SCOREBUILDERS

SPOTLIGHT *Series*

Patient Care Skills

Presented by Michele K Fox, PT, DPT, MS, CSCS

My Background

- Experience
- Education
- Areas of Specialty
- Academia
- Scorebuilders

Topics Covered

- Bed Mobility
- Transfers
- Gait Training
  - Assistive devices
  - Fitting Devices
  - Gait patterns
- Wheelchair Mobility
  - Basic W/C measurements

EQUIPMENT, DEVICES, & TECHNOLOGIES
PT 5-6 questions PTA 7-9 questions

This category refers to the different types of equipment, devices, & technologies, use requirements, and/or contextual determinants, as well as any other influencing factors involved in the selection and application of equipment, devices, & technologies, including consideration of current best evidence, in order to support appropriate and effective patient/client management for rehabilitation, health promotion, and performance across the lifespan. PT

This category refers to the different types of equipment, devices, & technologies, use requirements, and/or contextual determinants, according to current best evidence, as well as any other influencing factors involved in the application of equipment, devices, & technologies, in order to support appropriate and effective patient/client management for rehabilitation, health promotion, and performance across the lifespan PTA

- Applications and adjustments, indications, contraindications, and precautions of assistive and adaptive devices/technologies (e.g., walkers, wheelchairs, adaptive seating systems and positioning devices, mechanical lifts)

Content Outline 2018

Safety and Preparation are Paramount

.

- Remember that **safety is the overriding focus of the board exam as well as outcomes**
- **Preparation:**
  - Determine mental status and physical capabilities
  - Gait Belt
  - Proper clothing and footwear
  - Eyeglasses and hearing aids
  - Body Mechanics
  - Type of Assistance
- **Prepare the environment**
- **Have all equipment ready**
- **Give Clear Instructions** -slow, concise, allow time to process

Levels of Physical Assistance

Dependent

Maximal- Pt performs 25%

Moderate-Pt performs 50%

Minimal- Pt performs 75%

Contact guarding- maintain contact and very likely the pt will require protection

Standby (supervision)-Verbal, tactile, directions, safety assistance

Independent

BED MOBILITY

Moving from one bed position to another

- Scooting Up and Down/ side to side
- Rolling
- Supine to sit
- Minimize shearing forces on skin
- Clear lines/tubes
- Move equipment to the same side to which you are moving the patient
- Hooklying/ Bridging/ Use Arms
- Use momentum, head movements
- Bed rails/ Trapeze
- THA

TRANSFERS

Safe movement of a person from one surface or location to another or from one position to another

Dependent Transfers

Patient contributes less than 25% of effort required for safe transfer.

