

Beyond “the birds and the bees”:  
fertility facts  
and the path to pregnancy



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# About Us



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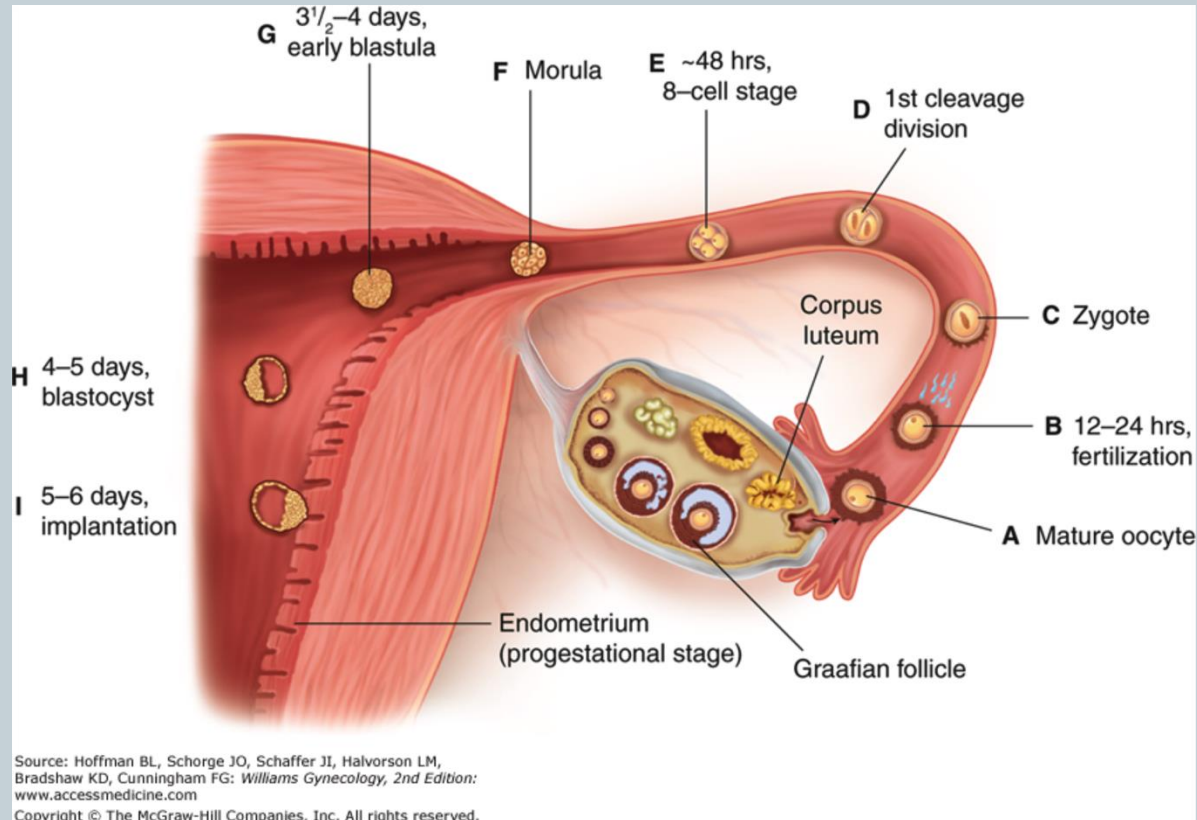
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GREENWICH FERTILITY  
CENTER



# Path to Conception



There are many steps required to achieve a healthy pregnancy

# What is infertility?



- The inability to conceive after 12 months of unprotected intercourse
- For women age 35 and over, an evaluation is recommended after 6 months of attempting to conceive
- If there is reason to suspect an underlying disorder, it is appropriate to seek consultation sooner

Infertility affects  
10-15 % of all couples

# Reproductive Endocrinologist



Who is a  
Reproductive  
Endocrinologist?



- A specialist in reproductive medicine and the treatment of infertility
- Someone who has completed residency training in Obstetrics and Gynecology followed by fellowship training in Reproductive Endocrinology and Infertility

# When should I seek fertility care?



Couples are generally advised to seek medical help if they are unable to achieve pregnancy after a year of unprotected intercourse.

## When to see your doctor:

Learn how to monitor the female partner's menstrual cycle to determine when ovulation occurs.



See your doctor if you are 35 or older and have tried to become pregnant for six months.

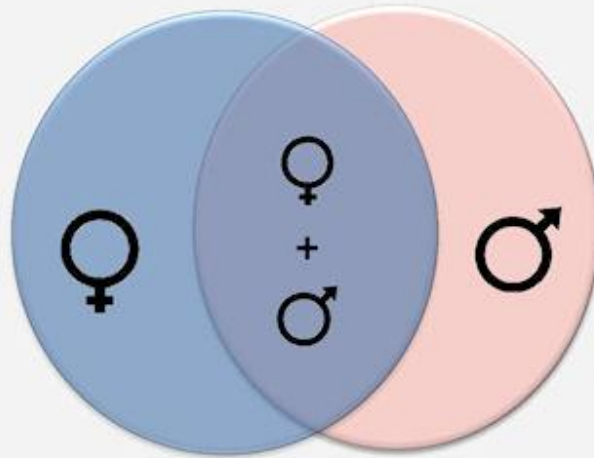
See your doctor if you are under 35 and have tried to become pregnant for a year.

For more information, go to [www.reproductivefacts.org](http://www.reproductivefacts.org)

# It takes two to tango



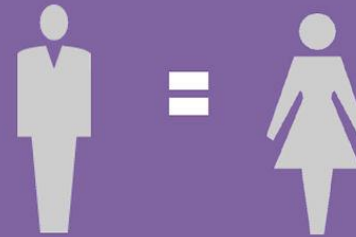
## Causes of Infertility



- One third of infertility cases can be attributed to male factors.
- One third of infertility cases can be attributed to female factors.
- One third of infertility cases are caused by a combination of factors in both partners.

