

**DISORDERS OF THE  
REPRODUCTIVE  
SYSTEM**

DIANE BARUSH, CRNP

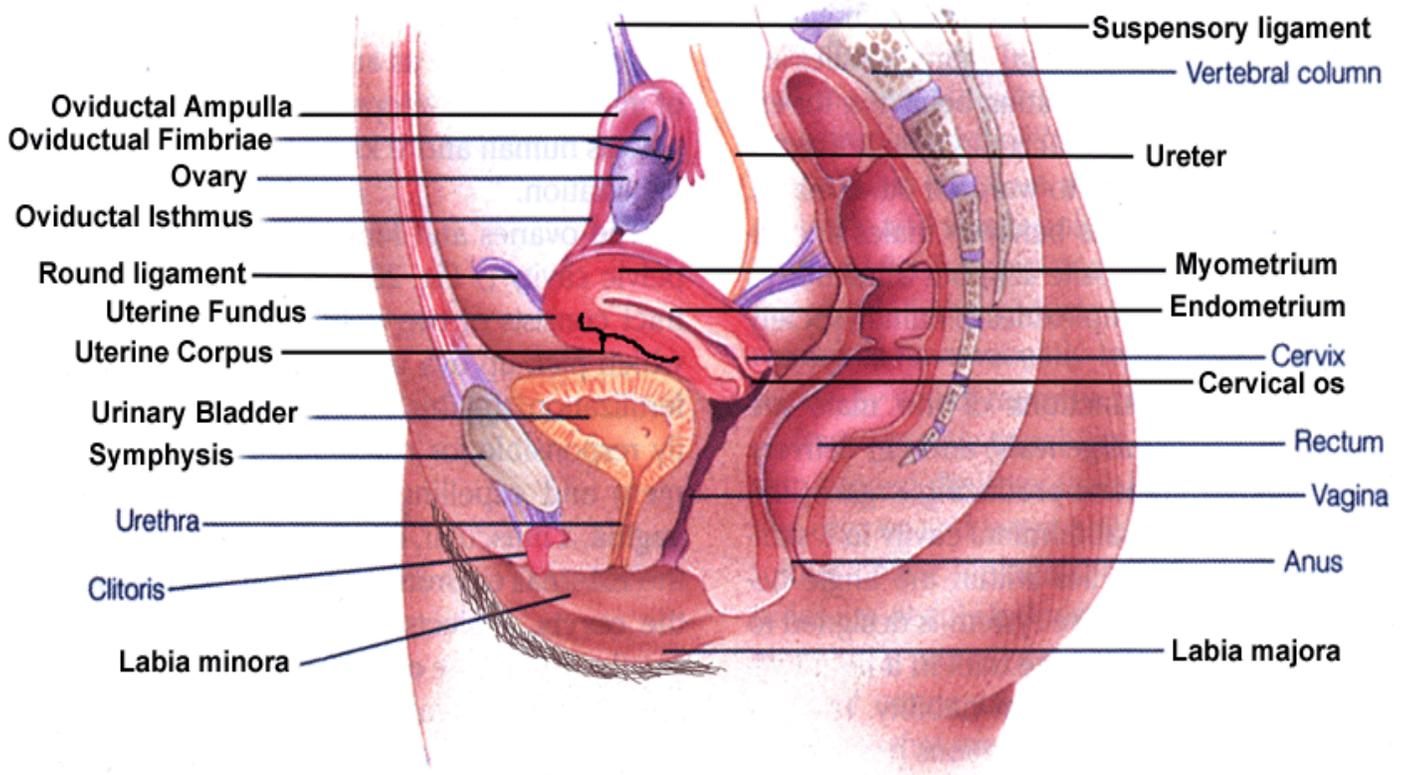
## FEMALE REPRODUCTIVE ORGANS (CH. 41)

- **OVARIES** – produce ova and secrete estrogens.
- **FALLOPIAN TUBES** – passageway between ovary and uterus. Does not have closed connection to ovaries.
- **UTERUS** – The *womb*. 3 layers: epimetrium, myometrium, and endometrium.

## **FEMALE REPRODUCTIVE ORGANS (CH. 41)**

- **VAGINA** – muscular canal. Function is to receive sperm, provide exit for menstruation, and act as birth canal.
- **EXTERNAL GENITALIA** – “Vulva”  
Includes mons pubis, labia majora & minora, clitoris, Bartholin’s glands.
- **BREASTS** – hormonally influenced and directly linked to reproductive process.

## Female Reproductive Tract



Modified from Sherwood, *Human Physiology: From Cells to Systems, 2nd Ed*, West Publishing: St. Paul, MN, 1993.

# PHYSIOLOGY

## FEMALE HORMONES

- Anterior pituitary:
  - LH
  - FSH
  - Prolactin
  - Oxytocin

## FEMALE HORMONES (cont.)

- Ovaries:
  - Estrogen – estrone, estradiol, and estriol.
  - Progesterone

# PHYSIOLOGY

## ■ MENSTRUAL CYCLE

- Menstruation – the flow of blood and materials from the uterus through vagina.
- Occurs approx every 28 days, with variation.
- Begins with menarche and ends at menopause.

# PHYSIOLOGY

- Menstrual Cycle – ovum matures and is expelled into oviduct. 3 phases:
  - Menstrual phase – loss of endometrium.
  - Follicular phase – 4-14 days. FSH stimulates growth of follicle. LH also increasing at slower rate.
    - Phase ends with ovulation – Middle of cycle. Sharp increase in LH. Ovum bursts through ovary.
  - Luteal phase – LH causes empty follicle to become corpus luteum which secretes progesterone *and* estrogen. Stimulates blood vessels in endometrium. If ovum not fertilized, LH and progesterone decrease, endometrium not maintained, and cycles begin again..

## Male Reproductive System

- Organs
  - Testes – in scrotum, contains seminiferous tubes to produce sperm. Sperm pass through tubules to epididymis.
  - Epididymis – tube coiled on posterior of testicle. Propels sperm into vas deferens (ductus deferens), then moves to ejaculatory duct and into urethra.
  - Prostate gland – muscular gland surrounding first inch of urethra emerging from bladder. Contributes to sperm motility.
  - Penis – external genital organ contains urethra. Has masses of erectile tissue that contain blood sinuses. Uncircumcised is covered by foreskin.

# Aging and the Reproductive System

- Women – ends at menopause.
  - Menses cease for 12 months.
  - Ages 45-55
  - Estrogen decreases, ovulation ceases.
- Men –
  - Testosterone decreases but does not cease.
  - BPH is common problem.