- ✓ Mechanical Devices
- ✓ 2-3 person lifts
- ✓ No lift Policies

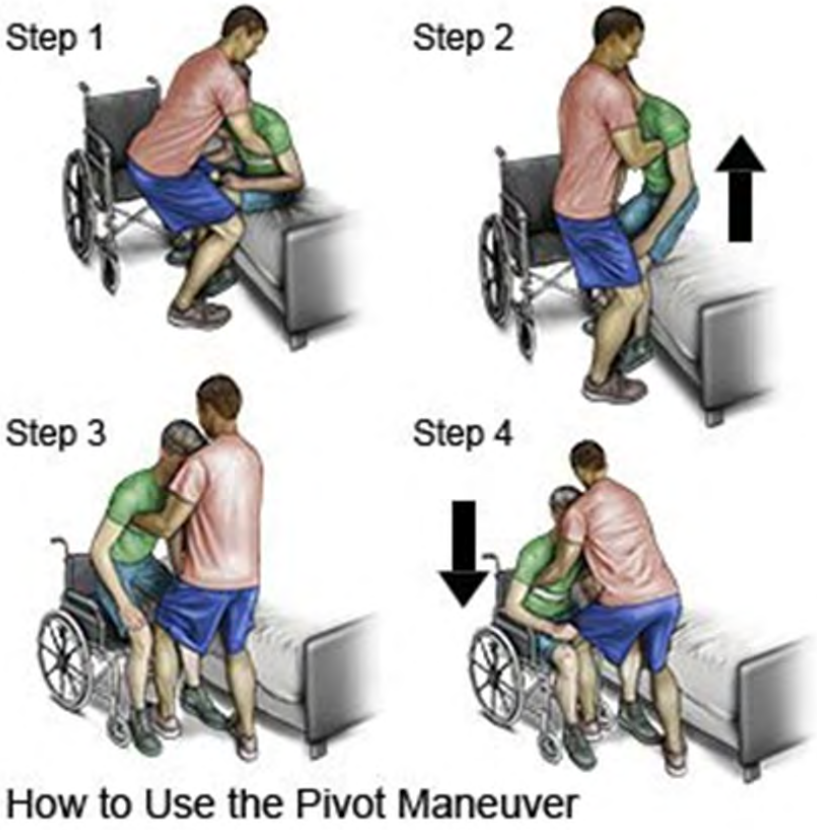
Assisted Transfers

- **Squat pivot**
- **Stand pivot**
- **Slide board (transfer board)**
- **Stand step**

<u>Keys:</u>

- ✓ Scoot Forward
- ✓ Foot position
- ✓ Toward strong side when possible to start
- ✓ Block LE (s)

THA



Complete the transfer

- ❑ Replace WC parts (arm rests/leg rests)
- ❑ Place feet on footplates
- ❑ Position
- ❑ Drape
- ❑ Give the patient what they need including a way to call for help

GAIT TRAINING

Preparatory Activities

Musculoskeletal concerns

- **Strength, flexibility, ROM, endurance**

Neuromuscular Concerns

- **Balance, coordination**

Weight Bearing Considerations

- **NWB:** Strength concerns
- Trunk
- Upper Extremities
  - Scapula stabilizers, *shoulder depressors*, shoulder extensors, *elbow extensors*, finger flexors
- Weight Bearing Lower Extremity
  - Hip extensors, knee flexors and extensors, ankle dorsiflexors

Precautions for Ambulation

Footwear

Monitor physiologic response

Avoid use of clothing for assistance / guidance

Anticipate the unexpected

GUARD!!!

- Stand to the side (usually weaker side) and slightly behind. Hand on gait belt and pt shoulder.

Never leave the patient unattended

Prepare the environment

Purpose of Assistive Devices

Improve stability by ↑'ing BOS

Reduce WB'ing status to one / both extremities

Permit mobility

Allow compensation for ↓'d balance / coordination / WB'ing ability

Decrease pain during ambulation

Choosing an Assistive Device

Most Stable

- Parallel bars ↓
- Walkers ↓
- Crutches ↓
- Single crutch ↓
- Bilateral canes ↓
- Single cane

Least Stable

Least coordination required

- Parallel bars ↓
- Walkers ↓
- Single cane ↓
- Bilateral canes ↓
- Axillary crutches ↓
- Loftstrand crutches

Most coordination required

Parallel Bars

Advantages

- Maximal stability and support
  - Pre- Gait training: wt shifting, removal of hand, gait pattern practice, varying directions.

Disadvantages

- Limited mobility
- need to change assistive devices to be mobile

Fitting:

- Elbow flex = **20-25º of flexion;** ulnar styloid process
- Hand grasp = **6 inches** anterior to the hips
- Width = **2 inches** wider than greater trochanters

Walkers

Advantages
- Provide maximal stability and support with ability to be mobile

Disadvantages
- Transport difficulty
- stair usage
- decreased speed of ambulation
- abnormal gait patterns except RW
- Environment

Fitting:
- Handgrip: level with the ulnar styloid process

Axillary Crutches

Advantages

- Gait pattern selection
- increased ambulation speed
- good stability & support
- easy to store / transport

Disadvantages

- Less stable than a walker
- axillary damage
- requires good balance/ strength
- insecure feeling

Fitting:

<u>Length</u>

- 2” lateral and 4-6” anterior to pt.’s toes
- Axilla “height” – 2-3 finger breadths b/t axilla pad and axilla

<u>Hand piece height</u>

- 20-25^{o} of elbow flexion while grasping hand piece; ulnar styloid process

Forearm / Lofstrand Crutches

Advantages

- No damage to axilla
- functional on stairs and confined spaces
- easy storage / transport
- easy to “hold” while reaching