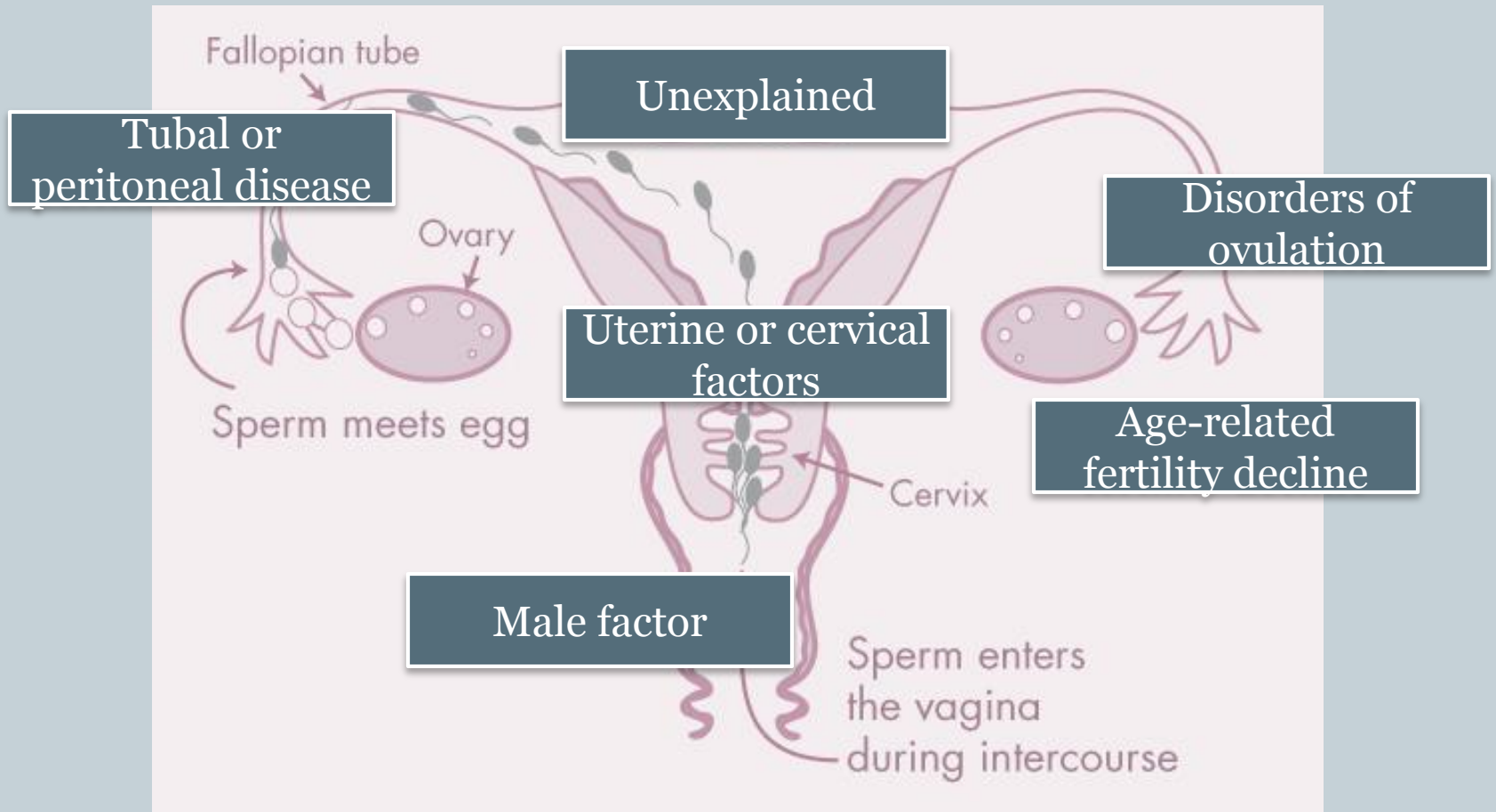
Find out more at [www.reproductivefacts.org](http://www.reproductivefacts.org)

Infertility affects men and women equally.



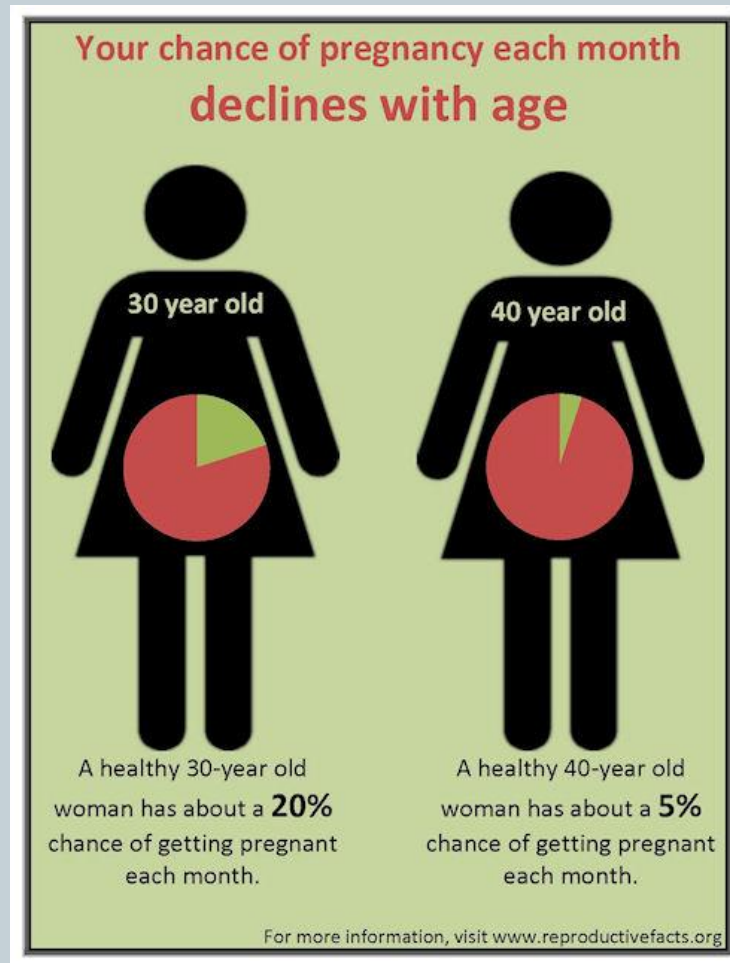
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# Causes of Infertility





