Therapeutic Use of Assistive Technology
...a clinical perspective

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What is Assistive Technology?

- Mechanical and non-mechanical devices which decrease the physical stresses of patient handling and movement for caregivers

  - Safe Patient Handling and Movement (SPHM)
  - Minimal lift programs
What is the challenge?

- Lack of awareness
  - Risk
  - Devices available
  - Positive rehab outcomes
- Perceptions of passive patients
Injury Statistics – Registered Nurses

- #8 for Work-related Musculoskeletal Disorders (WMDS)*

*Number of work-related musculoskeletal disorders involving days away from work and median days away from work by selected occupations, 2005

http://www.bls.gov/news.release/osh2.nr0.htm
Injury Statistics – Nursing Assistants, Orderlies, Attendants

- #2 Work-related Musculoskeletal Disorders (WMDS)*

*Number of work-related musculoskeletal disorders involving days away from work and median days away from work by selected occupations, 2005

http://www.bls.gov/news.release/osh2.nr0.htm
Injury Statistics – Physical Therapists

- 91% lifetime prevalence of MSDs
- 1 in 6 therapists moving out of profession as direct result of work-related MSDs

Rehabilitation Myths:

- Traditional tools are ineffective protection from musculoskeletal injuries during patient handling tasks.
- Body mechanics
- Gait Belt
- Team lifts
First Do No Harm…to anyone

- Patients
- Residents
- Caregivers
  - Nurses
  - Assistants
  - Therapists
  - Other direct-care staff
Safe Patient Handling and Movement (SPHM) equipment CAN be used in rehabilitation programs!
Requirements

- Safety-for-all attitude
- Knowledge of SPHM techniques/tools
  - Education
  - Creative problem-solving
- Appropriate devices/equipment for all tasks
Safe Patient Handling means….

- Safe for Patient
- Safe for Caregivers
- Consistent with Rehabilitation
Assistive Devices in Rehab

- **Dependent**
  - Passive
  - Dependent Lift
  - Gait-Assist Lift
  - Sit to Stand Lift

- **Cueing & Training**
  - Walker

- **Independent**
  - Active
  - Crutches
  - Cane
  - No Device; No assist
“To be safe, a technique must be repeatable and teachable...

A technique that relies on the lifter being at peak performance...

And the patient being of a particular build.... IS NOT SAFE.”

Handling of People, 5th Edition, Royal College of Nurses and Backcare, 2005
Dependent Patient Solutions: Passive Lifts

Non-weight bearing patients

- Nursing staff
  - Initiate mobility
  - Complement therapies
Dependent Patient Solutions: Passive Lifts

- Non-weight bearing patients
  - Therapy other than bed exercises
  - Wheelchair mobility
  - Sitting tolerance
  - Other health benefits of mobility
Dependent Patient Solutions: Passive Lifts

- Dependent bariatric patients
  - Out of bed almost as easily as others
Solutions for patients with difficulty standing and transferring:

Sit-to-Stand Lifts

- Nursing:
  - Initiate mobility
  - Complement therapy treatment plans
Solutions for patients with difficulty standing and transferring:

Sit-to-Stand Lift

- Patients:
  - Practice sit to stand
  - Increase standing tolerance

With activity unlimited by staff fatigue
Solutions for patients with difficulty walking

Gait Assist Devices

- Ceiling based systems
- Portable wheeled devices
Solutions for patients with difficulty walking

Gait Assist Devices

- Practice gait and balance activities
- Lift-assist aid for difficult sit to stand maneuver
- Support while walking
- Prevent falls
Walker
Crutches
Cane
Assistive Devices in Rehab

**Dependent**
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Choosing the right device

A guide to assist in decision making
Is the patient able to demonstrate the **prerequisite** components of a safe sit to stand transfer?

- Strong hip extension - demonstrated by bridging?
- Strong knee extension - demonstrated by straight leg raise?
- Good trunk stability - demonstrated by sitting unsupported at the edge of the bed?

**NO**: Consider a dependent lift until patient can safely perform these prerequisite activities.

**YES**: Continue to the next set of tests
Is the patient able to demonstrate the advanced components of a safe sit to stand transfer?

Can the patient perform all of the previous activities AND rise to standing from the edge of the bed or chair with minimal assistance or less?

**NO**: Consider a sit to stand device until the patient can complete this portion of the test.

**YES**: continue to the next test
Is the patient able to demonstrate the essential components of **safe gait**?

Ability to shift weight and lift one foot off the ground in a mini march step with good balance and less than minimal physical assist? Repeat contralateral side.

**NO**: Consider a walking assist device such as a lift walker or walking vest until the patient has these essential components of gait mastered.

**YES**: No patient handling equipment needed.
FAQs

If I’m using patient handling equipment, it isn’t really rehabilitation, is it?

ANSWER: YES! Your asset in guiding your patient on his recovery is your KNOWLEDGE – not your back! The equipment is simply a tool you use to safely apply your knowledge.
FAQs

Aren’t there times when use of patient handling equipment is inappropriate?

**ANSWER:** Of course! An assessment tool can never substitute for sound clinical judgment. Benefits must ALWAYS outweigh risks. Be aware that the risk of injury associated with patient handling is substantial.
FAQs

But the patient won’t have the equipment home, so why should they use it here?

**ANSWER:** They won’t have the rehabilitation staff at home either. Equipment is only one tool to safely allow the progression from passive to active.
Case Scenarios
Neurological Rehabilitation: 50 year male with dense right hemiplegia due to stroke.
General Medical Rehabilitation: 60 year old female with profound weakness due to extended illness.
Orthopedic Rehabilitation: 80 year old male nursing home resident with dementia and hip fracture stabilized with open reduction internal fixation.
First Do No Harm…to anyone
Second…Use a rehabilitation philosophy from beginning to end
So what do you think?