Disadvantages

- Less stable / supportive
- require good balance / UE strength
- difficult to remove cuff
- insecurity

Fitting:

- Length = same way as axillary crutch
- Forearm cuff = 1-1½” distal to the olecranon process when the handgrip is grasped
- Handgrip = ulnar styloid process

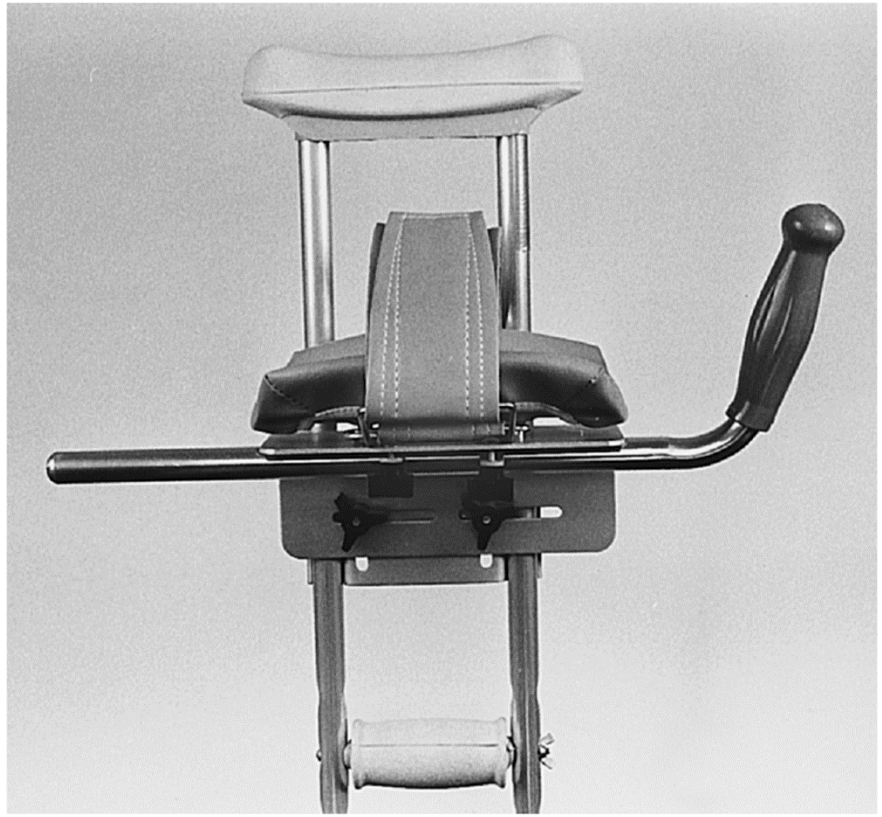
Platform Attachments

Advantages

- Used when unable to WB thru UE
- Unable to grasp- UE deformities, below elbow amputations
- lack of elbow extension

Disadvantages

- No use of triceps to elevate body during swing
- need assistance to apply
- less effective on stairs



Canes

Advantages

- Functional on stairs and confined spaces
- easy storage / transport

Disadvantages

- Very limited stability
- unable to perform three-point gait patterns

Fitting

- Handgrip = at the level of the ulnar styloid process
- Quad cane:
  - Position of the cane: Longer legs away

Weight Bearing Status WBS

- NWB Non- weight bearing
- TTWB/ TDWB Toe touch/ touch down weight bearing
- PWB Partial weight bearing
- WBAT Weight bearing as tolerated
- FWB Full weight bearing

Gait Patterns

Three Point

- Utilized when patient is **NWB, PWB, WBAT or TDWB on involved limb**
- Can be performed with either a walker or bilateral axillary crutches
- Pattern:
  - If NWB: Device(s) / WB'ing LE
  - **Device(s)/ involved LE / Non-involved LE**
  - step to **OR** step thru

Two Point

- Indicated when utilizing **1-2** assistive devices (crutches/canes)
- Uses **simultaneous** and reciprocal placement of the assistive device and the opposite lower extremity
- Pattern: **Device & opposite LE/Device & opposite LE**

  One Device**: Device & involved LE/ other LE**

The Age old Controversy ☺

Where do I put the cane, crutch, etc. ?

