

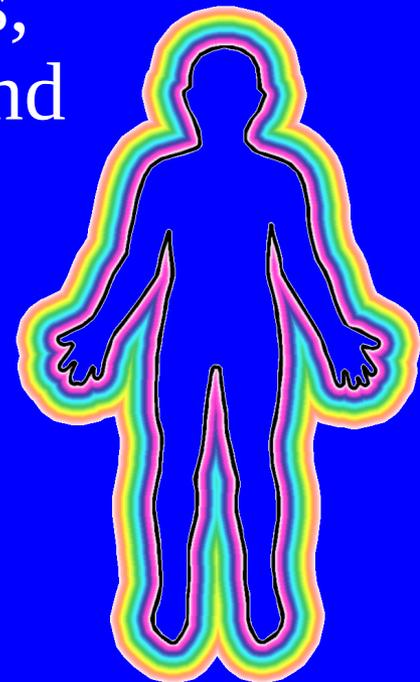
Nursing Care
of the
Surgical Patient
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CCRN, CNE



Surgical Overview

What is Surgery?

- A planned physical alteration of the human body designed to arrest, alleviate, or eradicate some pathological process.
- The Art & Science of treating diseases, injuries, or deformities by operation and instrumentation
- An anatomical alteration of the body



- Surgery performed for:
 - Diagnosis
 - Cure
 - Palliation
 - Prevention
 - Exploration
 - Constructive
 - Transplant



Phases of Surgery

- Perioperative

- “peri” Greek prefix

- *Around or About*

- Inclusive term meaning all phases of the surgical experience



Socrates

Phases of Surgery

- **Preoperative : time decision is made to have surgery until transported to the OR**



Phases of Surgery

- Intra-operative:
administration of anesthesia
through
completion
of surgical
procedure



Phases of Surgery

- Post-operative: Post-anesthesia care unit until recovery is complete



The Surgical Nurse

- **Perioperative nurse**
 - allows nurse to function in variety of roles within the surgical process



PHOTOGRAPHERS
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Perioperative nursing

Defines role of nurse in each of 3 phases

- Pre-operative
- Intra-operative
- Post-operative



- Perioperative nursing stresses *continuity of care* for total surgical experience

- Perioperative nursing is based on **Nursing Process**

- _____
- _____
- _____
- _____



AORN - Association of periOperative Registered Nurses

- Purpose - gain new knowledge and improve nursing care in the OR
- Develop Standards of Practice for the OR
 - used to measure quality
- Comprehensive approach to meet needs of surgical patient



Standardized Policies and Procedures

- Important for:
 - patient safety & welfare
 - easier to teach to others
 - learning easier when consistent
 - deviations have significance
- Help maintain quality of practice

Settings for Surgery

Surgeries are performed in hospitals, free standing surgical centers, and physician offices.



- Inpatient - patient admitted and surgery performed in the hospital surgical suite
- Ambulatory surgery - many surgeries can be performed without patient having to be admitted
 - Approximately 60-75% of surgeries performed as outpatient

Types of Ambulatory Surgery Centers

- **Hospital integrated:**
 - Outpatient integrated with inpatients in all 3 phases
 - Lab & diagnostic testing done as outpatient
 - Lowers hospital costs to patient & 3rd party payers

- **Hospital affiliated facility**

- located within hospital complex, adjacent to or a satellite location
- separate department for all 3 phases
- Physically & organizationally separate from hospital OR unit
- Exclusively outpatient



- **Free Standing Unit**
 - independently owned
& operated
 - not affiliated with hospital



Ambulatory Surgery

Advantages

- less costly
- inpatient beds for very ill
 - ∇ ↓ trauma of separation/away from home
 - ∇ ↓ disruption of normal daily activities



- Patient assessment & pre-op teaching done on outpatient basis

- Requires good teaching by RN



- Interventions carried out at surgery center
- Following procedure, patient recovered and monitored until safe discharge *to caregiver* achieved.

Ambulatory Surgery Criteria

- *Age* : children, young & middle age adults without complex health problems.



- *General health status: physical & emotional, including home situation*
- *Insurance guidelines*
- *Patient willingness*



Classifications of Surgery

Degree of Risk

Purpose

Degree of Urgency

Classified According to Degree of Risk:

- **Minor Surgery:** simple surgery that presents little risk to life



Classified According to Degree of Risk:

- **Major Surgery:** involves extensive reconstruction or alteration in body part.



Classifications of Surgery

- Classified According to Purpose:
 - (Review notes, class preparation assignment, assigned readings)

Classified According to Urgency

- **Emergency: unplanned.**
 - Performed immediately
 - Preserve life or function of patient



Classified according to Surgical Urgency

Urgent: Unplanned.

