

Practical Ergonomic Prevention Strategies

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What is Ergonomics?

Ergo = work nomics = “rules” or “laws”

“The Science of studying people at work, and then designing the working environment to ensure that they can be safe, healthy, effective and comfortable”

GOAL

Fit the Job to the
Worker

NOT TO

Fit the Worker to the
Job



What is Ergonomics?

Ideally, ergonomics

- Makes the job safer by preventing injury and illness
- Makes the job easier by adjusting the job to the worker
- Makes the job more pleasant by reducing physical and mental stress
- Saves money \$\$\$

Ergonomic Hazards

Ergonomic Hazards are workplace conditions that pose the risk of injury to the musculoskeletal system of the worker.

What characteristics of your job put you at risk for MSDs?

Prolonged, repeated or extreme exposure to multiple WMSD risk factors can cause damage to a worker's body. Risk Factors include:

 **Repetition**

 **Awkward Postures**

 **Static Postures**

 **Cold Temperatures**

 **Excessive Force**

 **Vibration**

 **Compression**

 **Inadequate Recovery**

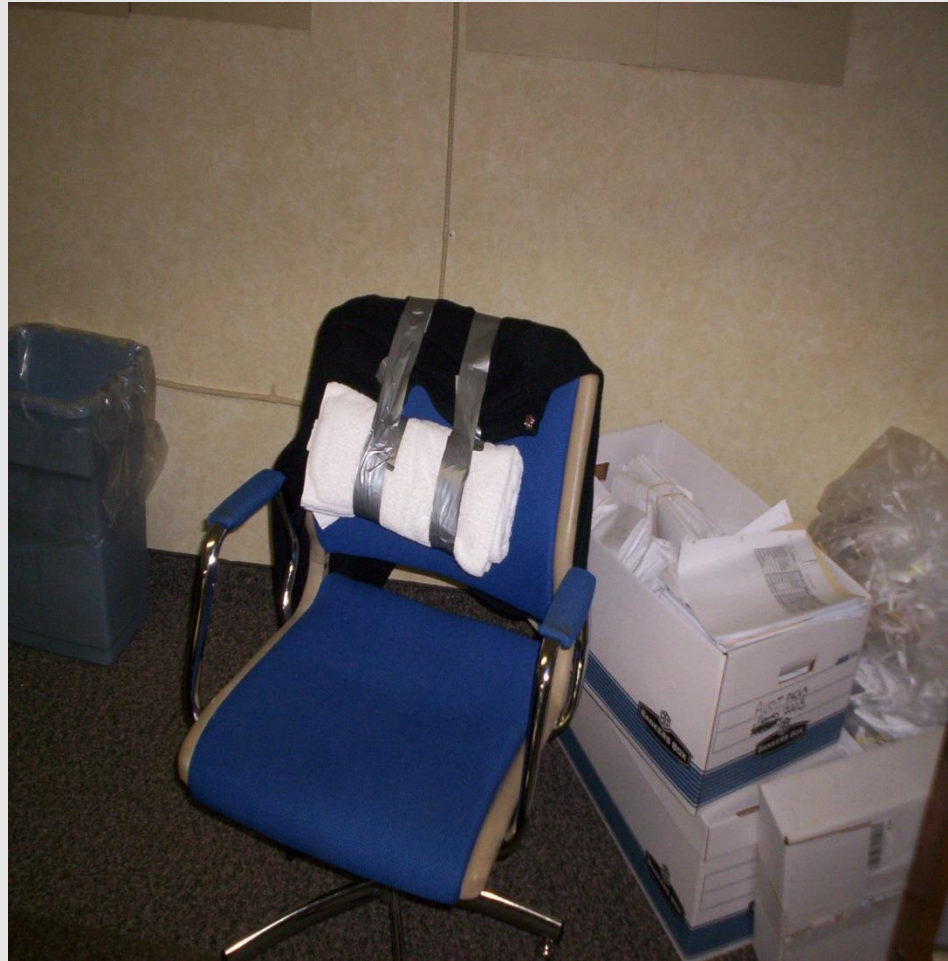
Practical Prevention Strategies

- The following slides will discuss different worksite risk factors and the solutions that were suggested.
- These solutions have been beneficial in decreasing injuries in these worksites.