# NURSING ASSESSMENT (Female)

- PERSONAL (MEDICAL) HISTORY
- MENSTRUAL HISTORY
- OBSTETRICAL/GYN HISTORY
- SEXUAL HISTORY
- FAMILY HISTORY
- PSYCHOSOCIAL HISTORY

# BREAST ASSESSMENT

- Palpation
- BSE
  - MONTHLY – 1 week after period
  - FLAT OF FINGERS for palpation
    - INSPECTION FIRST
    - NIPPLE DISCHARGE, COLOR, ETC.
    - PALPATE BREAST SYSTEMATICALLY
    - AXILLARY AREA

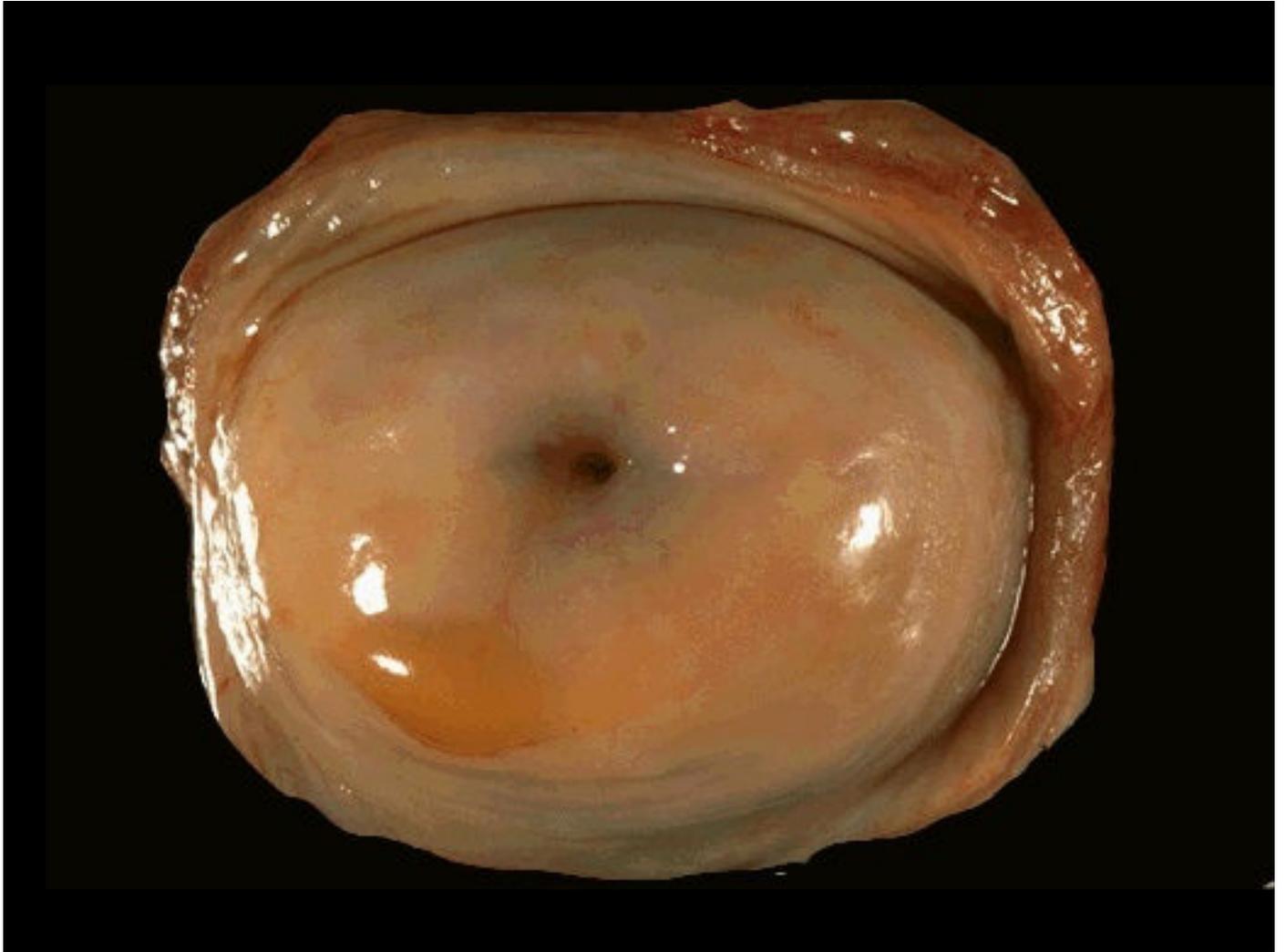
# DIAGNOSTIC TESTS

## ■ BREAST

- MAMMOGRAPHY – x-ray, begin screening at age 35-40, earlier if certain factors. Done yearly.
- ULTRASOUND – used to distinguish between solid mass and a cyst.
- MRI, thermography, tomography – not common.
- BIOPSY – to determine CA. Can be done by aspiration, needle biopsy, excisional, or incisional.

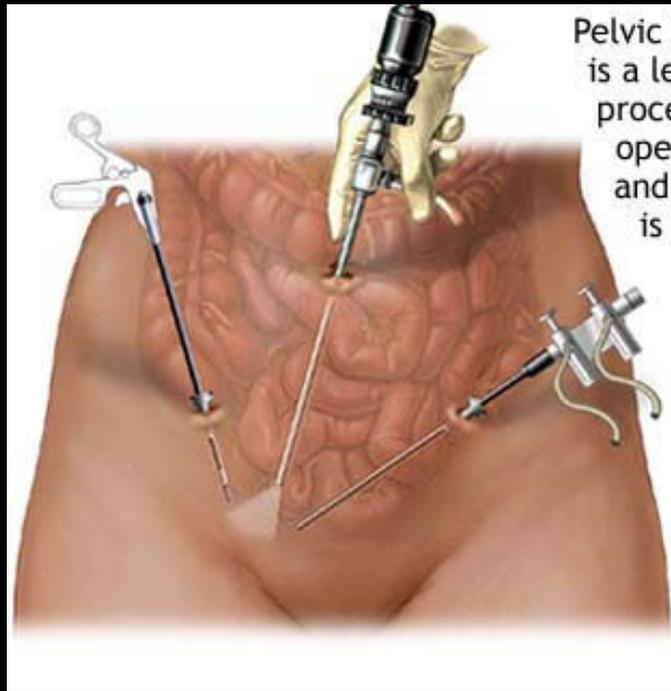
# DIAGNOSTIC TESTS

- Hormonal tests
- PELVIC EXAM
  - Lithotomy position
  - Speculum, lubricant, gloves
  - Bimanual exam – to palpate non-visible areas such as adnexa and uterus.
  - PAP test – Papanicolaou test
  - >90% accurate in detecting cervical CA
  - Begin at puberty, until age 65-75.



