

Ergonomics and the Aging Workforce

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Myths and Realities

Myth: Older workers are more likely to have injuries on the job.

Reality: Older workers suffer fewer injuries

Myth: Cost more than younger workers and are less productive

Reality: Older workers have less absenteeism and less turnover

Myth: Older workers relate poorly to customers

Reality: They are more effective with people skills

Facts

- By 2020, it is predicted that 25% of the U.S. labor force will be over 55. And 17% will be 65 and over.
- From 2008 to 2018, the over 55 workforce increased by 43%.
- According to AARP, between 2000 and 2020, the 55-64 age range will increase by nearly 40%, while the 65+ category will increase by more than 40%.
- The average age of the high- skilled manufacturing worker in the U.S. is 56 according to Industry Week 2019.

Basic Concepts

“One size fits all mindset” no longer valid.

Accommodating the older workforce is primarily common sense.

Proper ergonomics improves health across workers of all ages.

Declining Abilities with Age

- **Reduced joint mobility**
 - *Small motor: reduced grip, grasp, twist*
 - *Large motor: walking, bending, sitting, climbing*
 - *Flexibility: 18-20% decrease at age 65*
- **Decreased muscular strength**
 - *Strength: 25-30% decrease at age 65*
- **Slowing reaction and movement times**
 - *Changes in nerve fibers slow the speed of conduction, but varies greatly person to person*
- **Sight**
 - *Deteriorating visual acuity*
- **Hearing**
 - *1/3 of 65-74 year olds have hearing deficit*

What is ergonomics?

- Ergonomics is the science of designing workplace, products and systems to help and support the worker.
- Goal of ergonomics is to promote healthy lifestyles among workers.
- Employers can support ergonomics through developing information, diagnostic and training programs to prevent injuries as well as providing ergonomic workspaces.

6 Rules for Ergonomic Workplace

Focus on neutral posture

Remember the “Power Zone”