- Requires surgical intervention within 24-48 hrs



Classified according to Surgical Urgency

- **Elective (Required):** planned.
 - Indicated for health problems but *not necessary immediately* to preserve life or function
- **Elective (Cosmetic):** planned
 - Recommended or individual preferred surgical intervention.



COMMON SURGICAL SUFFIXES

- ECTOMY removal of an organ or gland
- LYSIS destruction of
- OSTOMY providing an opening
- OTOMY cutting into
- PLASTY formation or plastic repair
- SCOPY looking into

Pre-Operative Phase

PRE-OPERATIVE PHASE

Pre-operative needs include:

- **Informed Consent**
- **Psychosocial preparation**
- **Health Assessment**
- **Surgical risk**
- **Plan care**
- **Pre-op teaching**
- **Physical preparation**
- **Preoperative Medications**



Consent for Surgical Intervention

- Patient **MUST** have a clear understanding of the surgery, risks, and benefits
 - **Must have clear judgment**
 - **NO impairments**



- The consent form protects:
 - Patient
 - Hospital, staff, & surgeon



For Consent to be Informed:

- full explanation of the procedure by the _____ *in terms the patient can understand* _____ to signing the permit.
- Patient must be informed of risks & benefits of the surgery.
- Language barriers addressed appropriately
- **The nurse's role is _____**



Consent form must be properly signed

- _____
- _____
- _____



- If patient unable to write, may sign X with two adult witnesses
- Witness signature indicates _____

– Does not verify patient's competency or understanding of risks, benefits, or alternatives

- If patient unable to sign, authorized representative may give verbal consent via telephone to physician
- _____witnesses must sign to indicate consent given by phone
- Nursing role...
- Informed consent is valid for **60 days**

Consent in an Emergency

- Treatment may be given in medical emergencies without informed consent
 - True or False?
- _____
- _____

Who may give consent

- Parent or guardian of minor
- Married minor
- Married minor for spouse if unable to sign
- Minor parent for his/her child



Psychosocial Preparation

Psychosocial Preparation

- Surgery is **always** a major experience for the patient & family
- Surgery is a *stressor* that produces psychosocial and



- Anxiety may be less if patient perceives surgery as having positive outcomes.
 - Curative
 - Relief of symptoms
 - More attractive physical appearance



Anxiety

- *Anxiety can impair cognition, decision making, and coping*
- Always assess level of anxiety **first** to address before proceeding with preop preparation

- Lack of emotional response to surgery may indicate denial-
 - pt may detach self from process or show lack of interest
- Repeatedly asking questions, talking incessantly or not talking
 - may indicate hidden fears



Fears Related to Surgery

General

- _____
- _____
- _____
- _____

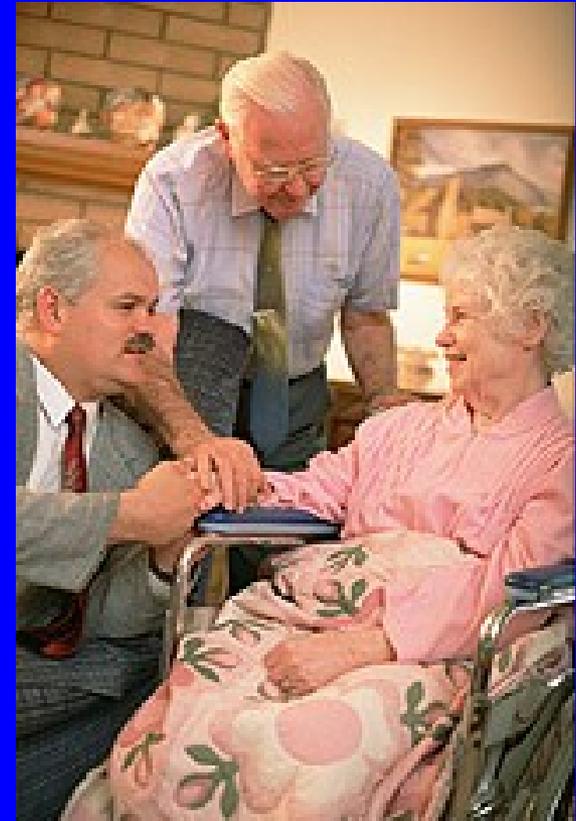
Specific

- _____
- _____
- _____
- _____
- _____
- _____
- _____



Assessment of Pre-Op Anxiety

- Subjective Data: patient level of understanding/perceptions
 - site
 - type of surgery
 - reason for surgery
 - extent of hospitalization
 - tests required
 - limitations



Assessment of Pre-Op Anxiety

- pre-op routines and post-op routines
- previous surgical experiences
- religion or cultural beliefs
- tests required
- source of support
 - family/significant other



Objective Data

- pick up clues of anxiety through objective data:
 - speech patterns
 - repetition of themes
 - change topic
 - avoid topics
 - degree of interactions with others



– Physical indications of anxiety

- pulse / respirations
- hand movements
- perspiration
- activity level
- frequent voiding
- change in sleep patterns



- What are some nursing diagnoses we might use related to our psychosocial assessment?
- Expected Outcomes?



