

MSD Hazards & Solutions

FORCE



Lifting/Lowering Hazards



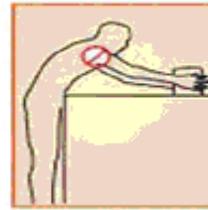
Lifting from the floor



Overhead Lifting



Lifting out of a Bin

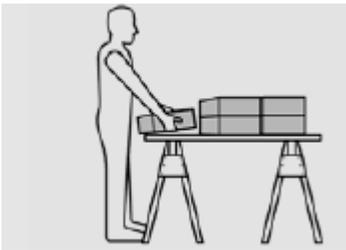


Lifting while reaching

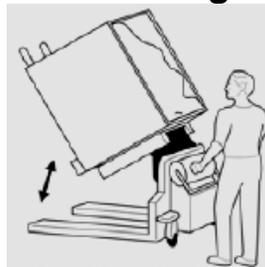


Lifting heavy loads

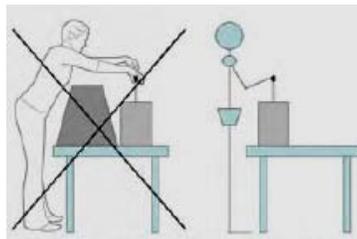
Lifting/Lowering Solution



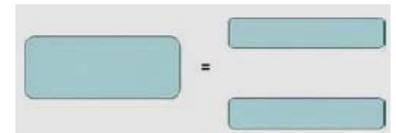
Store materials off the floor



Use lift/tilt devices



Remove obstacles between worker and load



Split heavier loads to reduce work



Pushing / Pulling / Carrying Hazards



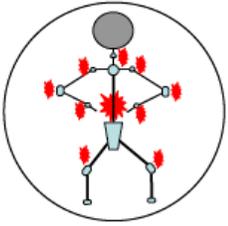
Difficult Pushing



Difficult Pulling



Carrying heavy loads



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Pushing / Pulling / Carrying Solutions



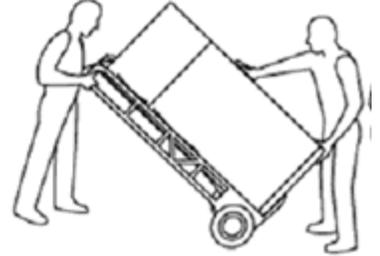
Use well-designed carts



Use a powered pusher



Use big wheels on carts/bins



Use dollies/carts

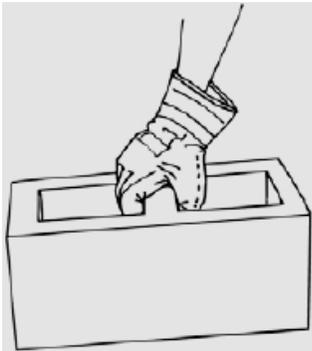


Use powered pallet jacks

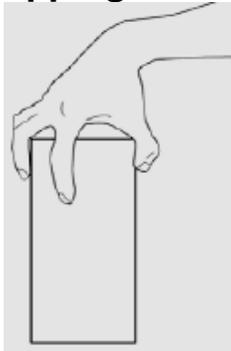


Use conveyors to move materials

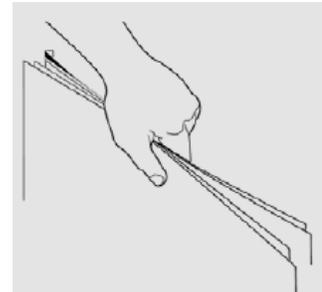
Gripping Hazards



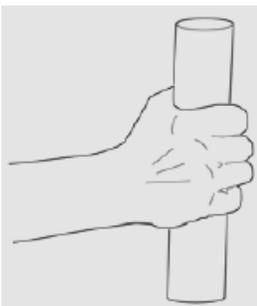
Difficult Power Gripping



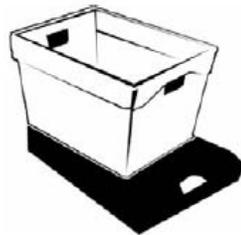
Difficult Pinch Gripping
Gripping Solutions



