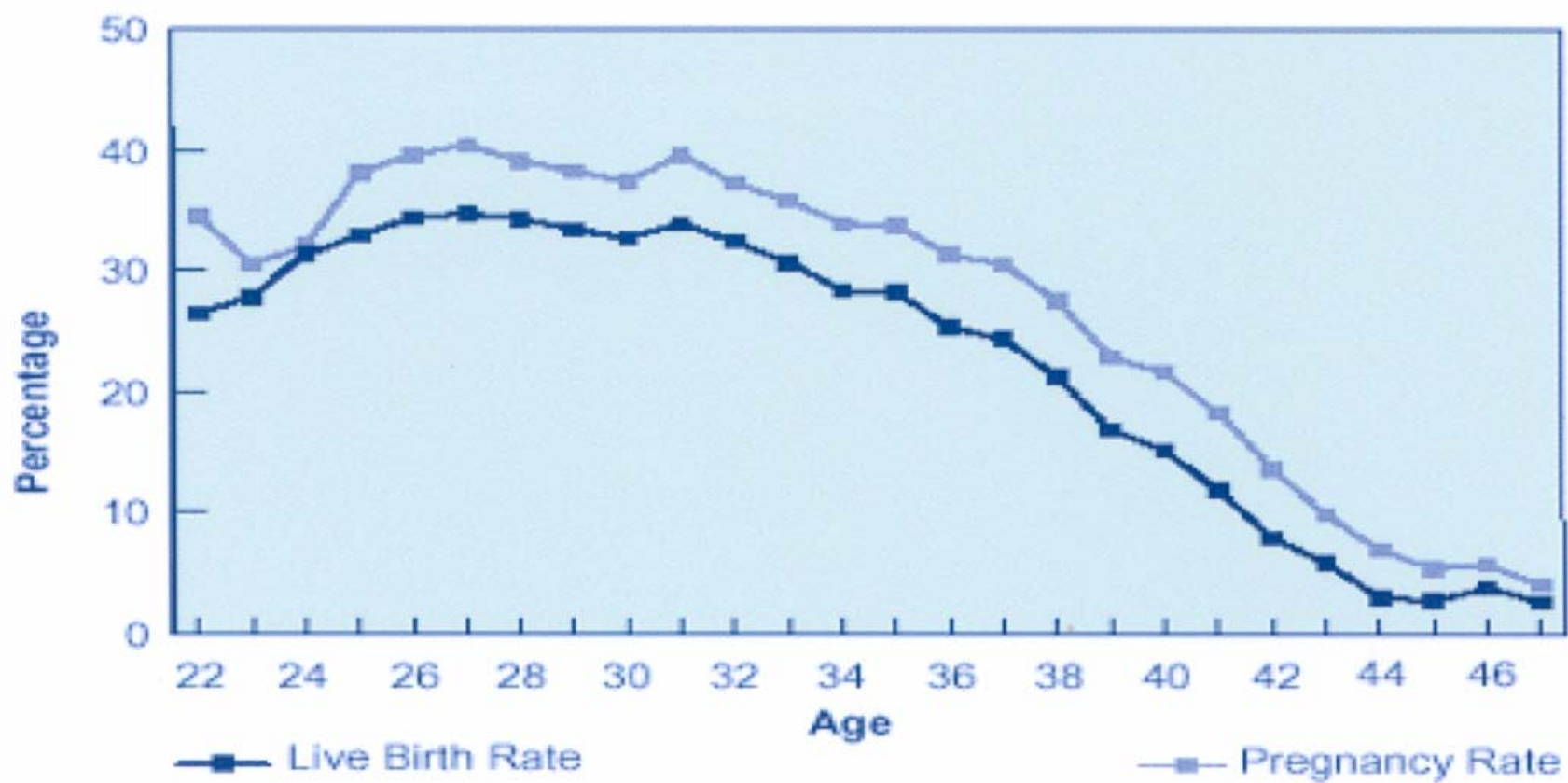
Medical Center at Dallas

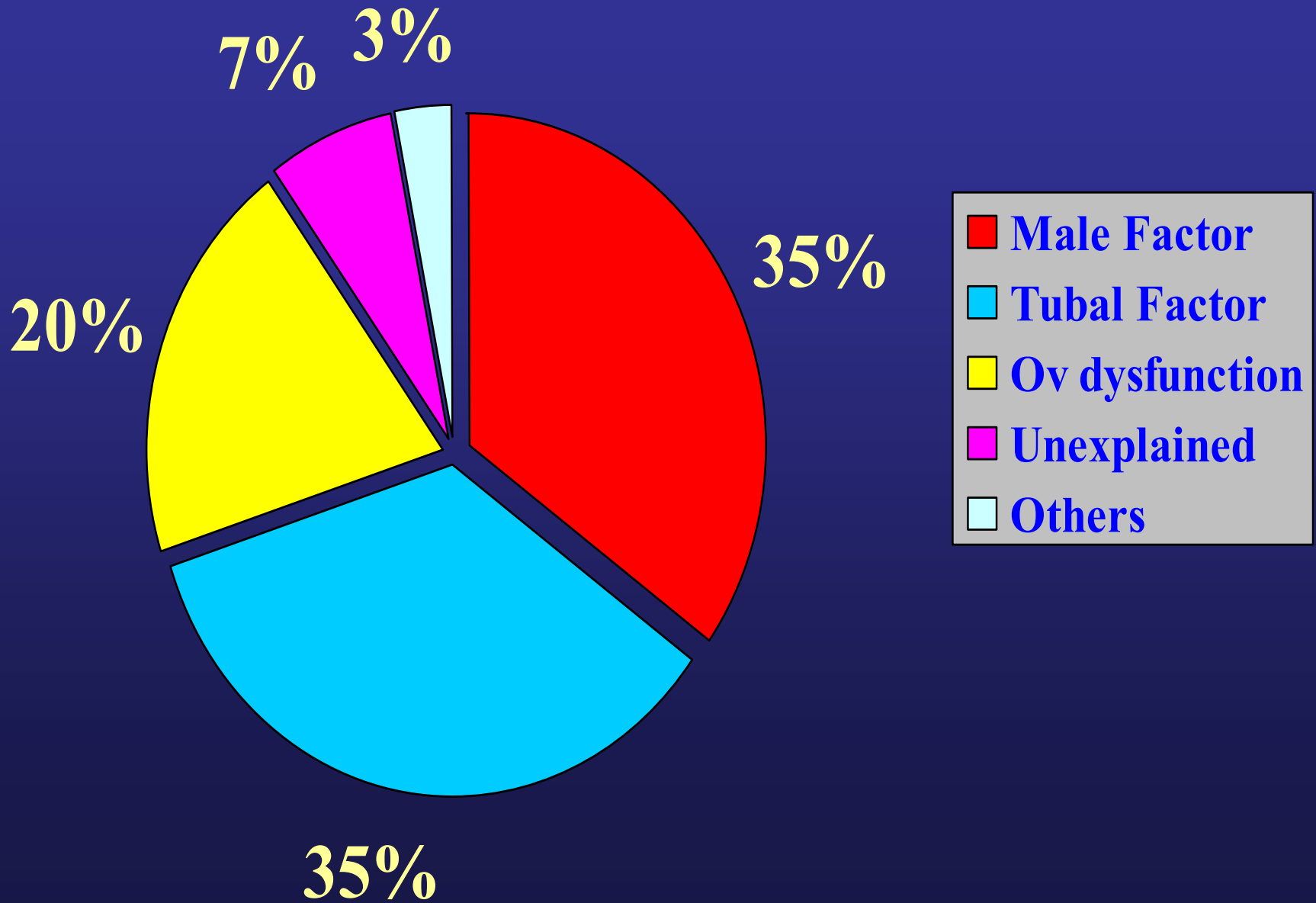
Infertility

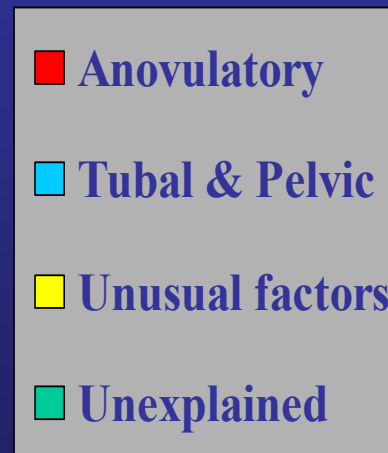
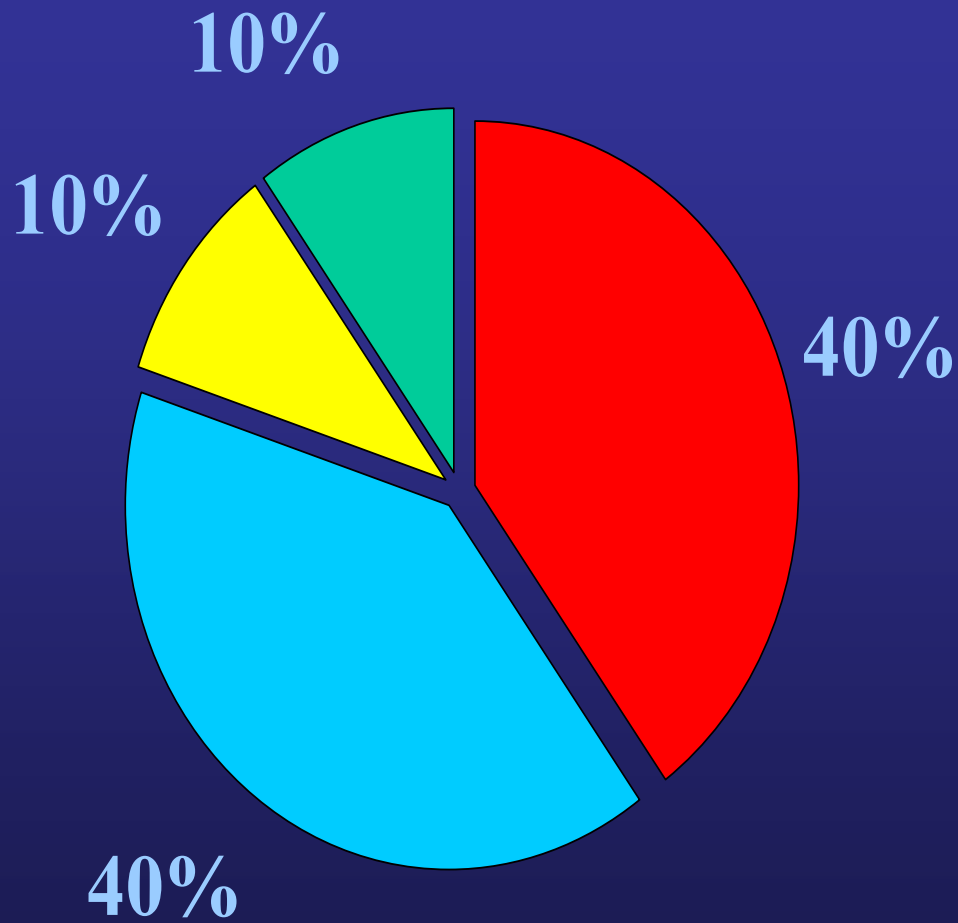
- Inability to conceive after one year of adequate unprotected intercourse (*six months if the woman is over age 35*)

Time Required for Conception in Couples Who Will Attain Pregnancy



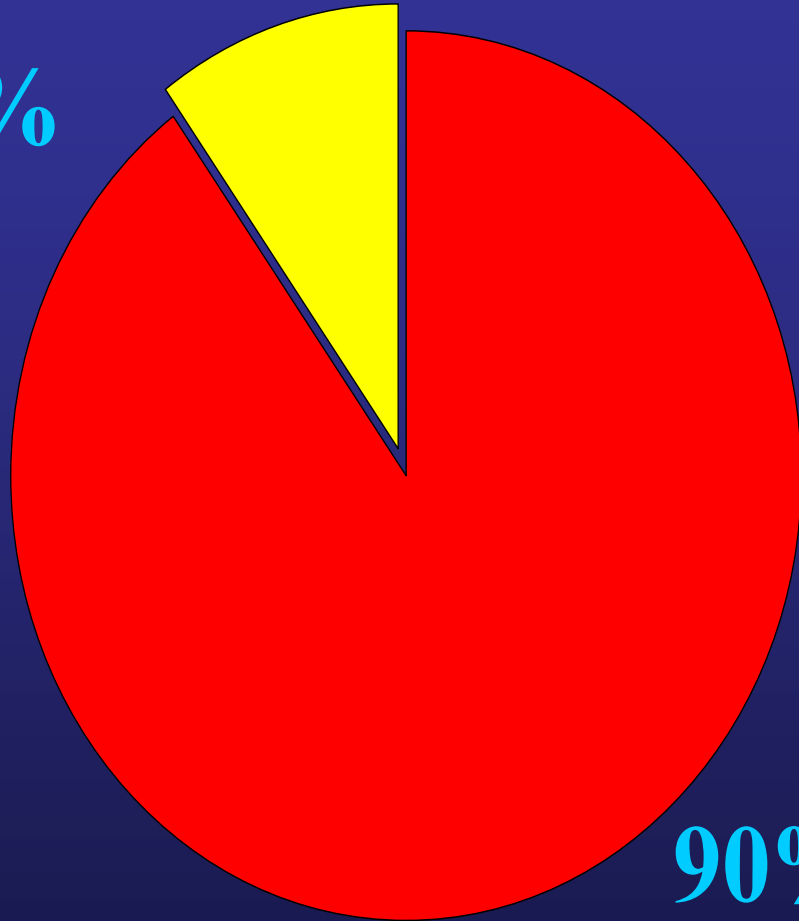




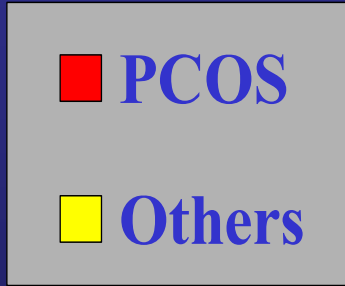


- **Anovulation**
- **Tubal Factor**
- **Male**
- **Pelvic Factor (Endometriosis, adhesion)**
- **Unexplained**
- **Uterine/cervical (fibroid)**

