



NOS

READY, SET, SOLVE

Mastering Body Mechanics

Enhancing Safety and Health in
the Workplace

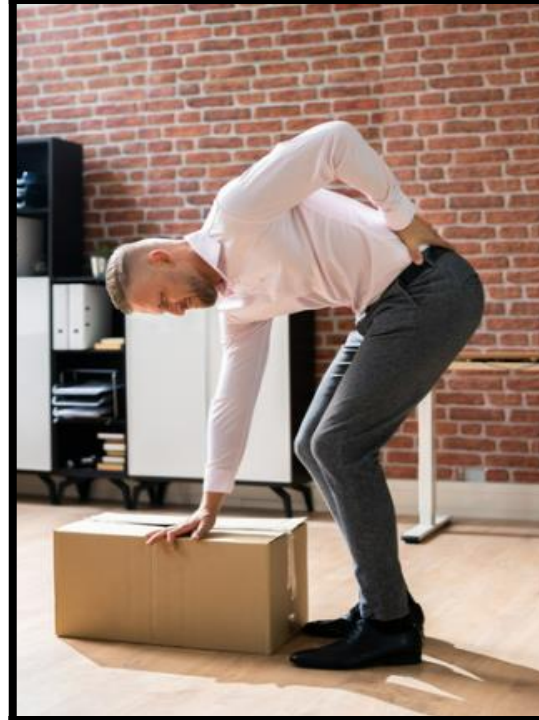
NORTHEAST ORTHOPEDIC SOLUTIONS, LLC
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Why Is Quality Movement Important?

By improving the way we move with better alignment and coordination, we reduce the risk of injury and chronic pain ⁽¹⁾

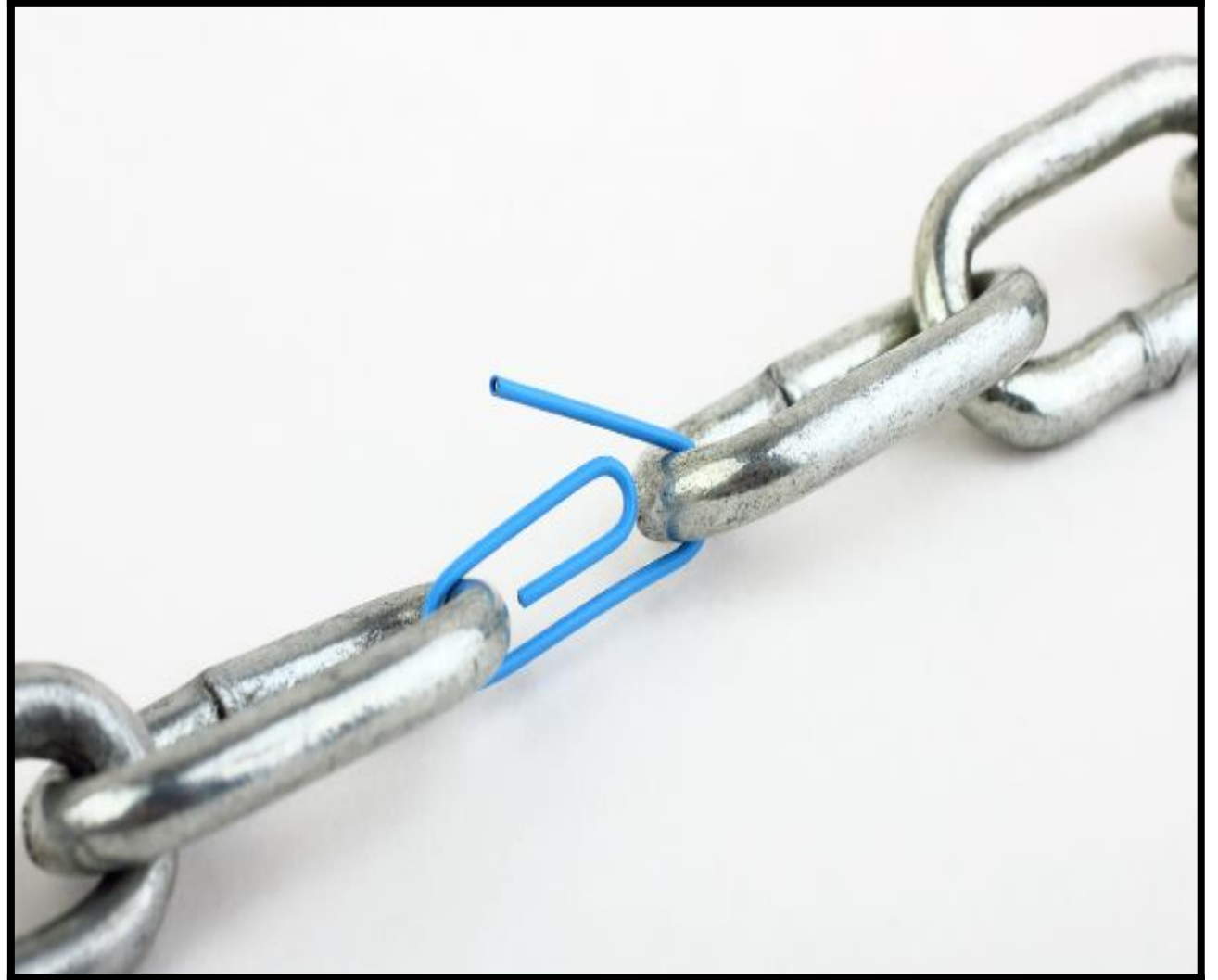
- Activities of daily living
- Lifting from the ground
- Overhead tasks
- Pulling motions
- Squatting
- Prolonged driving

