Body Mechanics
Review Last Lecture

- DOCUMENTING / ASSESSING WOUNDS:
  - Location & Shape
  - Size
  - Tissue type
  - Exudate (drainage)
  - Presence or absence of tunneling
  - Treatment
  - Stage
  - Pain or sensation
Why Learn about Proper Body Mechanics?

- Ensures clinician and patient safety
- Places less stress and strain on the body, preventing injury
- To conserve energy
Body Mechanics

- **Definition**: the use of one’s body to produce motion that is:
  - safe,
  - energy conserving,
  - and efficient,
  all of which allows the person to maintain balance and control
Terminology

- **Gravity:**
  - The force that pulls toward the center of the earth and affects all objects

- **Friction:**
  - The act of rubbing one object against another.
Terminology

- **Center of gravity (COG):**
  - The point at which the mass of a body or object is centered; when weight on all sides is equal.

- Centre of gravity

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*Brukner and Kahn, 2005*
Terminology

- **Base of Support (BOS):**
  - Area on which an object rests and that provides support for the object

- **Line of Gravity:**
  - The vertical line between the center of gravity and the ground
  - Must fall within the BOS if the “body” is to stay upright
  - May be shifted
Line of Gravity
Proper Body Mechanics

- **Gravity & Friction** are forces that add resistance to many activities
  - lifting, reaching, pushing, pulling, and carrying an object.

- Select and use techniques that:
  - reduce the adverse effects of gravity or friction
  - and/or enhance the positive effects of these 2 forces.
Principles of Body Mechanics

- Remain **close** to the object
- Use **short lever arms** for better control & efficiency (with less strain)
- Maintain your COG **close** to the object’s (or patient’s) COG
Principles Continued

- Widen your BOS and position your feet according to the direction of movement you will use to perform the activity.
- Use the largest & strongest muscles of your arms, legs and trunk.
- Avoid twisting your body when you lift.
- When possible, push, pull, roll, or slide an object rather than lifting it.
Principles in Summary

- Position yourself close to an object or position the object close to you.
- Increase your BOS, and approximate the COG of your body close to the object’s COG before attempting to lift, pull, reach or carry an object.
Preparation

- Prepare yourself mentally & physically
- What is the best method to move the object?
- All obstacles should be removed so there is a clear path from point A to B
- Determine the distance
- Determine the need for assistance
- Determine the final location of the object (or patient)
- Gravity and momentum should be used whenever possible
Improving efficiency & safety

- The patient and anyone assisting you must be given instructions regarding their responsibilities prior to the move (what, how and when to...)
- Give your full attention to the activity
- Anticipate the unusual or unexpected
- Be prepared to increase your assistance to maximal effort at any time
- Use of equipment can make transfers easier & safer
- Consider your ability & limitations
Basic Principles

- Instruction
  - BE SAFE
  - Be clear
  - Be consistent
  - Be positive!

- And remember, you are working with another human being!
Lifting

- Traditional Lift Model
- Golfer’s Lift (one-leg stance lift)
Proper Technique Traditional Lift

- Get close to the object (approximate COGs)
- Widen your BOS
- Contract Transverse Abdominis & PFM
- Keep your back straight and squat with the legs
- Use arms to lift object to waist level
- Rise to an upright position using the legs
Lowering the Object

- Do not twist your back
- Use your feet to turn and square away
- Get close to the landing surface (COG)
- Widen your BOS
- Lower the object by bending your knees
Golfer’s Lift

- This can be used for light objects that can easily be lifted with one UE
- Face the object to be lifted with one foot slightly forward of the other
- Shift weight onto forward leg and flex the hip and knee, lowering the body
- The NWB LE is extended to keep the spine from flexing
- Pick the object up and return to an upright position
Review of Body Mechanics

- Why learn body mechanics?
- Principles of Body Mechanics…
- How to prepare…
- Traditional Lift Model
- Golfer’s Lift
Next:

- Bed Mobility and Patient Transfers
Questions??