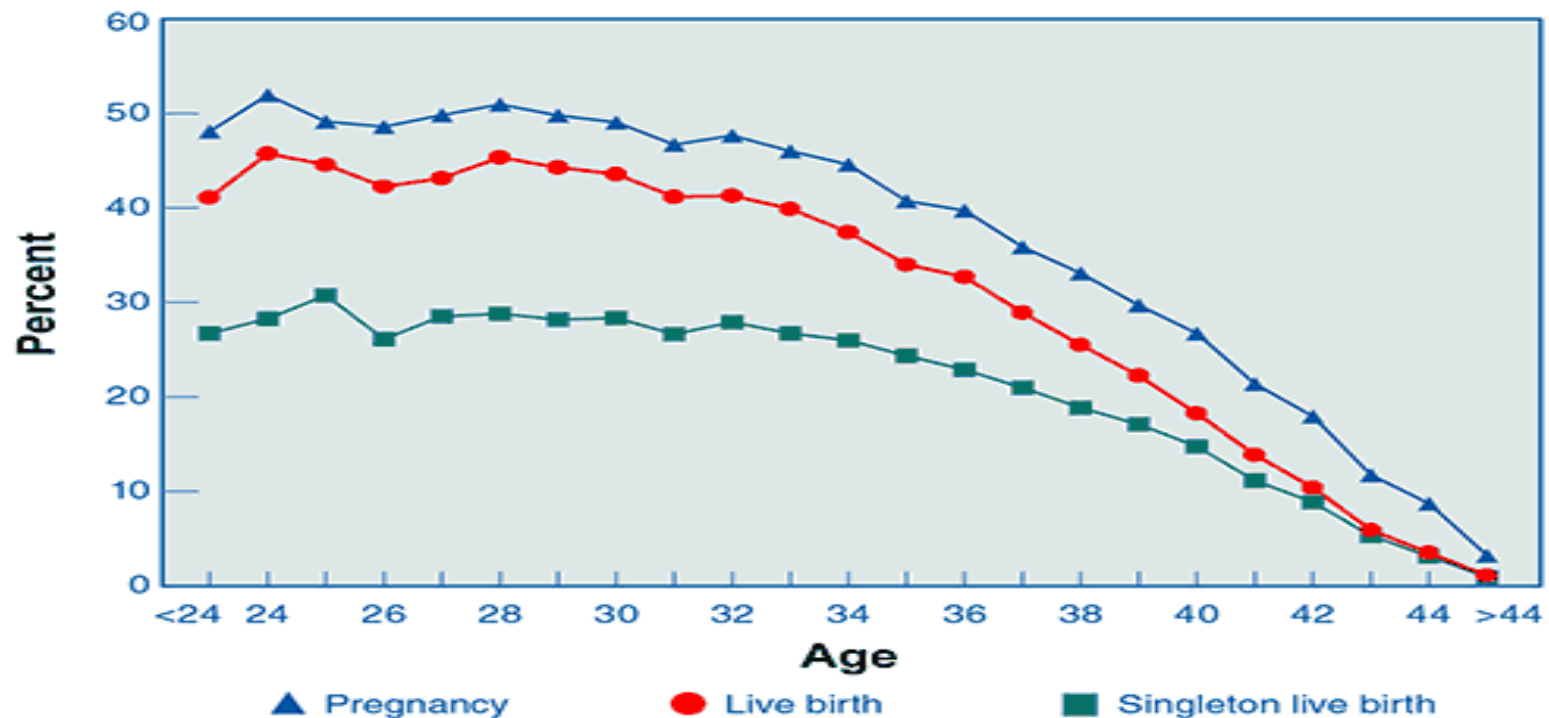
# Age-Related Fertility Decline



# Age-Related Fertility Decline



Percentages of ART Cycles Using Fresh Nondonor Eggs or Embryos That Resulted in Pregnancies, Live Births, and Singleton Live Births, by Age of Woman,\* 2010



