

Work Positioning

For Landscape, Care Providers and Janitorial Workers

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Goals

- Body Positions that can cause Musculoskeletal Disorders (MSDs)
- Typical Types of Injuries and symptoms
- How to Prevent MSDs in work settings through proper positioning

Definitions

Manual Material Handling is the event of a worker's hands moving an object (grasping, lifting, lowering, pushing, pulling, carrying, turning, filling, etc.).

Effective work design can help prevent workers from MSDs caused from manual material handling.



Benefits of Ergonomics

- Prevent or reduce injuries
- Reduce the workers' efforts
- Increase productivity
- Improve morale
- Improve product quality
- Save Money



Injuries

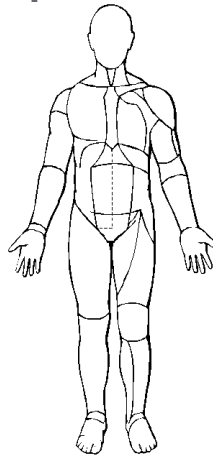
Typical Musculoskeletal Disorders (MSDs)

- back strains
- damaged discs
- bursitis
- tendonitis
- tenosynovitis
- tennis elbow



Signs and Symptoms of MSDs

- ◆ Decreased range of motion
- ◆ Decreased grip strength
- ◆ Loss of function
- ◆ Deformity
- ◆ Swelling
- ◆ Cramping
- ◆ Redness/loss of color



Risk Factors

- Frequency ✓
- Force ✓
- Duration ✓
- Poor Posture ✓
- Personal Propensity ✓
- Other Factors (cold, stress) ✓

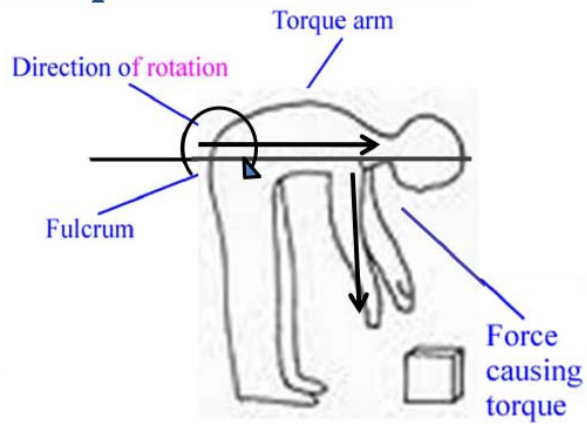


Poor Body Postures

- Low bending
- Reaching
- Twisting
- Squeezing/pinching
- Radial/Ulnar Hand Deviations



Torque



Hierarchy of Controls

Stover H.Snook - 1978

Controls

- Eliminate the Task
- Engineering Controls
- Administrative Controls
- Exercise
- Training

Effectiveness

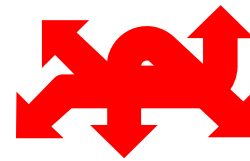
Most

Least



Eliminate the Task

- Work flow design
- Production stoppages and delays
- Automation
- Sub-Contracting



Engineering Controls

- Mechanical Handling Devices
- Work Flow Redesign
- Work Space Redesign
- Automation
- Conveyors
- Equipment Replacement or Enhancements



Administrative Controls

- Matching Jobs with Skills
- Rotation
- Breaks
- Expansion or Reduction in # of people doing the tasks



Training

- Job specific
- Observe to ensure they follow the procedure
- Review procedures periodically (after an accident, changes in operation)



Stretching and Exercise



Risk Factors Janitorial

- Awkward body postures and excessive repetition can occur when wiping baths and toilets, dusting and picking up trash.
- Heavy loads can be moved during emptying of trash or pushing overloaded carts.
- These types of activities occurring for extended durations or magnitude, contribute to MSDs.

Examples



Organization can help reduce the # of times that objects are handled

Example



Using a microfiber mop requires less force when wringing

Example



Alternate difficult tasks and light tasks

Example



Adjustable telescopic poles helps reduce low bending and reaching

Example



A rim caddy provides even distribution of the load

Example



Rotate workers that perform difficult tasks
Ensure the worker fits the capabilities of the task

Example



Inspect wheels and casters regularly to reduce pushing forces

Example



Do not overload your mechanical handling device

Example



Train workers on vacuuming, sweeping and mopping patterns to reduce reaching.

Example



At Risk



Line the trash in an upright position

Risk Factors Care Givers

- Awkward body postures during participant transfers or positioning
- Participant falls may result in holding heavy loads or awkward body postures.
- Sudden or jerky movements of the participants can result in loss of balance and awkward body postures.
- These types of activities occurring for extended durations or magnitude, contribute to MSDs.

Examples



Using lifts requires training and ensuring the lifts are available

Examples



Mechanical devices can reduce frequency, force, duration and poor body postures.

Example



At Risk

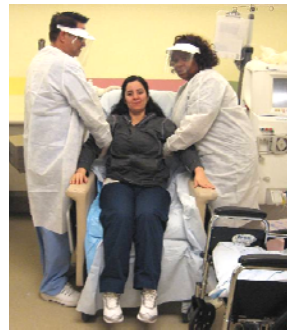


Keep the person close

Example



At Risk



Get help to improve body posture

Example



- Position the wheelchair at an angle (90° to 110°) and close to the destination
- Use 3 people if a task needs to be done during the transfer

Example

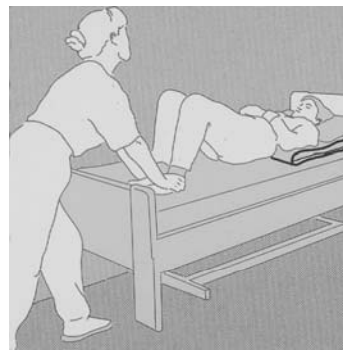


Repositioning can be difficult if done incorrectly

Examples



For light and semi-mobile persons, use slip sheets, handles



Let them help you if possible

Example

Widen the Lifter Base	Hook Chain Out
 A photograph showing a person's legs and feet as they stand on the wide, white, angled base of a red manual lift. The lift is on a light-colored floor. In the background, a wheelchair and other people are partially visible.	 A close-up photograph of a metal hook chain being attached to a blue fabric sling. The chain is connected to a black plastic component of the lift mechanism.