NANDA Nursing Diagnoses r/t Psychosocial Assessment

Expected Outcomes

Implementation of Nursing Action

Level of understanding of surgical procedure

- Assess what the patient really knows
 - do they really know what to expect?
- Explore patient's expectations and perceptions
 - If know what myths & misconceptions are, then can help patient deal with them

Patient: “I’m so nervous about my surgery”.

Patient: “I don’t want surgery because I’ll die like my father did.”

Avoid “why” questions, false reassurance

Pre-Op Teaching

Pre-op Teaching

Studies in nursing literature support the importance of pre-op psychological preparation.

What can pre-op teaching do?



Pre-op Teaching

Generally three types of information

1. Sensory –

2. Process –

3. Procedural –

Pre-op Teaching

- Provide information & instruction
 - Purpose of surgery
 - What and why of preoperative tests
 - Preoperative routines
 - Schedules
 - What to expect in the recovery period
 - Family instructions
 - Probable postoperative therapies

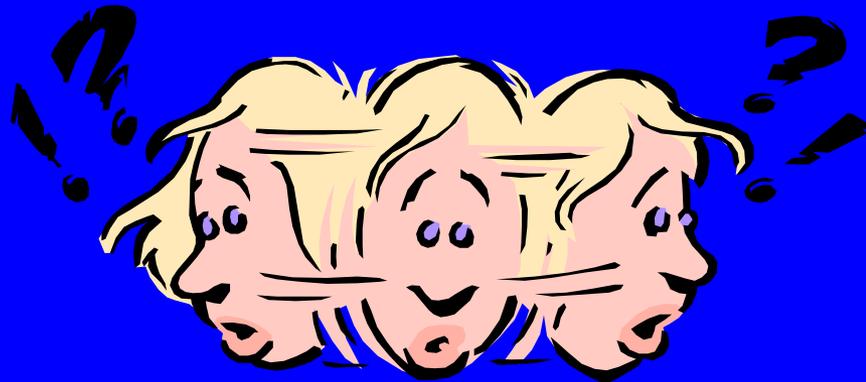
Pre-op Teaching

- Simple explanations are best
- Always give written information to review later and reinforce teaching



REMEMBER.....

- **Giving information does not mean it is perceived or understood!**



Evaluation of Pre-op Teaching

- Performance of post-op exercises
 - Return demonstration
 - Verbalized rationale
- Ability to sleep
 - Insomnia may indicate anxiety
- Willingness to cooperate
 - Participates in pre-op teaching
 - Follows instructions
 - Non-adherent may signal anxiety or denial



Summary of pre-operative psychological preparation

- _____
- _____
- _____
- _____
- _____
- _____



Health Assessment



Pre-op health assessment:

- Physical assessment
- Pre-surgical test results
- Identification of surgical risk factors

Physical Pre-op Assessment

- *Baseline information/data used for comparison throughout the perioperative experience*



Baseline Data

- General health/previous surgeries
- Allergic responses
- Height & Weight (Body Surface Area)
- Medications/Smoking/ETOH
- Dentures, glasses, hearing aids, etc
- Disabilities or Impairments



Baseline Data

- Mobility limitations
- Level of consciousness
- Mental status
- Coping/support
- Pregnant



Nutritional Status: *directly affects intra-op success & post-op recovery with tissue repair & resistance to infection*

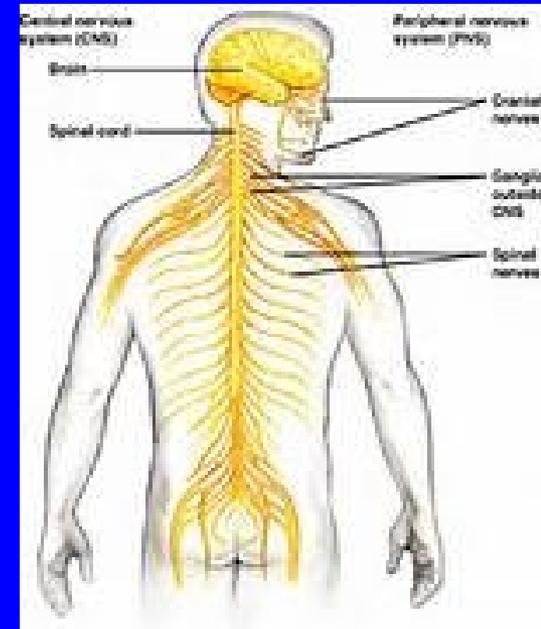


Review of Systems

- Neurologic
- Respiratory
- Cardiovascular
- Renal
- Endocrine
- Hepatic
- Skin Integrity
- Musculoskeletal
- Immune