Hospital Carpets



Poor Seat Designs

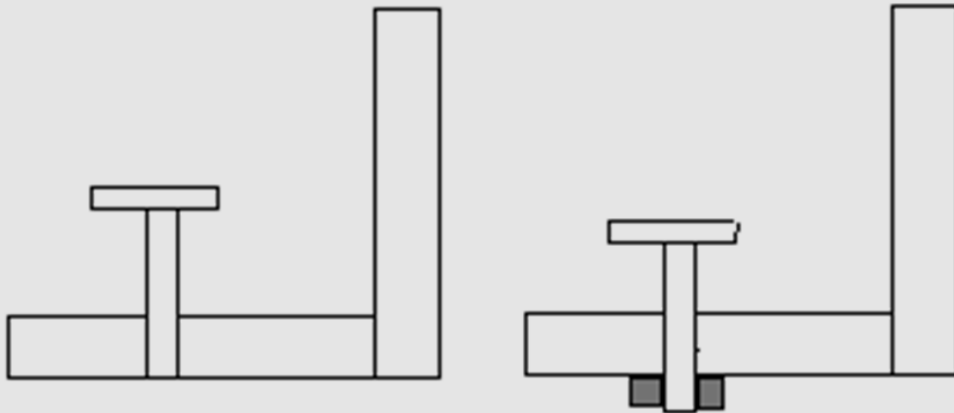


Office Chairs

- Fist Test – Seat Depth



- Arm Rests

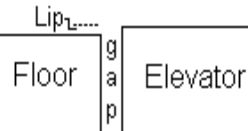


Keyboard Trays

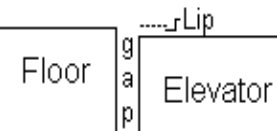


Equipment and Elevator Transitions

Hard to push and pull into the elevator
Easy to push and pull out of the elevator

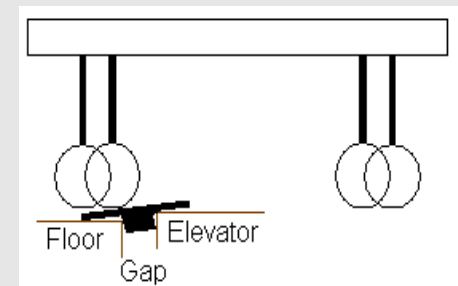
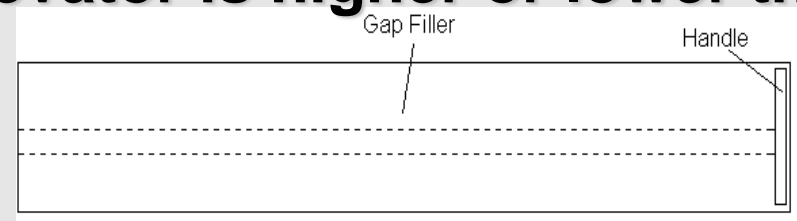


Easy to push and pull into of the elevator
Hard to push and pull out of the elevator



Elevator Plate

- Designed to remove any lip and to hold the elevator door open
- The expectation is that all staff that are transporting patients will place the plate down in order to remove any lip that may occur when the elevator is higher or lower than floor level



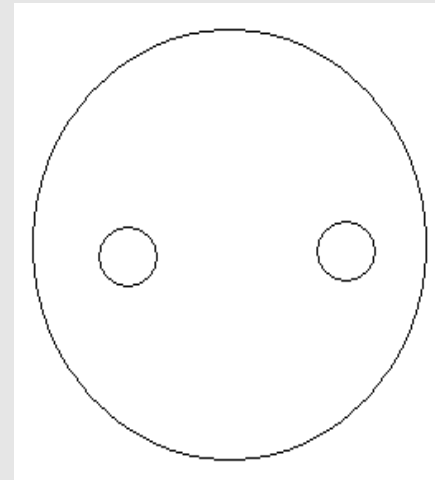
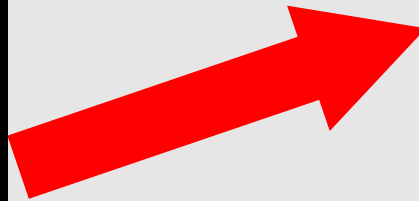
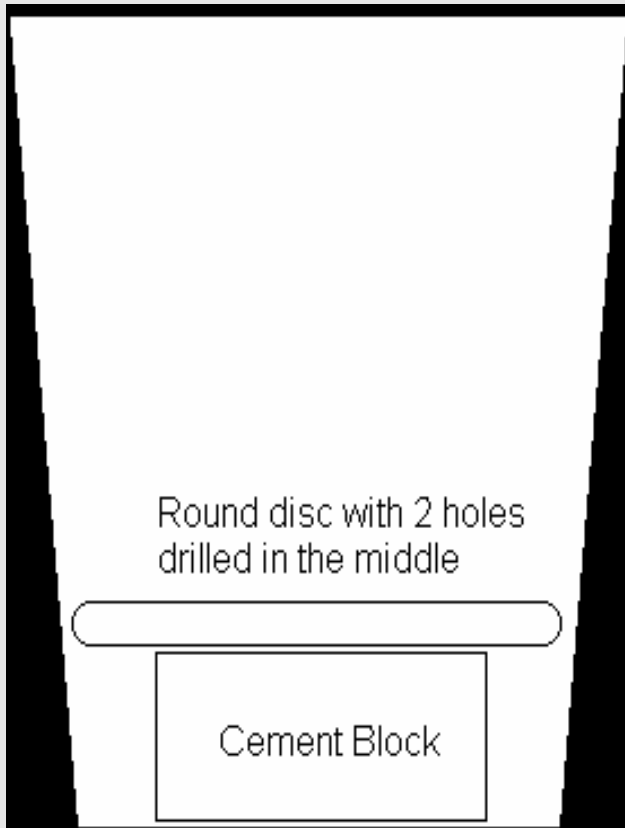
Lifting a Wheelchair