Train, Observe and Follow up on Specific Safe Operating Procedures for Using Lifts.

Example

Adjust Sling Underneath Person	Center Person Over the Base
 A photograph showing a person in a red shirt adjusting a blue sling underneath a person lying on a bed. The person being adjusted is wearing dark pants and a patterned shirt.	 A photograph showing a person lying on a blue sling on a lift base. The person is wearing dark pants and a patterned shirt. A metal chain is visible at the bottom of the sling.

Illustrate how to position the sling or sheet by rolling the participant, rather than lifting them.

Example



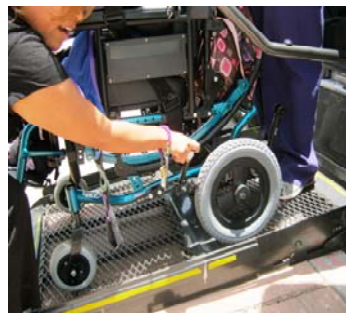
Use the tilt of the wheelchair to reduce lifting against gravity when positioning, if possible.

Example

Back onto the lift

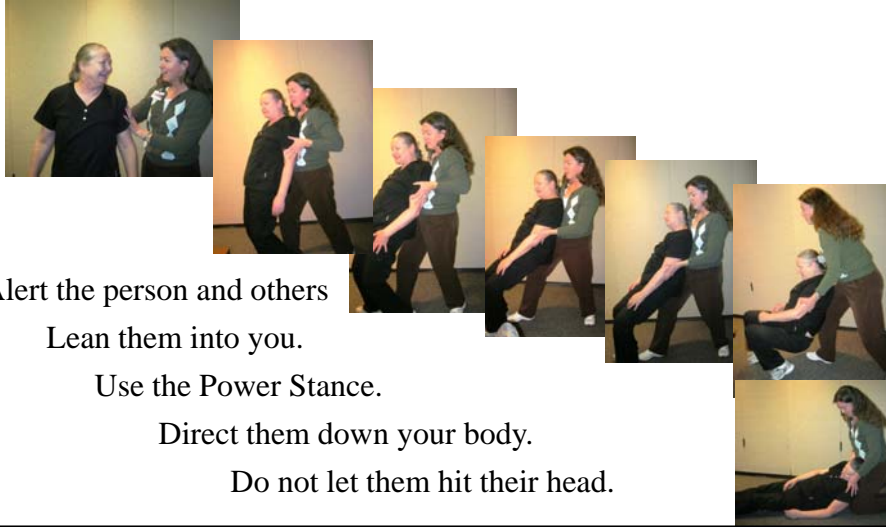


Set the brake



Use 2 persons when transferring into a vehicle. The operator of the lift should set the brake to reduce low bending .

Example



Risk Factors Landscapers

- Cold temperatures can affect a worker's coordination and manual dexterity;
- Excessive repetition of movements such as is the case with hand pruning tools; heavy lifting of limbs and branches, rolls of sod, etc.;
- Vibration from tools such as blowers
- These types of activities occurring for extended durations or magnitude, contribute to MSDs.

Examples



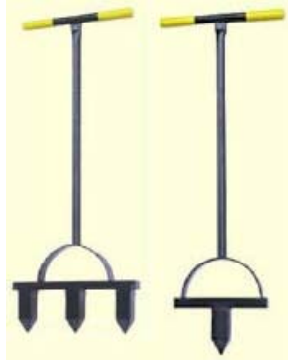
Everything has a place and Everything in it's place.

Example



- Use knee pads (*reduce contact stress*)
- Change positions frequently between kneeling, squatting and bending forward

Example



Use hole digger to make holes for plants

Example



Attach a handle to the shaft of the tool to improve leverage, posture and reduce fatigue

Example



Attach a handle to the shaft of the tool to improve leverage, posture and reduce fatigue

Example



- Reduce the size of load in the wheelbarrow
- Use a 4-wheeled wheelbarrow to transport material

Examples



A pot lifter can reduce low bending and repetitive lifting

Pictures from Cal-OSHA

Examples



Increasing the size of the handle reduces grip tension. A padded handle reduces contact stress.

Pictures from Cal-OSHA

Examples



Use angled handles to keep wrists in a neutral position.
Use the right handle size for the job

•If the load is on the floor, place your feet on either side of the load. One foot should be behind you so your knee can go to the floor.

Examples



If the load is on the floor, place your feet on either side of the load.
One foot should be behind you so your knee can go to the floor.

Examples



Take a break by varying
your tasks and/or stretching

Getting Started

- Review Written Records- (*OSHA 300 log, Complaints, Worker Reports, etc.*)
- Observe Tasks – (*risk factors, bottlenecks, employees exhibiting fatigue or discomfort, workers modifying tools, increased error rates, etc.*)
- Use assessment tools
- Prioritize Tasks
- Make Improvements
- Evaluate Results



Ergonomic Workshop

- Break up into teams
- Discuss picture of task
- Use the Ergonomic Assessment Tool to identify ergonomic risk factors.
- Develop Solutions to eliminate or improve risk factors.
- Discuss results with class

Task Workshop



What are the risk factors? Name some controls.

Task Workshop



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