Neurologic System

- _____
- _____
- _____
- _____
- _____
- _____



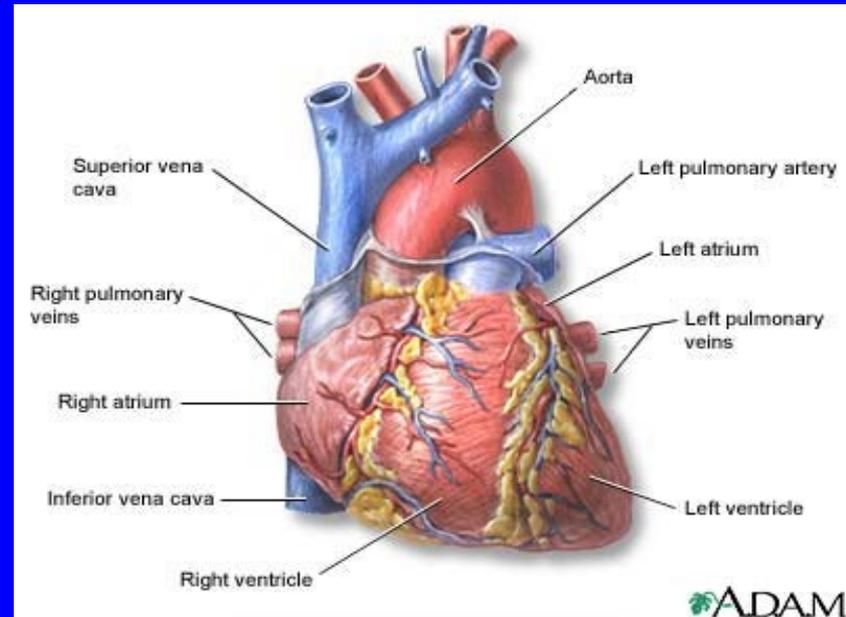
Pulmonary

- _____
- _____
- _____
- _____
- _____
- _____
- _____



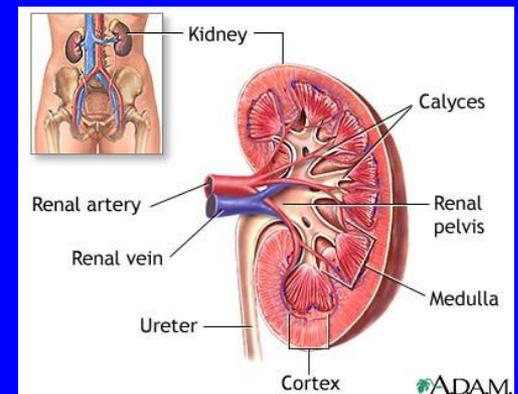
Cardiovascular

- _____
- _____
- _____
- _____
- _____
- _____
- _____



Renal

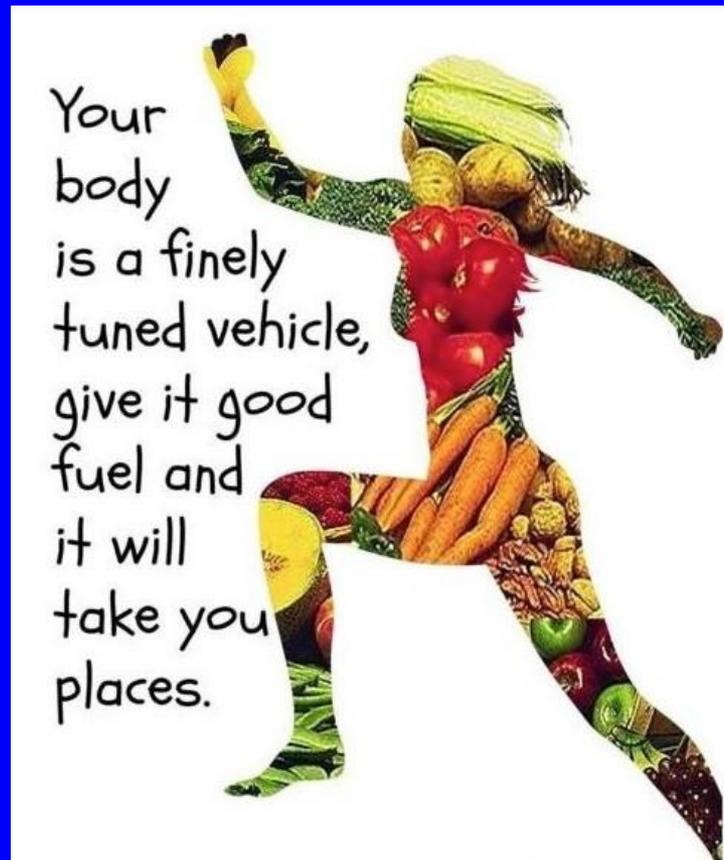
- _____
- _____
- _____
- _____



Endocrine



Nutritional Status



Skin Integrity

- _____
- _____
- _____
- _____
- _____
- _____

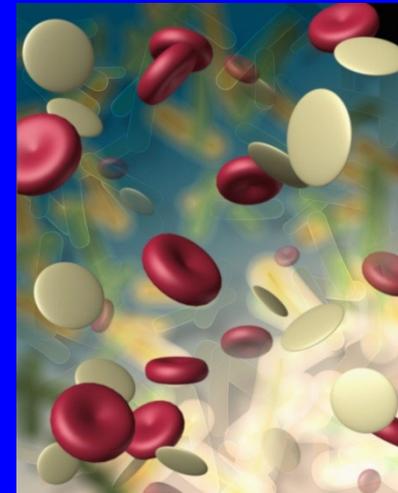


Musculoskeletal



Immune system

-
-
-
-
-



Hepatic Function

- _____
- _____
- _____
- _____



Pre-operative tests

- Lab work 
- Diagnostic studies
- Why is this important?

Pre-operative Labs: Complete Blood Count (CBC)

- WBC - Total white blood count
- Fight infection 
 - 4000 – 10000 (*4 – 10 on lab print-out*)
 - Neutrophils
 - Lymphocytes
 - Monocytes
 - Basophils
 - Eosinophils

Complete Blood Count

- RBC – Red blood cell
 - Contain hemoglobin for transport and exchange of oxygen
 - Male: 4.7 – 6.1
 - Female: 4.2 – 5.4
- Hemoglobin 
 - Male: 14 – 18
 - Female: 12 – 16