End Result= Better Health Outcomes



What Can We Learn From Poor Movement Patterns?

- Weakness
- Instability
- Stiffness
- Sometimes having too much flexibility!
- Fear of Movement

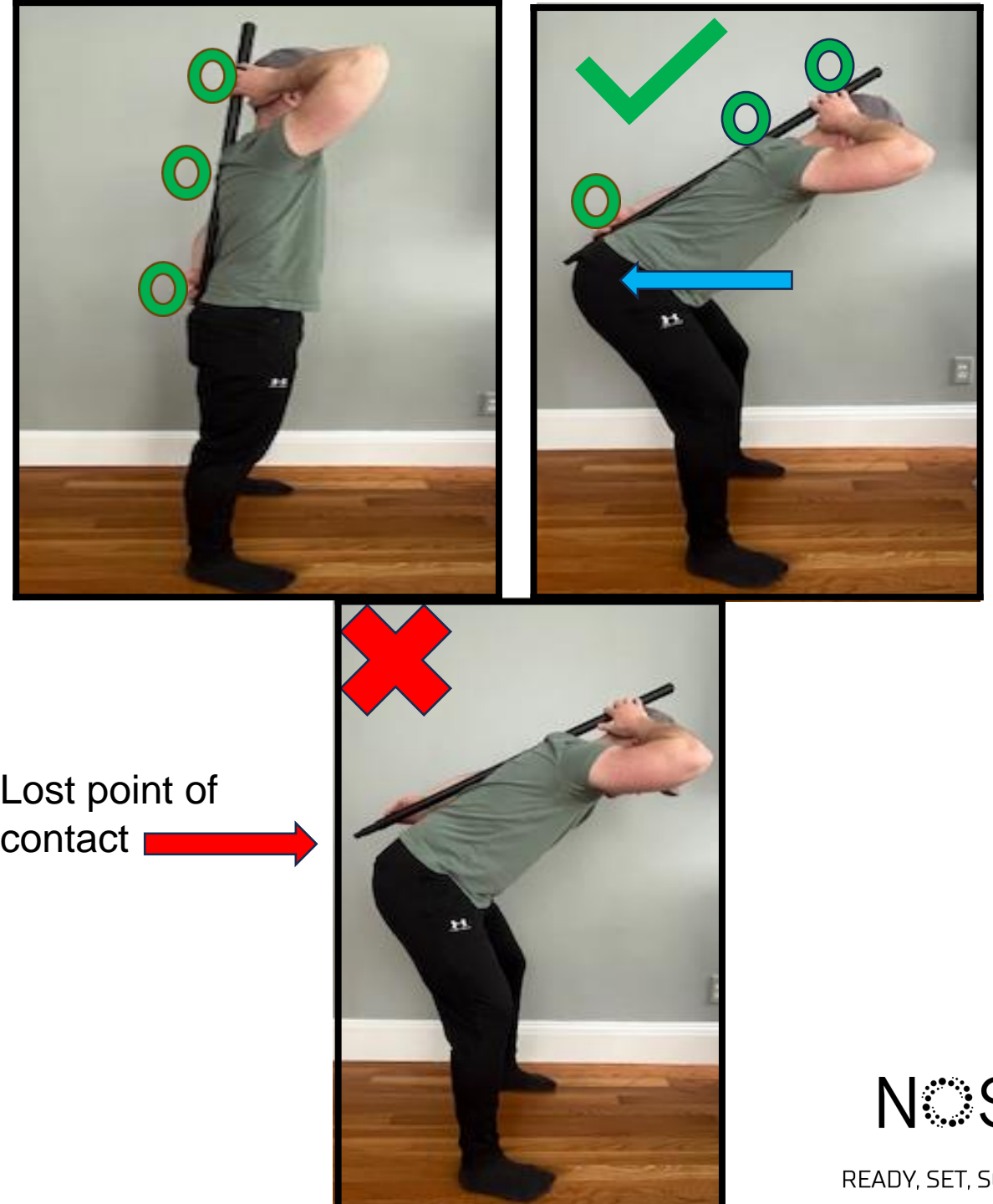




Body Mechanics and Movement

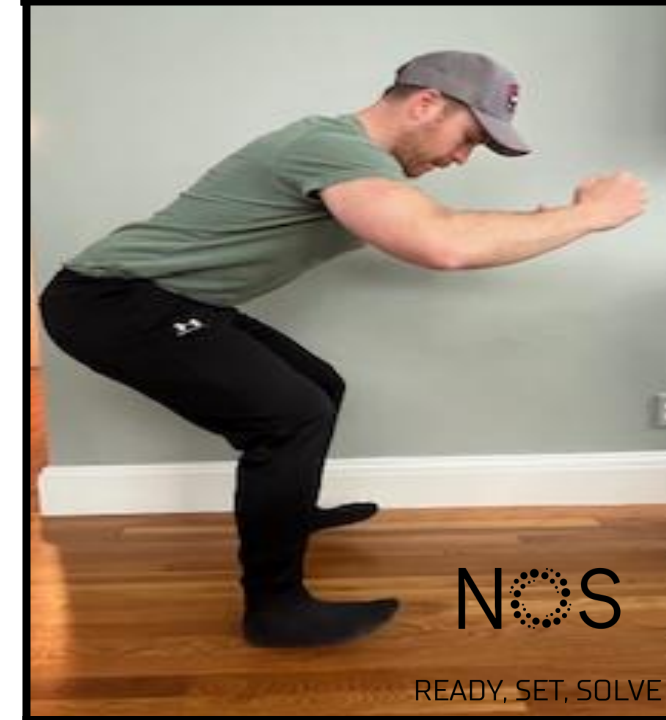
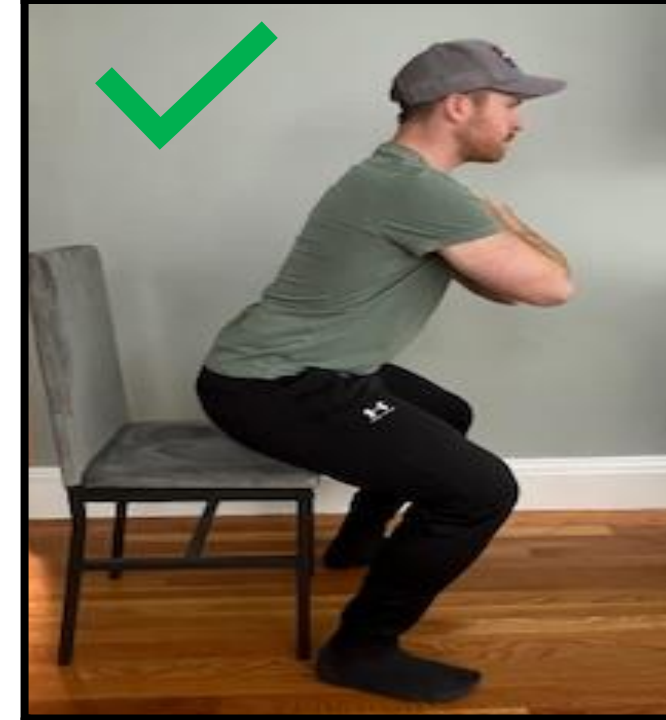
Hip Hinge