- Avoid at all times lifting the back end of a wheelchair.
 - With a 225 lbs patient, a shimmy lift required a lifting force of 67.3 kg (148.3 lbs)
 - When consulting recommendations for lifting weights (Snook & Ciriello, 1991), this lift was well above the recommended lift weight for both males and females
 - Therefore, the risk of injury is very high. Although it seems like the best alternative to simply lift the chair, it is better to roll the chair and place it in the preferred location

Garbage Cans



Garbage Cans



Poor Floors



Fixed and Moveable Matting



Ergomates Research – Nurses' Aides

- Numerous studies have shown that using different flooring types, including anti-fatigue mats improves comfort and fatigue levels. To date, no studies have analyzed the effects of wearing Ergomates™.
- Two surveys – one after a shift while wearing normal shoes and one after wearing Ergomates™.
- The survey showed that wearing Ergomates™ reduced foot fatigue, body discomfort and pain ratings in the feet, knees, hips and low back.
- Wearing Ergomates™ increased energy levels.
- Conclusion:
 - Ergomates™ are beneficial for those required to be on their feet for extended periods of time.

- When wearing Ergomates™ compared to shoes:
 - ↑ in impulse (amount of force over time)
 - ↓ loading rate (rate by which the foot force is applied)
 - ↓ centre of pressure difference
 - ↑ in peak force while wearing Ergomates™
- Conclusion:
 - It seems that the elasticity and cushioning properties of the Ergomates™ seem to absorb some of the forces while walking
 - Ergomates™ are a viable Ergonomic solution

Soup Pots



Dishwashing Area



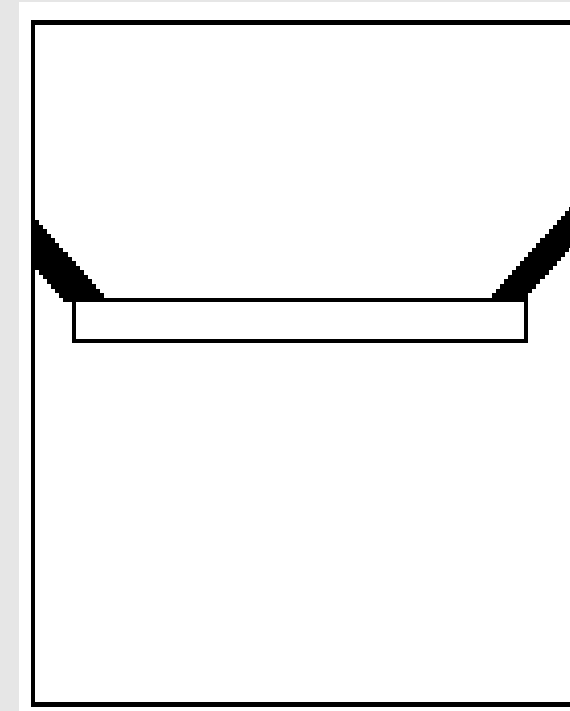
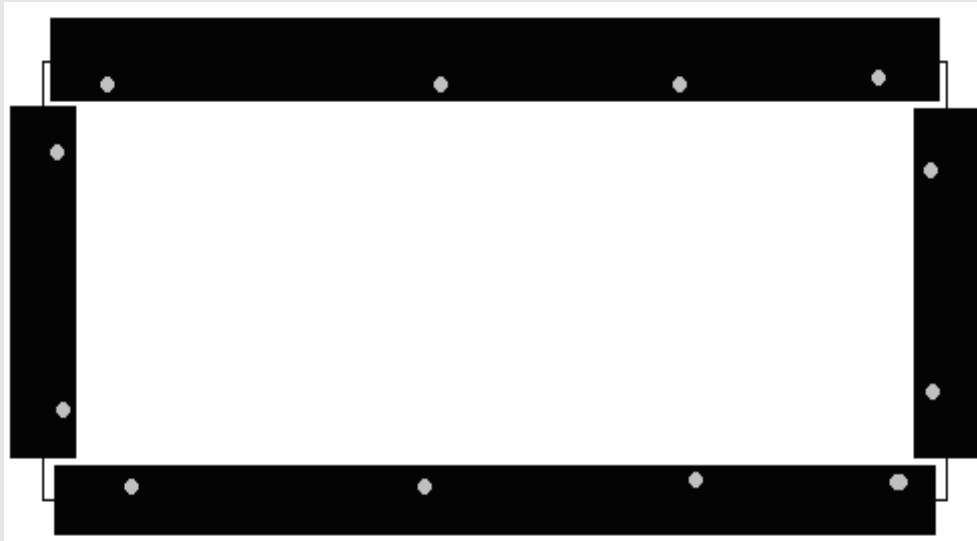
Dishes at a Banquet Hall