Complete Blood Count

- Hematocrit – percentage of total blood volume made up by RBCs



- Male: 42 – 52%

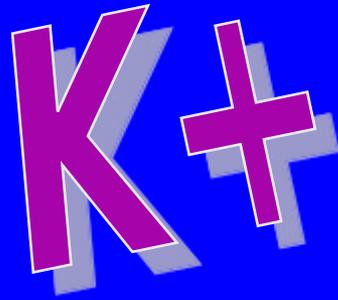
- Female: 37 – 47%

- Platelets – essential to blood clotting

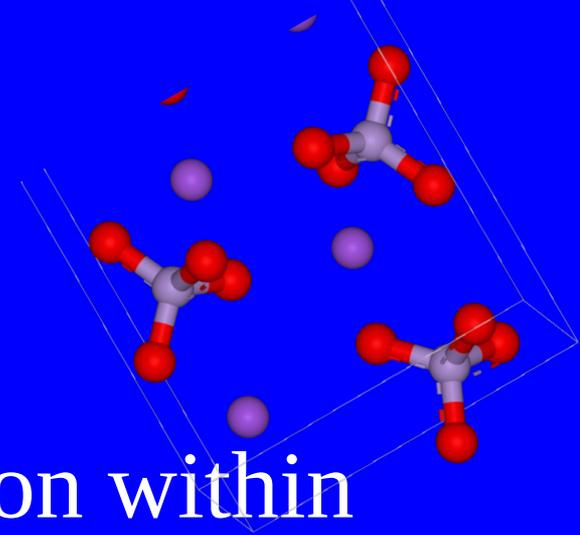
- 150,000 – 400,000



Other Components: RDW, MCV, MCHC



Electrolytes



- Potassium (K⁺) – major cation within cells



- Normal 3.5 – 5.0
- Excreted by the kidneys
- Minor changes have significant cardiac consequences

Na⁺

Chem 7: Electrolytes



- Sodium (Na⁺) – major determinant of extracellular osmolality.
 - Normal 136 – 145
 - Balance between dietary intake and renal excretion
 - Many other factors also regulate Na in body



CO2

Electrolytes

- Carbon dioxide – normal 23 – 30 mEq
 - Assists in evaluating pH status of patient and other electrolytes
- Chloride – normal 98 – 106 mEq
 - Gives indication of acid-base balance
 - Maintain electrical neutrality with Na⁺
- Calcium – normal 7.6 – 10.4 mg/dl
 - Evaluates parathyroid function, calcium metabolism, monitor renal patients, other uses



Cl

Ca⁺

Others

Kidneys



BUN (blood urea nitrogen)