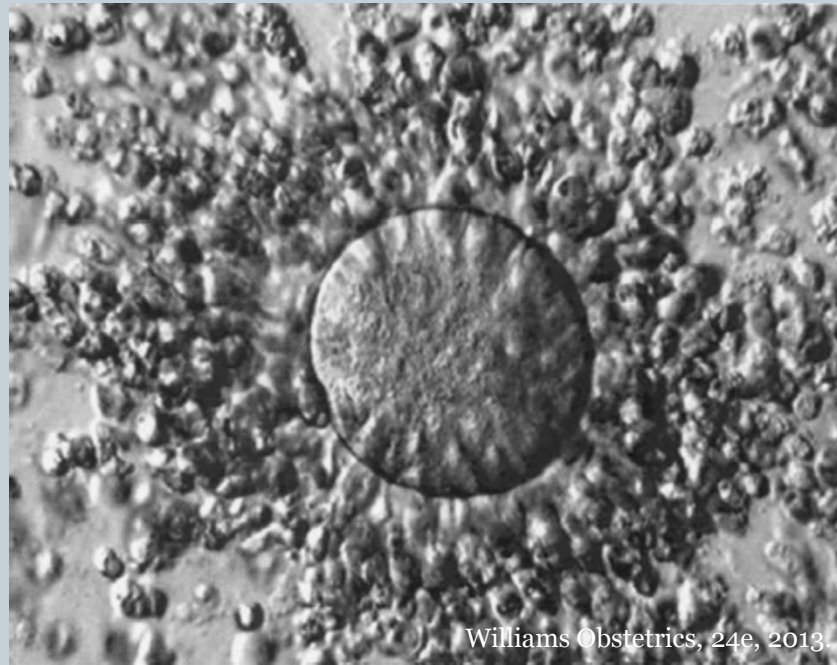
CDC, ASRM, Society for Assisted Reproductive Technology. 2010 Assisted Reproductive Technology

# The Age Factor



Age influences a woman's eggs in two different ways:

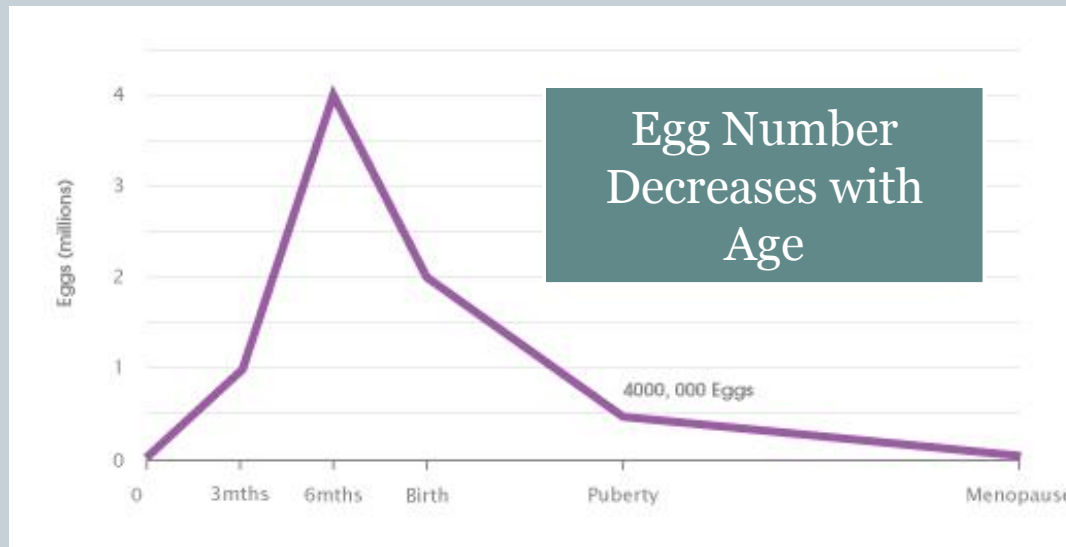
QUALITY



QUANTITY

The Oocyte (egg)

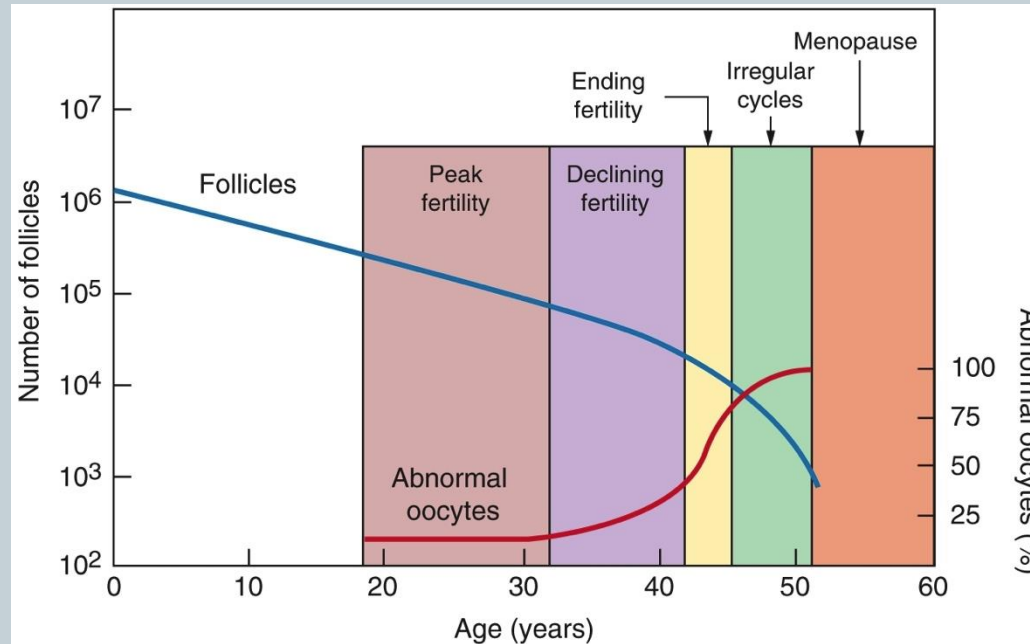
# The Age Factor: Egg Quantity



## A Woman is Born With All the Eggs She Will Ever Have

- The number peaks during fetal life at 6 to 7 million
- At birth: 2 million eggs remain
- At puberty: 300 to 400,000 eggs
- One egg ovulated per month (over about 400 lifetime ovulations)
- At menopause only about 500-1000 oocytes remain