Difficult Pinch Gripping



Use good power grips



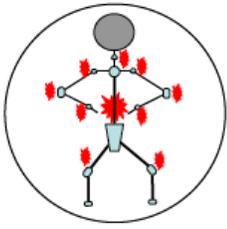
Use boxes with good handles



Use tools/equipment with good hand grips



Use tool balancers for heavier hand tools



MSD Hazards & Solutions POSTURE



Lower Force

+



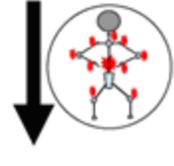
Good Posture

+



Less Repetition

=



Reduced MSD Risk

Back / Trunk Posture Hazards



Bending Forward



Bending Backward

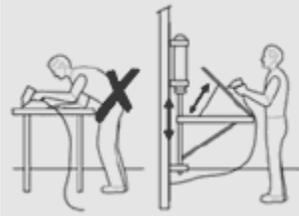


Bending to one side



Twisting

Back / Trunk Posture Solutions



Arm / Shoulder Posture Hazards



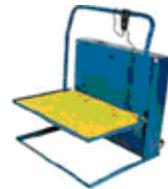
Arm / Shoulder Posture Solutions



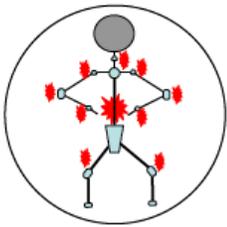
Use long handle extensions



Use lift tables with turn tables on them



Use adjustable height work platforms



MSD Hazards & Solutions POSTURE



Hand / Wrist / Elbow Posture Hazards

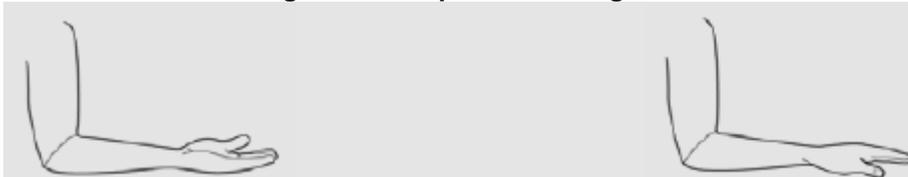


Bending the wrist down

Bending the wrist up

Bending the wrist down

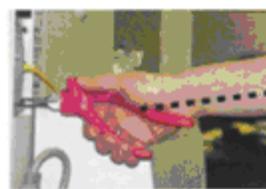
Bending the wrist up



Working with the palm facing up

Working with the palm facing down

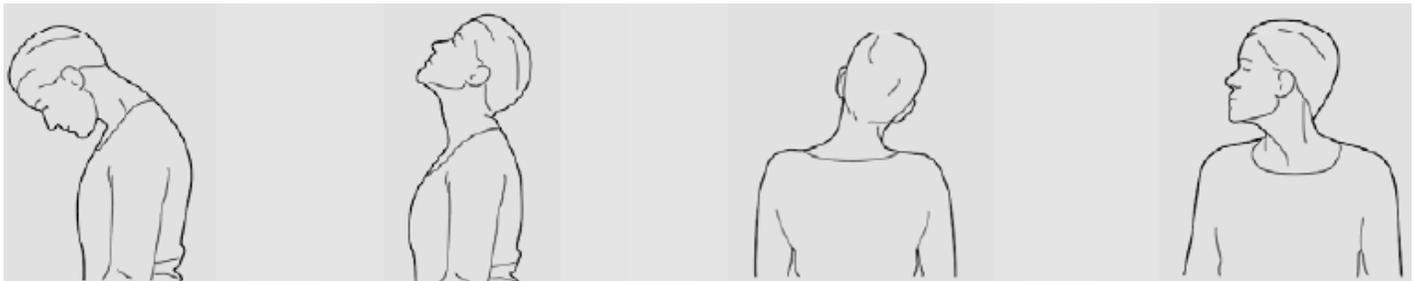
Hand / Wrist / Elbow Posture Solutions



Select tools that promote good wrist postures and power grips

Choose tools that are right for the task/working height

Head / Neck Posture Hazards



Neck bent forward

Neck bent backward

Neck bent to one side

Neck turned to one side

Head / Neck Posture Solutions



Raise task/equipment to reduce forward neck bending



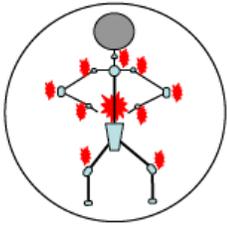
Place important visual displays directly in front of user



Provide head sets to reduce side bending of neck



Angled document holders/work surfaces improve neck postures



MSD Hazards & Solutions REPETITION



Lower Force

+



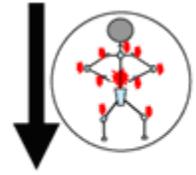
Good Posture

+



Less Repetition

=



Reduced MSD Risk

Repetitive Hand Use Hazards



Hand intensive manual sorting/packaging

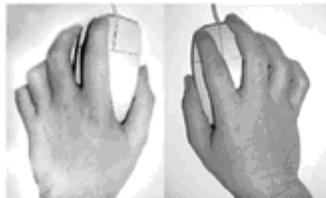


Repetitive hand tool use

Repetitive Hand Use Solutions



Use good job rotation schemes



Switch hands from time to time



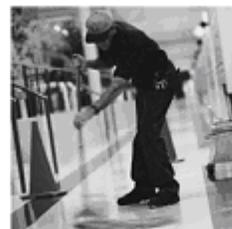
Use well-designed tools



Repetitive Hand Use Hazards



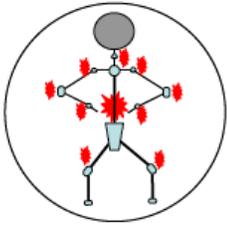
Repetitively working with hands above the shoulder



Repetitive twisting and bending



Repetitive bending and reaching



MSD Hazards & Solutions REPETITION



Repetitive Awkward Posture Solutions



Raise bins/use spring loaded inserts



Use height adjustable tables/carts



Use height adjustable work platforms



Tilt work up to reduce reaching



Use well-designed document holders

Repetitive Material Handling Hazards



Repetitive lifting and carrying



Repetitive pushing/pulling

Repetitive Material Handling Solutions



Use well-designed hoist for repetitive handling



Use roller conveyors to reduce repetitive lifting/handling



Mechanize repetitive material handling where necessary



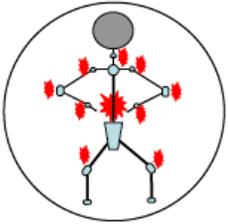
Use specially designed equipment to reduce repetitive handling/carrying

General Solutions for Different Repetitive Tasks



Use good job rotation schemes





MSD Hazards & Solutions OTHER



Lower Force

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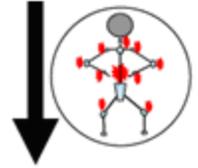
Good Posture

+



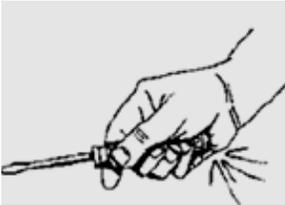
Less Repetition

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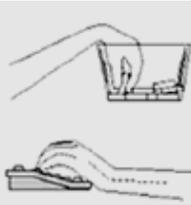


Reduced MSD Risk

Contact Stress Hazards



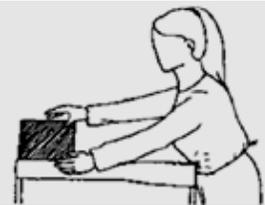
Tool digging into fingers/palm/hand



Sharp edges digging into wrist



Seat pan digging into back of the knee



Sharp edges digging into body

Contact Stress Solutions



Use tools with handles that extend past the palm



Select equipment, tools with rounded edges or provide padding



Provide good support for forearms



Adjust chair so feet are flat on the floor and there is space between seat and back of legs

Use Knee/ Hand as Hammer Hazards



Using Knee as Hammer



Using Hand as Hammer

Use Knee/ Hand as Hammer Solutions



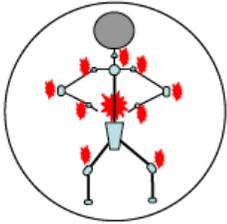
Use a rubber mallet instead of hand for hammering



Use knee pads/padded gloves

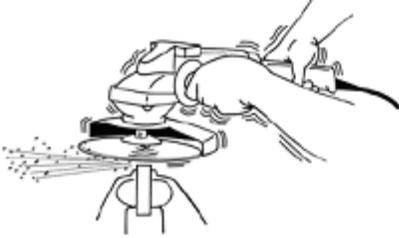


Use a mechanical device to replace knee/hand hammering



MSD Hazards & Solutions OTHER

Vibration Hazards



Hand-Arm Vibration



Whole Body Vibration

Hot / Cold Hazards



Hot and cold temperatures

Vibration Solutions



Use tools designed to reduce vibration



Use anti-vibration gloves



Use good anti-vibration seat suspensions



Keep roads/travel surfaces smooth

Hot / Cold Solutions



Drink water to keep hydrated



Use local heat sources for whole body, hands, etc.



Use hand warmers/gloves to keep hands warm



Wear appropriate clothing



Take breaks – to cool down or warm up