- Normal 10 – 20
- Monitors kidney function

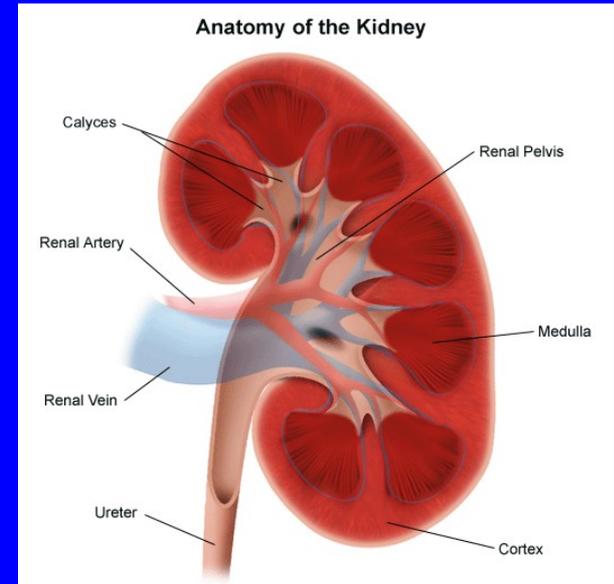


Creatinine

- normal 0.5 – 1.1
- Monitors kidney function

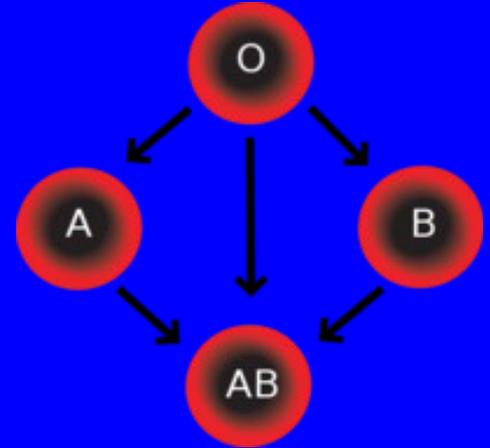
• Urinalysis –

- UTI, renal function, diabetes



Others

- Type & cross match
 - if at high risk for blood loss
- ABGs – arterial blood gases
- Pregnancy Test
 - Female patients of childbearing age



Others

- PTT, PT/INR, Bleeding time
 - Clotting factors



FBS – fasting blood sugar

- Resulted as GLU on chem 7
- Normal values 70-99



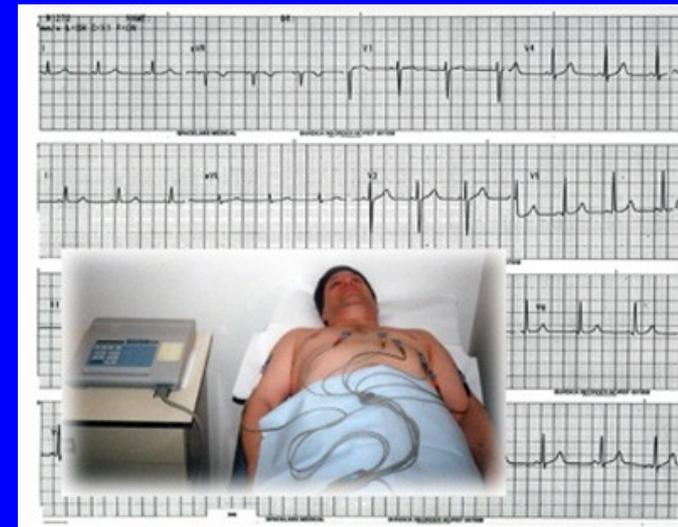
Diagnostic Tests

- CXR - examine condition of heart & lungs
 - any lung abnormalities may require a different type & dose of sedatives/anesthesia
 - Heart size



- EKG- measures heart electrical activity
 - rate, rhythm & other factors
 - Can identify pre-existing cardiac problems
 - Done if over 40 years old or history of heart disease

- PFT – pulmonary function test



Routine Pre-surgical Tests

- Nurse's responsibility is:

- _____
- _____
- _____

- _____



Surgical Risk Factors

- The degree of surgical risk depends on:
 - physical/mental condition of patient
 - extent of pre-existing disease
 - severity of required operation

Surgical Risk Factors

- AGE: Very young and very old at greatest surgical risk
 - Elderly patient has fewer physiological reserves to meet the demands of surgery



General Health



Use of Drugs/ETOH

Allergies



Nutrition

- Malnutrition: state of impaired functional ability of essential nutrients & calories within cells
- Protein is essential component to build & repair tissues and fight infection



Obesity:

excessive accumulation of fat



Fluid & Electrolyte Balance

- Hormonal reaction results in sodium & water retention *and* potassium loss
–within 2-5 days of surgery.
- Pre-op abnormalities increase risk of post op imbalance.