# The Age Factor: Egg Quality



Adapted from 17, 156

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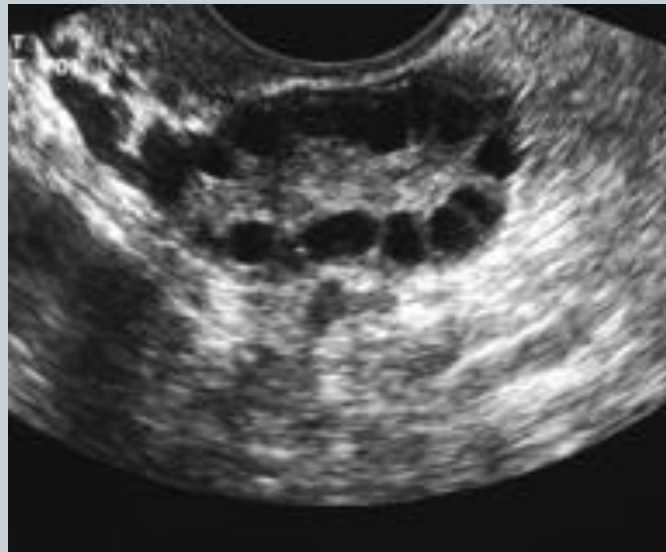
Clinical Gynecologic Endocrinology and Infertility.  
2011.

As a woman ages, an increasing percentage of her eggs are chromosomally abnormal

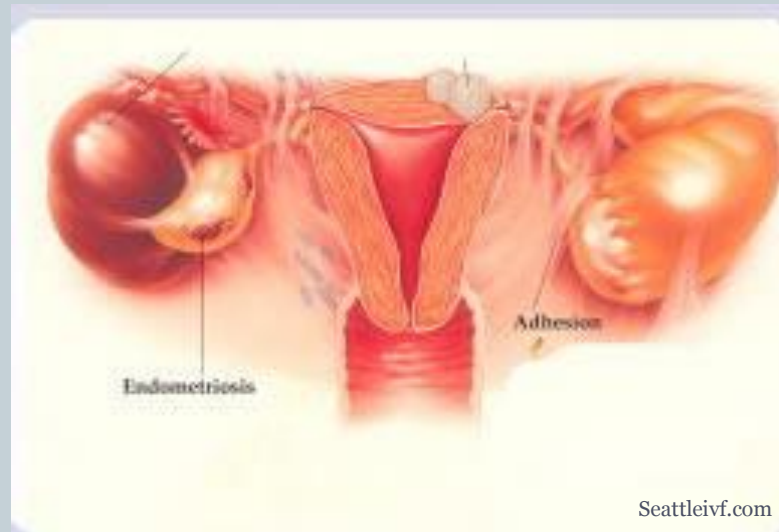
# The Age Factor: Ovarian Reserve Testing



- Anti-Mullerian Hormone Level
- Day 3 FSH level
- Antral Follicle Count on ultrasound



# Tubal Infertility

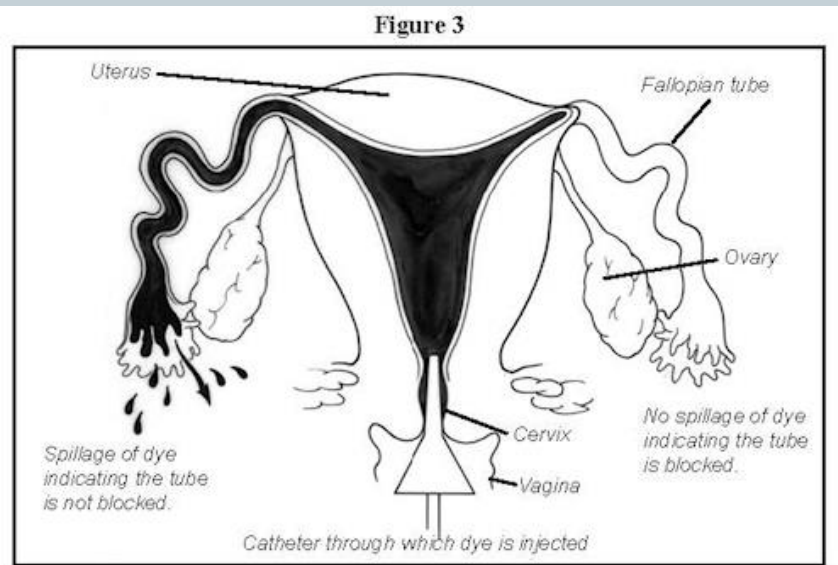


## Common Causes of Fallopian Tube Damage

- Endometriosis
- Pelvic inflammatory disease
- Prior abdominal surgery
- Prior ectopic pregnancy