Four Point

- Indicated when utilizing **1-2** assistive devices
- Uses alternate and reciprocal movement of device and lower extremities
- Pattern:
  - **Device/Opposite LE/Device/ opposite LE**
  - One device**: device/ opposite LE/ LE**

“Swing to” & “Swing thru”

- Use with two crutches
- LE weakness/ paresis/ paralysis
- Pattern: **Devices/ Simultaneous advancement of BLE**
  - Swing to
  - Swing thru

STAIR CLIMBING

UPSTAIRS

- Non-involved LE/ device/ involved LE
- Guard from behind with hand on post shld

DOWNSTAIRS

- Device/ involved LE/ non-involved LE
- Guard from the front with hand on ant shld

Documentation

- Amount and type of assistance (min, verbal cueing, dependent, A x 2)
- Type of Transfer
- Equipment and/or device
- Gait pattern/ Device/ amount of guarding
- Distance
- Consistency, safety awareness

Wheelchair Sizing

Selection of size and type depends on

- Results of patient evaluation
- Needs of the caregivers
- Environment in which the chair will be used
- Financial/ insurance

B: SEAT DEPTH

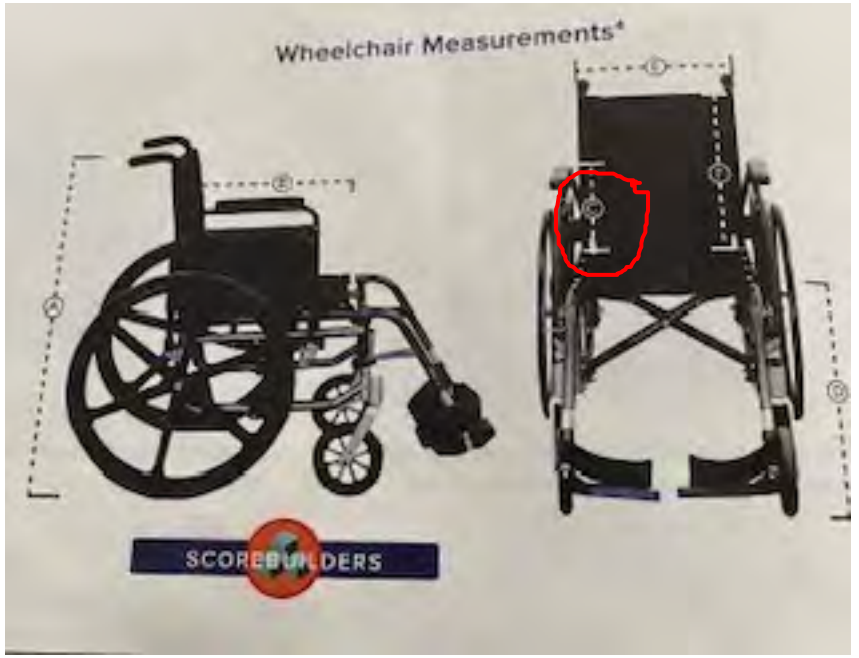
- Distance from the flat back surface (Posterior buttock) to the popliteal fold- measured along solid seat surface.
- **SUBTRACT 2-3”**
- Too long:

  sacral sitting (slouching)- excessive pressure on sacrum → less effective propulsion and increased skin breakdown

C. Armrest Height

Determine armrest height

- Arm placed against chest wall with the elbow flexed to 90 degrees
- Measure vertical distance between the solid seat and the patient's olecranon **ADD 1"**
- Seat cushion→ **add** this height of the cushion to your measurement



D. Seat height from floor

Determine seat height from floor

- Measured from the popliteal fossa to the heel and

  ADD 2” to allow clearance of footrest.