Mental outlook and status

- Mental illness and developmental disabilities affect ability to cope with and understand surgery
- Dementia, Alzheimer's Disease
- Anxiety



Economic & occupational status

- Will surgery affect work status or impact ability to return to same job.
- Insurance coverage
 - authorizations, pre-certifications
- Ability to pay
- Required second opinion



Radiation Therapy

- Side effects that may affect surgery/healing
 - thins skin layers
 - breaks down collagen for less healing potential
 - scars tissue - fibrotic & changes vascularity
- Ideally, wait 4-6 weeks after radiation to do surgery.

Planning & Interventions

- Provide information & instruction for optimal physiological needs.
- Degree of pre-op physical preparation depends on patient status, type of surgery, & physician preference.
- Planning= expected outcome

Overall goal of pre-op period:

To ensure patient is mentally & physically prepared for surgery.

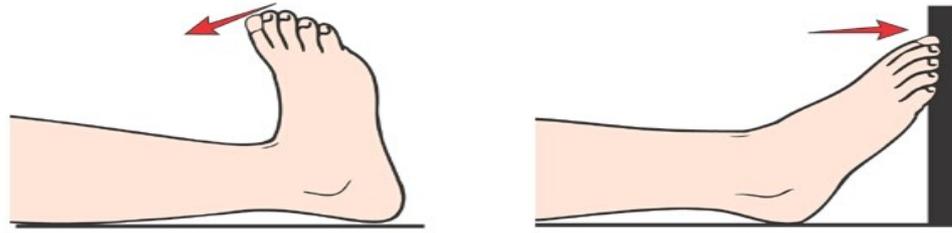
Pre-op Exercises Teaching

- Deep breathing
- Coughing
- Splinting
- Extremity exercise
- TEDS and/or EPCs
- Turning
- OOB
- Incentive Spirometry or special equipment

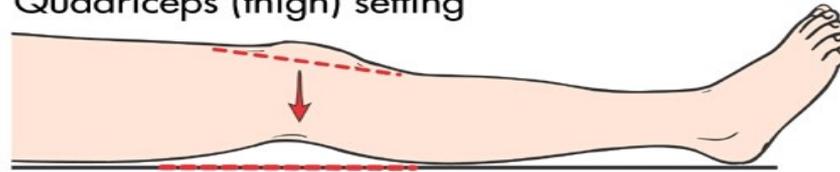




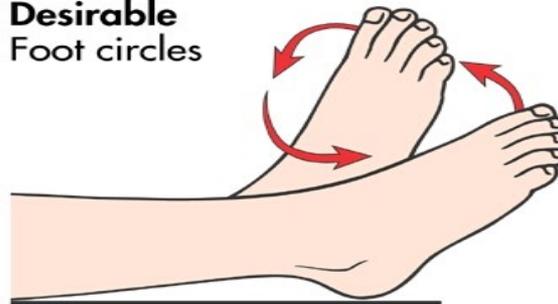
Essential
Gastrocnemius (calf) pumping



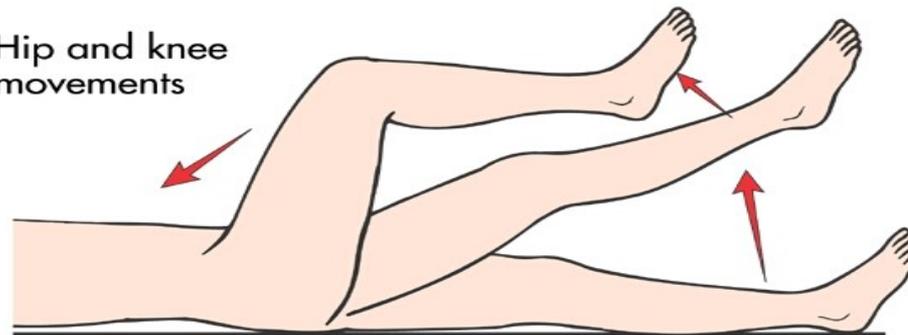
Quadriceps (thigh) setting



Desirable
Foot circles



Hip and knee movements



- Antiemboli Stockings
 - Firm elastic stockings
 - Compresses veins in legs to facilitate venous blood return
 - Prevents edema and thrombi from forming



- Sequential Compression Devices / SCD's
- EPC's
 - Inflate and deflate
 - Promote venous flow
 - Prevent thrombi



Goal of Pre-op Exercises

-

-

Expected Outcomes

- Knowledge: disease process
- Knowledge: prescribed activities
- Knowledge: Health resources
- Fear control
- Anxiety control
- Comfort level
- Coping
- Decrease risk of complications

Physical Preparation Evening Prior

- Bowel Elimination
 - Collapse or “decompress” bowel so will not obstruct access to organs or be nicked during surgery
 - prevents incontinence and contamination of surgical area when sphincter relaxed under anesthesia