## DIAGNOSTIC TESTS (cont.)

- Radiographic procedures
  - CT, MRI – used to locate tumors, radiopaque dye to view structures.
  - Hysterosalpingogram – used for infertility screening.
- Endoscopic procedures– surgical procedure to directly visualize abdominal organs. Uses cannula with fiberoptic light and lens.
  - Usually requires general anesthesia.
  - Insufflation with CO<sub>2</sub> to further distinguish structures.



Pelvic laparoscopy is a less-invasive procedure than open surgery and recovery is quicker

# NURSING ASSESSMENT (MALE)

- HISTORY
- Physical exam – physician or qualified professional.
  - Hair patterns, gynecomastia.
  - Penis, scrotum, and testes
  - Inguinal hernia
  - Digital rectal examination (DRE)
- TSE
- BSE

## DIAGNOSTIC TESTS (MALE)

- Ultrasound – to evaluate repro or GU problems. Transrectal to diagnose prostate CA.
- Cystourethroscopy – to evaluate urethral obstruction from enlarged prostate.
- Laboratory – PSA.
- Infertility – hormone levels, semen analysis.



**REPRO DISORDERS  
(FEMALE)**

**CH. 42**

# BREAST DISORDERS

- BENIGN –
  - Cyclic Breast Discomfort – variations in hormone levels. Swelling, tenderness, and occasional mastalgia.
  - Fibrocystic breast disease – normal tissue replaced with fibrous tissue. Breasts hard and lumpy.
  - Mastitis – infection with inflammation. Usually associated with breast feeding.

# BREAST DISORDERS

- **Malignant** –
  - most common cancer in women. Early detection important.
- **RISK FACTORS:** ↑ age, personal/family hx breast CA, ↑ fat diet, ↑ alcohol, estrogen, early menarche, late menopause, late 1<sup>st</sup> pregnancy, no pregnancy.

# BREAST DISORDERS

- **Malignant**

- **DETECTION**

- BSE *and* clinical exam. Signs & Symptoms – lump, thickening, discharge, pain, change in size or shape, etc.
    - Mammogram – Can identify cancers up to 2 years before palpable.
    - Ultrasound
    - Breast Biopsy – only diagnostic test for breast cancer

# BREAST DISORDERS

## TREATMENT

RADIATION

CHEMOTHERAPY – uses combination therapy.

HORMONE THERAPY – use of a drug to block the influence of estrogen on the cancer cells. Only used for estrogen-dependent cancers.

These drugs increase post-menopausal symptoms, and increase chance of uterine cancer. Ex: tamoxifen, Femara, Arimidex

# BREAST DISORDERS

## TREATMENT:

BIOLOGIC MODIFIERS – ex: interferon, tumor necrosis factor, interleukin. Newer tx.

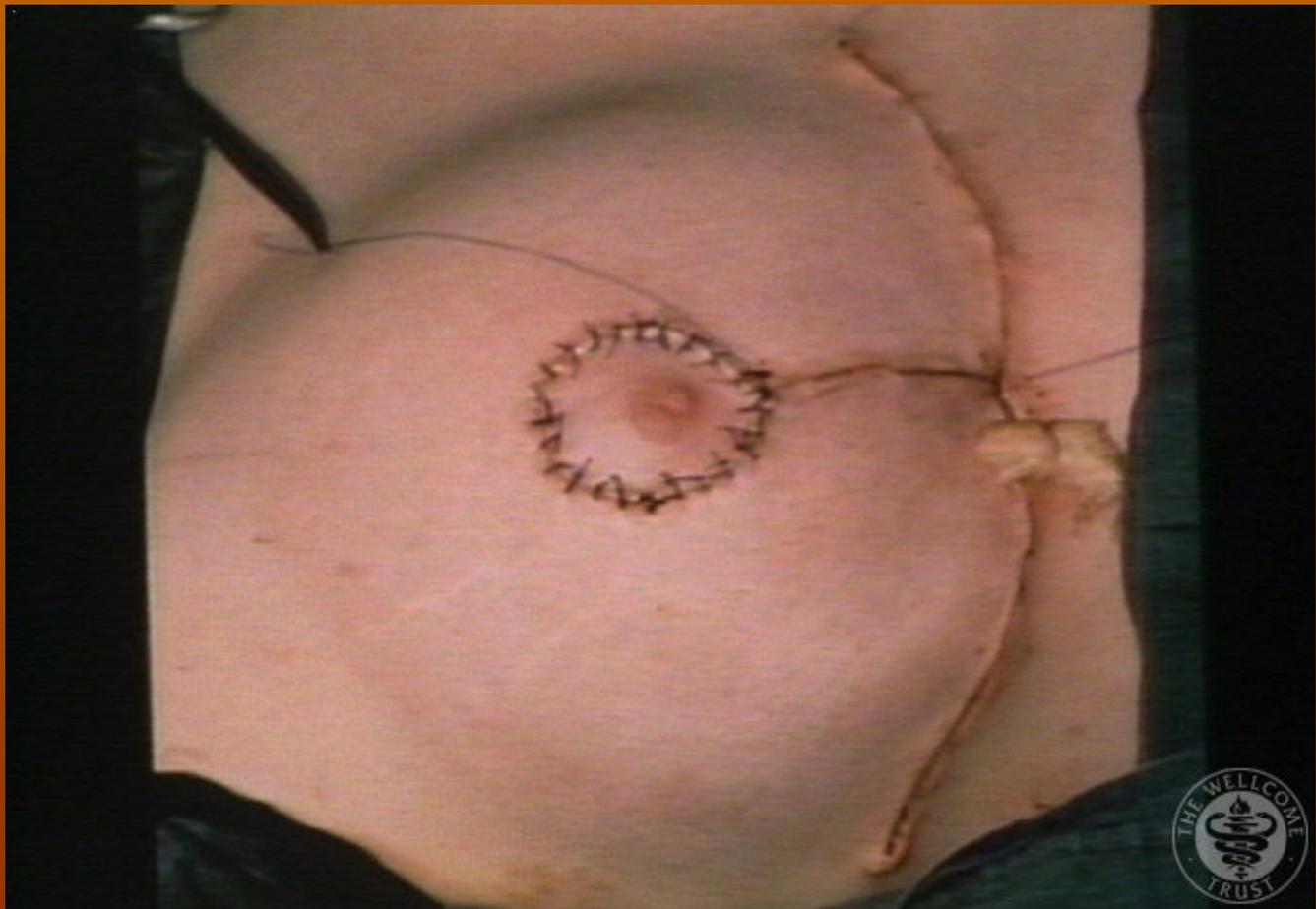
SURGERY – to remove the cancer from the breast.