# Tubal Infertility: Testing

## Hysterosalpingogram

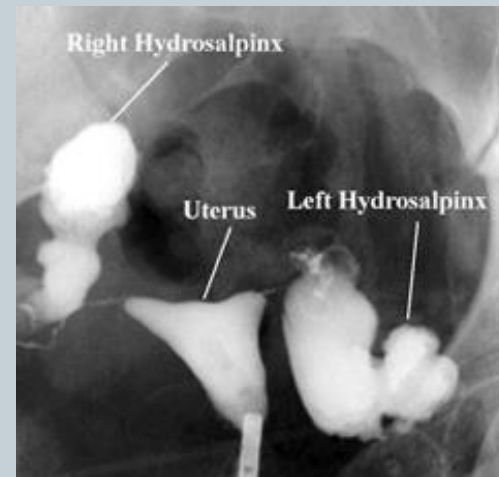


**Figure 3. Hysterosalpingogram, a procedure to determine if the fallopian tubes are open or blocked.**

asrm.org



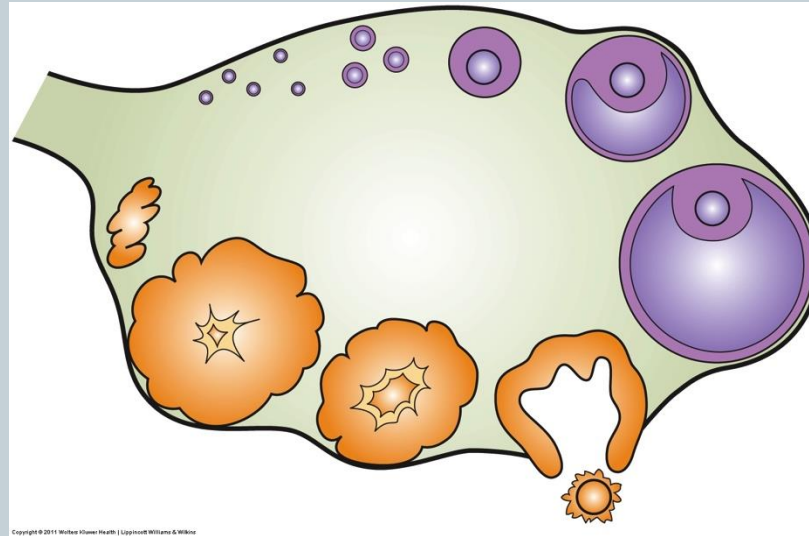
Normal  
anatomy



Blocked  
Fallopian  
tubes



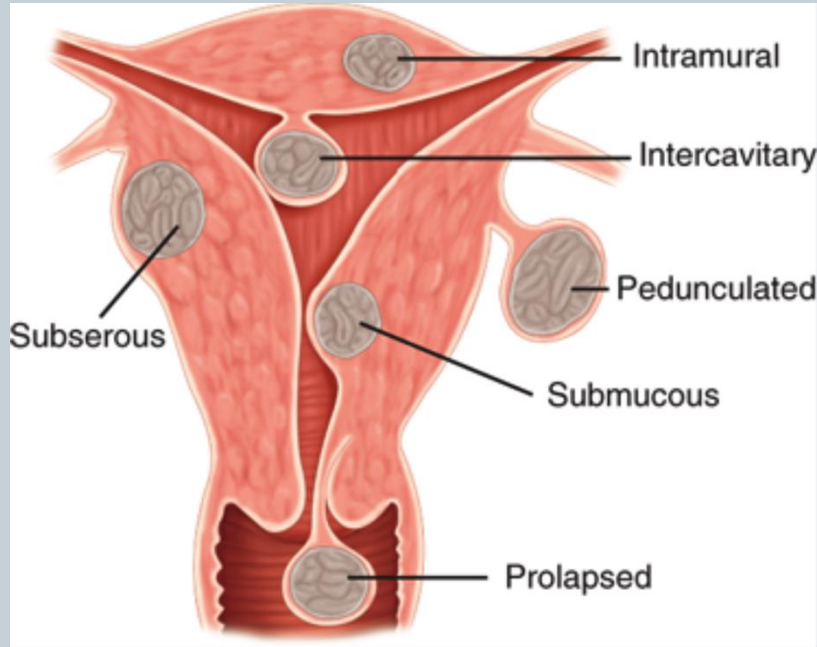
# Ovulation Disorders



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Clinical Gynecologic Endocrinology and Infertility, 2011.

- Women with regular periods are usually ovulatory
- Progesterone levels can confirm ovulation
- Thyroid and prolactin hormones may affect ovulation

# Uterine/cervical factors



Schwartz's Principles of Surgery 2014



Source: Hoffman BL, Schorge JO, Schaffer JJ, Halvorson LM, Bradshaw KD, Curingham FG: Williams Gynecology, 2nd Edition: www.accessmedicine.com  
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Williams Gynecology 2e, 2012

- Scar tissue, polyps, fibroids, and uterine anomalies can interfere with embryo implantation or increase the risk of miscarriage
- Cervical factors are rarely the sole cause of infertility

# Uterine/cervical factor testing



## Sonohysterogram: polyp



Source: Hoffman BL, Schorge JO, Schaffer JI, Halvorson LM, Bradshaw KD, Cunningham FG: *Williams Gynecology, 2nd Edition*: www.accessmedicine.com  
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Source: Hoffman BL, Schorge JO, Schaffer JI, Halvorson LM, Bradshaw KD, Cunningham FG: *Williams Gynecology, 2nd Edition*: www.accessmedicine.com  
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## Hysterosalpingogram: Fibroid



Submucous leiomyoma

Source: Hoffman BL, Schorge JO, Schaffer JI, Halvorson LM, Bradshaw KD, Cunningham FG: *Williams Gynecology, 2nd Edition*: www.accessmedicine.com

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Hysterosalpingogram or sonohysterogram can be used to visualize the uterine cavity



# Unexplained Infertility



- The inability to conceive within a year despite normal fertility test results
- May have problems with egg quality, fertilization, genetics, tubal function or sperm function that cannot be readily diagnosed
- Many will respond well to treatment