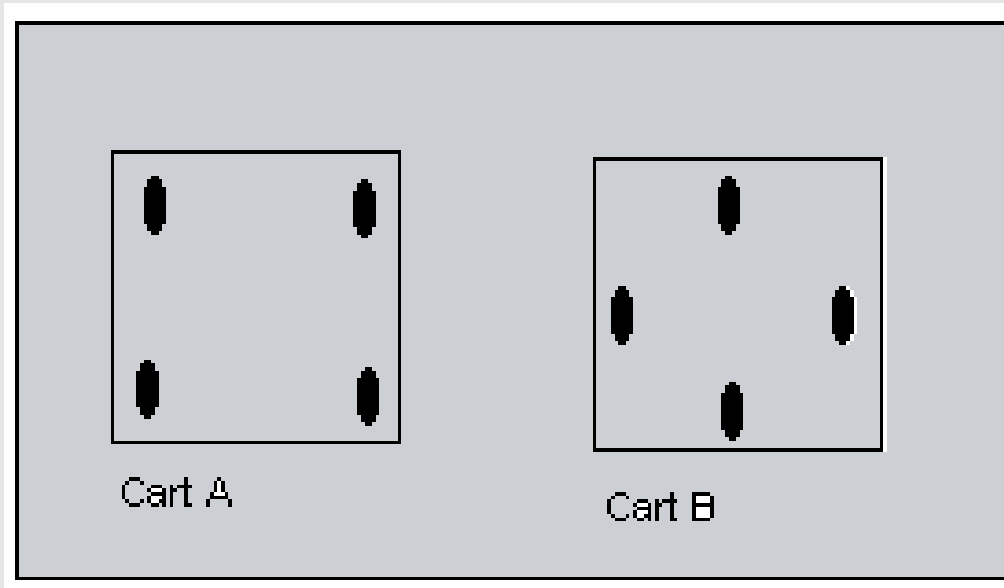
Laundry Carts



Laundry Carts



Laundry Carts



Loading Washing Machine



Solutions – Laundry

- Ensure working/folding tables are height adjustable or set to the average height of standing elbow heights
- Prevent overloading bags by providing smaller bags or keeping carts nearby allowing for items to be deposited directly in carts
- Maintain springs of spring loaded bottoms and ensure wheels are well maintained

Static Postures



Lifting Bearings



Shoveling Postures



Storage Areas



Counter/Workstation Heights



Counter/Workstation Heights



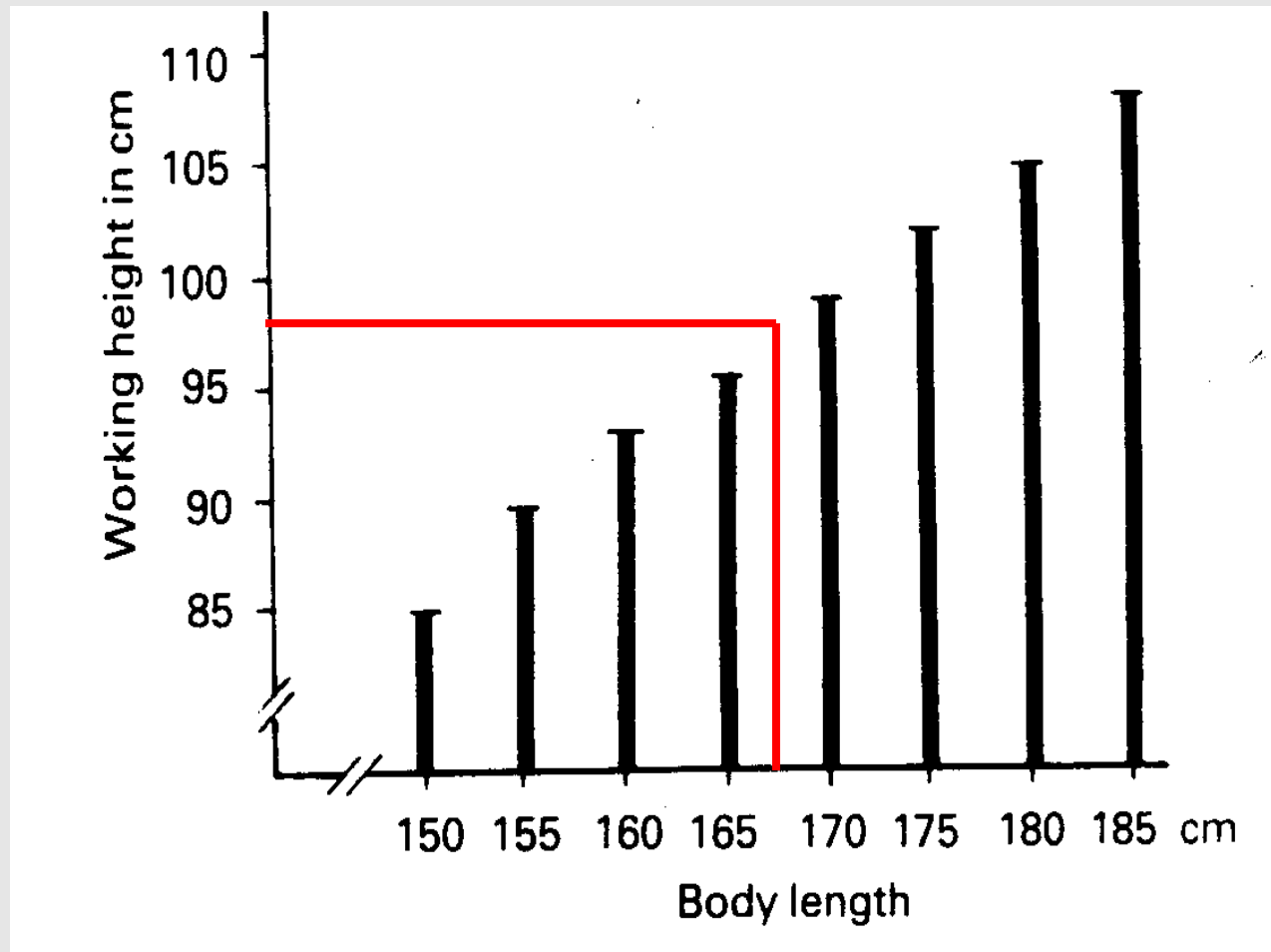
Height Adjustable Workstations



Counter/Workstation Heights



Counter/Workstation Heights



Cleaning Toilets

- Workers have to kneel, squat, or bend the back in order to get low enough to clean around and behind the toilet
- Purchase a toilet brush with a longer handle so workers can clean without having to bend over



Mop Buckets

- Most workplaces use a standard mop bucket
- The problem is that the stand bucket forces workers to bend excessively when wringing the mop and while emptying the water
- Recommendation
 - Tall Sally



Sweeping

- Handle Length
- Be sure workers are using a handle that is not too short or too long for them (the handle should be close to the height of the worker's chest)
 - Ribbed vinyl grip provides a secure grip in any condition
 - Foam grip provides optimal comfort and hand placement.
 - Adjustable shaft adjusts to the height requirement of the user



Sweeping

- Dust Pans
 - To minimize bending when sweeping up dirt, a long handle dust pan should be purchased



Using a 25 lbs tool



Kneeling and Excessive Force



Inappropriate Workstation Designs



Avoid Twisting



Thank you for your attention

If you have any questions about ergonomics or any other occupational health concern contact OHCOW at:

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