- Prevents post-op constipation related to decreased peristalsis
- Prevents uncomfortable straining first few days post-op
 - dangerous for rectal, prostate & eye surgery
- After surgery, peristalsis doesn't return for 24 – 48 hours



- Bowel Prep

- Laxative and stool softeners day prior
- Enema or suppository evening prior
- If ordered, cleansing enema until clear

- Administer well before bedtime so patient can rest

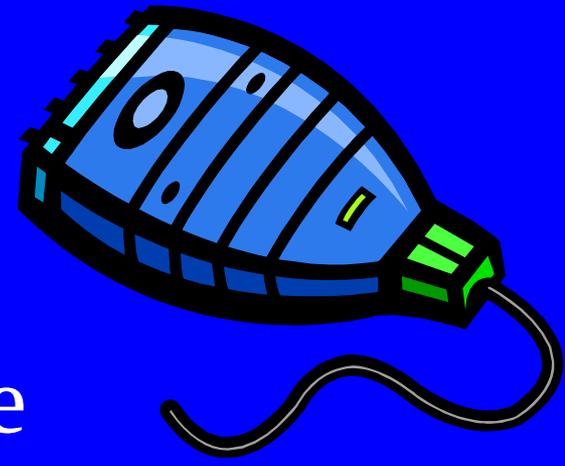


- Remember: with outpatient surgeries, all preps are done by the PATIENT at home so require good teaching.
 - Many people don't know how to give themselves an enema
 - **Don't assume your patient knows!....**
 - Always assess their knowledge level

Skin preparation

- **Want to decrease the number of microorganisms at surgical site**
- Maintain skin integrity
- Shower or surgical bath with regular or antiseptic soap evening before or in morning of surgery
- Surgical bath should include shampoo if possible
- Nails should be trimmed and free of polish





- Removing hair at surgical site
- Always done in the OR just prior to surgery
- Special electrical razor, clippers, or depilatory

Sleep & Rest

- Adequate rest helps patient manage stress and helps the healing process



NPO after MN

- Nothing by mouth after midnight
- Evidence Based Practice
 - New research shows not necessary
 - Guidelines changing
 - Clear liquids up to 2 hours prior
- Must follow what the physician orders!

NPO after MN

Food & fluid

- NPO
 - ensure upper GI tract empty
 - reduces possibility of vomiting & aspiration during anesthesia
 - encourage patient to eat nourishing meal evening before & maintain good fluid intake

NPO after MN

- Home/ Routine medications
 - Usually held prior to surgery
 - Some may be held for days prior
 - Some ok to give the morning of
- When in doubt, clarify with surgeon

Physical Preparation Day of Surgery

- **OR checklist** identifies what is required prior to patient going to OR.



CANNOT enter OR without

- ID band on
- H & P in chart
- OR Checklist completed

Vital signs



- Taken preoperatively as part of final preop assessment for baseline data
- Report any abnormal findings to surgeon

Hygiene & Attire



- Surgical bath
- Mouth care
- Remove all makeup & nail polish
- Remove all hairpins, clips, wigs, etc.
- Remove all prosthetic devices
- Remove all clothing -undergarments/socks
- Clean hospital gown on
- Surgical cap placed on head when ready to go

Care of Valuables

- Remove ALL jewelry (ask about places not readily visible!)
 - Can not have ANY metal on
 - Potential for electrical shock or burns from equipment



Special Orders

- Complete any special orders
 - Insertion of urinary catheter
 - NG tube
 - IV
 - Other
- Document all pre-op preparations on OR checklist and in EMR

Pre-operative Medications

Purposes of Pre-op Medication

- Relieves apprehension & anxiety
- Promotes sedation & amnesia
- Provides analgesia
- Facilitates induction of anesthesia
- Prevents nausea & vomiting
- Prevents autonomic reflex response
- Decreases anesthetic requirements
- Decreases respiratory & GI secretions
- Prevents post-op infections



Once pre-op meds are given:

- patient must remain in bed
- side rails up
- attach call bell
- document explained to patient need to remain in bed
- What will you do if the patient has to go to the bathroom?

Transportation to OR

- When OR is ready, staff will call and then come get patient
- Patient will be transferred to OR either in own bed or on stretcher.
- Cover patient's head with OR cap
- Allow time to say good-bye to family
- Fasten all safety straps, side rails up
- Chart goes with patient to OR



- Family may accompany to OR holding room or go to waiting area
- OR personnel will communicate with them during surgery.
- Provide emotional support & reassurance



Family Instructions

- Instruct family what to expect when their loved one comes out of surgery
 - Not awake
 - May say incoherent things
 - Pale
 - Special equipment
 - Frequent vital signs