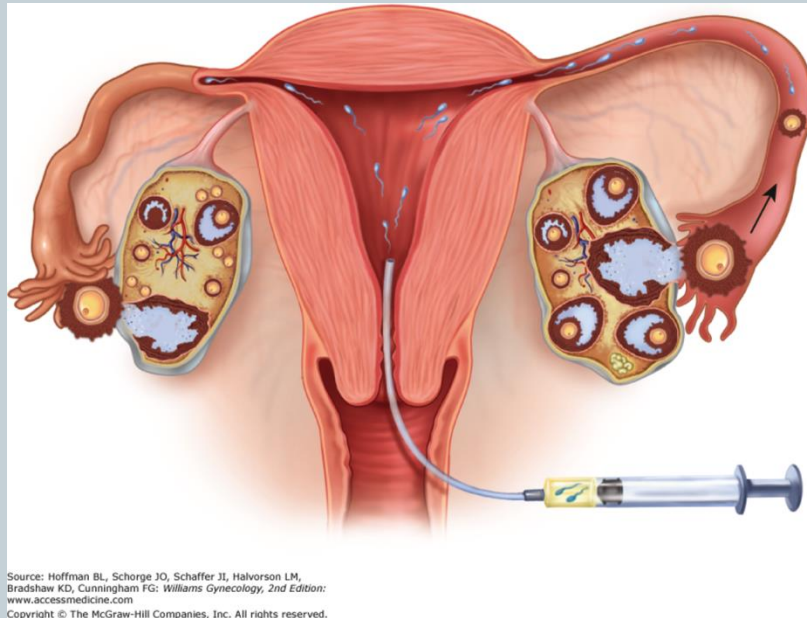
# Treatment



Depends on the etiology of infertility...

- Often start with oral medication and intrauterine insemination (IUI) if the patient has open fallopian tubes and does not have severe male factor infertility
- Consider In Vitro Fertilization (IVF) in patients who have failed multiple IUI cycles, have blocked fallopian tubes, or severe male factor infertility
- Donor sperm or donor egg treatment is an option for appropriate candidates