- 3 points of contact:
 - Head
 - Upper back
 - Lower back
- These 3 points have to maintain postural alignment along the stick as you push hips backwards and shift weight onto heels
- *Think of this as a backward and forward exercise*



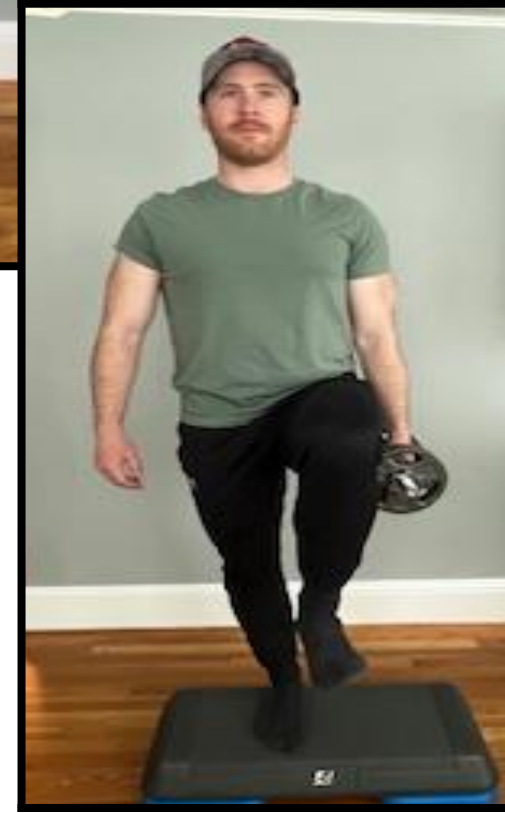
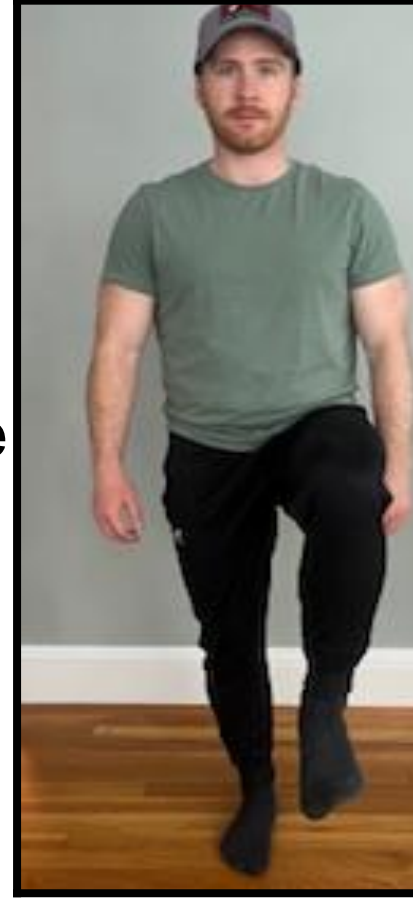
Squat