10%



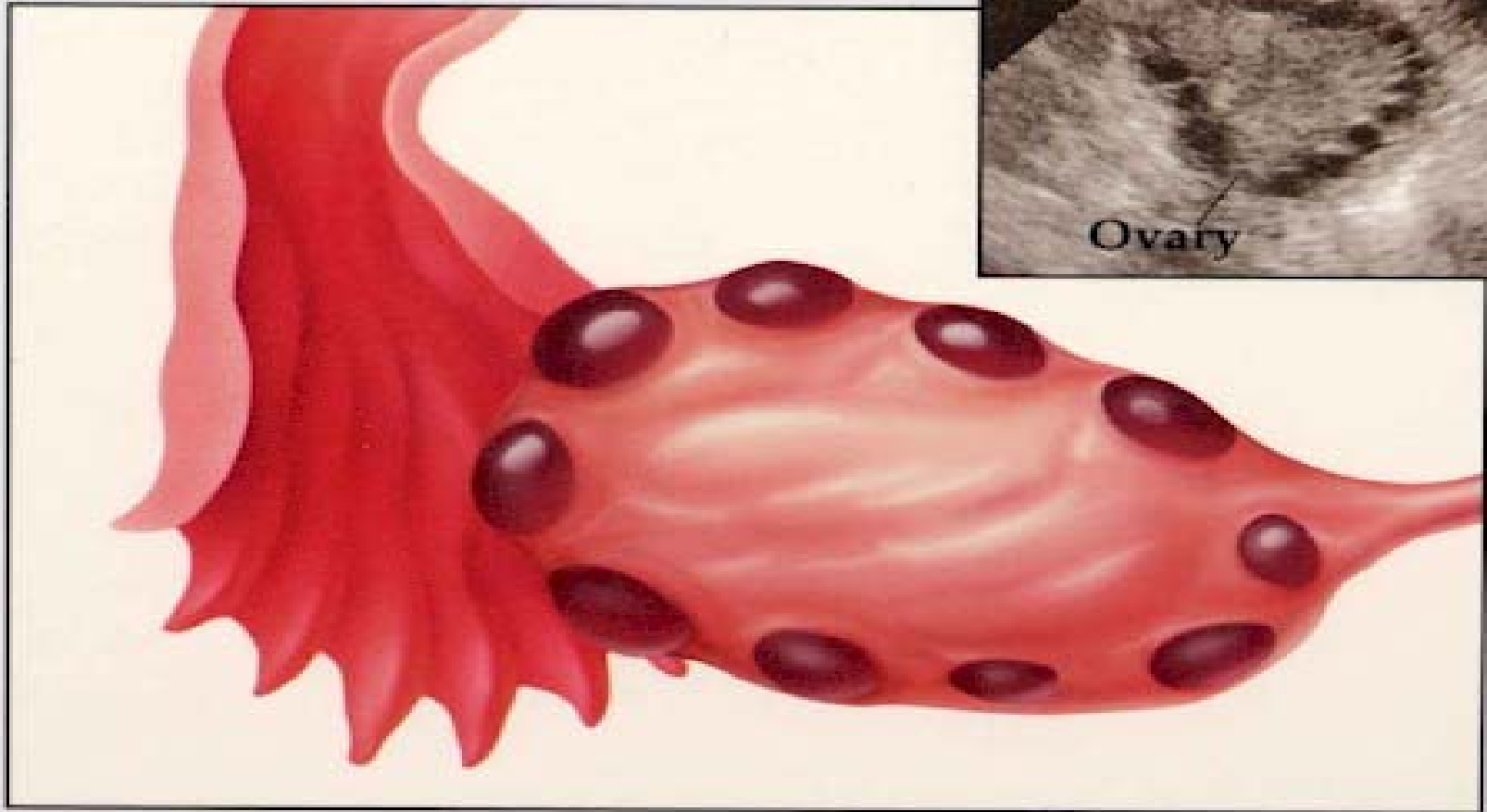
90%



PCOS

Others

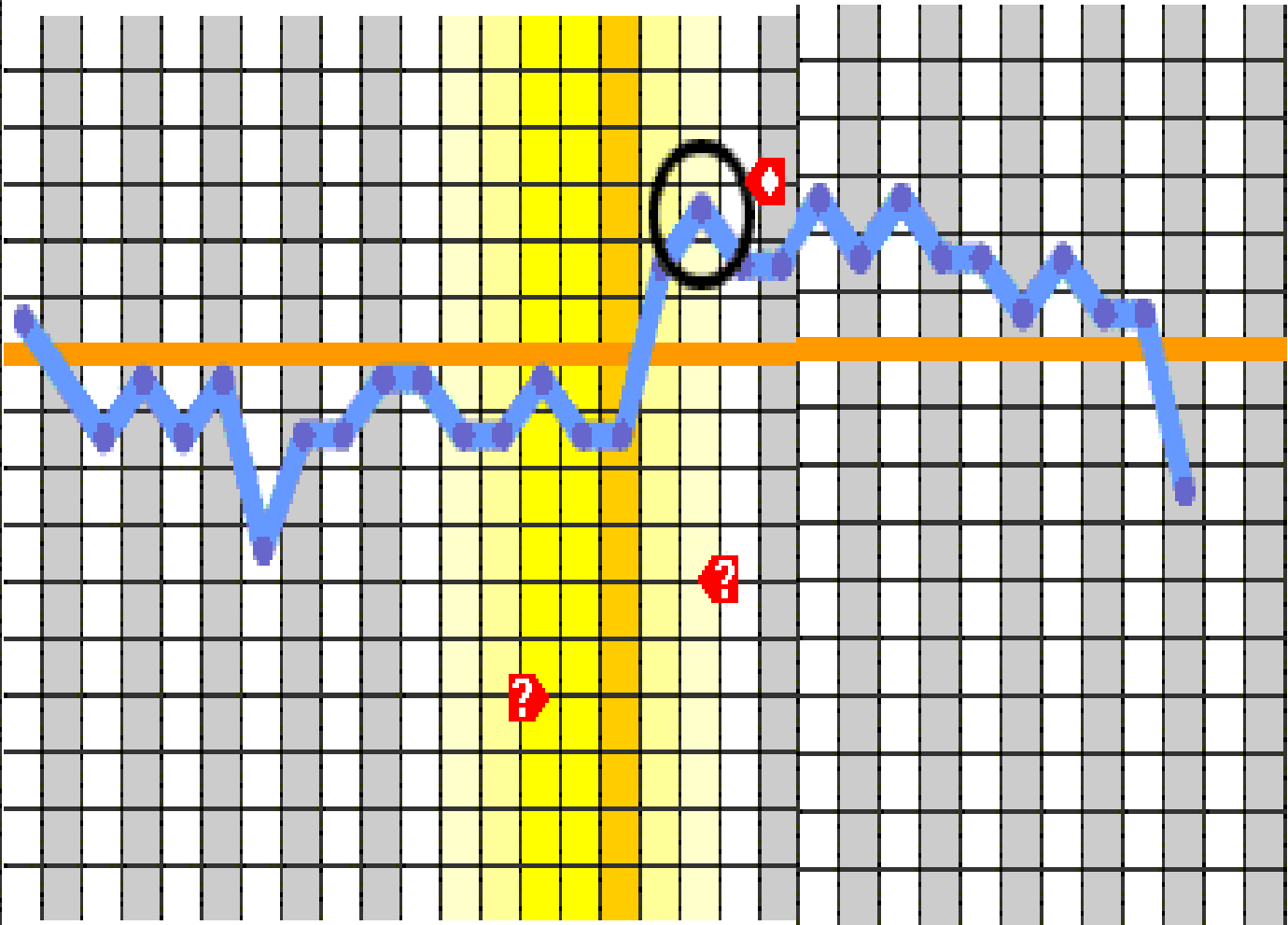
Anovulation



Ovulation

- History
- BBT
- LH kits
- Mid luteal phase Progesterone (**cycle length - 7**)
- Ultrasound
- EMB (day 21-26)

98.9
98.8
98.7
98.6
98.5
98.4
98.3
98.2
98.1
98.0
97.9
97.8
97.7
97.6
97.5
97.4
97.3
97.2
97.1
97.0
96.9



- **Anovulation**
- **Tubal / Pelvic Factor**
- **Male**
- **Unexplained**
- **Uterine/cervical (fibroid)**

Tubal & Pelvic Factors

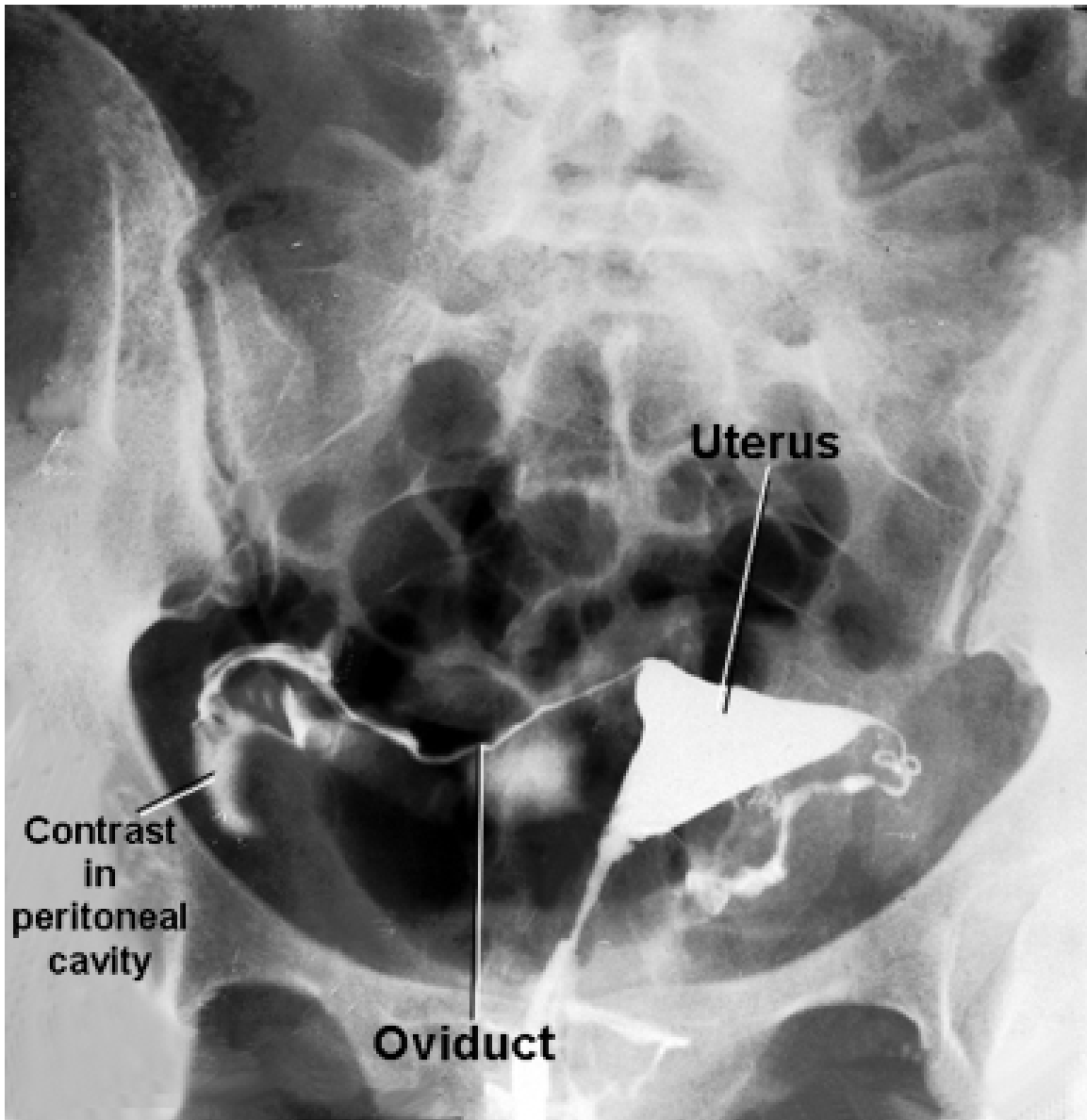
- Tubal disease, PID
- Tubal surgery
- Pelvic adhesions
- Endometriosis