E. SEAT and BACK WIDTH

Determine seat width

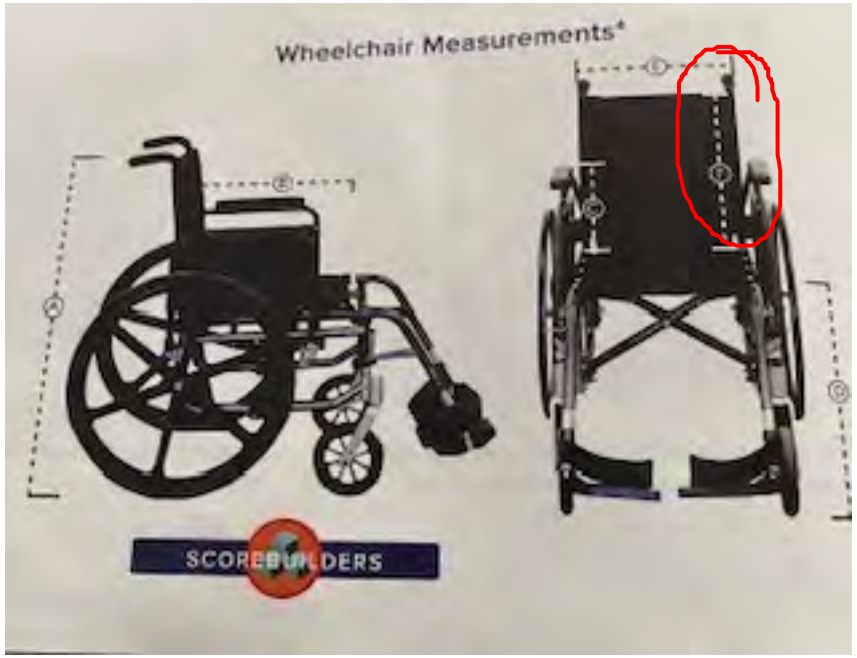
- Measure widest aspect of the patients buttocks, hips or thighs and **ADD 2”**

- Important because it properly locates the drive wheels and arm rests for easy and efficient use by the patient
- Provides space for bulky clothing, orthoses or clearance of the greater trochanters from the arm rest side panel

F. Back Height

Determine back height

- Measure from base of solid seat to inferior angle of scapula or/
- From base of solid seat to the axilla and **SUBTRACT 4”**
- If using a seat cushion→ height of cushion must be **added** to measurement



A FEW QUESTIONS

A therapist attempts to select an assistive device for a 50 yo that is partial weightbearing on the left lower extremity. Which of the following assistive device (s) permits partial weightbearing and requires the patient exhibit significant coordination?

A. Axillary crutches

B. Bilateral canes

C. Single Cane

D. Walker

A therapist attempts to select an assistive device for a 50 yo that is partial weightbearing on the left lower extremity. Which of the following assistive device (s) permits partial weightbearing and requires the patient exhibit significant coordination?

A**. Axillary crutches**

B. Bilateral canes

C. Single Cane

D. Walker

A patient on prolonged bed rest attempts to get out of bed. When the patient attains a standing position the patient complains of lightheadedness and blurred vision. What is the MOST appropriate explanation?

A. Decrease in respiratory rate

B. Decrease in Blood pressure

C. Increase in Pulse rate

D. Adverse reaction to medication

A patient on prolonged bed rest attempts to get out of bed. Upon attaining a standing position the patient complains of lightheadedness and blurred vision. What is the MOST appropriate explanation?

A. Decrease in respiratory rate

B**. Decrease in Blood pressure**

C. Increase in Pulse rate

D. Adverse reaction to medication

A patient sustained a trimalleolar ankle fracture on the left and a Colle's fracture on the right. The patient is PWB. What is the BEST assistive device to use?

A. Axillary crutches

B. Forearm crutches

C. Platform Crutches

D. Lofstrand Crutches

A patient sustained a trimalleolar ankle fracture on the left and a colle's fracture on the right. The patient is PWB. What is the BEST assistive device to use?

A. Axillary crutches

B. Forearm crutches

C. **Platform Crutches**

D. Lofstrand Crutches

SPOTLIGHT *Series*

Thanks for Tuning In!

Visit our website www.scorebuilders.com for more information on all of our products.

SCOREBUILDERS