- Hip and knees have to move simultaneously while the spine and head stay in a neutral position
- Similar to the hip hinge, but now we use knees to lower center of gravity instead of shifting it backwards
- **Myth: “knees behind toes”**
 - Over-use of back and hips



Single Leg Balance

- Many ways to compensate
 - Exposes weakness and instability at the ankle, hip or core muscles
- Goal: Hold for 30-60 seconds without compensation or swaying
- Ways to make this more advanced?
 - Hold weight in the opposite hand
 - Stand on unstable surface
 - Perform on a step for more dynamic challenge

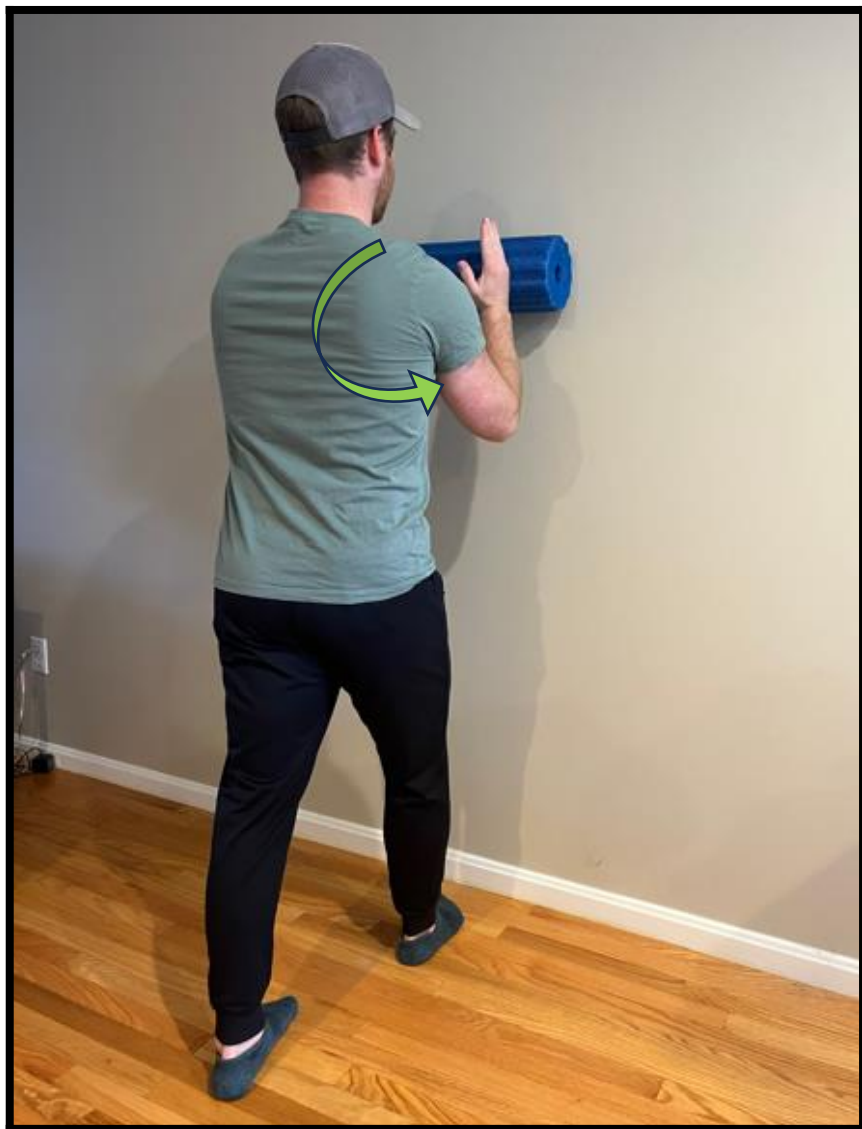


Scapular Retraction and Chin Tuck

- **Scapular Retraction:** Ability squeeze the shoulder blades together
- **Chin Tuck:** Ability to pull chin in toward the neck without angling head downward
- Prolonged activity without change in position can lead to neglect of using postural muscles
- Chronic forward posture can lead to impaired shoulder health and less ability to reach overhead