Tubal Factor

- Tubal infertility after PID (12%, 24%, 50%)
- One-half of patients who found to have tubal damage and/or pelvic adhesion have no history of antecedent disease

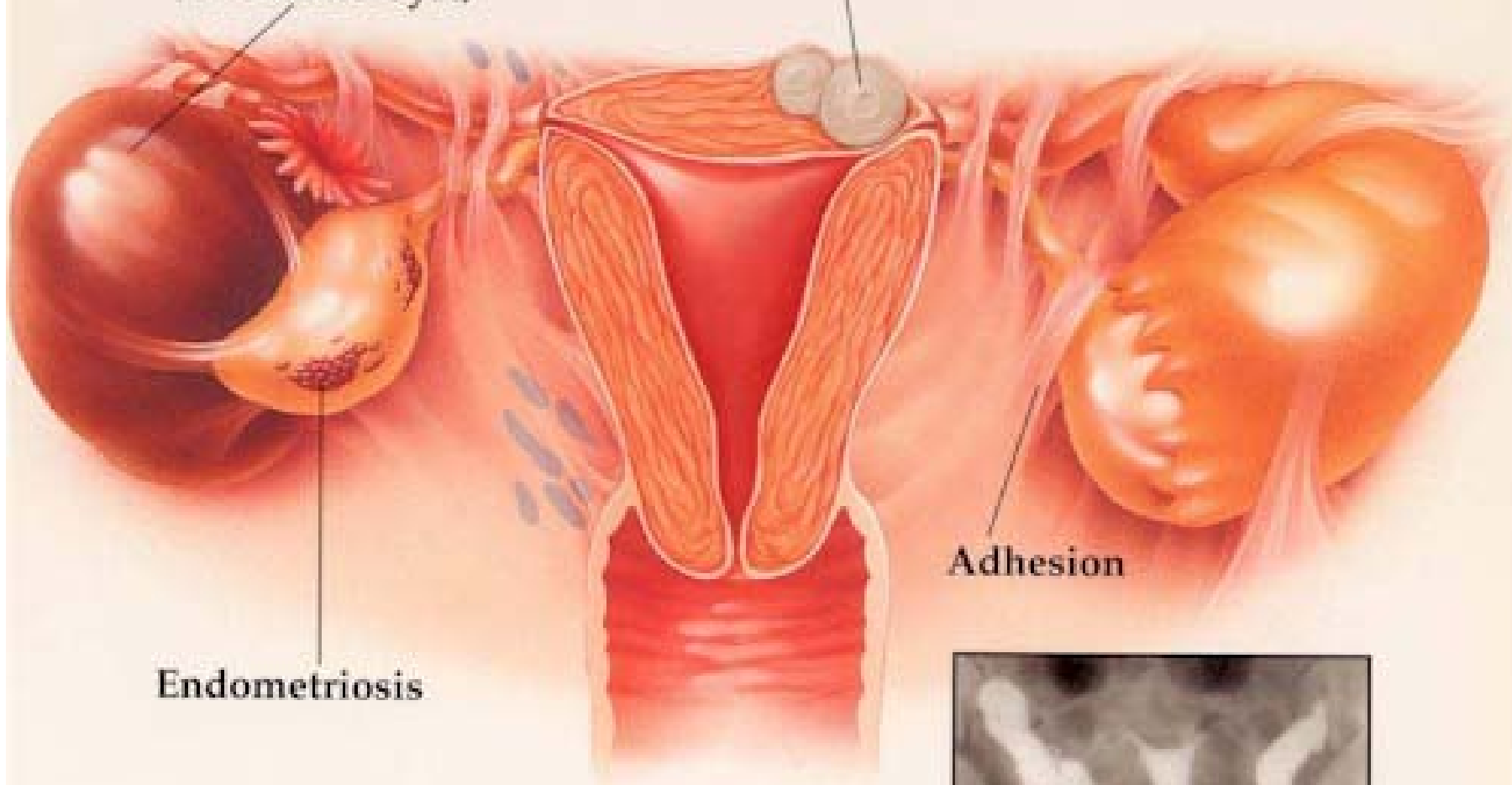
Tubal Factor

- Hysterosalpingography
- Hysteroscopy / laparoscopy
- Falloscopy



**Endometriosis
(Chocolate Cyst)**

Fibroid Tumor

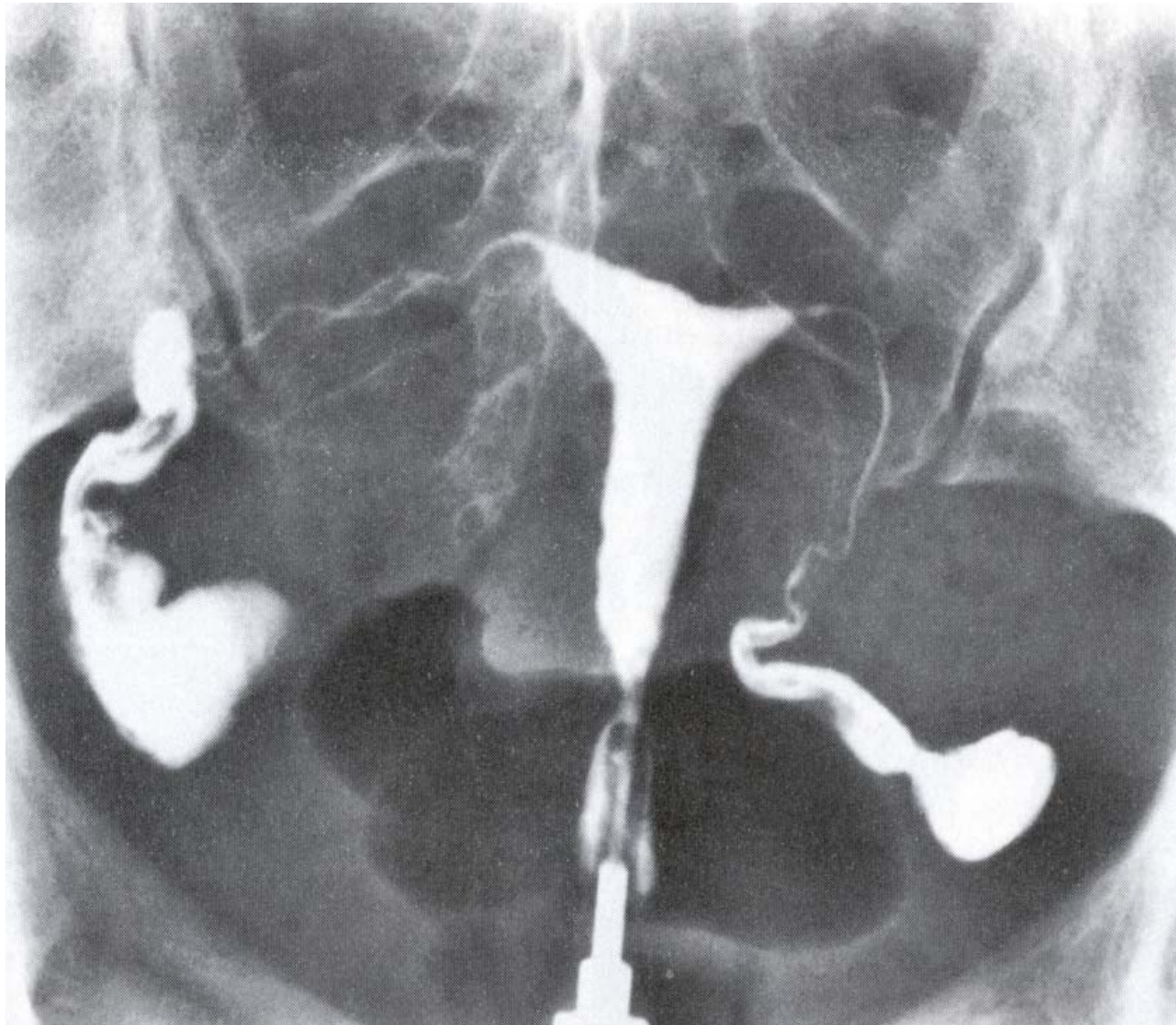


Endometriosis

Adhesion



Hysterosalpingogram



- **Anovulation**
- **Tubal Factor**
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- **Uterine/cervical (fibroid)**

Male Factor Infertility

- Anatomic defects (hypospadias, Retrograde ejac.)
- Genetics Causes
- Trauma
- Infection
- Endocrine disorders
- Varicocele

Male Factor Infertility

- Vol. > 2 ml, Conc. $> 20 \times 10^6$, Mot. $> 50\%$, Morph. $> 30\%$.
- Total motile sperm per milliliter (sperm per ml X percent motility) $> 10 \times 10^6$

Semen Analysis

Sperm Morphology



Normal
Oval Form



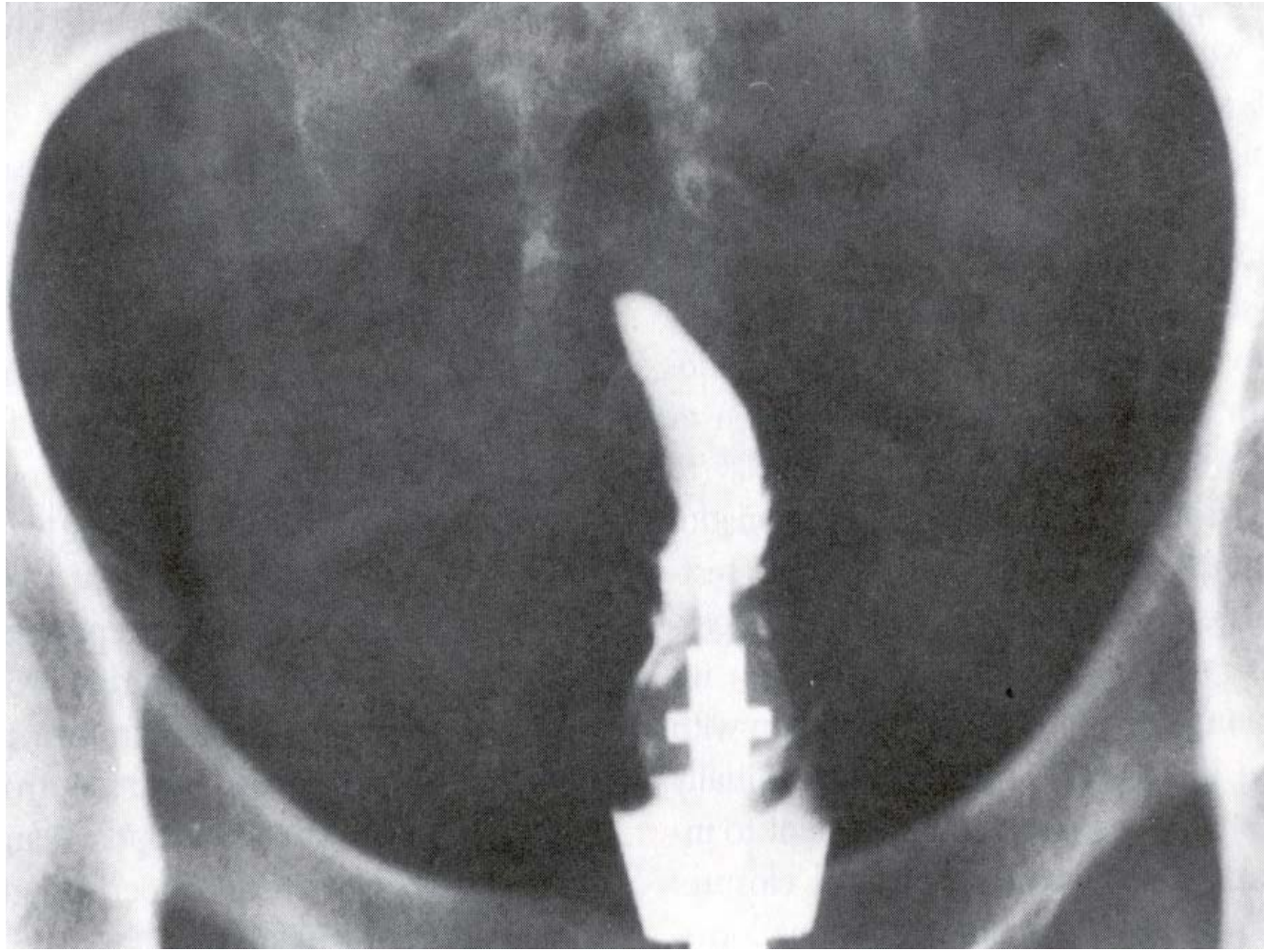
Abnormal Sperm

- Sperm count (number of sperm per cc)
- Motility (percentage of sperm moving)
- Sperm morphology

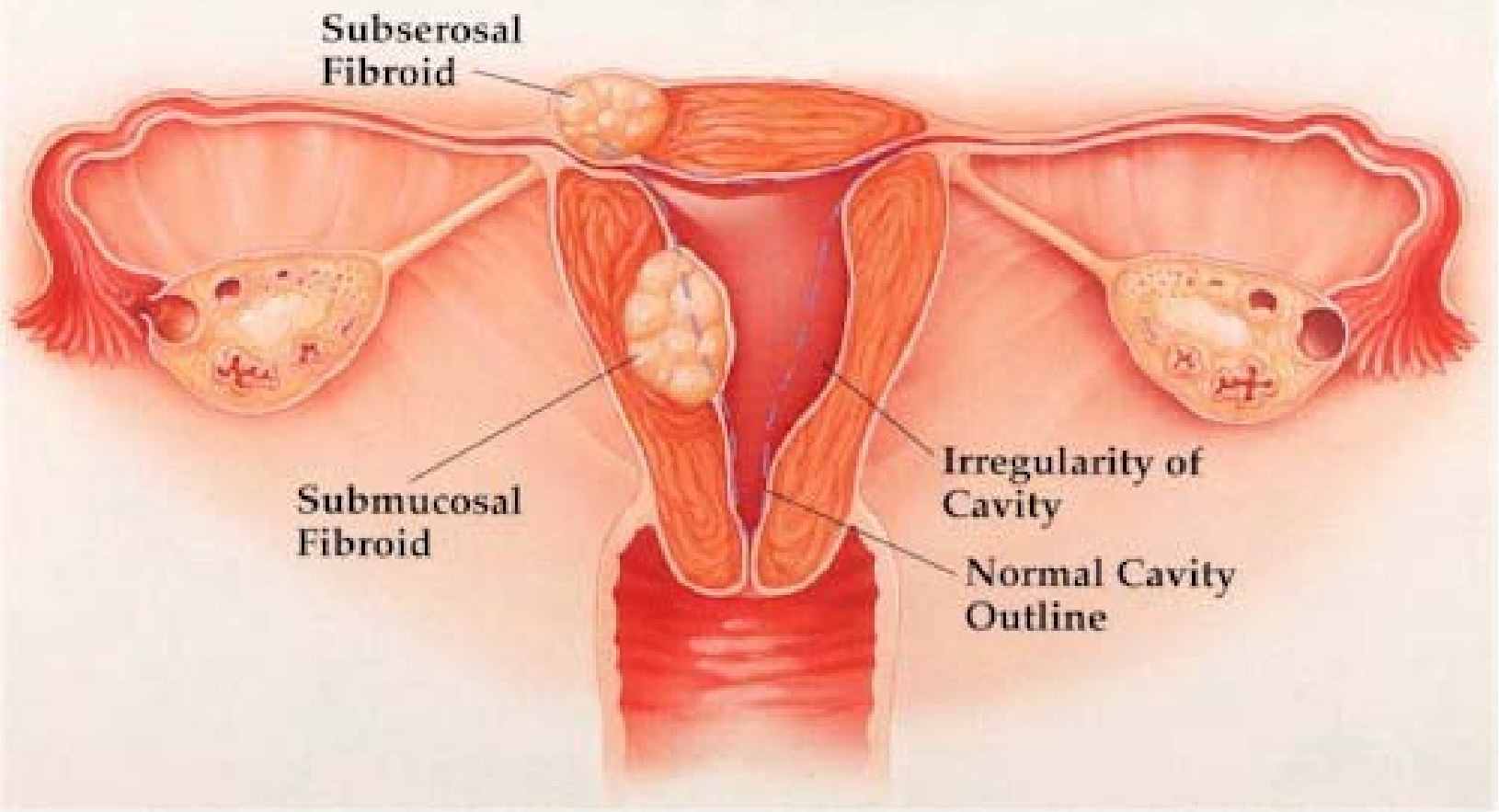
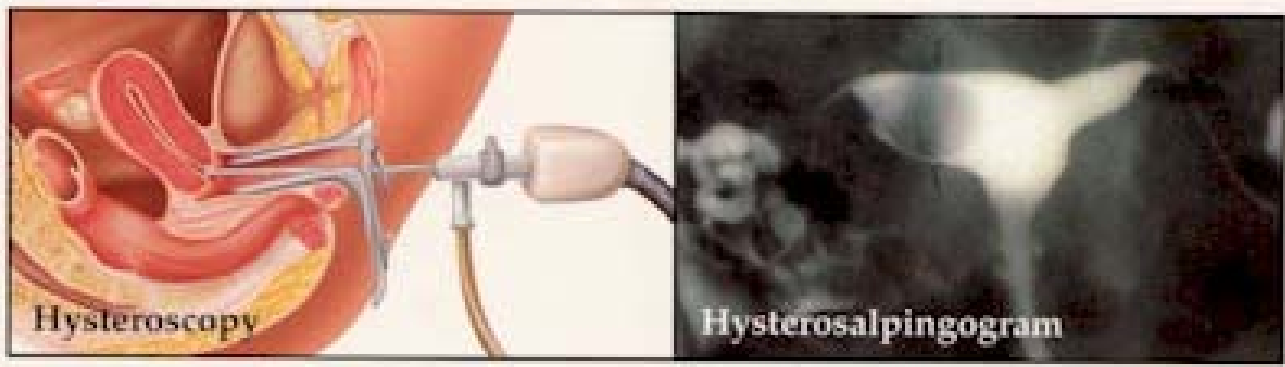
Male Factor Infertility

- Screening for
 - * Cystic fibrosis (Bilateral congenital absence of the vas) (1%-2% of infertile males)
 - * Y chromosome microdeletion (7% - 10%)
 - * Klinefelter's syndrome (XXY) (1 in 500)

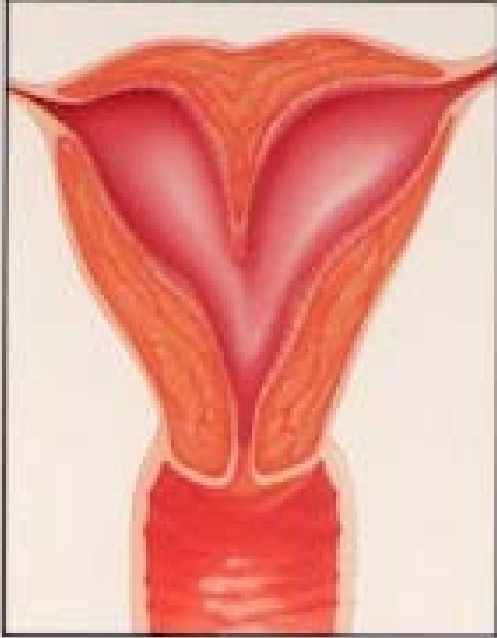
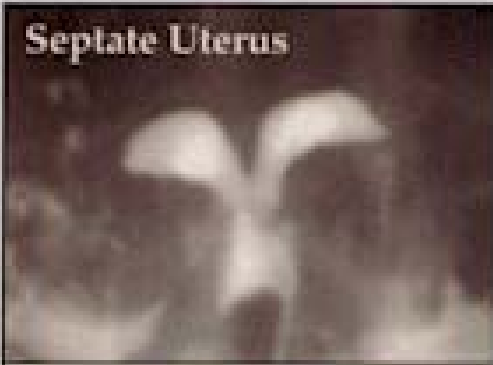
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- **Unexplained**



Submucosal Fibroids



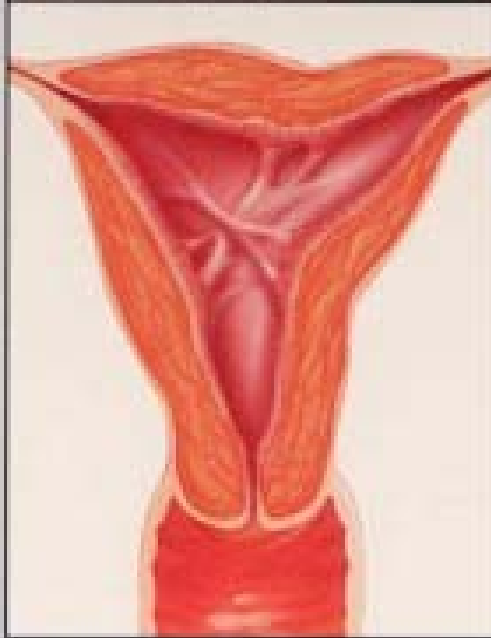
Septate Uterus



Septate Uterus

Wedge of fibrous tissue dividing uterine cavity.

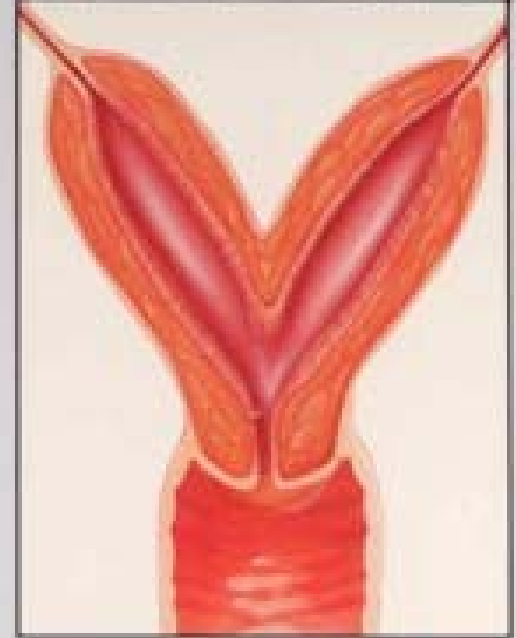
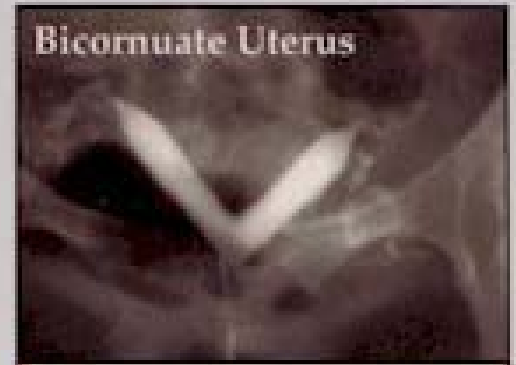
Asherman's Syndrome



Asherman's Syndrome

Adhesions (band-like formations) crossing the lining of the uterus.

Bicornuate Uterus



Bicornuate Uterus

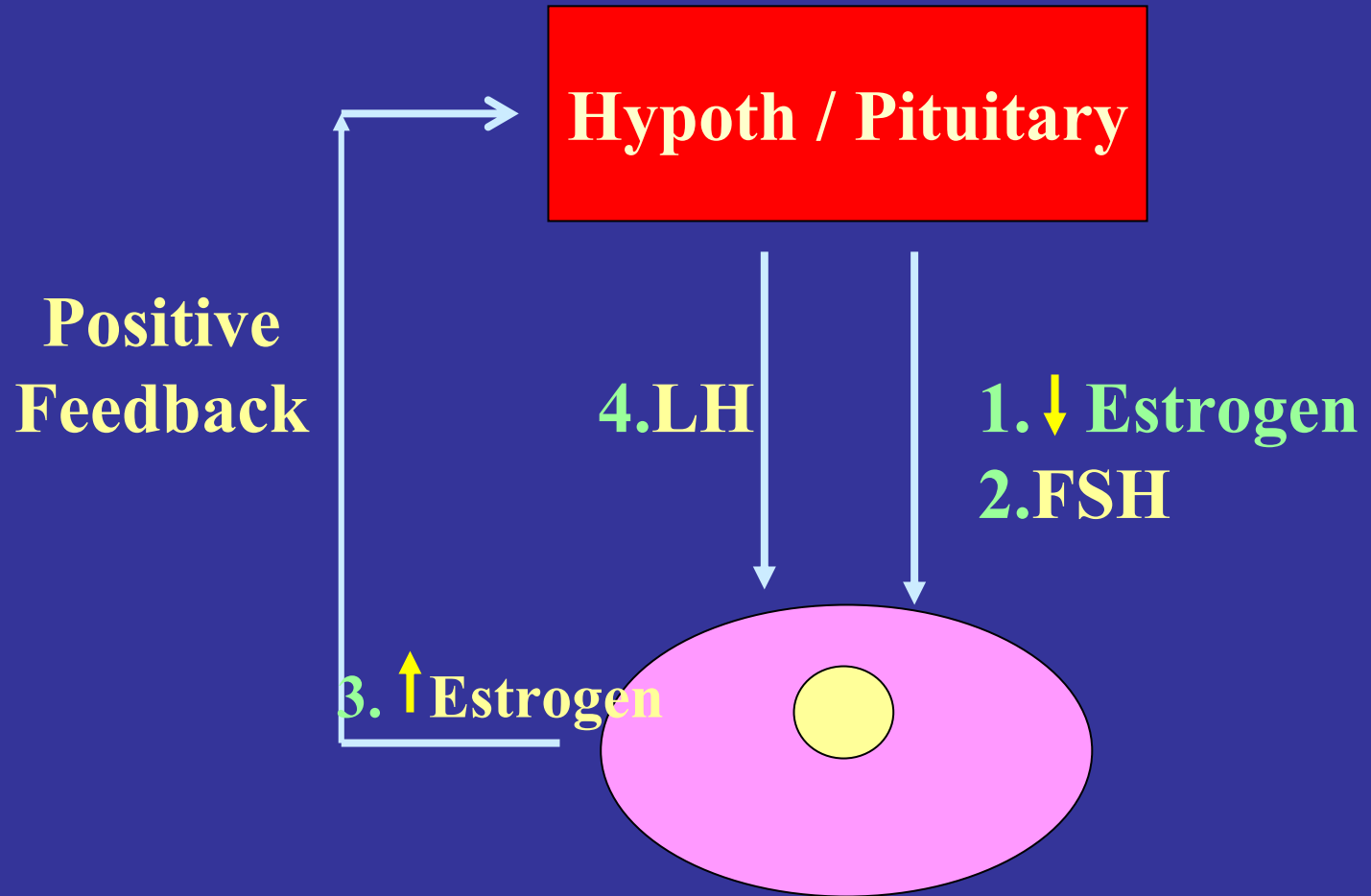
Incomplete uniting of uterus.

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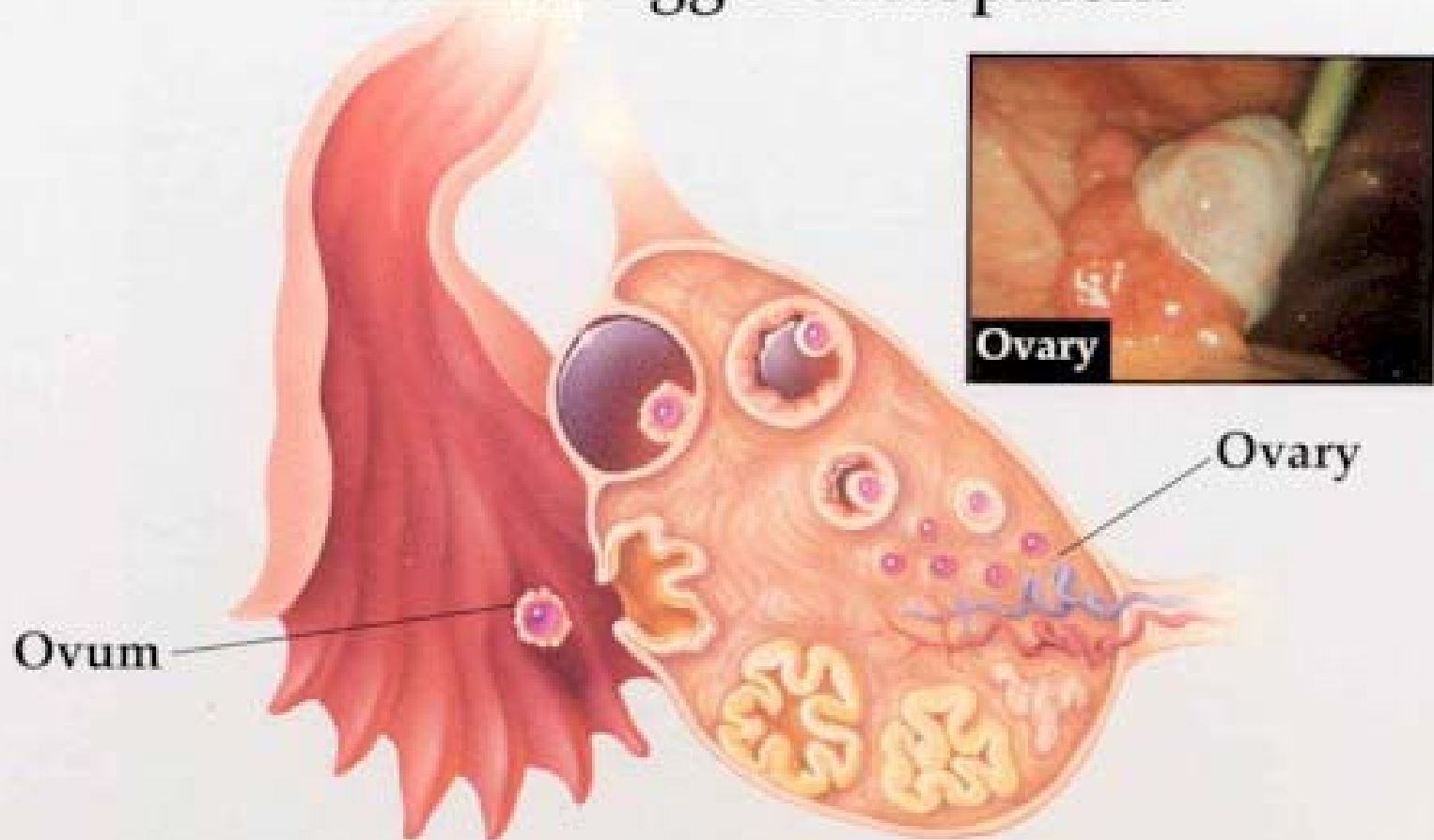
Basic Work Up

- Anovulation
- Male
- Tubal Factor
- Uterine/cervical (fibroid)
- Unexplained
- Day 3 Labs (FSH, Inhibin B, Estradiol)
- Mid luteal phase Progesterone
- Semen analysis
- Hysterosalpingogram
- ??? Laparoscopy

- **Anovulation**
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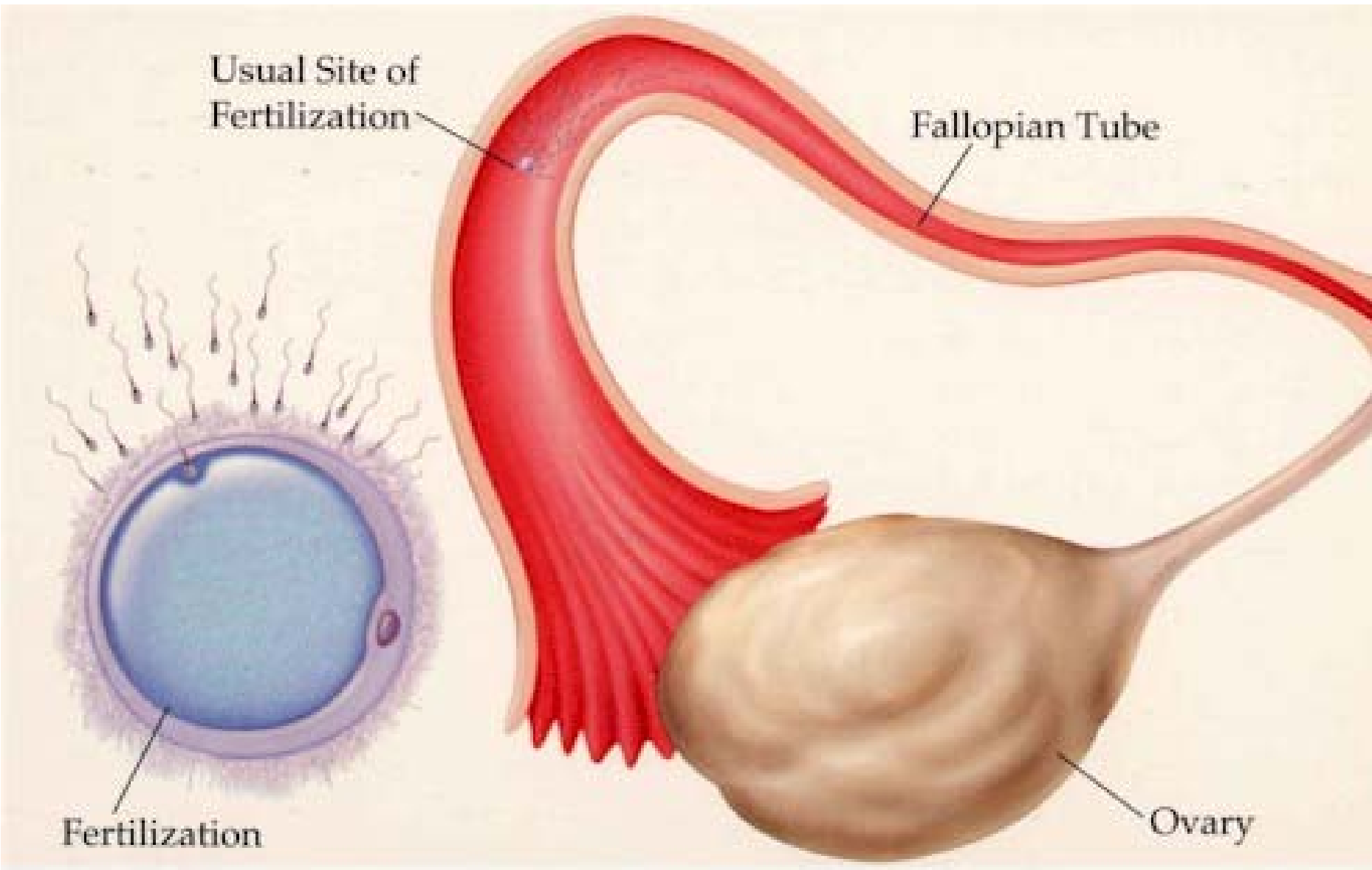


Normal Egg Development



Each month the ovaries release one egg, or ovum.





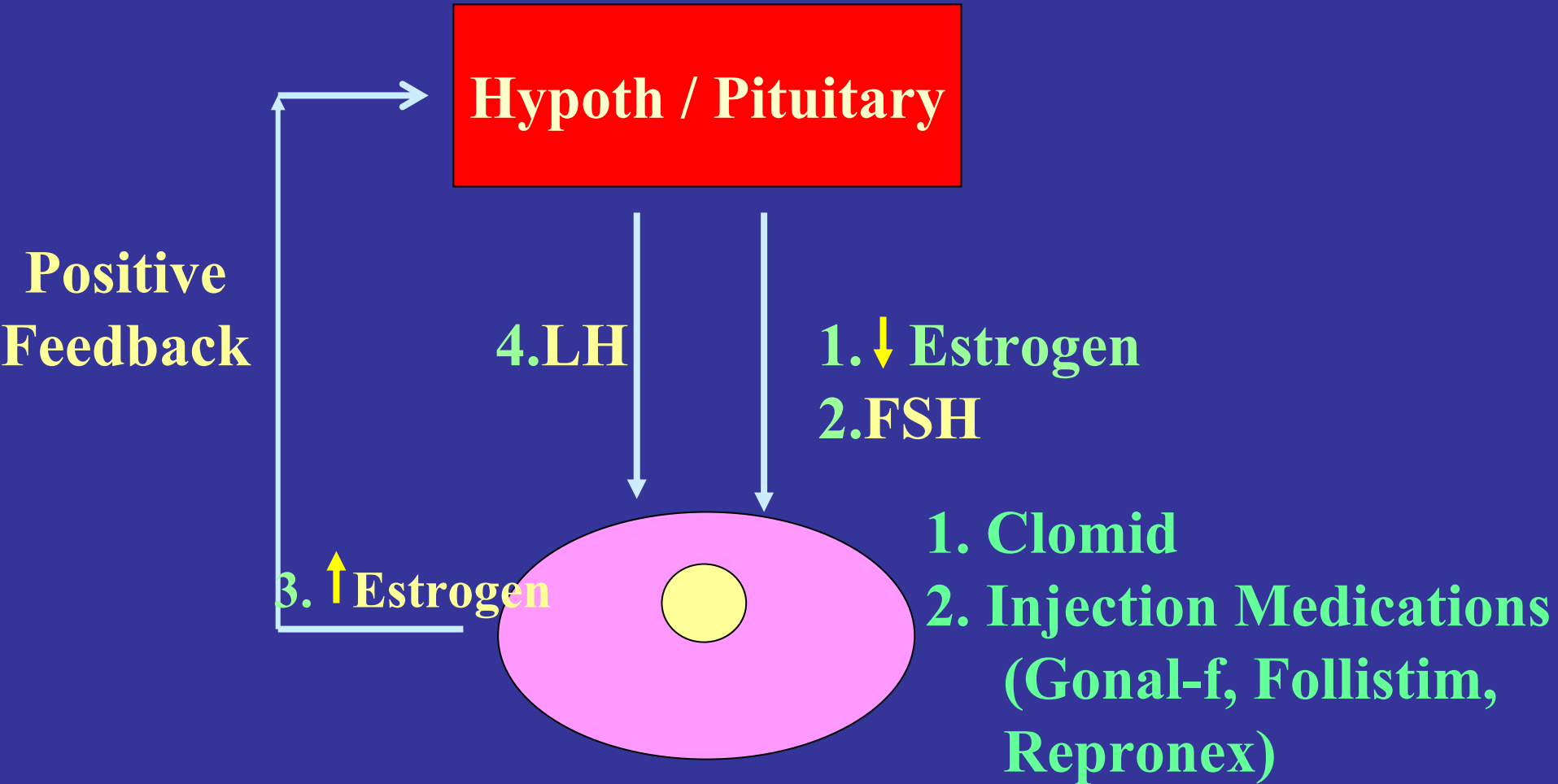
Usual Site of Fertilization

Fallopian Tube

Fertilization

Ovary

Induction of Ovulation



Induction of Ovulation

- **Clomid**

80% response, less invasive, cheap

Low incidence of multiple

- **Injectable**

Multiple gestation

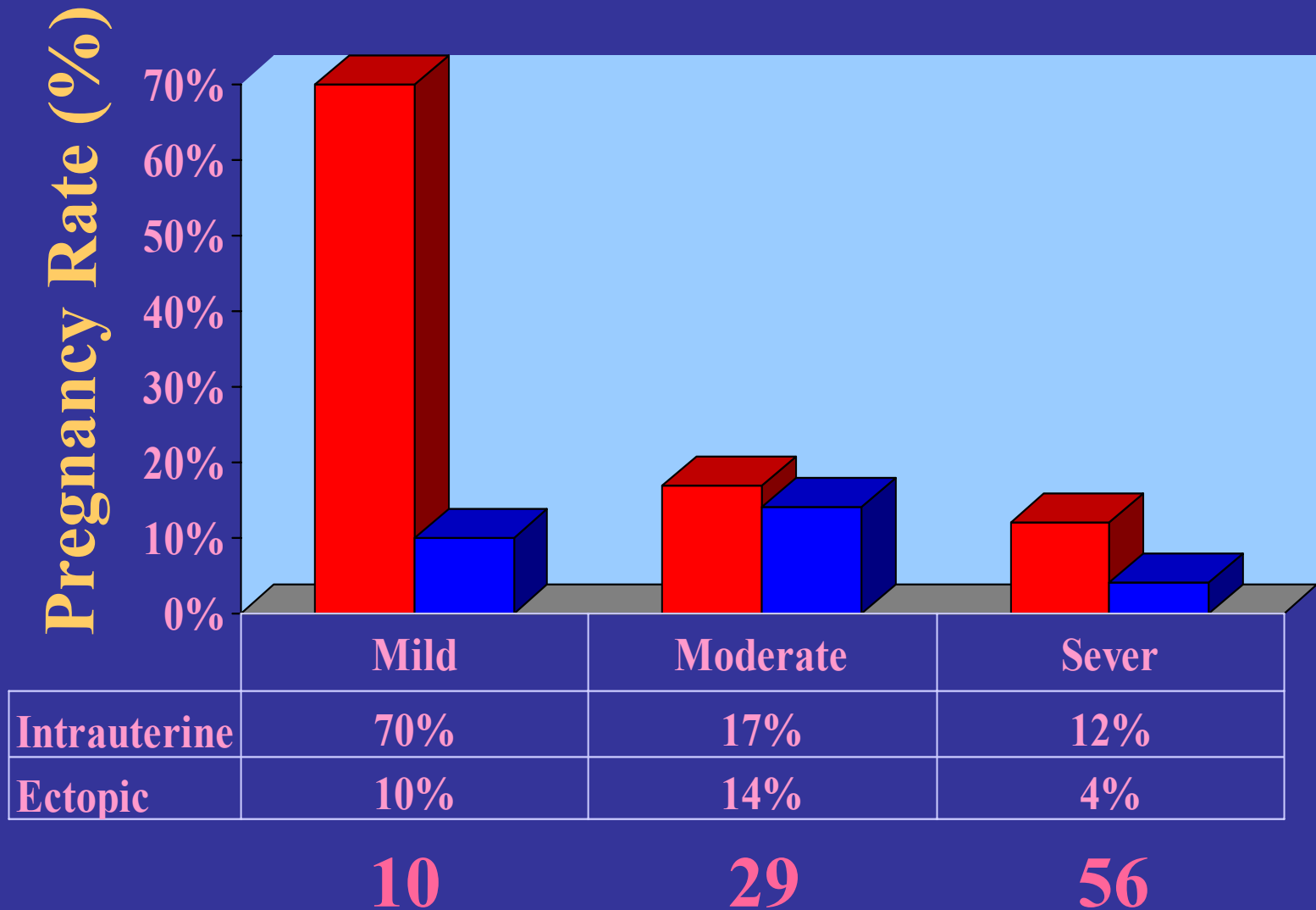
Expensive

- **Intrauterine Insemination**

- **Anovulation**
- **Tubal / Pelvic Factor**
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- Tubal Surgery
- **In vitro fertilization (IVF)**

Pregnancy Outcome After Tubal Surgery

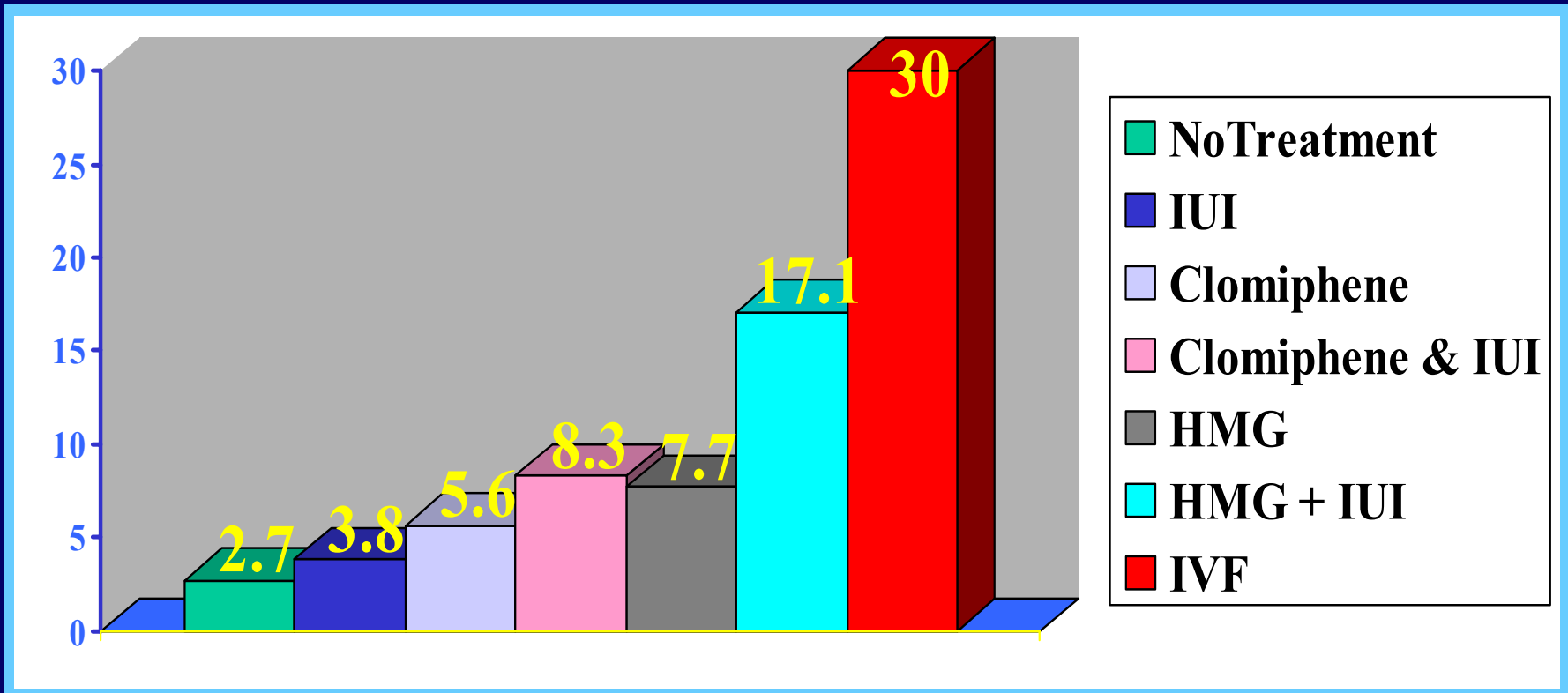


- **Anovulation**
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- **Intrauterine Insemination**
- **In vitro fertilization (IVF)**
- **Intracytoplasmic Sperm Injection (ICSI)**

- **Anovulation**
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Pregnancy Rate per Cycle in Patients with Unexplained Infertility



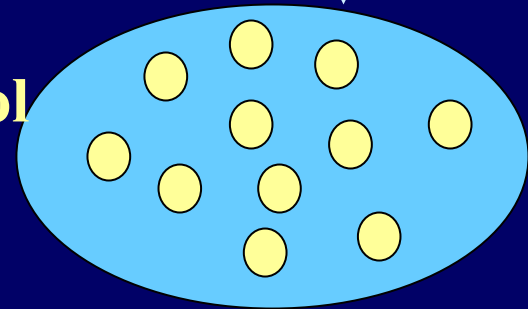
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Hypoth / Pituitary

LH

FSH

**Follisitim
Gonal-F
Perganol
Repronex**



**Positive
Feedback**

Estradiol

Start OC

**Start
Lupron**

**Start
FSH**

Retrieval

Transfer

D 1

3 wks

D 21

2wks

D 35

10-14 D

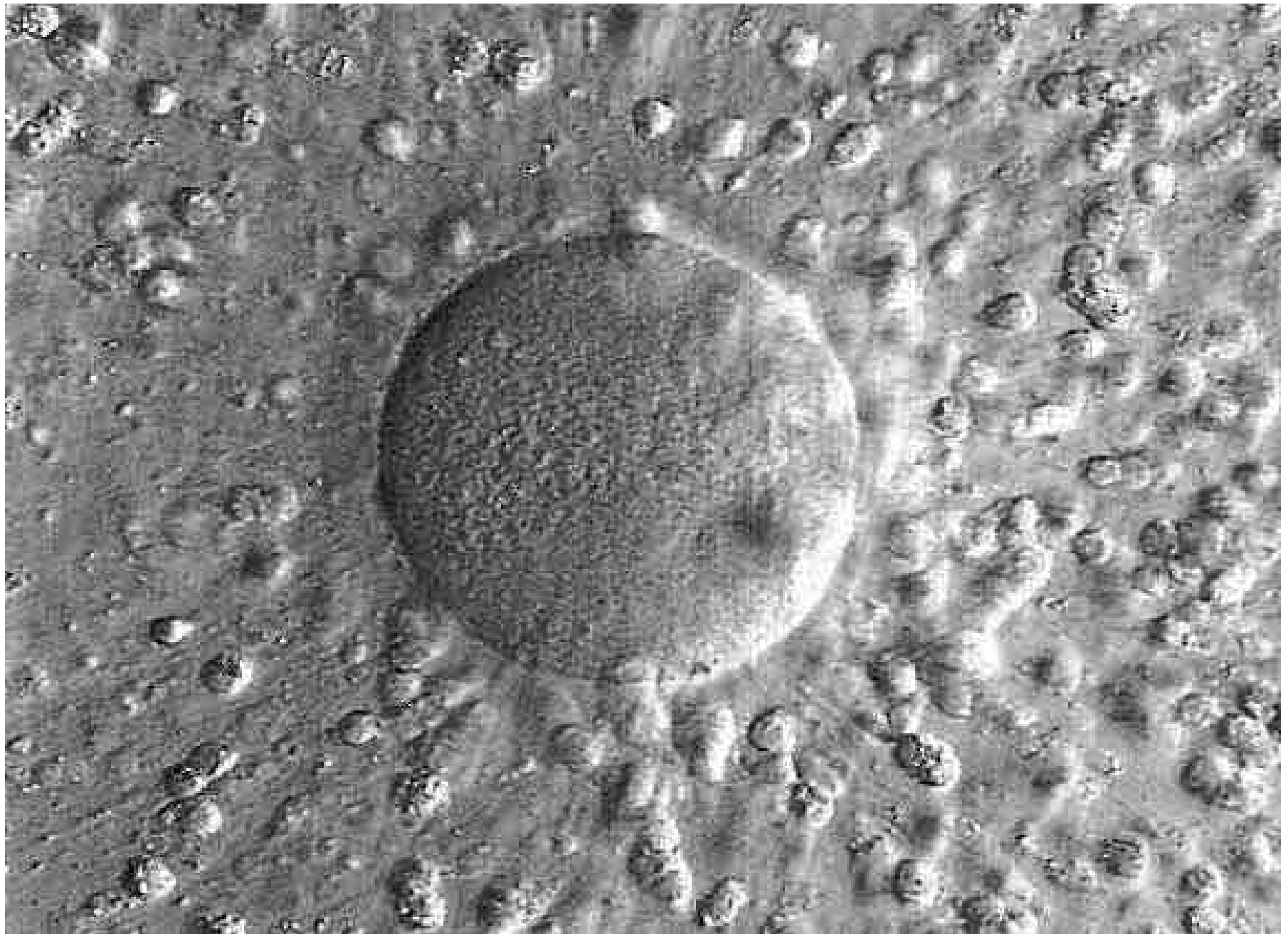
S D

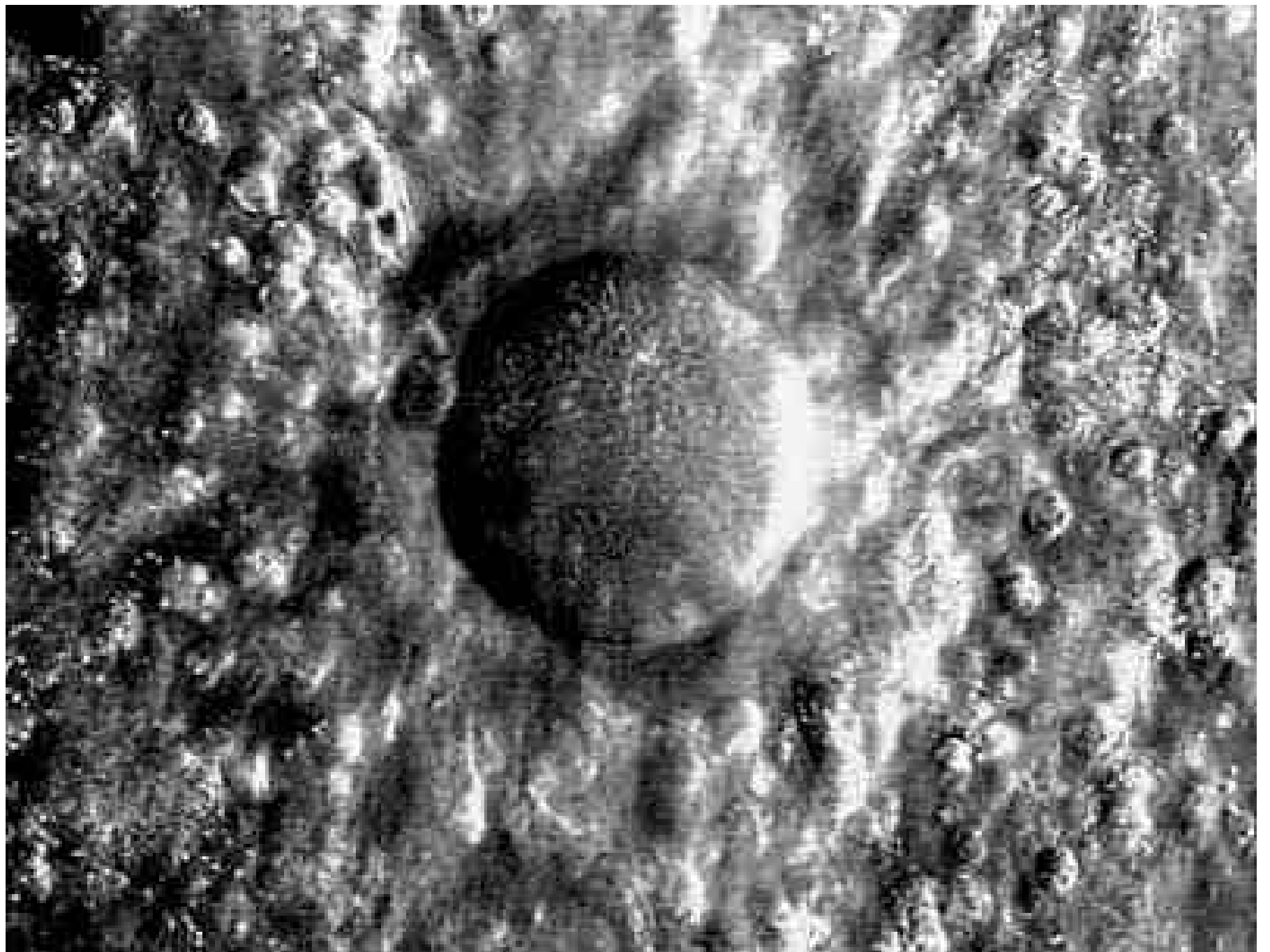
3 D

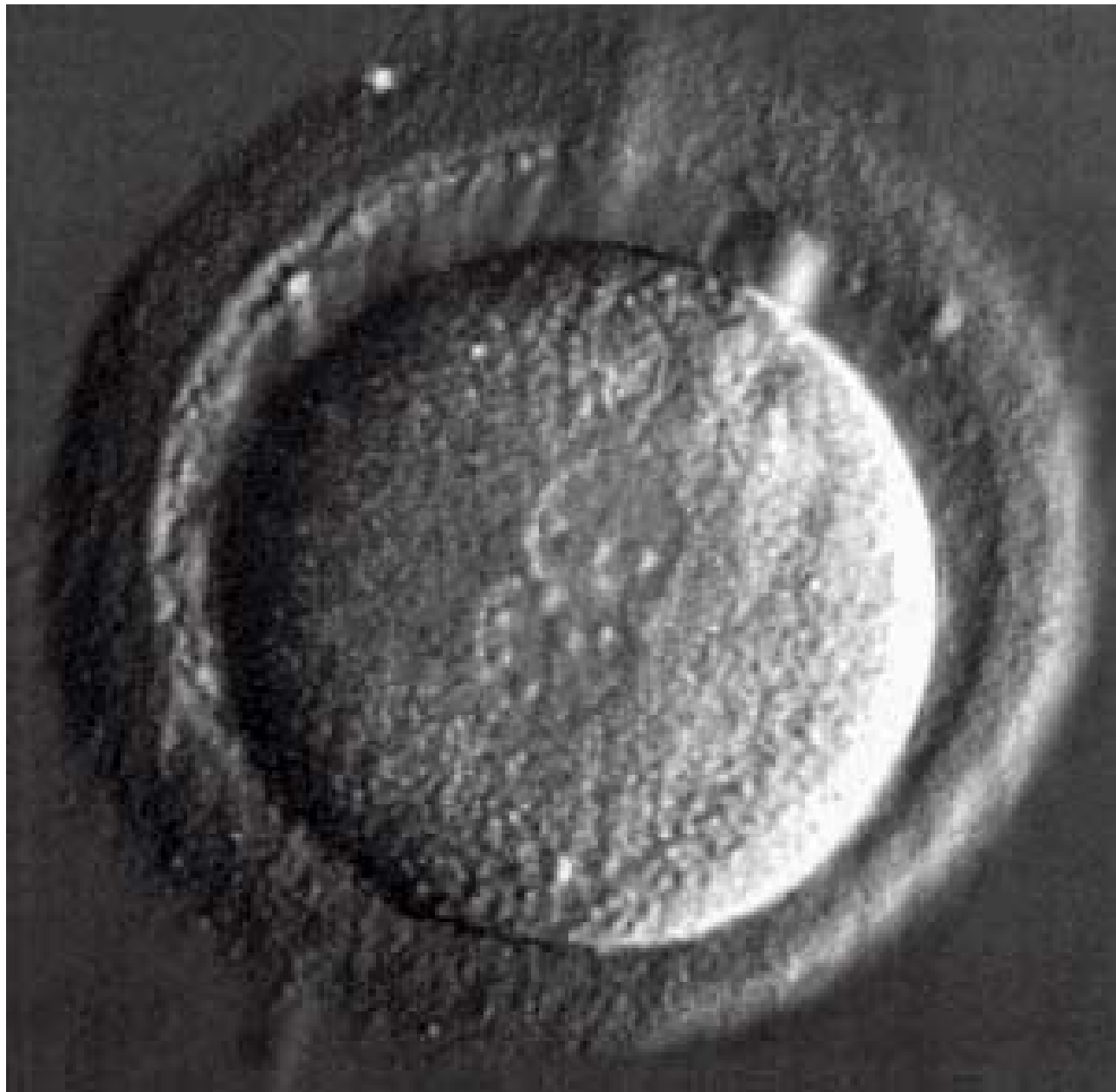
2 D

SD 1

10-14

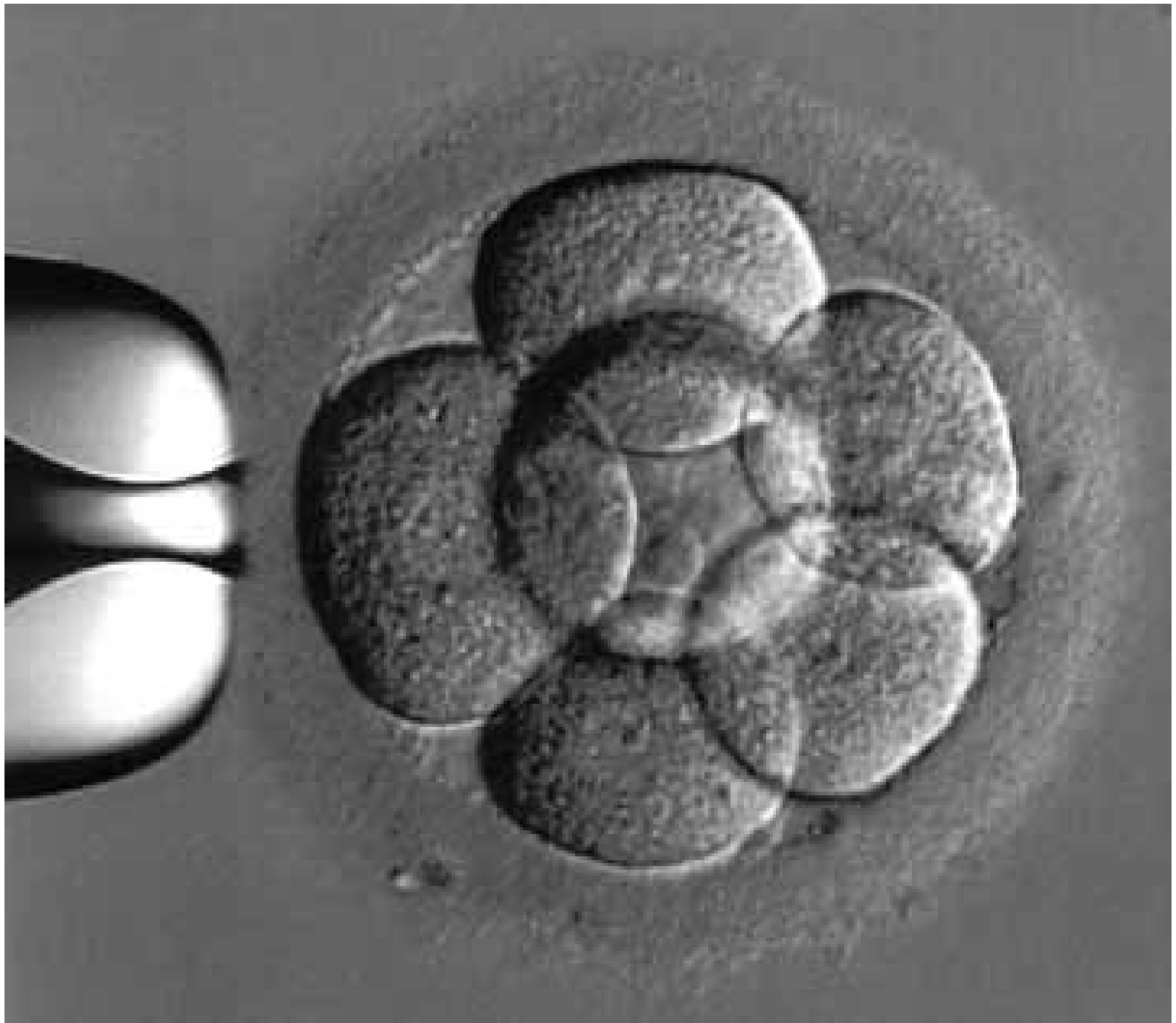




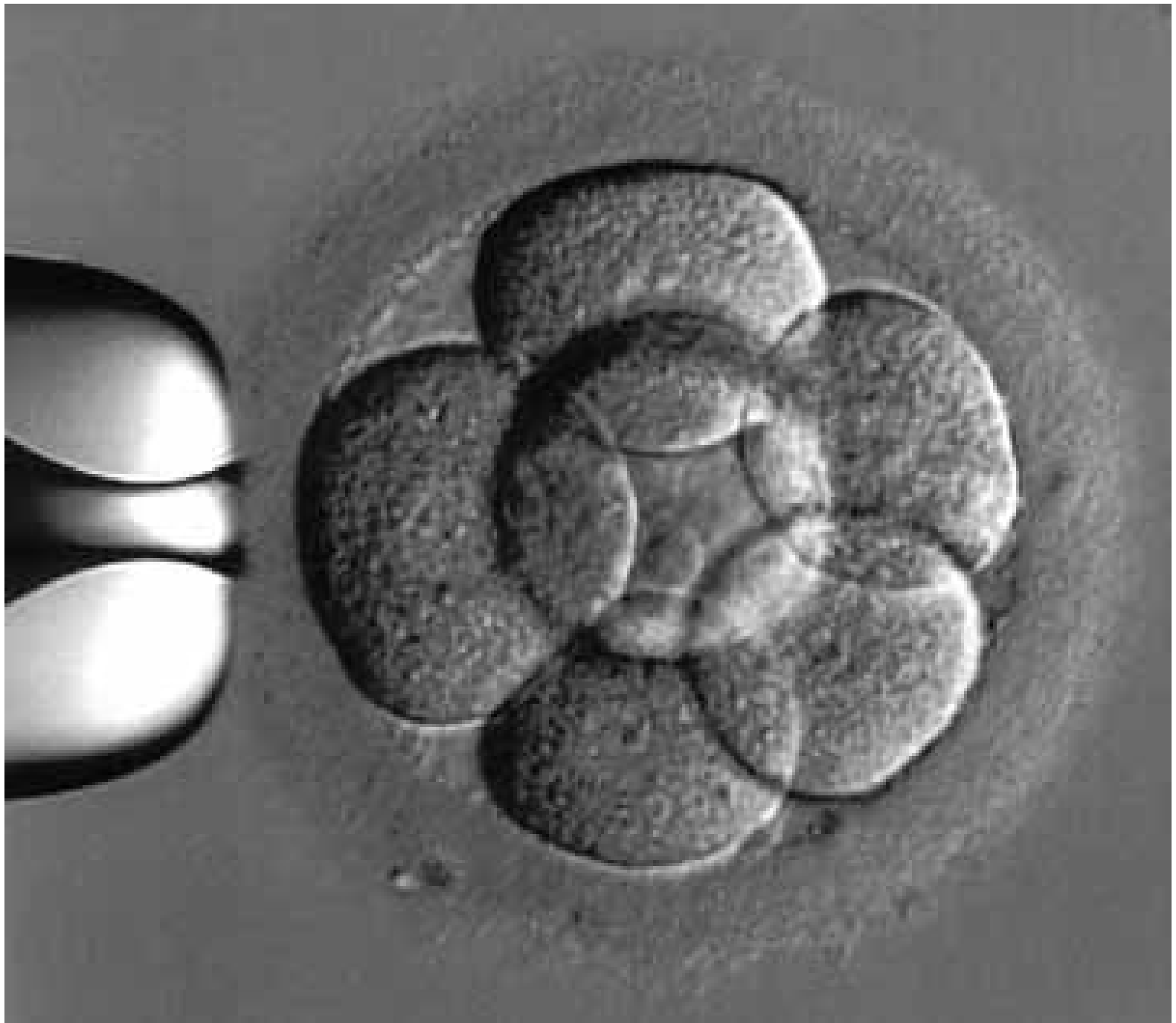




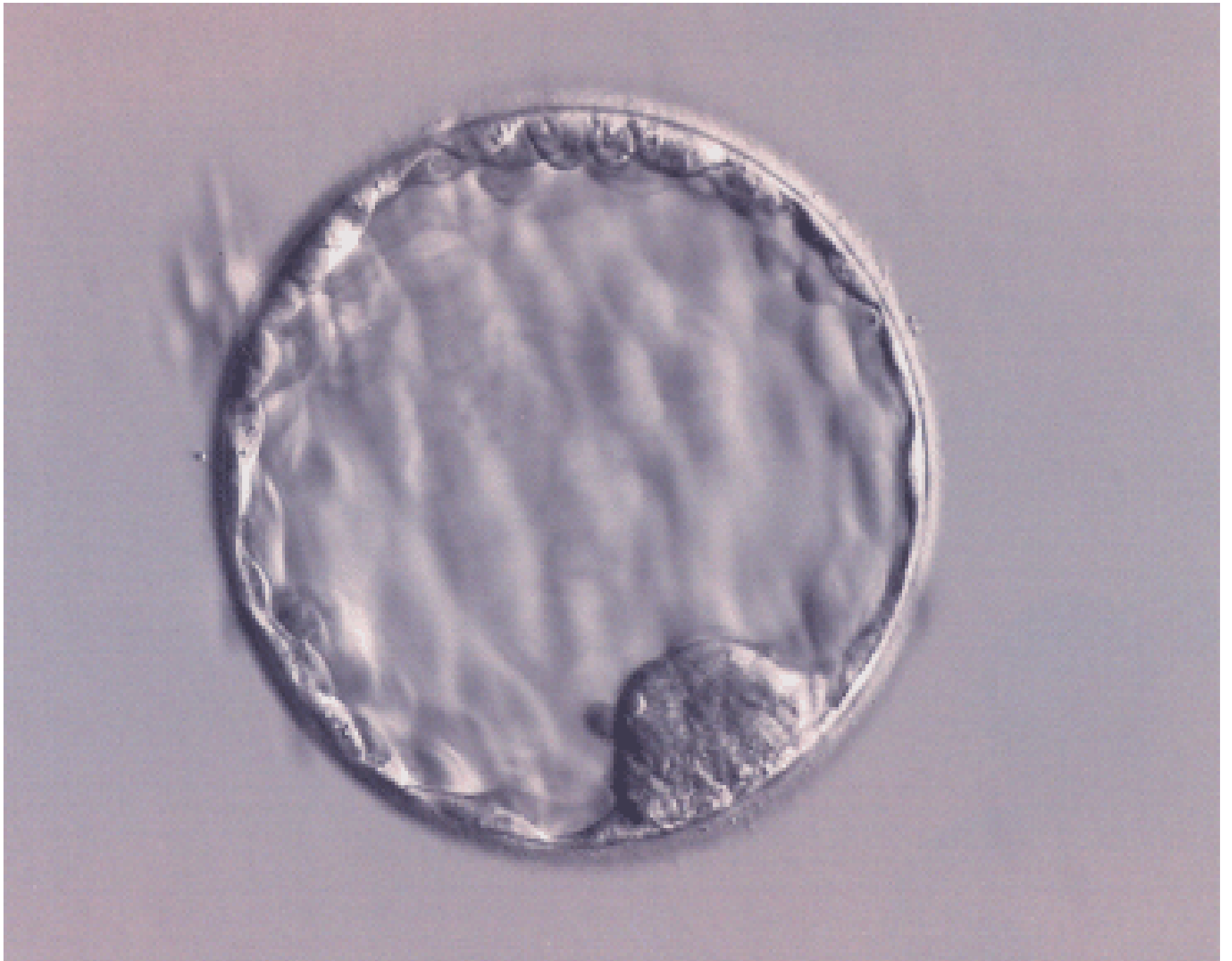








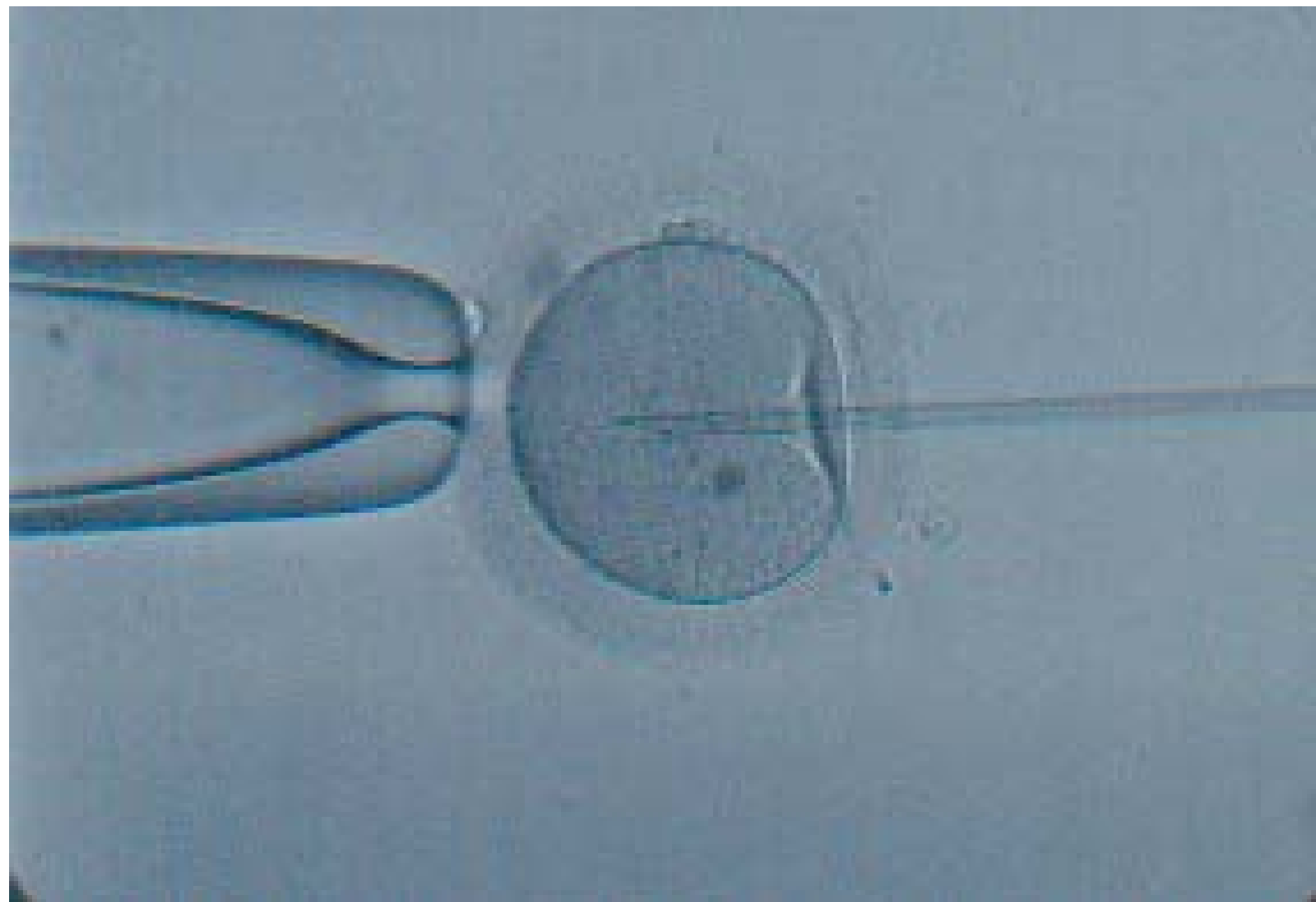


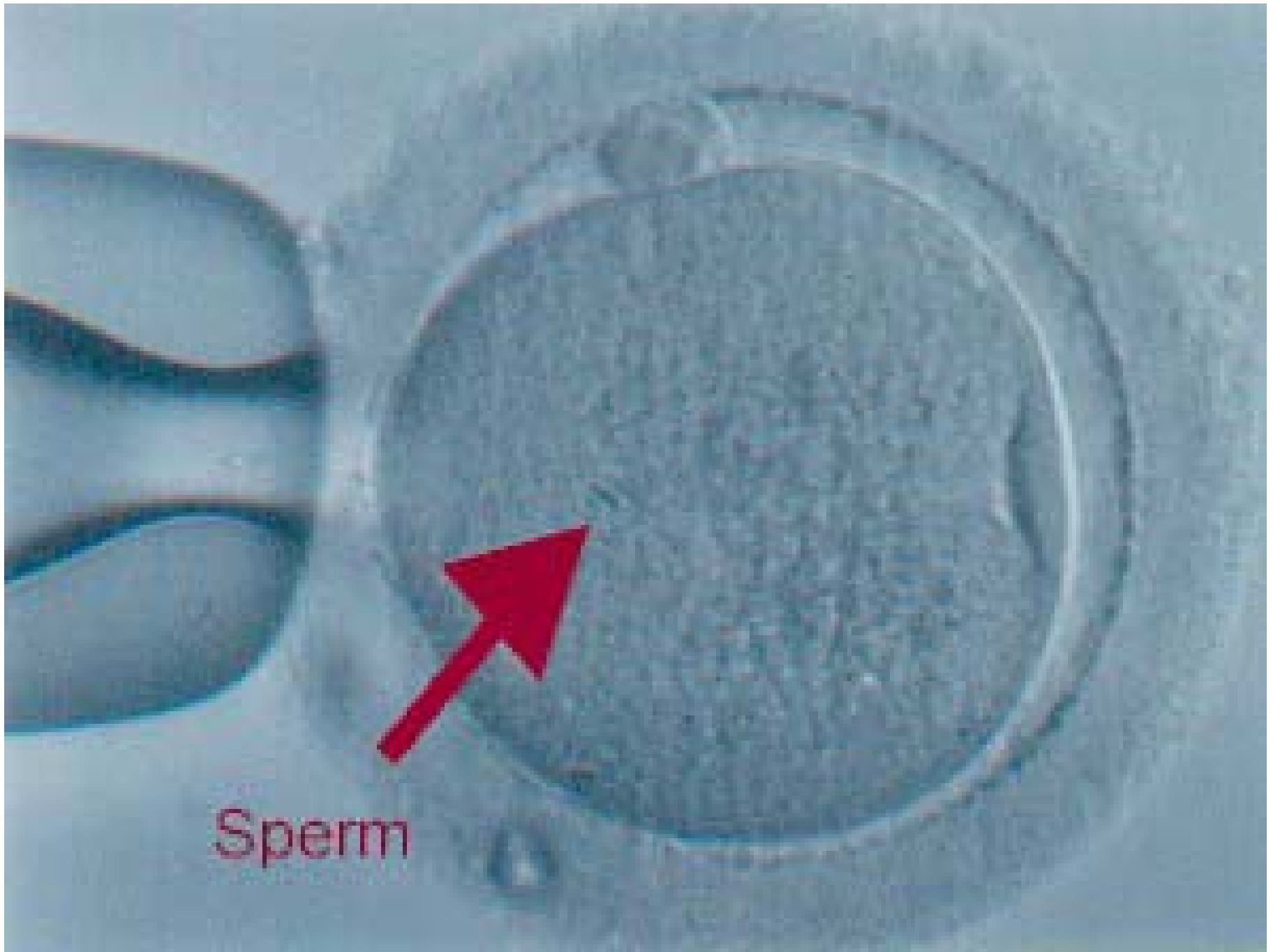


IVF Success Rate

- Age
- Age
- Age
- 40 - 60%
- Cost \$5500 + Medications







Sperm