PARTIAL or SIMPLE MASTECTOMY - may be option, breast tissue is saved. Requires radiation after surgery.

RADICAL MASTECTOMY – if more than one tumor, large, or fast-growing. Removal of breast, muscle, lymph nodes.

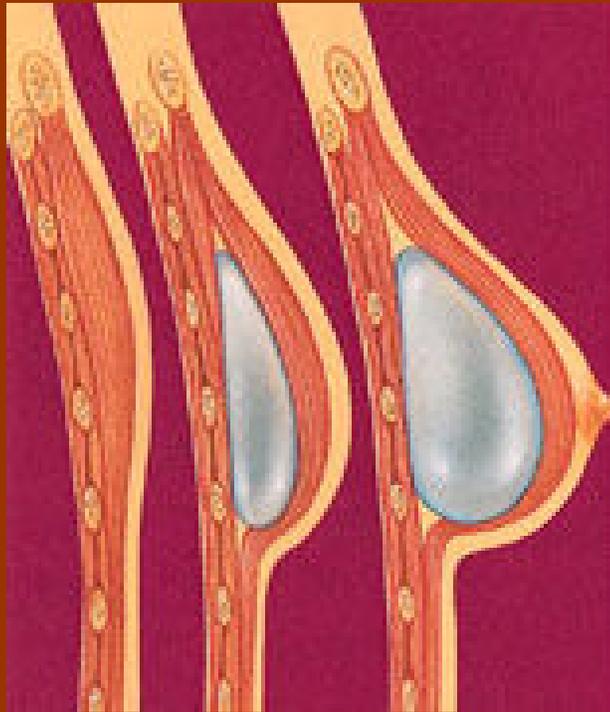
# BREAST MODIFICATION SURGERY (Mammoplasty)

- COSMETIC BREAST SURGERY –
  - Reduction mammoplasty – breast reduction.
  - Mastopexy – breast lift.
  - Augmentation mammoplasty – breast implants for enlargement.



# BREAST MODIFICATION SURGERY (Mammoplasty)

- POST-MASTECTOMY RECONSTRUCTION – must be covered by insurance after dx of breast CA.
  - (WOMEN'S HEALTH & CANCER RIGHTS ACT of 1998)
- Implants – similar to augmentation, but much more involved – requires expansion of tissues.
- TRAM flap – uses pedicle graft



Age 41: 5'5" tall: 130 lbs.  
Implant Size: 380cc  
Procedure: Bilateral  
breast reconstruction  
following breast cancer  
skin expander followed  
by a breast and nipple  
areolar reconstruction.  
Post-op cup size: C:  
Photos taken: 1-month post op



BEFORE



FIRST STAGE



AFTER



BEFORE



FIRST STAGE



AFTER



BEFORE

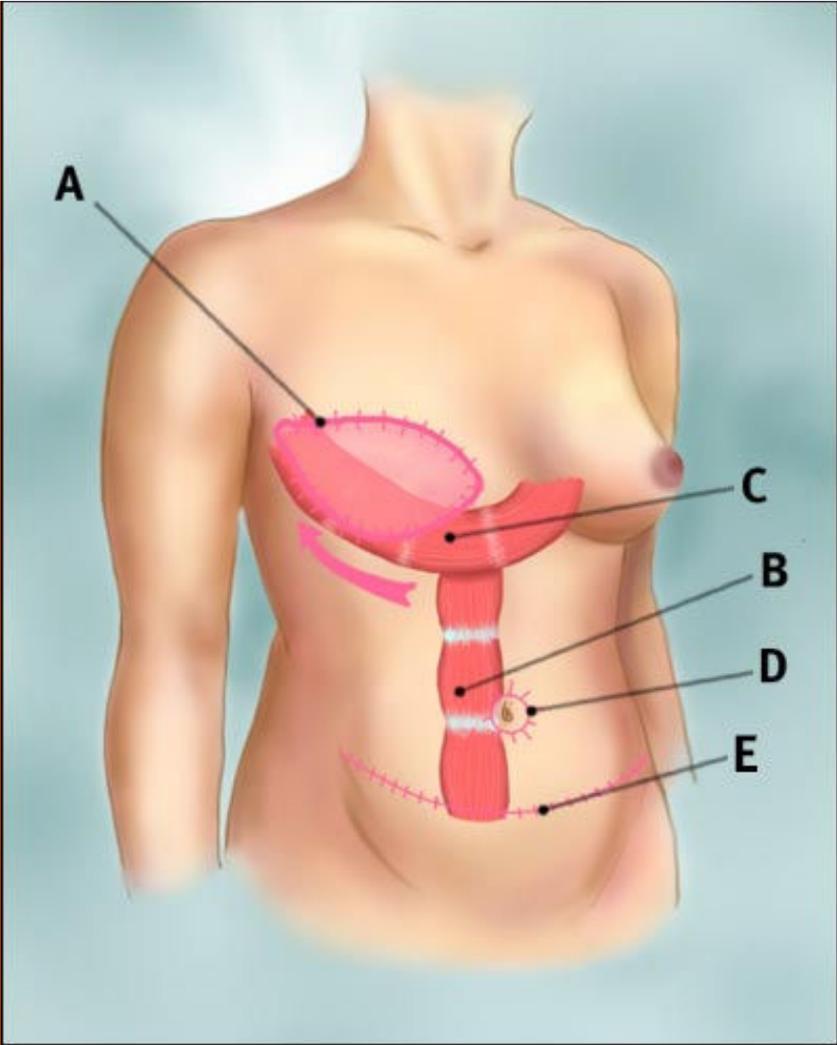


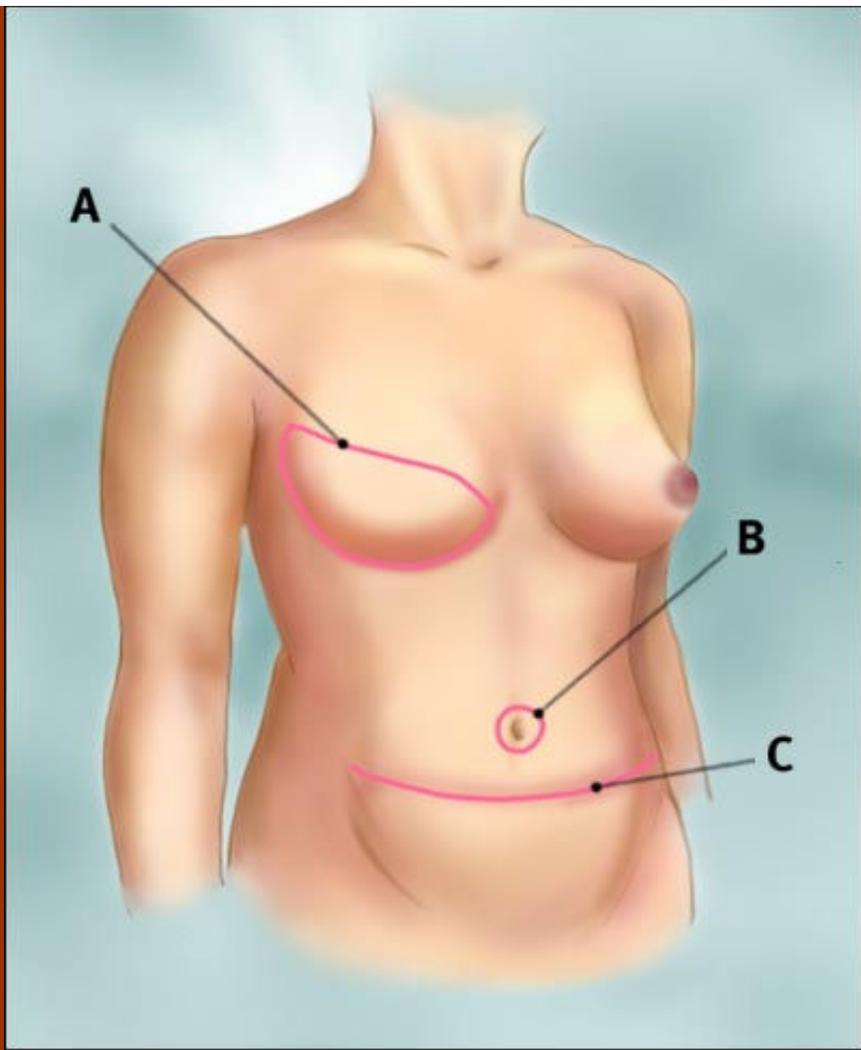
FIRST STAGE



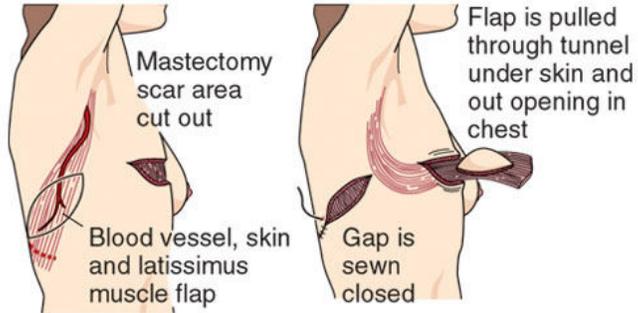
AFTER



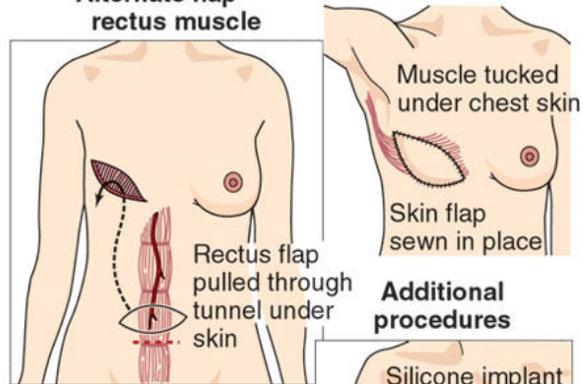




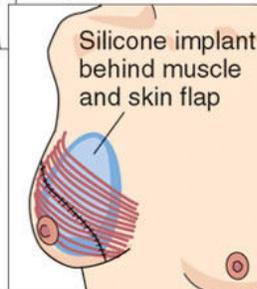
### Latissimus muscle flap



### Alternate flap — rectus muscle



### Additional procedures



Nipple reconstructed with skin from thigh, labia or other site

# MENSTRUAL DISORDERS

- FLOW DISORDERS:
  - AMENORRHEA – absence of menses.
  - OLIGOMENORRHEA – Cycles longer than 35 days
  - MENORRHAGIA – excessive menstrual bleeding.
  - METRORRHAGIA – bleeding between periods.
- Treatments – usually hormonal, can be surgery
  - D&C
  - Laser ablation
  - Hysterectomy

# MENSTRUAL DISORDERS

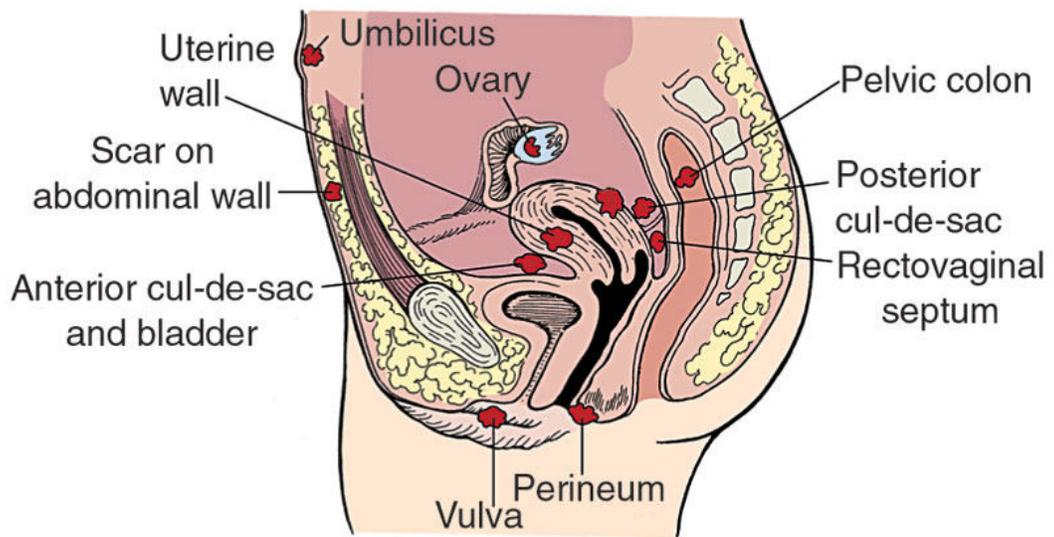
- DYSMENORRHEA – painful menstruation.
  - Common disorder.
  - Primary – not pathological, prostaglandins.
    - Tx - NSAIDs
  - Secondary – pathological condition causing discomfort.
    - Needs to be investigated.

## MENSTRUAL DISORDERS

- **PREMENSTRUAL SYNDROME (PMS)** – Collection of S/S that are cyclic in nature, occurring before onset of menses.
  - Tx : ↓ salt diet, ↓ sugar, ↑ protein.
  - diuretics (HCTZ, spironolactone), OC's, progesterone,
  - vitamin B supplements (pyridoxine), elemental calcium (1000 mg/day)
  - Antianxiety agents (Xanax, Valium)
  - Antidepressants – Prozac, Sarafem, Zoloft, etc.

# MENSTRUAL DISORDERS

- ENDOMETRIOSIS – endometrial tissue in pelvic cavity.
  - Ages 25-45, especially if no pregnancies.
  - Pelvic pain/pressure, bleeding, dyspareunia
  - Tx –meds, pregnancy, surgery
  - Nsg measures – pain relief strategies



# MENSTRUAL DISORDERS

- MENOPAUSE – cessation of menstruation.
  - Usually btw age 45-50.
  - Ovulation ceases, ↓production of estrogen/progesterone
  - NORMAL body change
  - Irregular periods (perimenopause) then stop
  - S/S: hot flashes, vaginal dryness, mood swings

# MENSTRUAL DISORDERS

- MENOPAUSE (cont.)
  - Treatment:
    - HRT (<8 yrs) – oral, transderm, topical.
      - Includes bioidentical hormone therapy
    - OTC lubricants,
    - Herbals/supplements
  - Bleeding after menopause complete is never normal.

## INFLAMMATORY DISORDERS

- CANDIDIASIS – fungal infection. Common. Vaginal itching & burning, white discharge. Tx – nystatin, miconazole, etc.
- BACTERIAL VAGINOSIS (BV) – very common, nonspecific. Fishy odor. Tx – Flagyl (metronidazole).
- TRICHOMONIASIS – parasitic STD. Foul-smelling discharge. Tx – Flagyl.
- CONTACT VULVO-VAGINITIS
- ATROPHIC VAGINITIS – post-menopausal cond.

# INFLAMMATORY DISORDERS

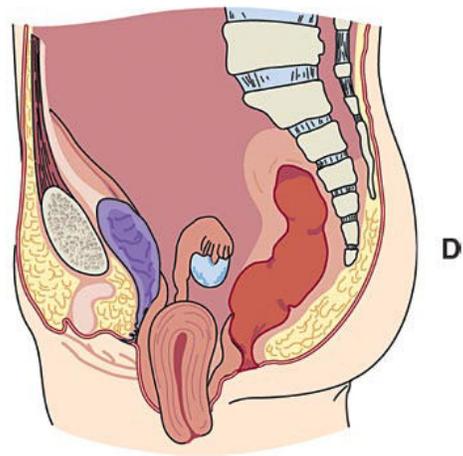
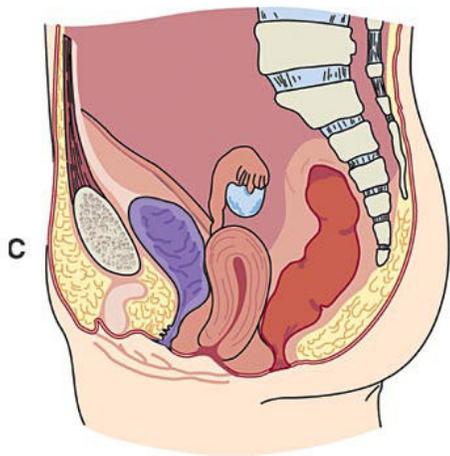
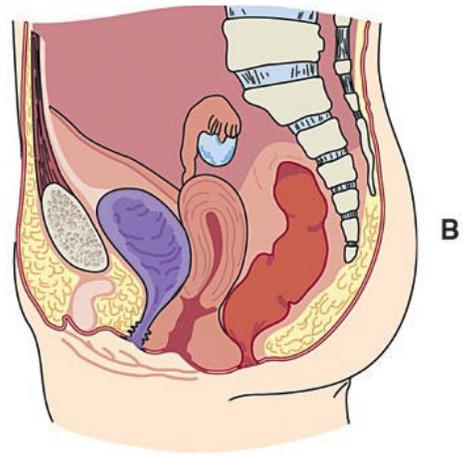
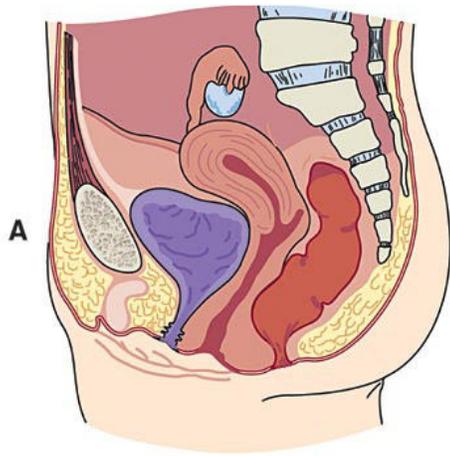
- TOXIC SHOCK SYNDROME (TSS) .
  - Multi-system illness
  - assoc. w/ use of tampons
  - Staph aureus
  - ↑fever, vomiting, ↓BP, rash,
  - Can be **life-threatening** (“**shock**”).

# DISORDERS OF GENITAL ORGANS

- Congenital defects
  - Agenesis – organs did not develop
  - Hypoplasia – underdeveloped.
  - Imperforate – expected openings do not exist.
- May not be noted until symptoms (i.e. dyspareunia, dysmenorrhea, etc.)

## DISORDERS OF GENITAL ORGANS

- CYSTOCELE – downward displacement of bladder toward vaginal space. Stress incontinence common.
- RECTOCELE – upward displacement of rectum into vagina. C/o pelvic pressure, and fecal incontinence or constipation.
- PROLAPSED UTERUS – uterus sags into vagina.
  - Tx: hysterectomy, re-suspend, pessary.



# FERTILITY DISORDERS

- INFERTILITY – inability to conceive and to produce live babies. Sterility is absolute inability.
  - MALE INFERTILITY – 40% of infertility due to male factors. Commonly factors affecting sperm.
  - Tx – medication or surgery.
- FEMALE INFERTILITY – 40 % due to female factors. Commonly factors affecting ova or ability for ova to implant.
  - Tx – timing intercourse, fertility drugs, surg tx of cause.

# REPRODUCTIVE PLANNING

- CONTRACEPTION

*ABSTINENCE – Only 100% effective method  
against both pregnancy and STD's.*

# REPRODUCTIVE PLANNING

- ORAL CONTRACEPTIVES – “the pill”, BCP’s, OC’s.
  - Very effective if USED CORRECTLY.
  - Contain estrogen/progestin or (rarely) progestin only.
  - Either prevents conception or prevents implantation.
  - Can improve dysmenorrhea, endometriosis, and irregularity.
  - Side effects: acne, fluid retention, headaches, breast swelling. Increased risk of blood clots, stroke, high BP, rare but possible in women who smoke or have hx.
  - Teach about concurrent use of other meds (i.e.: antibiotics)

# REPRODUCTIVE PLANNING

- CONTRACEPTIVE IMPLANTS – tubes implanted under skin.
  - New product – Implanon. Single implant effective for up to 3 years.
- DEPOT MEDICATIONS – injectable slow release med. Ex: medroxyprogesterone acetate (Depo-Provera)
  - Administered every 3 months. Causes amenorrhea, and possible weight gain.

# REPRODUCTIVE PLANNING

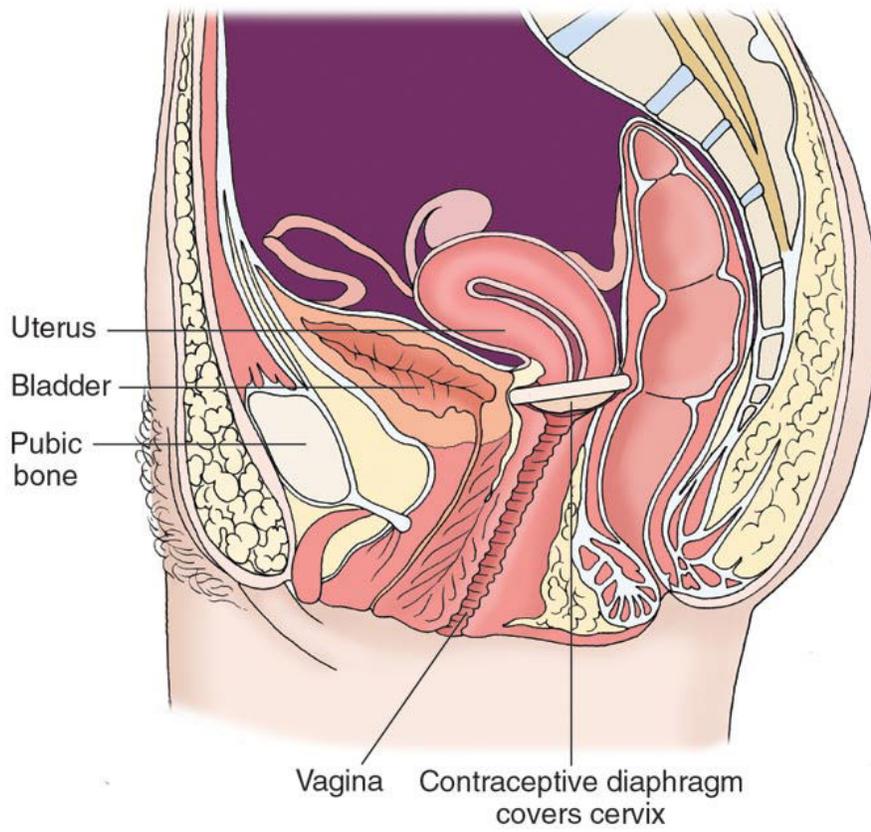
- CONTRACEPTIVE RING – estrogen-progesterone vaginal ring.
  - Hormones absorbed through vaginal epithelium.  
3 weeks in w/ one week out for withdrawal bleeding.
- CONTRACEPTIVE PATCH – transdermal.  
Worn weekly for 3 weeks, then free week.
  - Same side effects and contraindications as O.C.'s
  - Must be worn while swimming and bathing.

# REPRODUCTIVE PLANNING

- BARRIER METHODS – less effective. Prevent sperm from reaching ovum. Should be used w/ spermicidal.
- Condoms - must be used correctly. Can help prevent STD's.
  - Store in cool, dry place.
  - Can be weakened by petroleum-based products.
- **Female condoms** – effective if used correctly, but not widely used.

# REPRODUCTIVE PLANNING

- Barrier methods (cont) - cervical cap, diaphragm.
  - Diaphragms and caps must be fitted to pt.
  - Possible higher risk for UTI's and TSS.
- Spermicidal creams, foams, etc. – much more effective if used in combo w/ barrier.
  - Kill or disable sperm.
  - Nonoxynol 9 – screen for allergy.



# REPRODUCTIVE PLANNING

- INTRAUTERINE DEVICE – (IUD), device inserted into uterus. Prevents implantation by altering uterine environment.
  - Made from plastic or copper, may contain progestin.
  - Can be done in office.
  - May cause increased bleeding, cramping, or infection risk.

# IUD'S



# REPRODUCTIVE PLANNING

- NATURAL FAMILY PLANNING (fertility awareness, rhythm method.) Only reliable for women who ovulate regularly.
  - Basal body temp – to monitor ovulation.
  - Ovulation kits.
  - Only method presently approved by Catholic church.

# REPRODUCTIVE PLANNING

## OTHER OPTIONS:

- COITUS INTERRUPTUS - withdrawal.
- DOUCHING – washing sperm out of vagina.
- BREASTFEEDING
- STERILIZATION – male: vasectomy;  
female: tubal ligation.
  - Hysterectomy.

# PREGNANCY TERMINATION

- Therapeutic Abortion
  - Ectopic pregnancy
  - Prenatal abnormalities
- Abortion Methods
  - Chemical – “morning-after” pill, RU-486.
  - Early pregnancy – menstrual extraction, vacuum, D&C.
  - Late pregnancy – D&C, saline or urea injection, hysterotomy.

## Tumors (Benign)

- FIBROIDS (leiomyoma) – endometrial cells implanted within or outside the uterine walls.
  - Estrogen sensitive. Can be tx'ed w/Depo-Provera, OC's, myomectomy, or hysterectomy.
- POLYPS – growths inside the uterus or on the cervix.
  - Bleed easily. Usually develop >42 yr old. Can be removed and cauterized.

## Tumors (Benign)

- CYSTS – most common on ovary or endometrium. Do not usually need to be removed.
- POLYCYSTIC OVARY DISEASE – endocrine imbalance, usually have multiple cysts on ovaries.
  - s/s – excess body hair, severe acne, diabetes, infertility, menstrual abnormalities.
  - Tx – symptomatic, OC's for hormonal balance, possible antiandrogen meds.

## Tumors (Malignant)

- VULVAR CANCER – not common. Either subjective complaint or noted on inspection.
- CERVICAL CANCER
  - Women age 40-55.
  - Development is slow and insidious.
  - Bleeding is first sign, usually found on Pap test.
  - Primary risk factor - HPV
  - Staging 0 (in situ) to Stage IV (throughout body).
  - Tx – cryotherapy, laser, surgery, possible hysterectomy.

# Tumors

- ENDOMETRIAL CANCER – most common uterine CA.
  - Related to excess estrogen, otherwise unexplained.
  - Vaginal bleeding in post-menopausal woman usually first sign. Tx – hysterectomy, radiation, chemotherapy.
- OVARIAN CANCER
  - Usually no early warning signs. Dx with CA125, vaginal ultrasound, MRI. Tx – surgery, *no hormones*.

# SURGERY

- ENDOSCOPY – scope w/ magnifying lens.
  - Laparoscopy – most common endoscopy for gyn surgery. Used to access the abdominal cavity.
  - Culdoscopy – incision through upper posterior vagina to access the back of uterus.
  - Colposcopy – used for problems w/ cervix. Often performed in office .
  - Hysteroscopy – to treat problems inside uterus.

# SURGERY

- DILATION AND CURETTAGE (D&C) – most frequently performed gynecologic surgery. Performed outpatient.
- HYSTERECTOMY – surgical removal of uterus. Vaginal or abdominal.
  - Total hysterectomy – uterus including cervix.
  - Subtotal hysterectomy – cervix remains
  - Salpingectomy – removal of oviducts
  - Panhysterectomy – everything.



**MALE REPRODUCTIVE  
DISORDERS  
(Chap 43)**

# VASECTOMY

- Surgical cutting of vas deferens for infertility.
- Outpt procedure
- Sperm continues to be produced but semen that is ejaculated will not contain sperm.
- 6 WEEKS for sperm count in tract above surgery site to be cleared.

## ERECTILE DYSFUNCTION (ED)

- Physical condition in majority of cases.
- Affected by circ., neuro, hormonal, and limbic systems.
- Psychological component
- Tx: med change, hormones, herbals, injections, etc.
- Oral meds – Viagra (sildenafil), Levitra, Cialis.
  - Should not be used w/ nitrates.

# MALE INFERTILITY

- Problems are pre-testicular (endocrine), testicular (usually varicocele or idiopathic, or post-testicular (structural).
- Infertility – dx'ed after 1 year of unprotected intercourse.
- Dx: H&P – includes lifestyle, occupation, med-surg hx, exam of secondary sex characteristics and varicocele. Tests – semen analysis.

# SEXUALLY TRANSMITTED DISEASES (STD's)

- DISORDERS RELATED TO STD'S:
  - Vulvovaginitis
  - Urethritis
  - Mucopurulent cervicitis
  - Proctitis
  - Genital ulcers
  - PID – primarily from chlamydia and gonorrhea
    - Invades cervical canal and moves upward
    - Can cause infertility
    - May require hospitalization

## SEXUALLY TRANSMITTED DISEASES (STD's)

- HIV/AIDS
- CHLAMYDIA – bacteria (*C. trachomatis*) that is leading cause of preventable infertility in women. Most common STD in U.S.
  - Called the “silent STD”
  - Dx by cervical swab sample for culture.
  - Tx – doxycycline or zithromax.

## SEXUALLY TRANSMITTED DISEASES (STD's)

- GONORRHEA – bacteria *Neisseria gonorrhoeae*. Spread through vaginal, oral, or anal sex.
  - Dx – culture of discharge or urine DNA.
  - Tx – ceftriaxone (Rocephin), **MUST TREAT PARTNERS**. Usually treat for chlamydia at the same time.

## SEXUALLY TRANSMITTED DISEASES (STD's)

- SYPHILIS – bacterial spirochete (*Treponema pallidum*). Called the “great imitator” because it mimics many diseases.
  - Spread through direct contact w/ syphilitic lesion via oral, vaginal, or anal sex. Can be passed to fetus.
  - 3 stages: primary, secondary, and latent
- Diagnosed by blood test: VDRL, RPR, ART, FTA-ABS, etc.
- Tx : PCN, (doxycycline if allergy.)

## SEXUALLY TRANSMITTED DISEASES (STD's)

- HERPES SIMPLEX VIRUS (HSV) - causes genital herpes. Blisters loaded w/virus and can transfer infection. Tend to recur.
  - HSV – 1: assoc. w/ cold sores. Genital caused by oral-genital sexual contact. (5-30% of genital herpes is HSV-1)
  - HSV – 2: transferred during sex.
  - *Pts infected w/ HSV-2 have double risk of acquiring HIV.*
  - *HIV pts are 4X more likely to contract HSV-2.*

## SEXUALLY TRANSMITTED DISEASES (STD's)

- HERPES SIMPLEX VIRUS (HSV) (cont.)
  - S/S: recurrent episodes of painful genital sores.
    - Women – lesion like fever blister, Spread, become painful, crust. May have systemic flu-like symptoms.
    - Men – lesion on penis. May be carried in smegma of uncircumcised male.
  - OFTEN ASYMPTOMATIC!

## SEXUALLY TRANSMITTED DISEASES (STD's)

- **HERPES SIMPLEX VIRUS (HSV) (cont.)**
  - Tx – usually palliative. Can also use antivirals to shorten outbreaks, limit recurrences, and reduce/stop asymptomatic shedding.
  - **Patient education important – especially risk-reduction.**

## SEXUALLY TRANSMITTED DISEASES (STD's)

- GENITAL HUMAN PAPILLOMA VIRUS (HPV) – condylomata acuminata or **genital warts** caused by HPV. Very common. Assoc. w/ CA of cervix.
- Vaccine available – recommended for females at age 9-18. (CDC)

# SEXUALLY TRANSMITTED DISEASES (STD's)

## ■ HEPATITIS B

- Transmitted through sexual contact.
- Prevention through HBV vaccine.

## ■ PARASITES

- Pubic lice (“crabs”) . Pediculosis pubis. Or
- Scabies
- Tx – permethrin. Repeat 2 weeks later.

# SEXUALLY TRANSMITTED DISEASES (STD's)

- REPORTING OF STD'S
- PATIENT EDUCATION



# **SEXUAL ASSAULT**