Overhead Reaching and Lifting



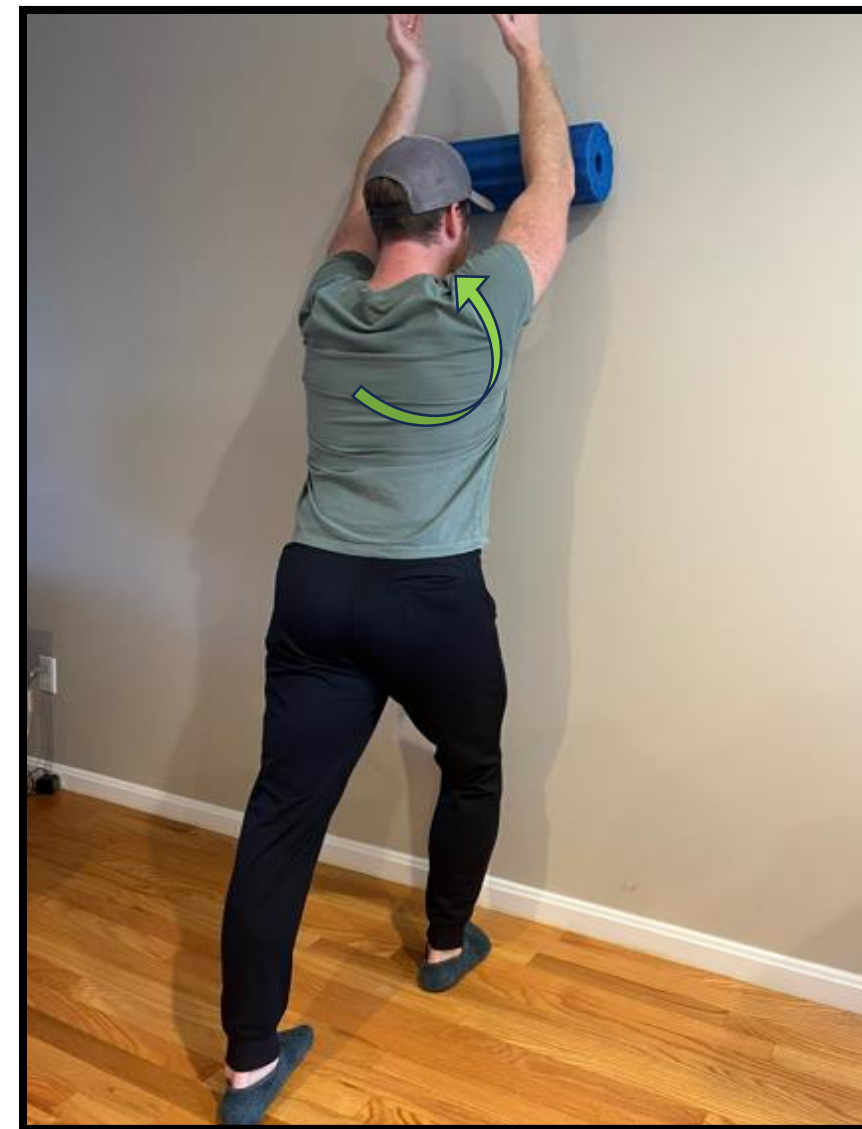
Foam Roller Wall Slide

One foot in back for leverage and support

As roller slides up, push chest towards wall to use trunk as support under the arms

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Overhead Reaching and Lifting

Resisted Overhead Press

- Providing light resistance helps test and improve understanding of how your own shoulder moves and what your comfortable end range limit is



Leverage

Putting your body in a position of leverage will help protect you from injury.