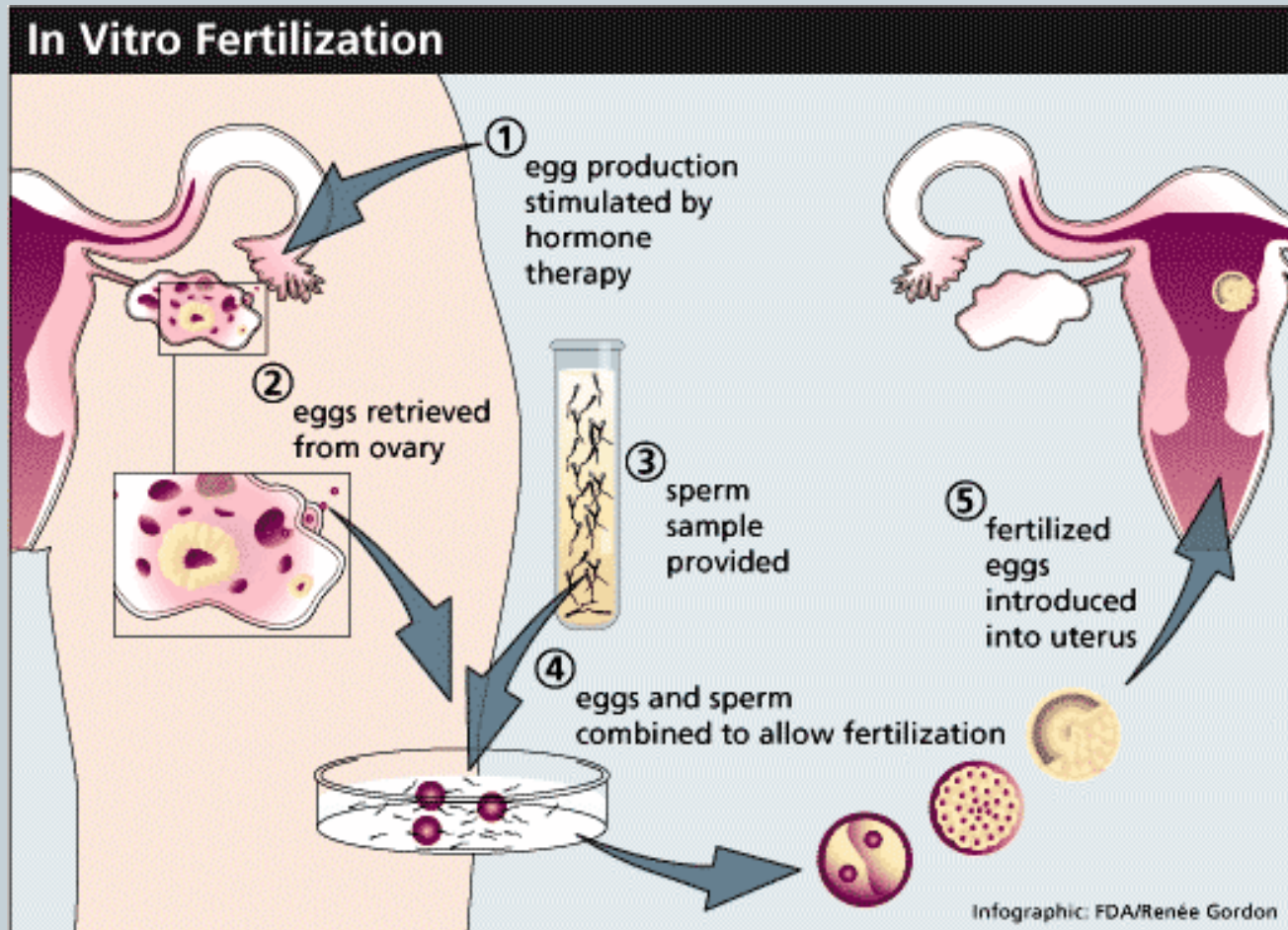
# Ovulation induction/IUI



Source: Hoffman BL, Schorge JO, Schaffer JI, Halvorson LM, Bradshaw KD, Cunningham FG: *Williams Gynecology, 2nd Edition*; www.accessmedicine.com  
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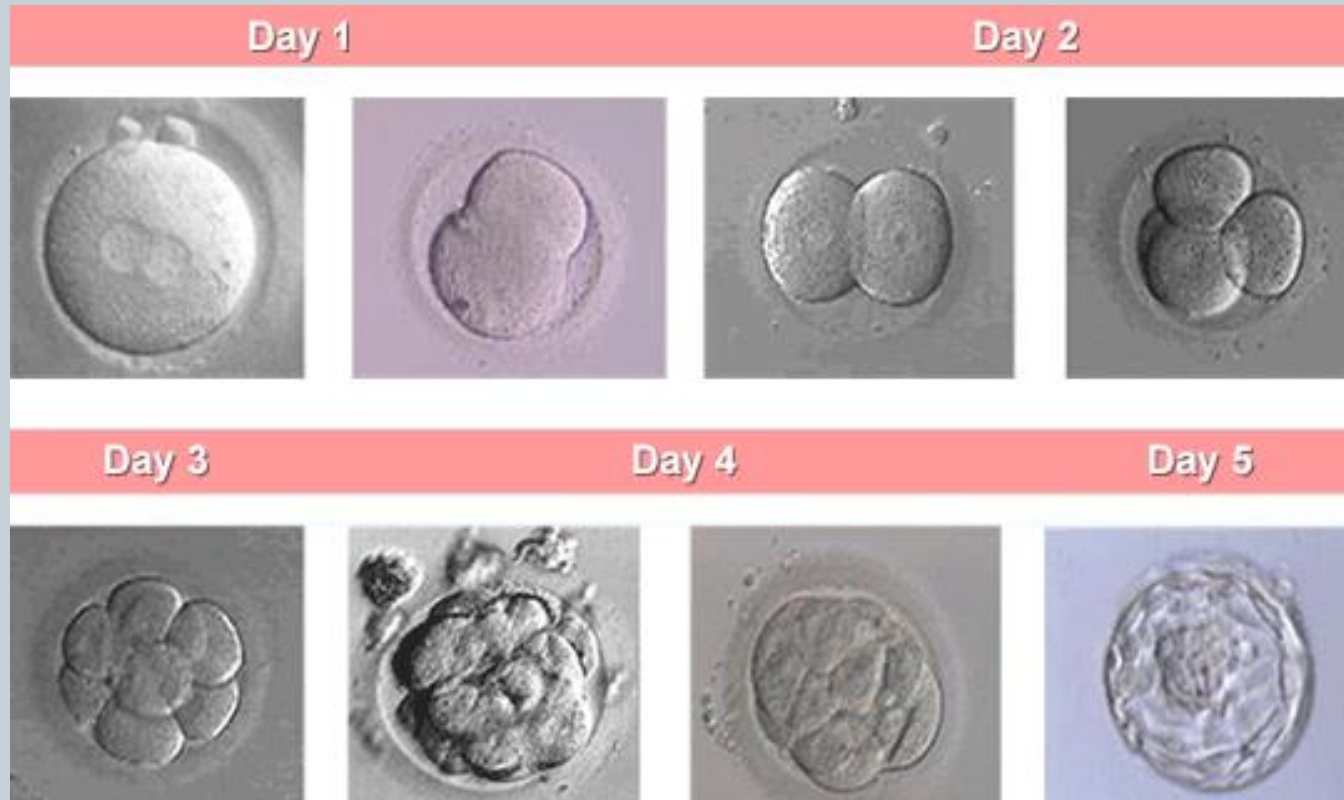
- A woman takes oral or injectable medications during her cycle and is monitored with periodic bloodwork and ultrasounds
- Around the time of ovulation, a semen sample is produced and processed in the andrology lab
- A catheter is used to place the sperm into the uterine cavity

# In Vitro Fertilization





# IVF: Embryonic Development



# Steps for Maximizing Fertility



The “fertile window” is the six (6) days leading up to and ending on ovulation.

	The chance		of pregnancy
goes up if		couples have	intercourse
every one to		two days!	OVULATION! 

For more information, go to [www.reproductivefacts.org](http://www.reproductivefacts.org)

# Steps for Maximizing Fertility



**ADVANCING AGE DECREASES YOUR ABILITY TO HAVE CHILDREN.**

While women and their partners must be the ones to decide when (and if) to have children, women in their twenties and thirties are most likely to conceive.

Your decisions now can impact your ability to conceive in the future.

**GET THE FACTS**  
AMERICAN SOCIETY FOR REPRODUCTIVE MEDICINE



**PRACTICING SAFE SEX NOW, PROTECTS YOUR ABILITY TO HAVE CHILDREN LATER.**

Sexually transmitted infections are the leading cause of infertility and often have no symptoms.

Your decisions now can impact your ability to conceive in the future.

**GET THE FACTS**  
AMERICAN SOCIETY FOR REPRODUCTIVE MEDICINE



**IF YOU SMOKE THIS MIGHT BE YOUR ONLY USE FOR A BABY'S BOTTLE.**

Smoking can affect your ability to have children. It can cause infertility in women and men.

Your decisions now can impact your ability to conceive in the future.

**GET THE FACTS**  
AMERICAN SOCIETY FOR REPRODUCTIVE MEDICINE



**AN UNHEALTHY BODY WEIGHT MAY PREVENT YOU FROM HAVING CHILDREN.**

Low body weight and obesity can cause infertility.

Your decisions now can impact your ability to conceive in the future.

**GET THE FACTS**  
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# Fertility Preservation



- Egg freezing allows women to preserve their eggs in a frozen state until they are ready to become parents
- Slow freezing vs. vitrification

# THANK YOU!!



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## Resources:

