

Prostate, Testicular and Lung Cancer

OCCC Nursing Program

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NUR 143

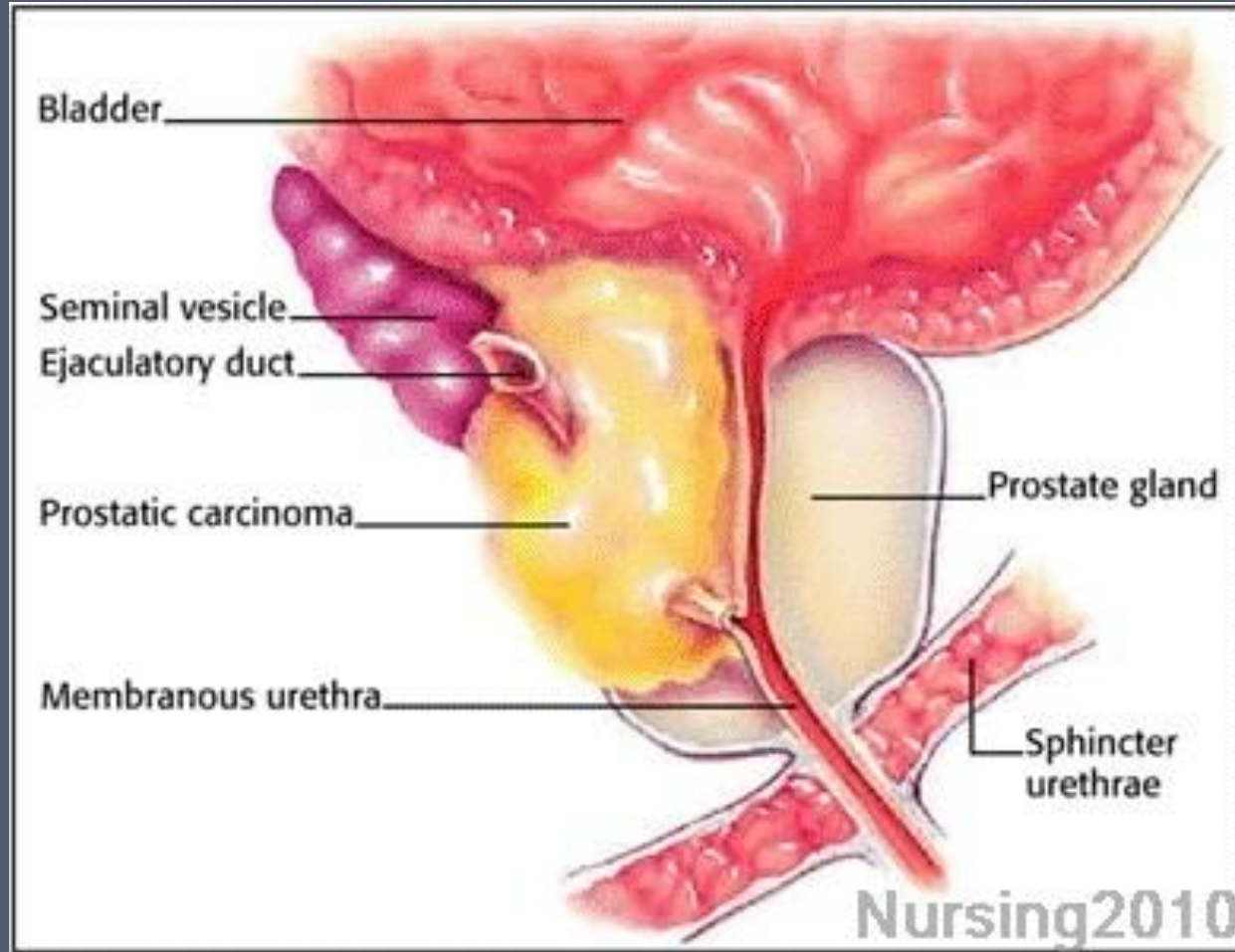
Program Description

- ▶ This unit will focus on the pathophysiology, diagnostic testing, clinical manifestations, medical treatment and multi-disciplinary approach in dealing with patients with lung, prostate and testicular cancer.

Program Objectives

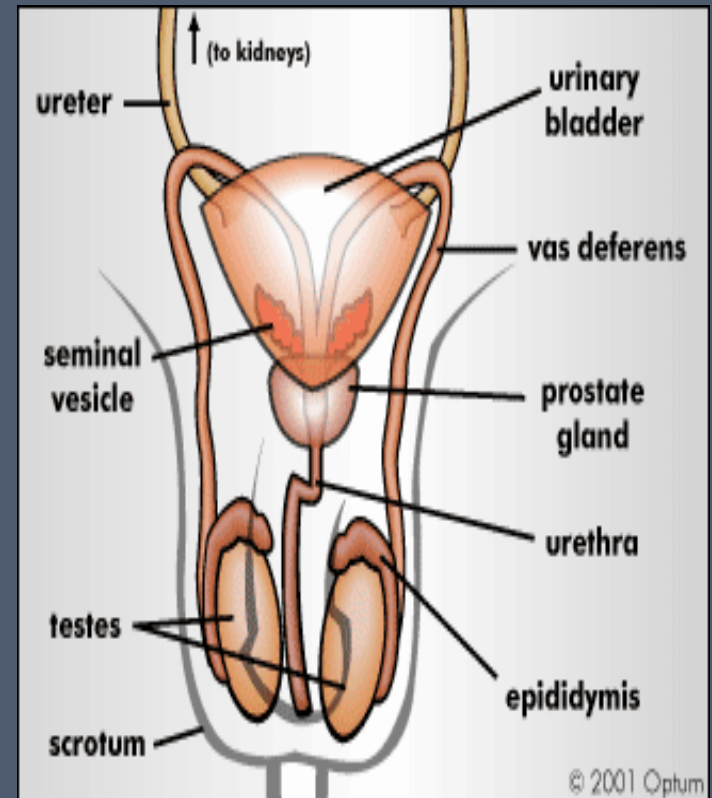
- ▶ Describe the pathophysiology and manifestations of lung, prostate and testicular cancer.
- ▶ List factors predisposing to lung, prostate and testicular cancer.
- ▶ Describe the incidence, signs and symptoms, lab/diagnostic findings and treatment for lung, prostate and testicular cancer.
- ▶ Explain the multi-disciplinary care of a patient with lung, prostate and testicular cancer.
- ▶ Identify common complications of prostate and testicular cancer.
- ▶ Identify important aspects of health promotion, maintenance, rehabilitation, and end-of-life care regarding lung, prostate and testicular cancer.
- ▶ Identify the action, reaction/side effects and nursing implications of drugs used to treat these disorders.
- ▶ Identify the nutritional considerations for a patient with cancer.
- ▶ Utilize the nursing process in caring for patients with selected cancer diagnoses.

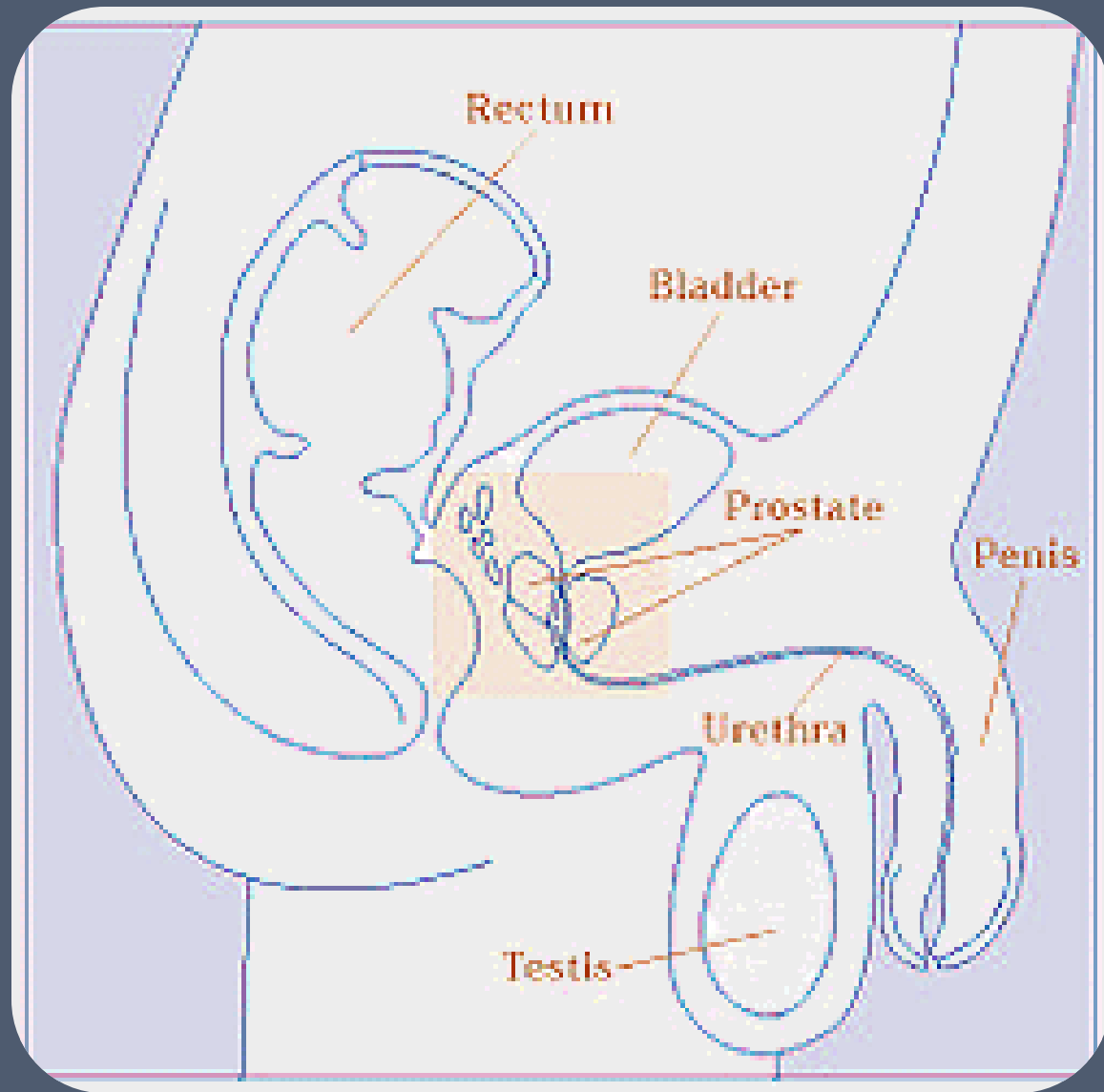
Prostate Cancer



Male Reproductive System

- ▶ Prostate ~
 - Walnut sized gland at the bladder outlet surrounding the first part of the urethra
 - Produces seminal fluid that protects & nourishes sperm
 - Androgens stimulate the prostate gland to develop & grow, if removed the gland will not fully develop or shrink
- ▶ Testicles
 - Manufacture testosterone & produce sperm
- ▶ Vas deferens
 - Carries the sperm to the seminal vesicle
- ▶ Epididymis
 - Stores the sperm for maturation





Health History Males

- ▶ Monthly testicular self exam
 - Any abnormalities?
- ▶ Difficulty urinating
 - If so, what kind?
- ▶ Penile discharge
 - describe
- ▶ Hx of STD's
 - what type?
- ▶ Hernia: any symptoms related to hernias
- ▶ Sexual functioning
 - Erectile dysfunction
- ▶ Use of condoms
 - Contraceptive method
- ▶ Family history of prostate or Reproductive CA

Physical Assessment of the Male

- ▶ External Genital Examination
 - Penile exam
 - Scrotal exam
 - Testical exam
- ▶ Exam for hernia
- ▶ Rectal/Prostate Examination

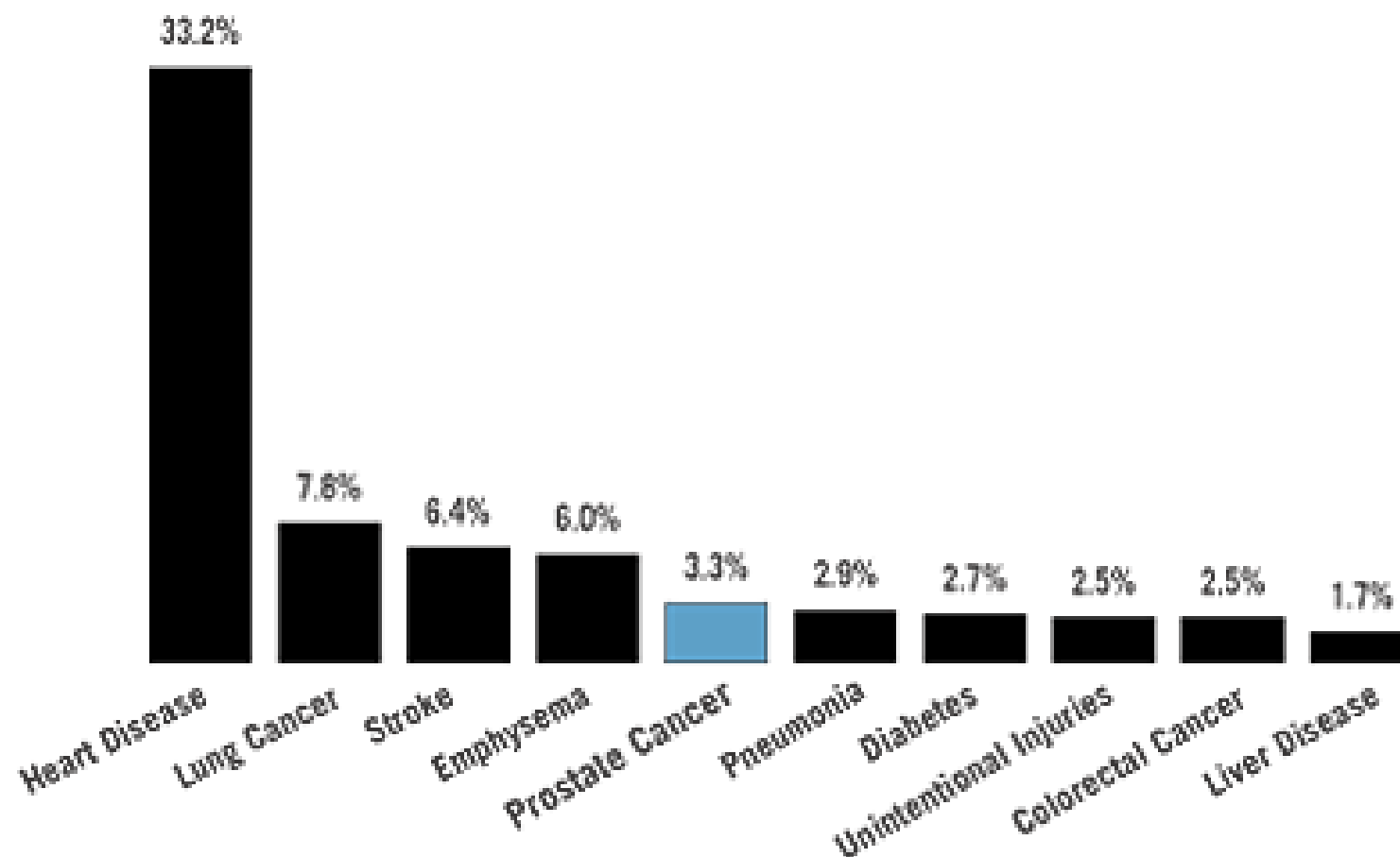
Incidence of Prostate Cancer: Nation & State

	2005	2006	2007
New cases - Oregon	2980	3,000	2870
New cases – nation	232,090	234,460	218,890
Estimated deaths – Oregon	390	350	340
Estimated deaths – nation	30,350	27,350	27,050

Risk of Being Diagnosed with Prostate Cancer by Age

Age 45	1 in 2,500
Age 50	1 in 476
Age 55	1 in 120
Age 60	1 in 43
Age 65	1 in 21
Age 70	1 in 13
Age 75	1 in 9
Ever	1 in 6

Top Ten Causes of Death in Men Over Age 45



CDC 2006

Risk Factors

- ▶ Age
- ▶ Ethnicity
 - Higher risk in African Americans, more likely at younger age
 - More common in North America & NW Europe
- ▶ Family history
 - Higher risk if 1st degree relative has had prostate cancer
- ▶ Increased risk after age 50
- ▶ High fat dairy products & red meat consumption increase risk
- ▶ Lycopenes, selenium & vitamins D, E may lower risk
- ▶ History of BPH is not a risk

Pathophysiology

- Etiology

- Unknown

- ▶ Occurs in the outer aspect of the gland
 - Androgen dependent and slow growing
- ▶ Begins with a condition called
 - Prostatic intraepithelial neoplasia (PIN)
 - Microscopic changes in the prostate gland cells
 - Increase PIN associated with increased risk of prostate cancer
- ▶ Metastasis to local structures
 - Seminal vesicles, urethra, bladder wall and external sphincter
 - Later ~ pelvic bones, head of femur, spine, liver, lungs

Clinical Manifestation

- ▶ Early stages: may be asymptomatic
- ▶ Slow or weakened urine stream, frequency, nocturia, hesitancy, retention, difficulty starting to urinate
 - Frequency the same symptoms as BPH
- ▶ Advanced
 - Hematuria, impotence
- ▶ Metastasis
 - Pain in the pelvic bones, spine, hips or ribs
 - Pain is a major significant issue with metastasis

PROSTATE PROBLEMS ARE NO...

Frequency

Urgency

Nocturia

- Hematuria
- ↑Infections
- ↓Urinary Stream
- ↑Residual Urine



Diagnosis

► Digital Rectal Exam

- Findings: hard, asymmetrical & nodular prostate gland

► Prostate Specific Antigen (PSA)

- A substance normally made by the prostate gland
- normal $<4\text{ng/ml}$ $>4 <10$ 25% chance of Prostate CA
- $>10 = 67\%$ of prostate ca
- PSA levels can be affected by BPH, prostatitis, and ejaculation can temporarily increase PSA levels
- Some herbs & medications can lower PSA levels
 - Proscar, Propecia
- Percent free PSA: how much PSA is circulating compared to total PSA.
 - The percent free is lower with prostate cancer, more accurate

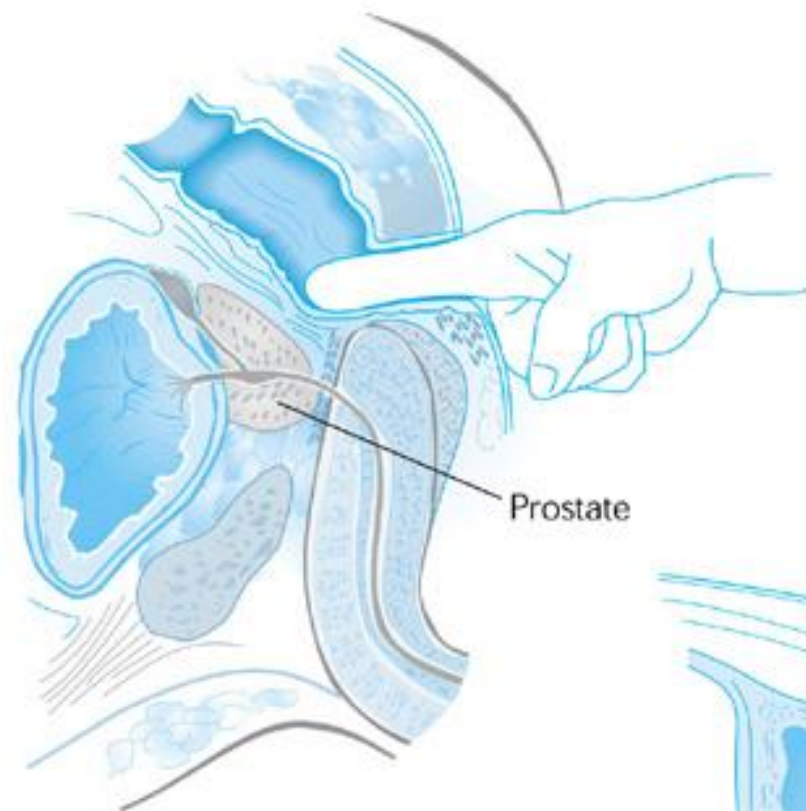
Diagnosis

▶ Transrectal Ultrasound (TRUS)

- A probe is placed in the rectum & sound waves make an image of the prostate.
- Normal tissue & cancer reflect sound waves differently.
- Also used to guide needle biopsy.

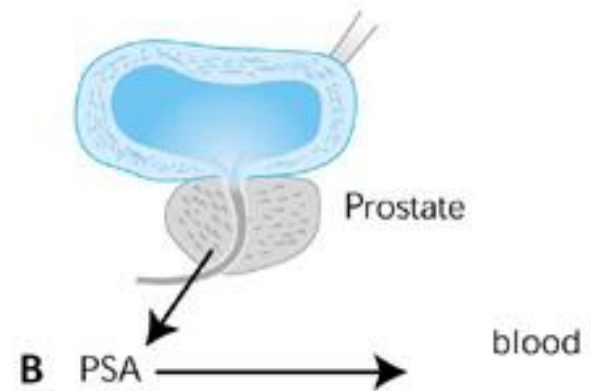
▶ Prostate Biopsy

- A core needle takes tissue samples
- Several samples are taken (risk of false positive)
- Biopsy through the perineum may also be used



A

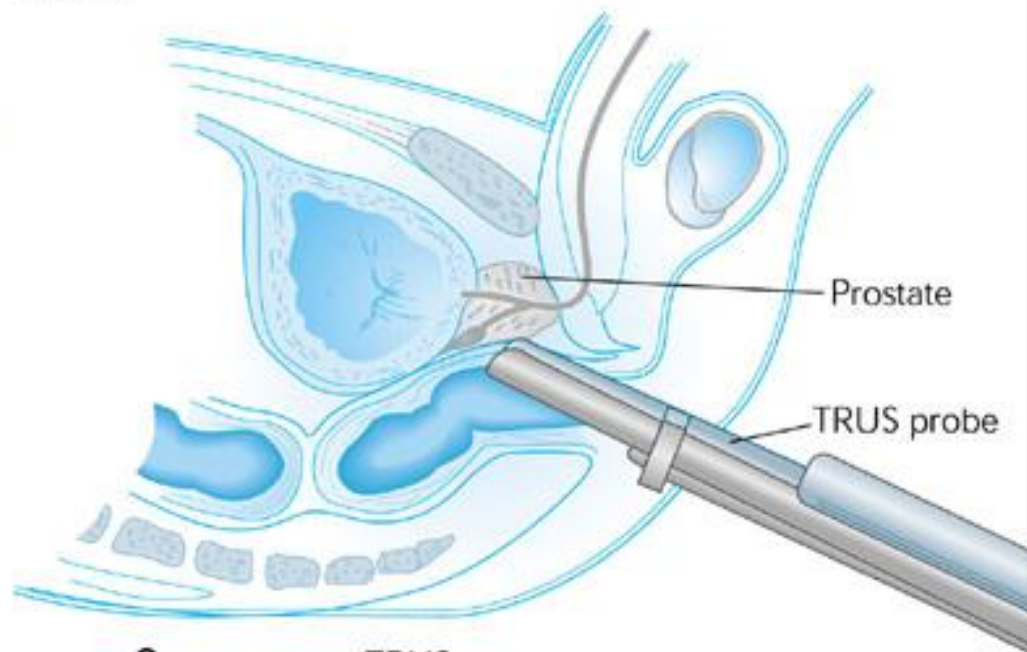
DRE



B

PSA

blood



C

TRUS

Prostate

TRUS probe

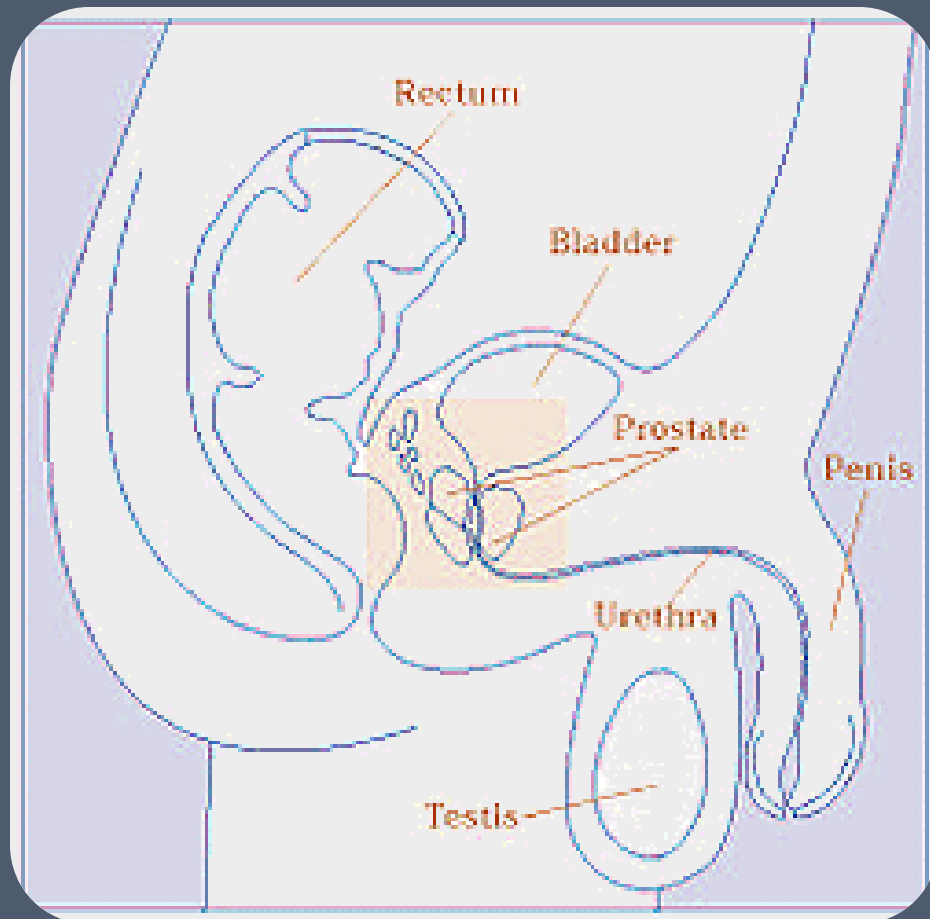


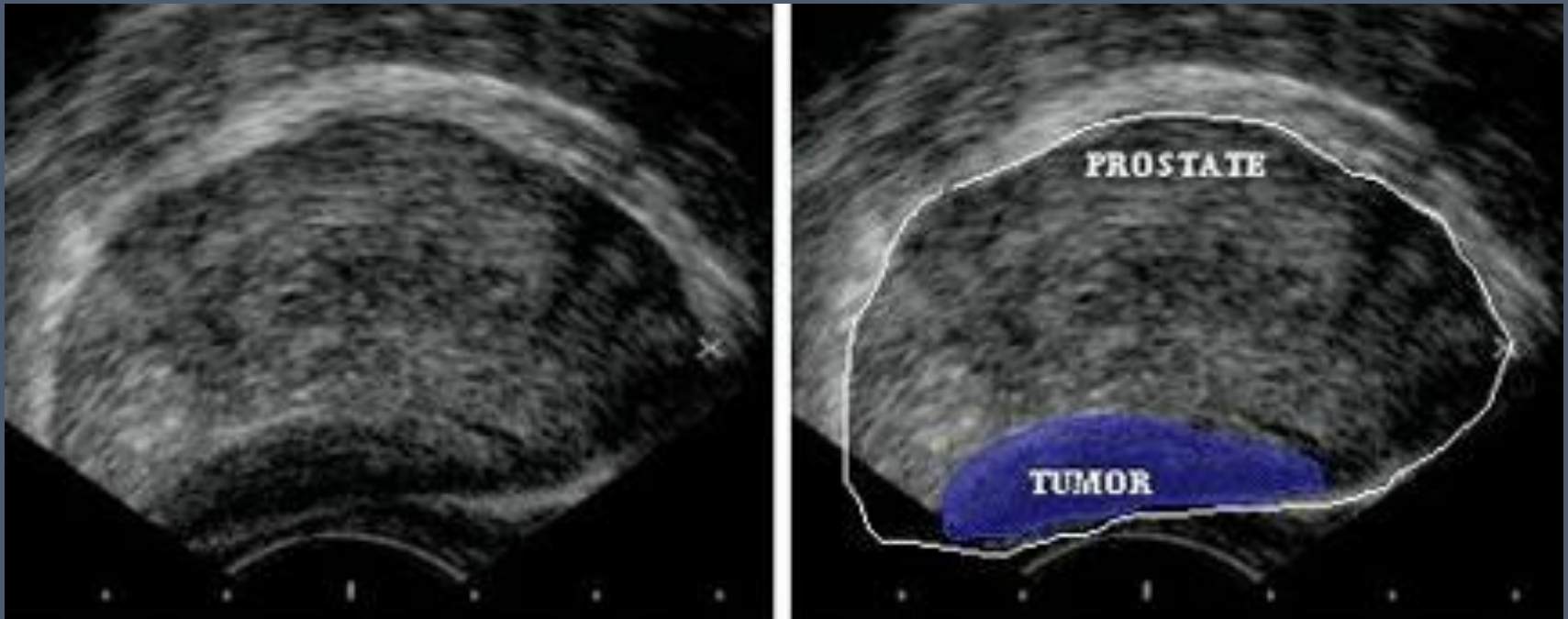
Normal prostate



Prostate cancer

www.malecare.com/prostate-cancer_sam2.jpg





<http://www.emedicine.com/med/topic3537.htm>

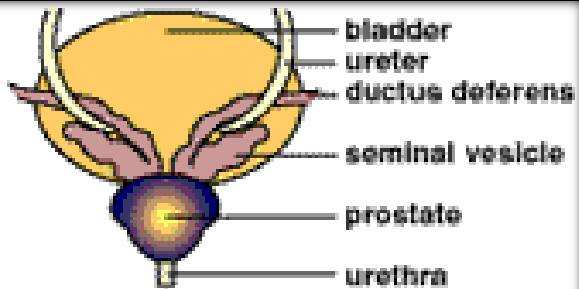
Staging

- ▶ Diagnostics used to stage prostate cancer:
- ▶ Gleason System (1-5 scale)
 - 1: normal prostate tissue – 5: lacks features of prostate tissue
 - The grade of the two areas that make up most of the tumor are added together to yield the Gleason Score (2-10).
 - The higher the score the more likely the cancer will grow and spread rapidly.
 - 2-4 = low 5-6 = intermediate 7-10 = high
- ▶ Staging: TNM = I-IV
 - Stage I: cancer is within the prostate gland, no lymph node involvement, low Gleason score
 - Stage II: cancer is within the prostate, intermediate of high Gleason score
 - Stage III: cancer has spread outside prostate to seminal vesicles, not lymph nodes or beyond, any Gleason score
 - Stage IV: spread beyond prostate to external sphincter, rectum, and/or wall of pelvis, and/or lymph nodes, distant metastasis, any Gleason score

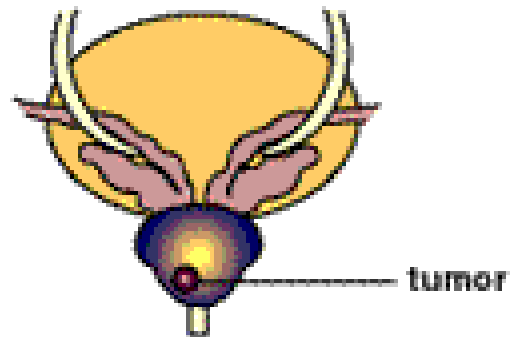
Natural History by Stage

- ▶ T1a - Progression over 10 years (uncommon)
- ▶ T1b - Tumor-related death rate of 10% in 10 years
- ▶ T2 - Ten-year metastasis-free survival rate of 81% with grade 1, 58% with grade 2, and 26% with grade 3
- ▶ T3 - Lymph node metastasis at presentation in 50% and approximately 25% rate of 10-year disease-free survival
- ▶ The natural history of clinically localized disease varies, with lower-grade tumors having a more indolent course, while some high-grade lesions progress to metastatic disease with relative rapidity.

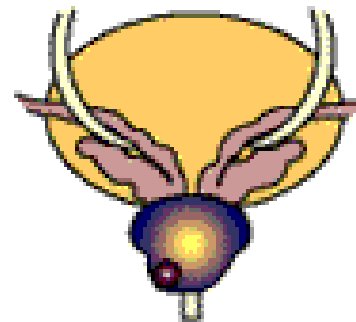
Stage T1

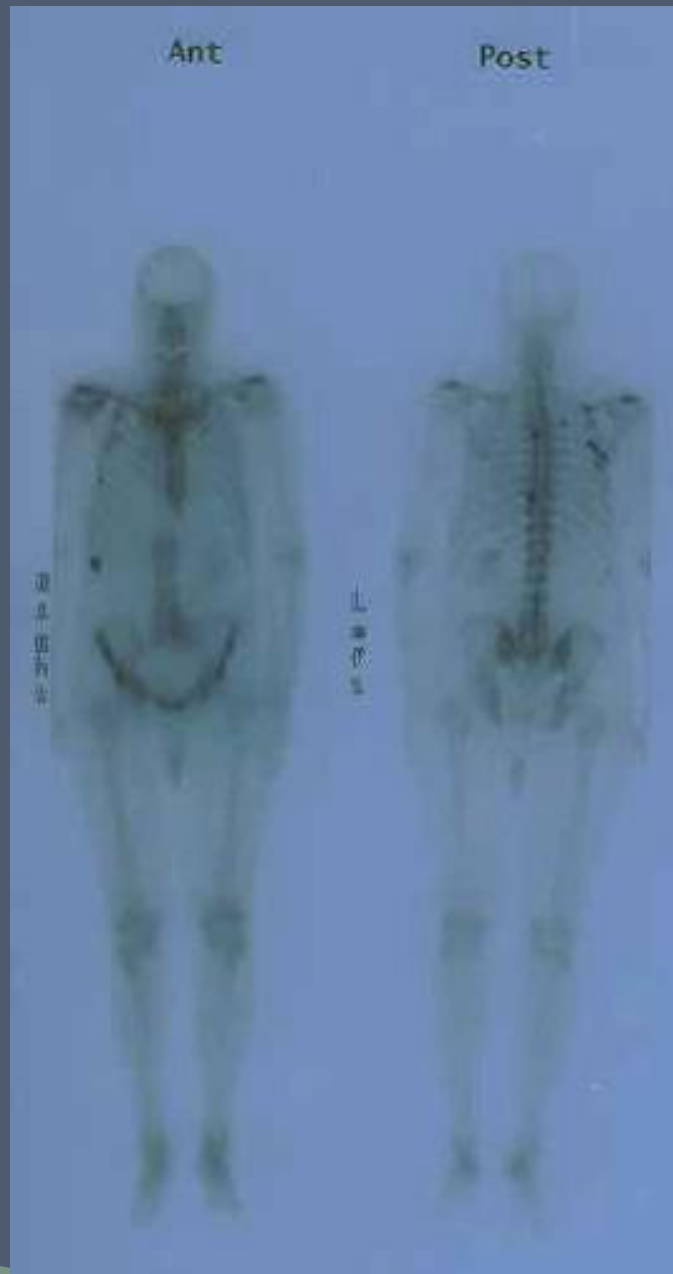


Stage T2



Stage T3 or T4





Treatment

▶ Treatment Considerations

- Patients thoughts/feelings regarding treatment and the side effects, Age, life expectancy, other health conditions, stage/grade of cancer, likelihood that treatment will be curative

▶ Surgery

- Radical prostatectomy
 - Removal of the prostate, seminal vesicles, and part of the bladder neck
 - Retroperitoneal lymph node dissection
 - Preferred treatment for men <70, good health & no mets
 - Retropubic: low abdominal. Incision, may be nerve sparing
 - Perineal resection: incision between the scrotum & anus, non nerve sparing
- Transurethral resection of the prostate (TURP)
 - Most often for BPH, palliative for cancer to relieve symptoms
- Cryosurgery
 - Freezes the cells with a metal probe. Cancer must be small

TURP

(Transurethral Resection of the Prostate)

- Continuous or Intermittent Bladder Irrigation (C.B.I.)
Murphy Drip
- Close observation of drainage system-
(↑ Bladder Distention causes Pain & Bleeding).
- Maintain Catheter Patency



- Bladder Spasms
- Pain Control: Analgesics & ↓ Activity first 24 hours.
- Avoid straining with BM's. ↑ Fiber diet & Laxatives.
- Complications:
 - Hemorrhage - Bleeding should gradually ↓ to light pink in 24 hrs.
 - Urinary Incontinence - Kegel Exercises
 - Infections - ↑ Fluids
 - Prevent Deep Vein Thrombosis
 - Sequential compression stockings
 - Low dose heparin
 - Discourage sitting for prolonged periods

Treatment

► Radiation

◦ External beam radiation (ERBT)

- Used for cancer confined to prostate and/or surrounding areas
- Side effects: skin & GI changes, bleeding, erectile dysfunction, urinary problems, fatigue, bone marrow suppression

◦ Brachytherapy

- Implantation of radioactive seeds, high doses directly to cancer
- Side effects: urinary irritation, obstruction

◦ Radiopharmaceuticals

- Injected into the vein, park in the cancerous bone, killing the cancer and relieving some pain associated with bone meets.

Treatment

► Androgen Suppression

- Lowering testosterone can make prostate cancer shrink or grow more rapidly
- Used when surgery/radiation is not an option & there is mets
- Recurrence after surgery or radiation
- In addition to radiation when there is a high risk of recurrence
- Cancer can become refractory to hormone effects last 18-24 months
 - Bilateral Orchiectomy
- Antiandrogens
 - Blocks the body's ability to use androgens
 - Used in combination with LHRH drugs or orchiectomy
- Luteinizing hormone releasing hormone (LHRH)
 - Lowers testosterone produced by testicles
 - Injected monthly, or every 3, 4 or 12 months

Treatment

► Chemotherapy

- Prostate cancer does not respond well to chemotherapy
- Used in late stages of disease when resistant to hormonal treatment

ANTICANCER DRUGS

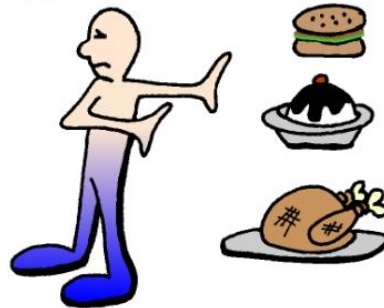
ADVERSE REACTIONS/PRECAUTIONS



Bone Marrow Suppression



Nausea and Vomiting



Anorexia



GI Disturbances



Alopecia



Avoid Pregnancy

Treatment Complications

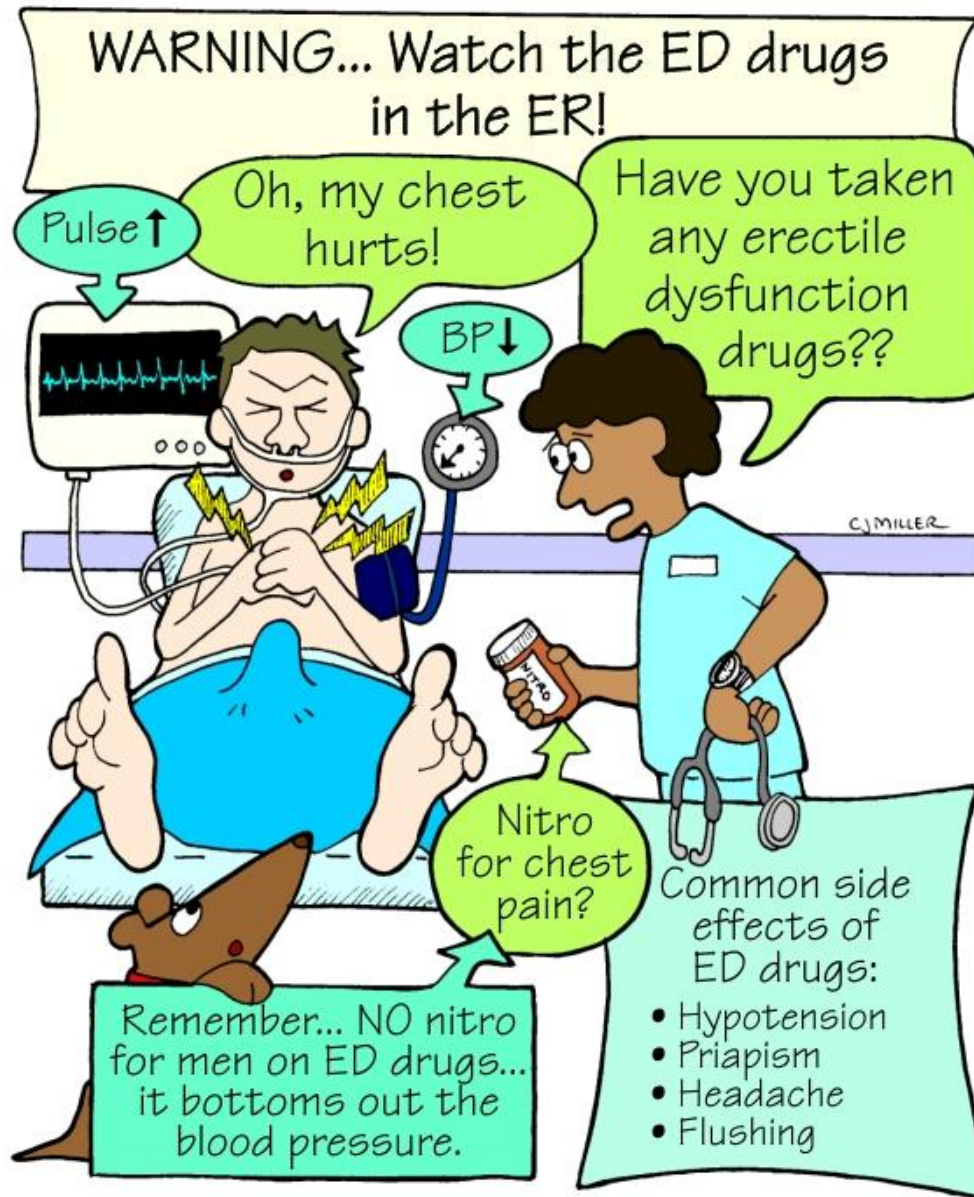
► Incontinence

- Stress incontinence: treatment may damage muscles that form the bladder sphincter or nerves that keep the muscle working.
 - *Most common*
- Overflow incontinence: long time to urinate, dribbling stream with little force.
 - Caused by narrowing of the bladder outlet by cancer or scar tissue
- Urge incontinence: bladder becomes too sensitive to stretching by urine accumulation
- Normal bladder control usually returns within several weeks to months

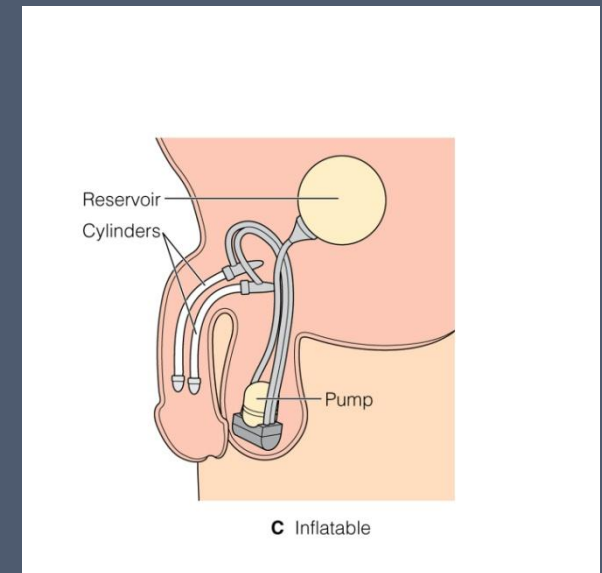
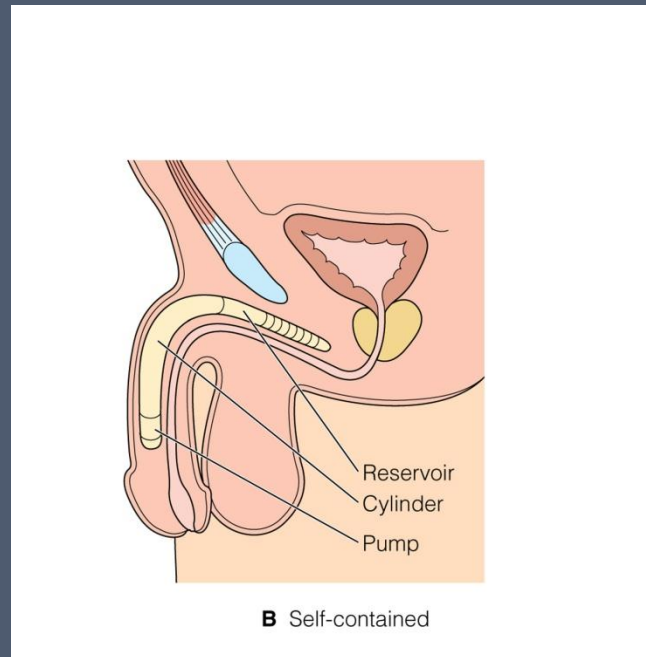
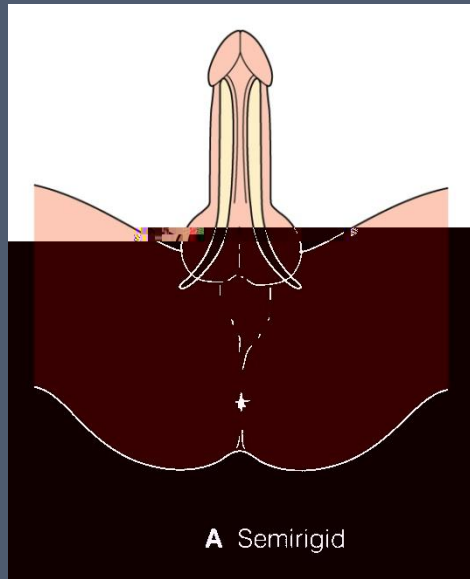
Erectile Dysfunction

- Unable to get an erection sufficient for sexual penetration
- Prostate surgery:
 - 3-12 months after radical prostatectomy unable to have a spontaneous erection
- May also be caused by: vascular disease, smoking, spinal cord injuries, medications, radiation, low testosterone, psychological causes, multiple sclerosis
- Treatment: life style changes, medications
 - (Viagra, levitra, cialis), penile implants, penile injections

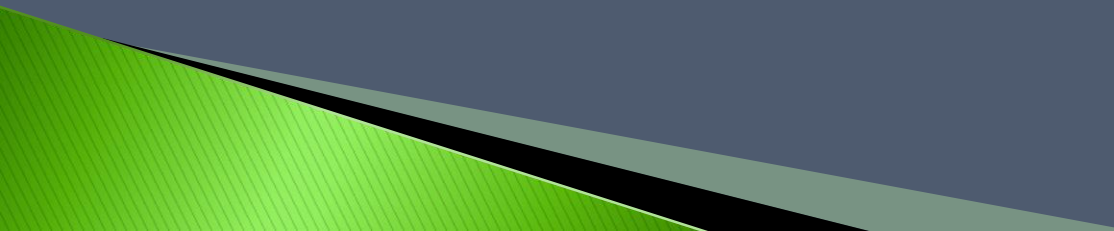
ERECTILE DYSFUNCTION DRUGS



Types of Penile Implants



Nursing Care

- Assess frequently for signs and symptoms for organ obstruction
 - Provide guidelines to help clients and the family to recognize serious problems
 - Monitor lab values
 - Assess current eating patterns and evaluate degree of malnutrition
 - Assess and evaluate skin for loss of integrity
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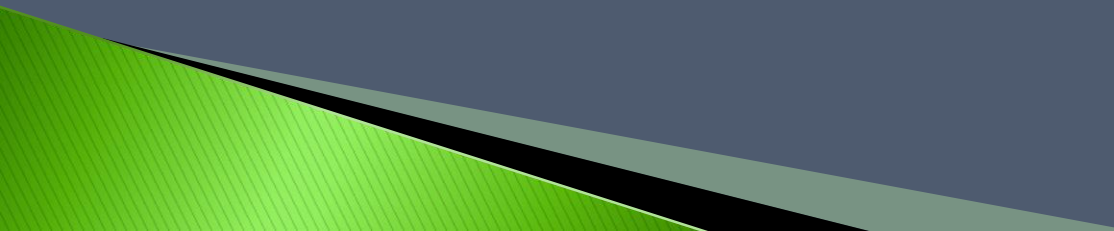
Testicular Cancer

Incidence of Testicular Cancer

National & State

2005 new cases	8010
2005 deaths	390
2006 new cases	8250
2006 deaths	370
2007 new cases	7920
2007 deaths	380
2008 new cases	8090
2008 deaths	380

Risk Factors

- ▶ Cryptorchidism (undescended testicle)
 - ▶ Family history of testicular cancer
 - Genetic predisposition
 - ▶ Multiple atypical nevi
 - ▶ HIV/AIDS infection
 - ▶ Cancer of the other testicle
 - ▶ Age 15-40
- 

Pathophysiology

▶ Seminomas ~

- Occur in men 30 – 60 years of age
- Slow growing and usually does not metastasize

▶ Nonseminomas

- Occur in late teens to early 40's
- More aggressive and more resistant to radiation therapy

*Testicular Teratoma



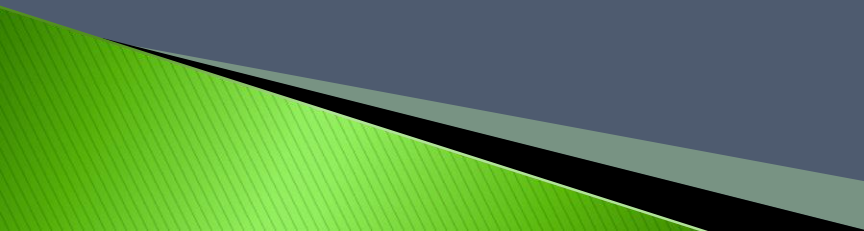
Testicular teratoma

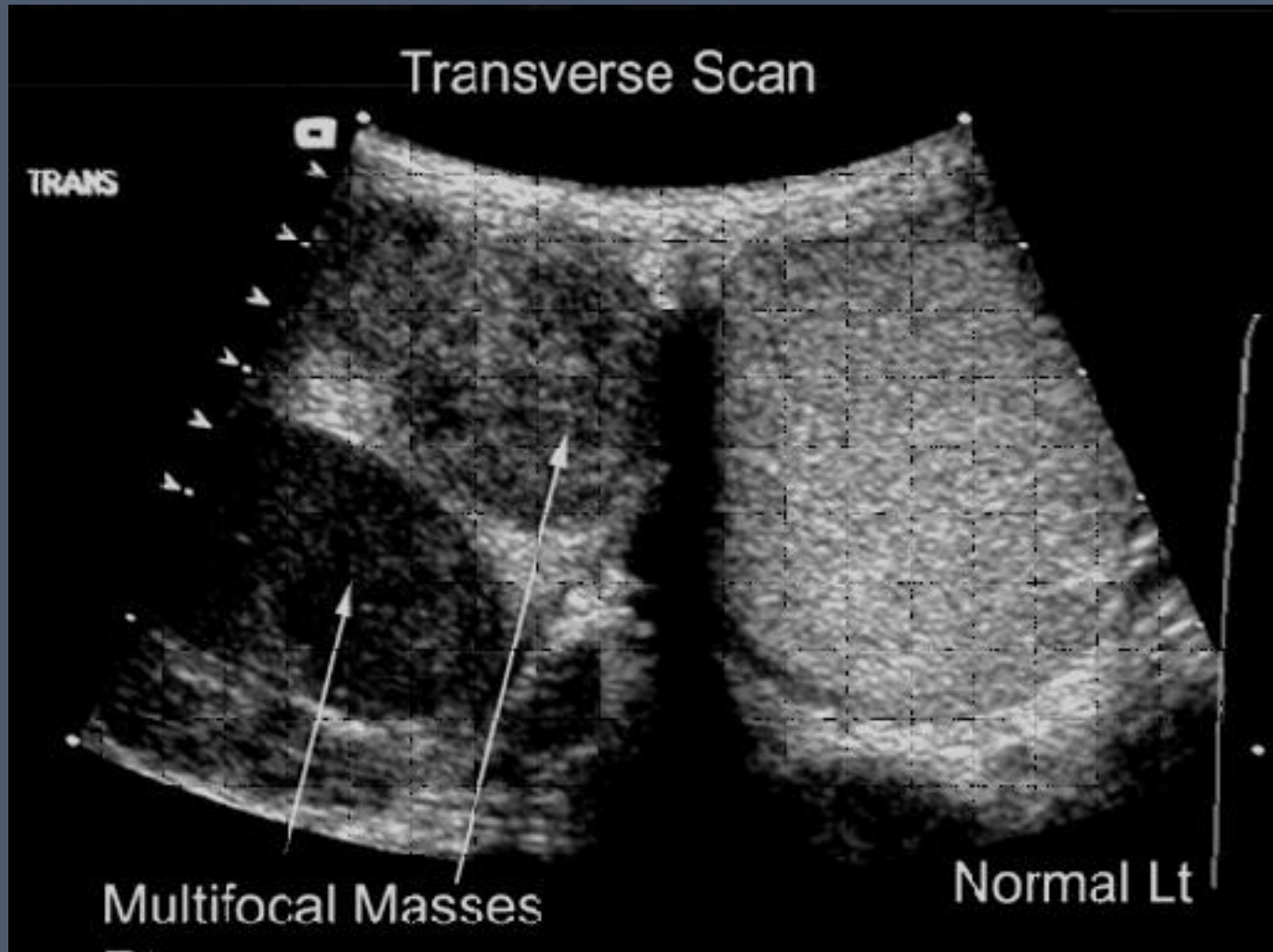
(Weiss and Mills, 1988/Courtesy S.E. Fowler, Jr., MD, Chicago, Ill)

Clinical Manifestations

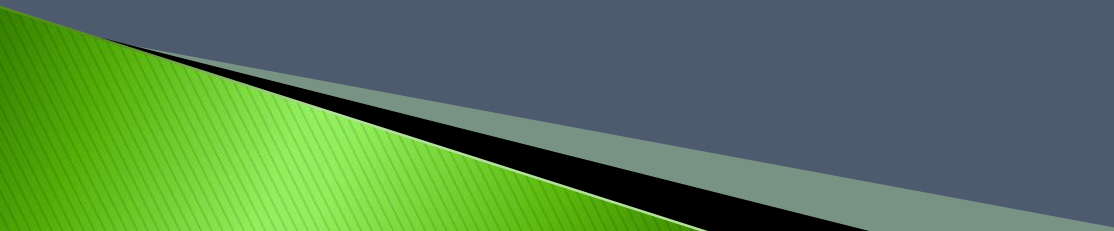
- ▶ Painless lump or swelling in the testicle
 - pain or discomfort in a testicle or in the scrotum
- ▶ Sensation of heaviness or aching in the lower back, abdomen or scrotum
 - any enlargement of a testicle or change in the way it feels
- ▶ Estrogen producing tumors can cause breast growth and tenderness
- ▶ Sudden collection of fluid in the scrotum
- ▶ Symptoms of metastasis depend on area affected:
 - Lower back pain
 - Cough
 - Dyspnea
 - Hemoptysis
 - Abdominal pain
 - Headache

Diagnosis

- ▶ Ultrasound
 - ▶ Blood Tests ~ serum tumor markers
 - Alpha-fetoprotein (AFP)
 - Human chorionic gonadotropin (HCG)
 - Lactate dehydrogenase (LDH)
 - ▶ X-ray, CT, MRI, PET
 - ▶ Staging: uses the TNM system
- 



Three Stages of Testicular Cancer:

- ▶ Stage 1—Cancer confined to the testicle.
 - ▶ Stage 2—Disease spread to retroperitoneal lymph nodes, located in the rear of the body below the diaphragm, a muscular wall separating the chest cavity from the abdomen.
 - ▶ Stage 3—Cancer spread beyond the lymph nodes to remote sites in the body.
- 

Treatment

- ▶ Surgery ~
 - Orchiectomy: removal of affected testicle
 - Testicular prosthesis available
 - May consider sperm banking
 - Retroperitoneal lymph node dissection
 - May cause nerve damage
- ▶ Radiation
 - Used with seminomas only
- ▶ Chemotherapy ~
 - Combination drugs

Testicular Cancer

- Interdisciplinary care
 - Diagnosis
 - Elimination of the cancer
 - Prevention or treatment of metastasis
- Diagnosis
 - hCG and AFP
 - LDH
- Therapy
 - Radiation therapy
 - Surgery
- Nursing diagnoses
 - Deficient knowledge
 - Ineffective sexuality patterns

Summary

- ▶ Encourage testicular self exam & follow up if lump is detected

Key Points

- ▶ Nearly all testicular cancers are one of two general types: seminoma or nonseminoma.
- ▶ Other types are rare
- ▶ This disease occurs most often in men between the ages of 20 and 39. It accounts for only 1 percent of all cancers in men
- ▶ Risk factors include having an undescended testicle, previous testicular cancer, and a family history of testicular cancer
- ▶ Symptoms include: a lump, swelling, or enlargement in the testicle; pain or discomfort in a testicle or in the scrotum; and/or an ache in the lower abdomen back, or groin
- ▶ Diagnosis generally involves: blood tests, ultrasound, and biopsy
- ▶ Treatment can often cure testicular cancer, but regular follow-up exams are extremely important.

Nursing Diagnoses and Interventions

► Anxiety

- Assess the client's level of anxiety (moderate, severe, or panic)
- Establish a therapeutic relationship (warm, empathetic, non-judgmental)
- Encourage client to express feelings
- Review and encourage appropriate coping strategies, discourage inappropriate coping strategies such as repressing anger or alcohol use
- Identify community resources that can help client manage anxiety (hot lines, support groups)

► Disturbed Body Image

- Observe and evaluate interaction with others
- Encourage verbalization of feelings
- Assist the client and others in coping with changes in appearance

Nursing Diagnoses and Interventions

▶ Anticipatory Grieving

- A response to a loss that has not occurred yet
- Answer questions about loss honestly
- Encourage client to make final arrangements
- Encourage client to participate in activities he or she enjoys as long as possible

▶ Risk for Infection

- Encourage client to eat a high protein diet
- Monitor vital signs
- Protect skin and mucous membranes

Nursing Diagnoses and Interventions

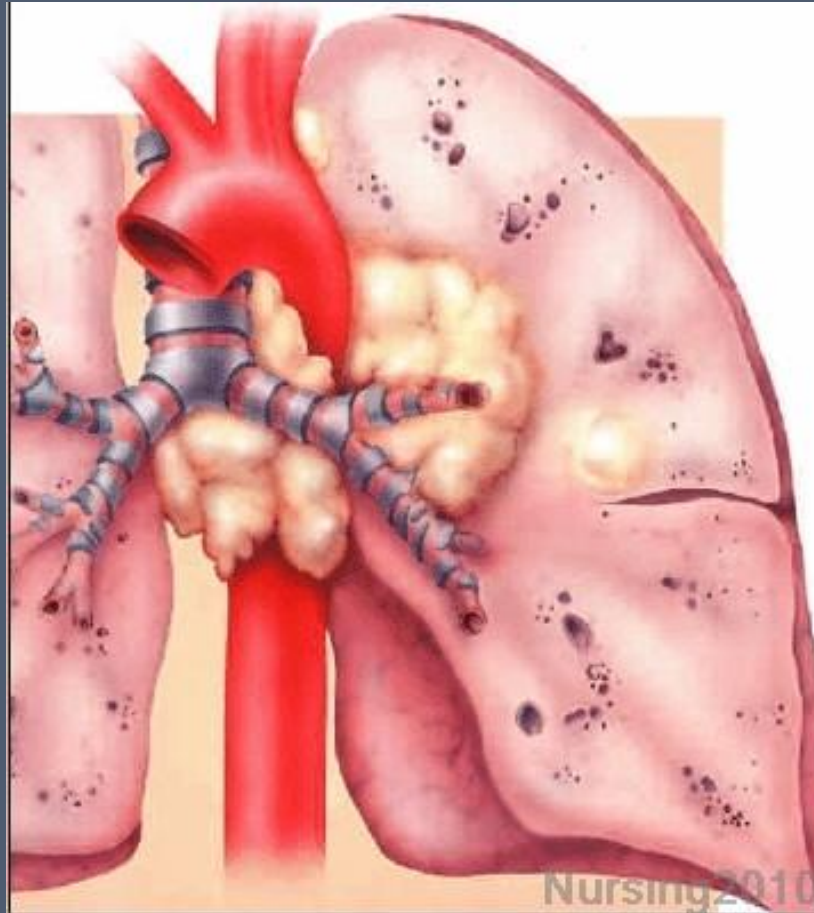
▶ Risk for Injury

- Assess for signs and symptoms indicating problems with organ obstruction
- Teach how to differentiate minor from serious problems
- Monitor laboratory values

▶ Pain Management

- Evaluate level of pain
- Establish a plan of combination of non-narcotic drugs with other adjunct medications

Lung Cancer



Lung Cancer

- ▶ May originate within the lung or may result from metastasis from other tumor sites

Classified into four cell types:

- ▶ Squamous cell carcinoma: epidermal
 - Most common form of lung cancer
- ▶ Adenocarcinomas: arise from the epithelial cells of the lung
- ▶ Oat cell, undifferentiated small cell: has the poorest prognosis
- ▶ Large cell carcinomas: undifferentiated

MANIFESTATIONS OF LUNG CANCER

Local

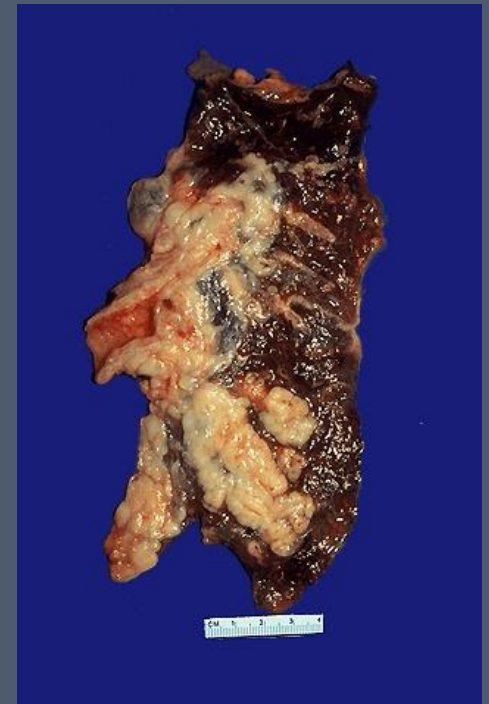
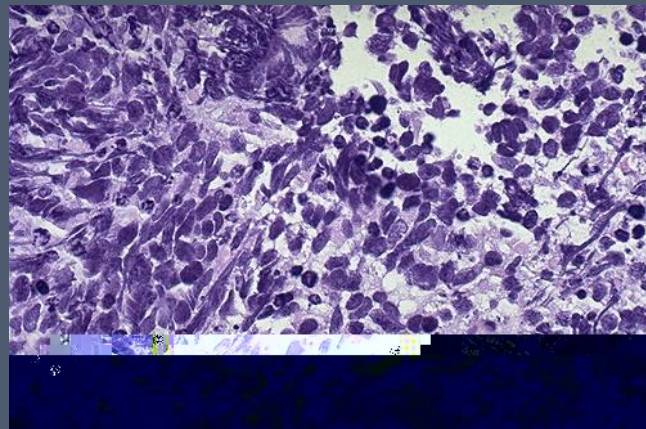
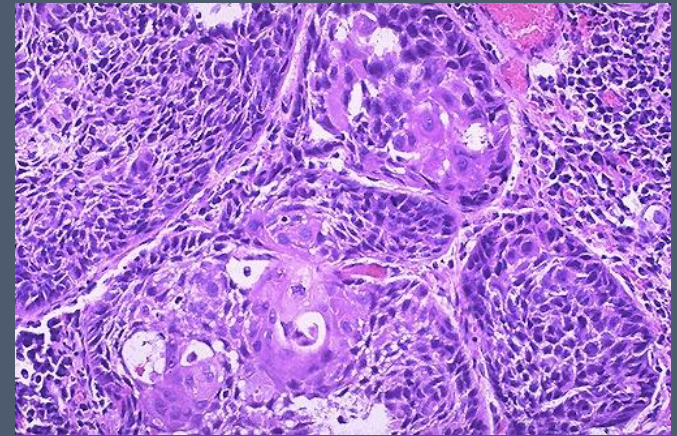
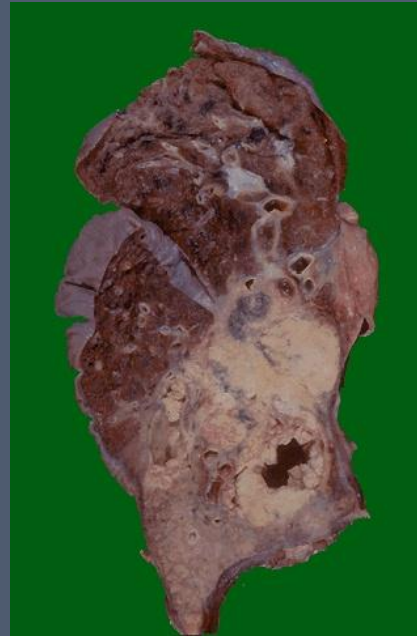
- Cough, hemoptysis
- Wheezing and dyspnea
- Chest pain, hoarseness or dysphagia

General

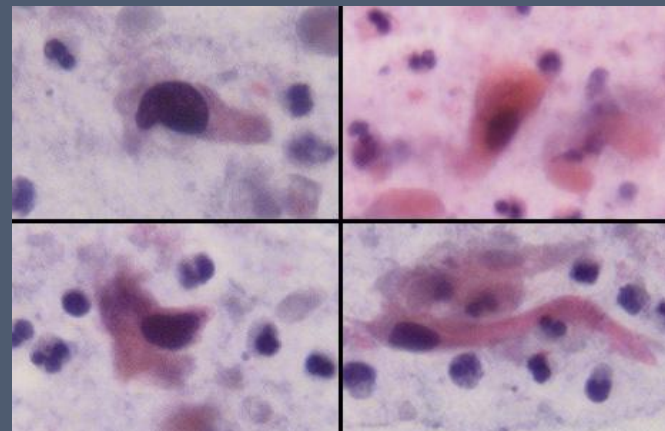
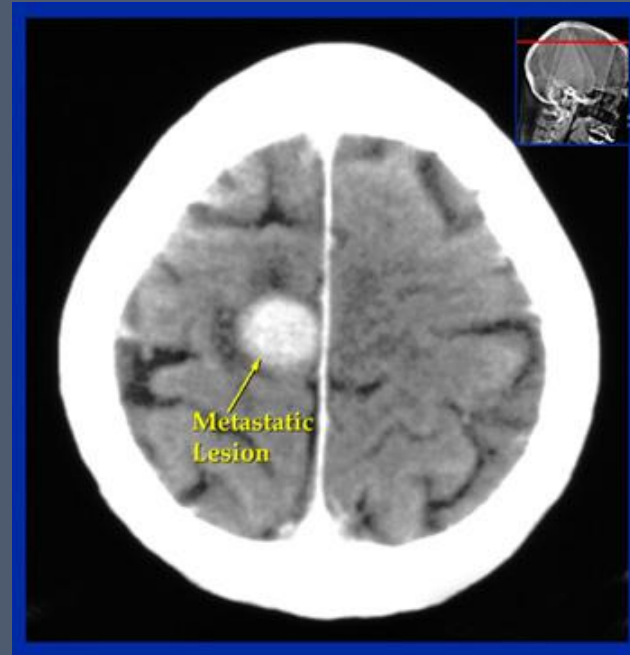
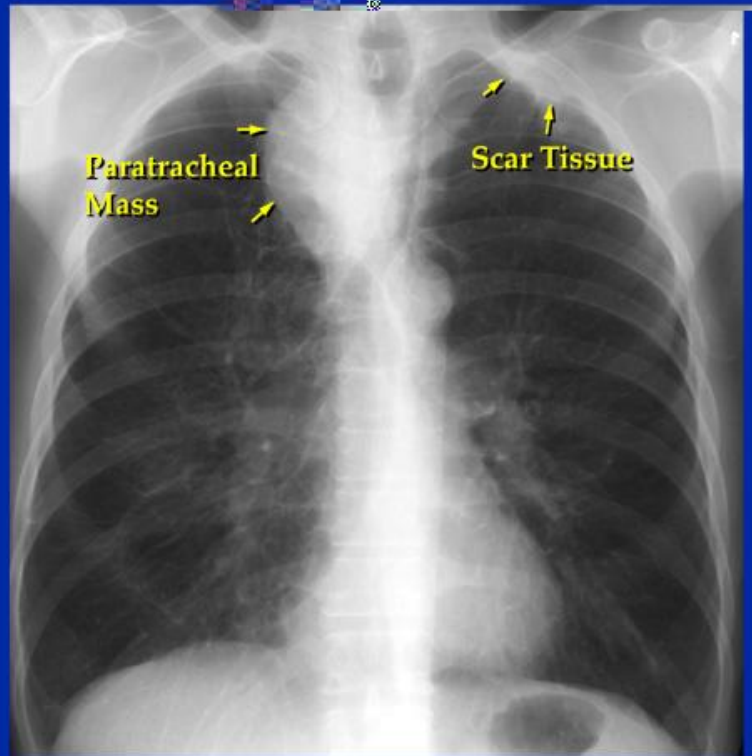
- Anorexia, weight loss
- Fever

Paraneoplastic

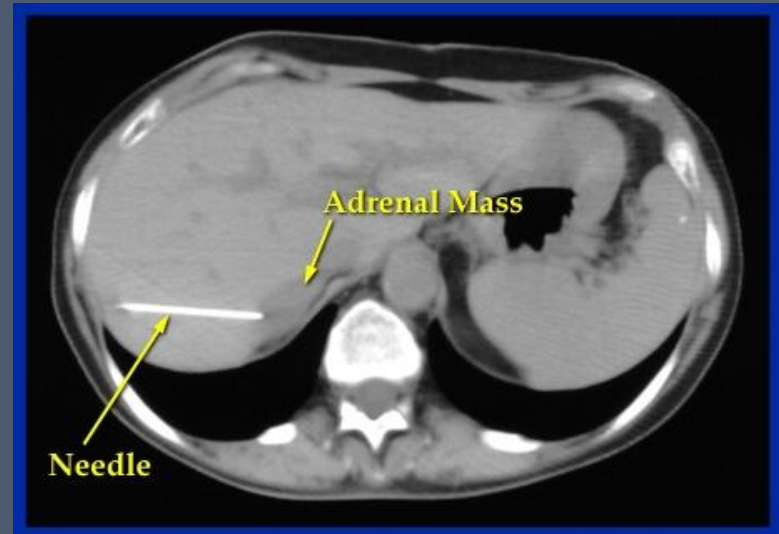
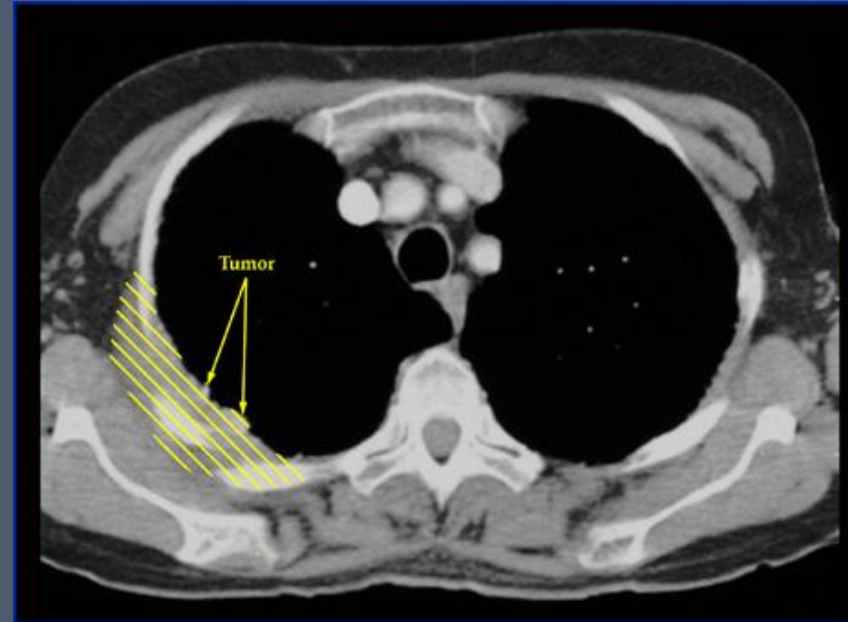
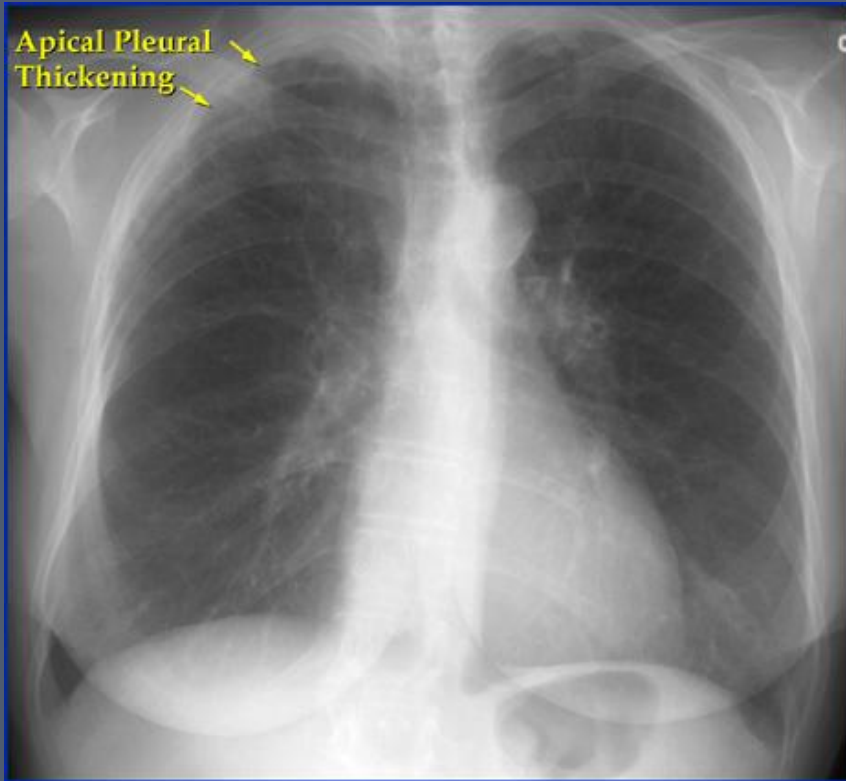
- Fluid and electrolyte imbalances
- Cushing's syndrome
- Peripheral neuropathy, muscle weakness
- Thrombophlebitis
- Anemia, disseminated intravascular coagulation (DIC)

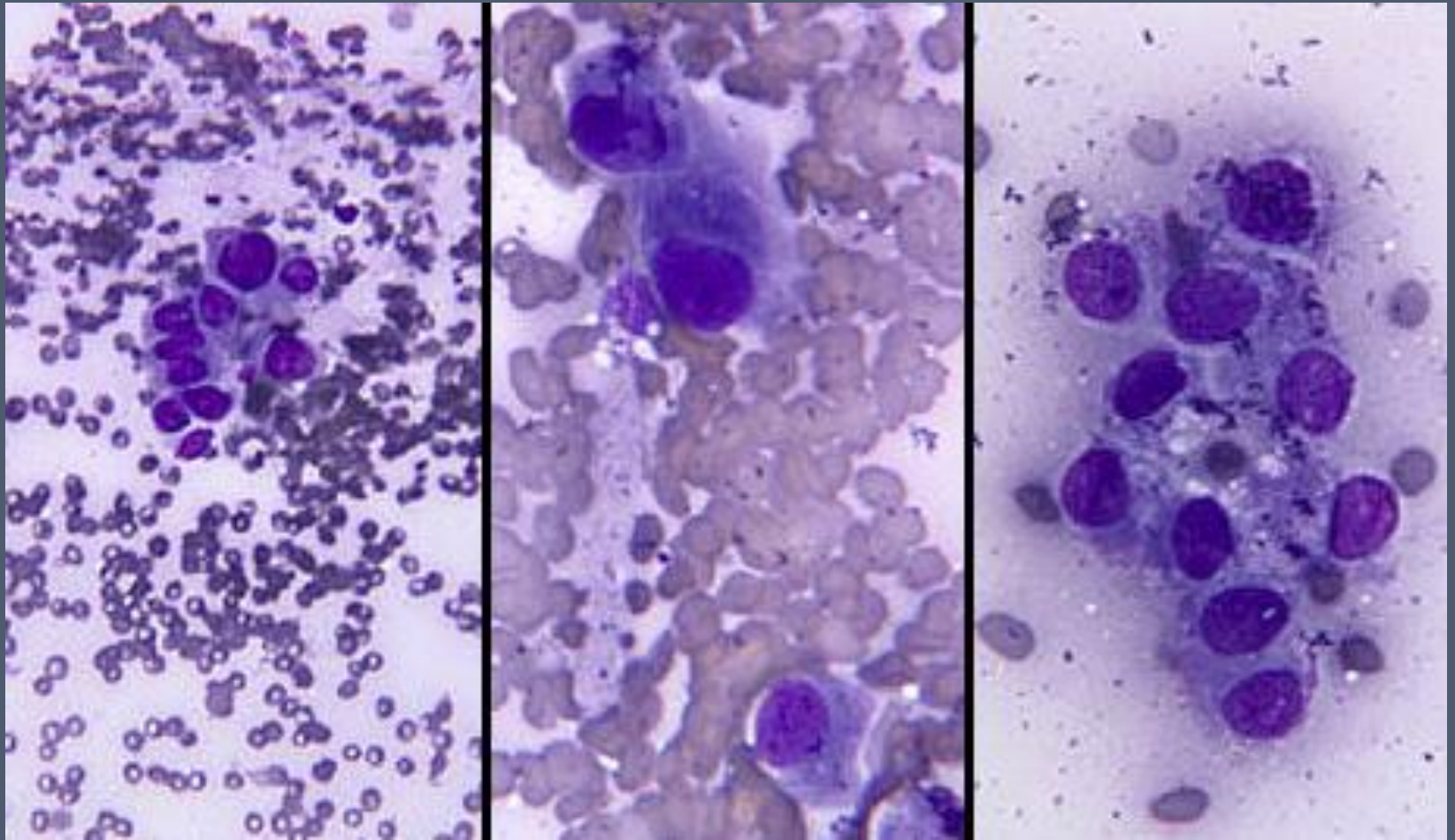


Non Small Cell Carcinoma



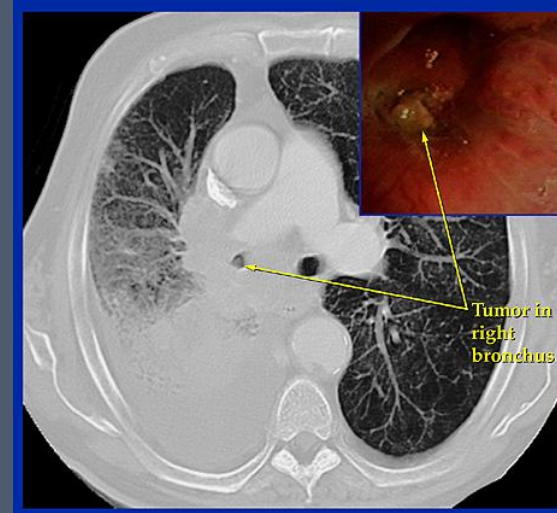
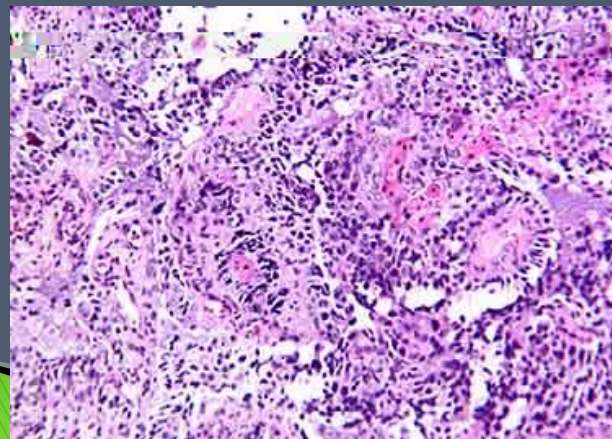
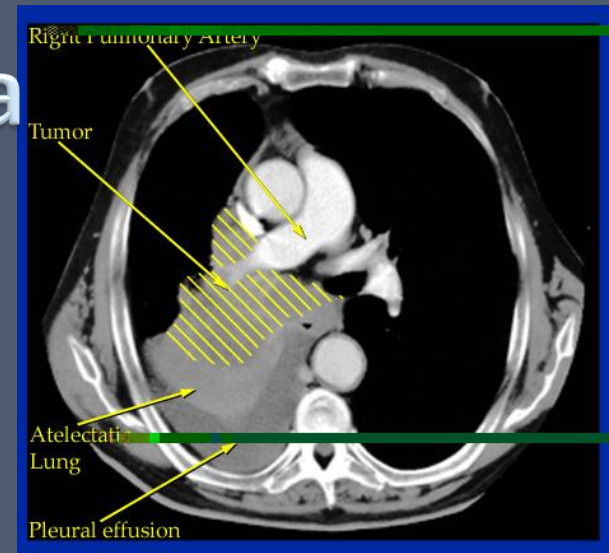
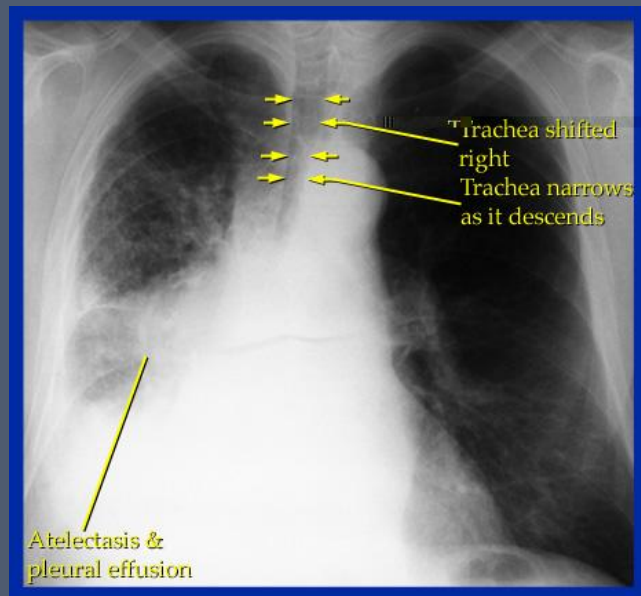
Adenocarcinoma



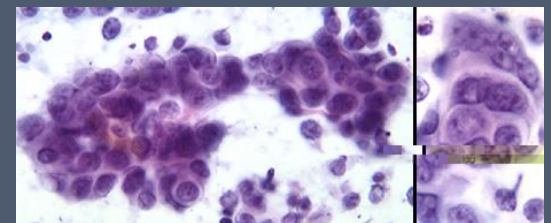
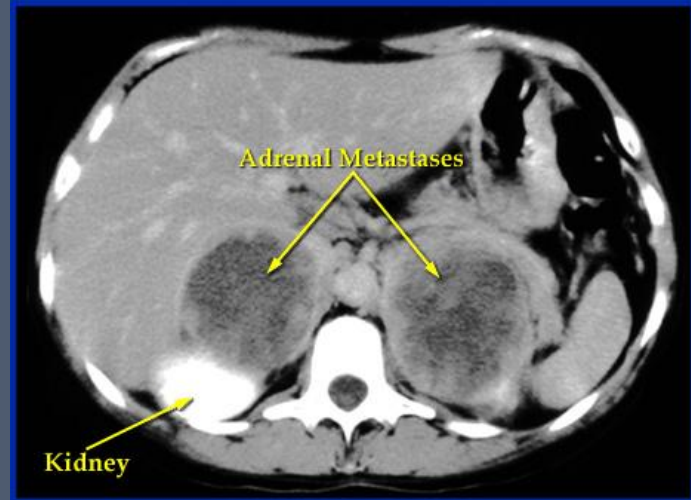
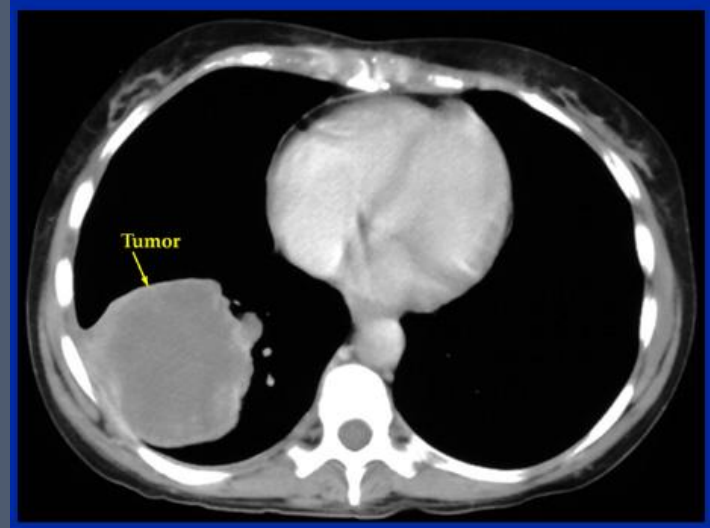
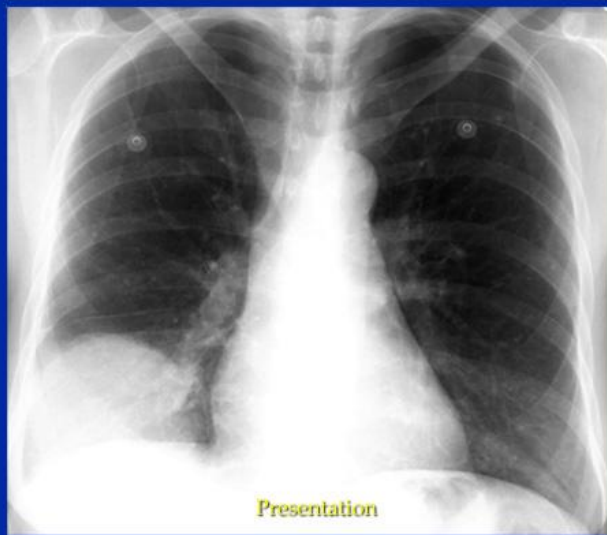


<http://www.vh.org/adult/provider/radiology/LungTumors/TitlePage.htm>

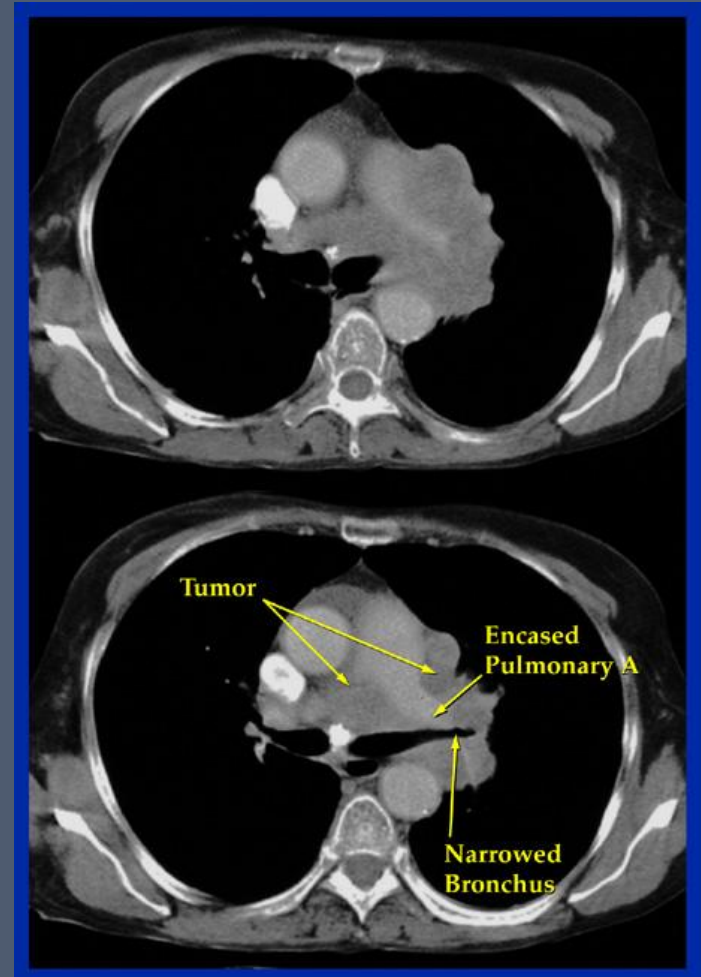
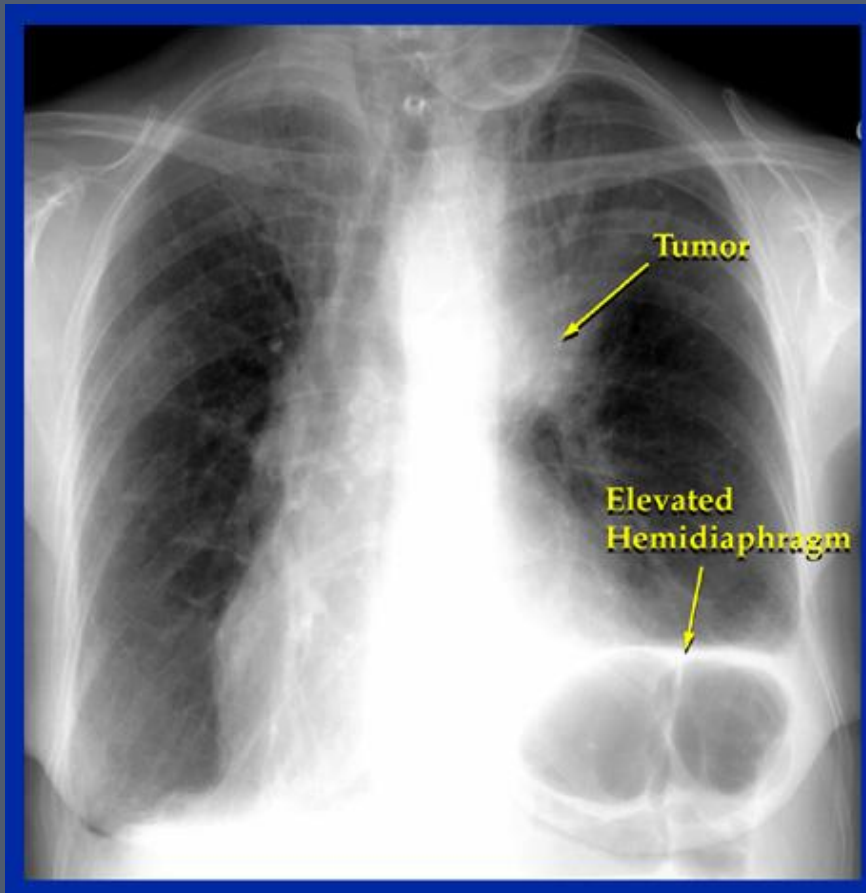
Squamous Cell Carcinoma



Adenocarcinoma

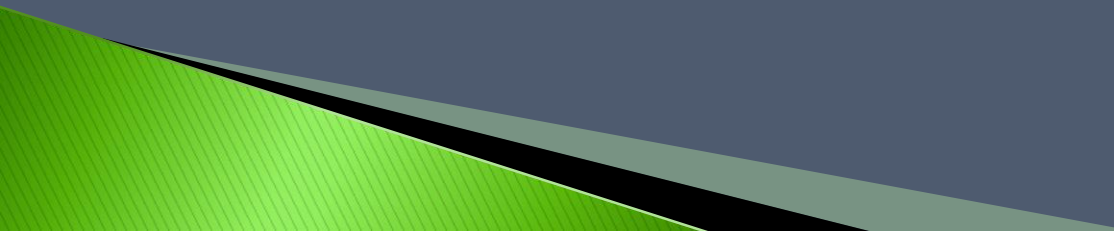


Small Cell Carcinoma

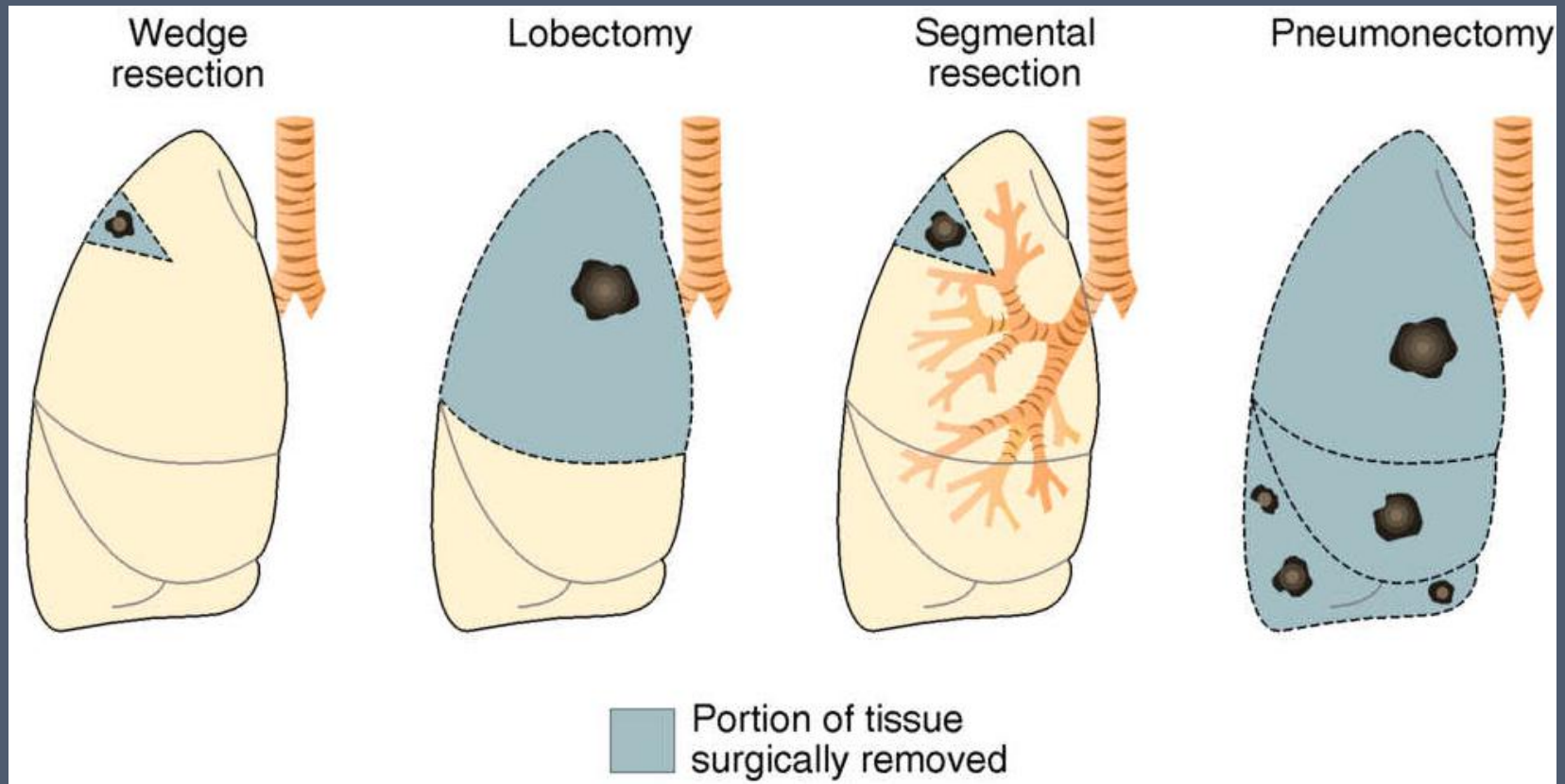


<http://www.vh.org/adult/provider/radiology/LungTumors/TitlePage.html>

Surgical Intervention

- Laser therapy: to relieve endobronchial obstruction
 - Thoracotomy with pneumonectomy: surgical removal of a lung for bronchogenic carcinoma
 - Thoracotomy with lobectomy: surgical removal of one lobe of the lung for tumors confined to a single lobe
 - Thoracotomy with segmental resection: surgical removal of a lobe segment for clients unable to tolerate lobectomy or pneumonectomy
- 

Pulmonary Resections



Postoperative Intervention

- Monitor vital signs
 - Monitor cardiac and respiratory status
- Maintain the chest tube drainage system, which will drain air and/or blood that accumulates in the pleural space
- Monitor the chest tube insertion site for subcutaneous air and drainage
- Oxygen Therapy
 - Monitor pulse oximetry
- Provide activity as tolerated
 - Encourage active ROM exercises to the operative shoulder as prescribed
- Maintain the client's position based on the procedure performed

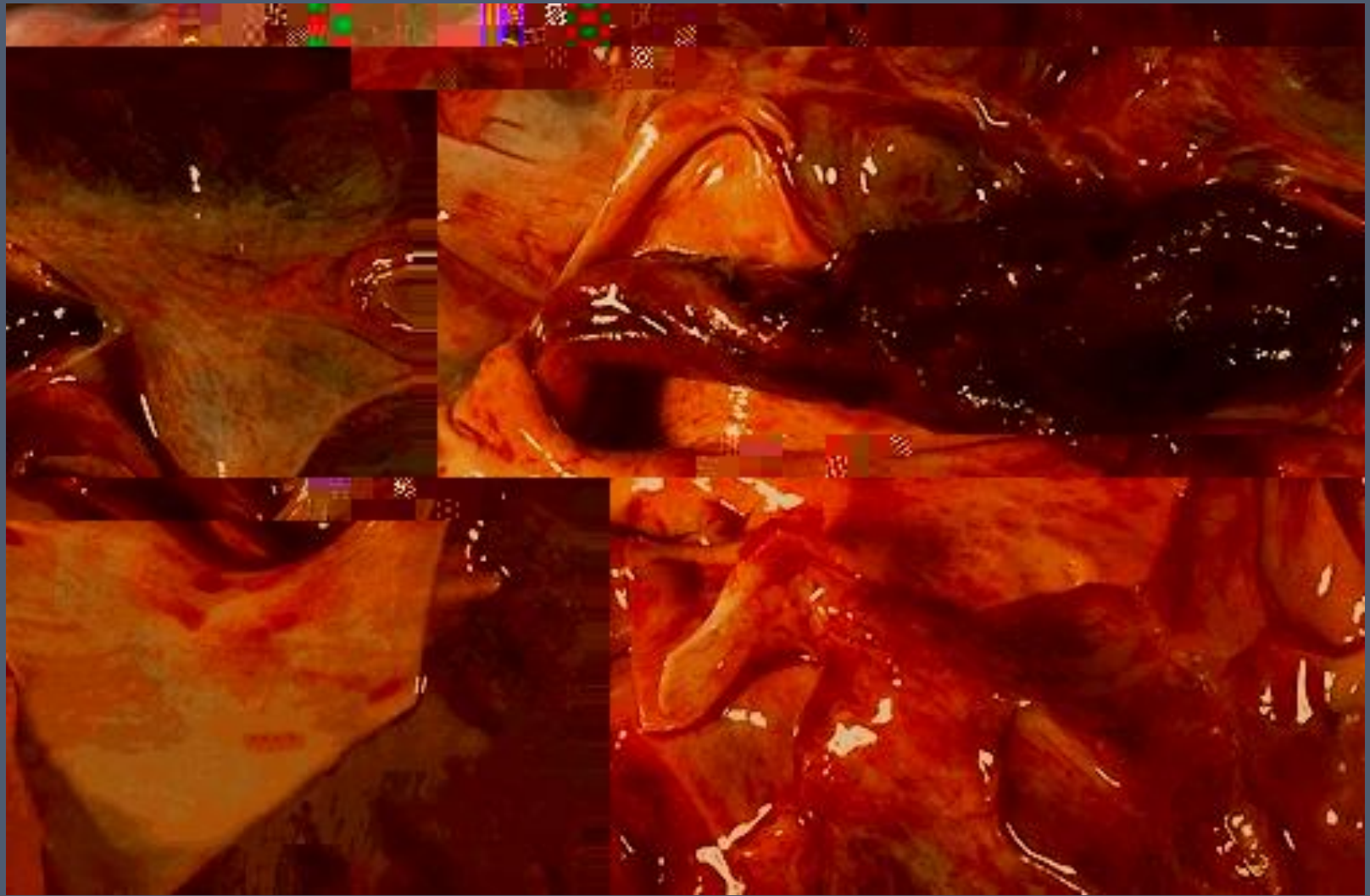
Postoperative Intervention

▶ Pneumonectomy:

- Avoid complete lateral positioning because the mediastinum is no longer held in place on both sides by lung tissue
- Extreme turning may cause mediastinum shift and compression of the remaining lung

▶ Segmental (wedge) resection:

- elevate the head of the bed 30 to 45 degrees and avoid positioning the client on the operative side as prescribed



Twenty-two-year-old David Banks' medical history revealed unilateral cryptorchidism which was corrected by orchiopexy at the age of seven. You know that this history increases his adult risk for the development of:

- a. orchitis.
- b. testicular cancer.
- c. torsion of the spermatic cord.
- d. varicocele.

A young adult client detects a firm, painless lump on his right testis and noted an enlarged scrotum on his testicular self-exam (TSE).

Ultrasound confirms a malignant lesion. What is the usual treatment for testicular cancer?

- a. biopsy of the testis
- b. removal of the lesion only
- c. removal of the affected testes with examination of the nodes
- d. radical inguinal orchiectomy

► A 65-year-old male is being discharged from the hospital after prostate surgery. As his RN, you inform him that he should contact his PCP immediately if: (Check all that apply.)

a. he is unable to urinate.

b. he gets hungry in the middle of the night.

c. his scrotum becomes increasingly swollen and tender.

d. he has pain in one calf, chest pain, or difficulty breathing.

- ▶ Which is the American Cancer Society's recommendation for the early detection of cancer of the prostate?
- ▶ a. a yearly PSA level and DRE beginning at age 50
- ▶ b. a biannual rectal examination beginning at age 40
- ▶ c. a semi-annual alkaline phosphatase level beginning at the age of 45
- ▶ d. a yearly urinalysis to determine the presence of prostatic fluid

The client diagnosed with early cancer of the prostate.
Which assessment data would the client report?

- ▶ a. urinary urgency and frequency
- ▶ b. ejaculation during intercourse
- ▶ c. low back and hip pain
- ▶ d. states that he has not had any problems

- ▶ The nurse enters the room of a 24 y/o client diagnosed with testicular cancer. The fiancée of the client asks the nurse “Will we be able to have children?” Which is the nurse’s best response?
- ▶ a. “Your fiancée will be able to father children like always.”
- ▶ b. You will have to adopt children because he will be sterile”
- ▶ c. You and he should consider sperm banking prior to treatment.”
- ▶ d. “Have you discussed this with the client? I can’t discuss this with you.”

The nurse is assessing a client to rule out testicular cancer. Which assessment data would support that the client has testicular cancer?

- ▶ A) the client complains of pain on urination
- ▶ B) there is a chancre sore on the shaft of his penis
- ▶ C) the patient complains of heaviness in the scrotum
- ▶ D) there is red, raised rash on the testes

The client is diagnosed with early cancer of the prostate. Which assessment data would the client report?

- ▶ A) urinary urgency and frequency
- ▶ B) retrograde ejaculation during intercourse
- ▶ C) low back and hip pain
- ▶ D) states that he has not had any problems

- ▶ The client diagnosed with prostate cancer has been placed on LHRH agonist (luteinizing hormone releasing hormone) therapy.
- ▶ Which statement indicates that the client understands the hormone therapy?
 - A) "I will be able to function sexually as always"
 - B) "I may have hot flashes while taking this drug"
 - C) "This medication will cure the prostate cancer"
 - D) "there are no side effects with these medications"

Websites

▶ Testicular Cancer

- Website of the American Urologic Association which discusses male and female urologic conditions including testicular and prostate cancer.
- <http://www.urologyhealth.org/adult/index.cfm?cat=04&topic=136>

▶ Prostate Cancer

- Website of the National Cancer Institute of the National Institutes of Health discussion of prostate cancer.
- <http://www.cancer.gov/cancertopics/types/prostate>