Lifting and carrying:

- Keep load as close to midline and your body as you can
- Lift through knees and hips
- Suit Case Maneuver for walking with heavy object

Pushing tasks:

- Staggered stance with one foot behind the other

Pulling tasks:

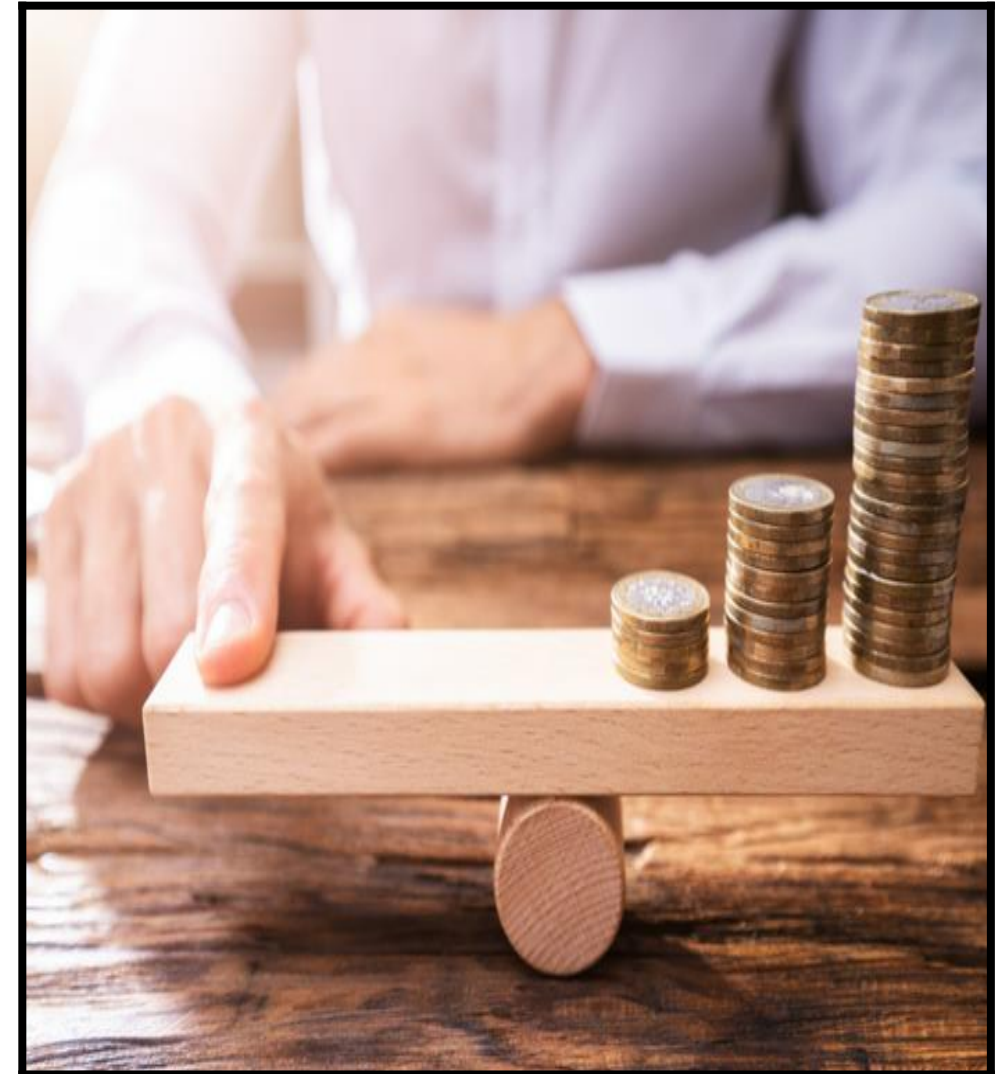
- Staggered stance and hip hinge to protect back

Side to side:

- Wide stance for more balance in left and right directions

Tasks below chest height:

- Half kneeling position if possible



Questions?

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****IMPORTANT:** Exercises in the presentation are not a replacement for medical advice. Always consult your physician or qualified health care provider if you have any health concerns or have had recent surgeries and are unsure of your restrictions.*



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Sources

1) Exercise Biomechanics for Health: Evaluating Lifelong Activities for Well-Being - PMC (nih.gov)