Educate and train

Vision and Hearing environment

“Power grips” vs. pinch grips

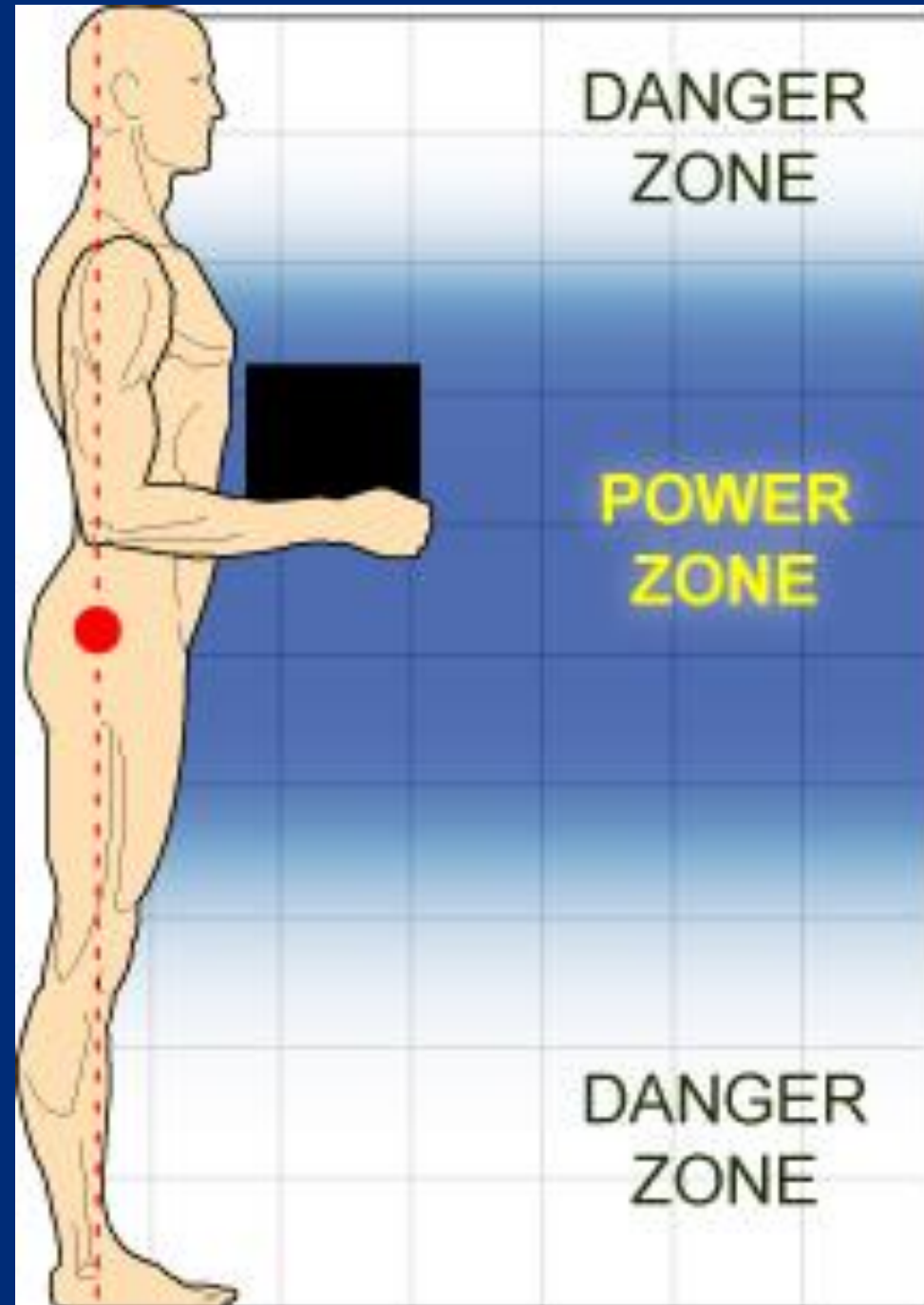
Avoid repetition

❖ Neutral Postures

- Maximum muscle force producible in neutral postures is greater than maximum muscle force producible in awkward postures.
- Fatigue occurs sooner when working in awkward postures.
- Working in extreme awkward postures (near extreme ranges of motion) causes stress on muscles and joints.

❖ Power Zone

- Close to body
- Mid thigh and mid chest height
- Comparable to the strike zone in baseball



❖ Educate and Train

- Provide employee education

- Hands on training
- Handouts
- Online training

- Employer Diagnostics

- Job assessment and placements
- Ergonomic/Engineering assessment

- Healthy Habits

- Stretching programs
- Job rotation and breaks
- Return to work strategies



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WARM UP AND STRETCH

The Warm Up
It is important to warm up your muscles BEFORE you stretch and BEFORE you engage in physical work. Repeat this squat slowly, 10 times.

Stretching Sequence
It is important to stretch BEFORE, AND DURING physical work (Approximately every 1/2 hour)

- 1. Neck Stretch**
Hold for 5 seconds on each side
- 2. Top of Forearm**
Hold for 5 seconds
- 3. Underside of Forearm**
Hold for 5 seconds
- 4. Shoulder Stretch**
Hold for 5 seconds on each side
- 5. Side Stretch**
Hold for 5 seconds on each side
- 6. Back Twist Stretch**
Hold for 5 seconds on each side
- 7. Back Extension Stretch**
With hands on hips arch your back & look up at the ceiling. Hold for 5 seconds.
- 8. Forward Bend Stretch**
With knees slightly bent, bend forward with arms hanging. Hold for 5 seconds.
- 9. Quadriceps Stretch**
Hold for 5 seconds on each side
- 10. Hamstring Stretch**
Hold for 5 seconds on each side

If you have questions about your ability to perform any stretch, please consult your doctor. info@enablingaccess.ca
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Ergonomic STRESSORS EYE STRAIN can be prevented

Accommodate and exercise your eyes

- When working on a computer**
 - Use computer eyewear when appropriate
 - Placement of reference material and monitor distance should be comfortable for your eyes
- When doing work at close range**
 - Periodically focus on object 20 feet away
 - Blink eyes rapidly if they feel dry
- When driving for long periods of time**
 - Periodically focus on object 5 feet away
 - Blink eyes rapidly if they feel dry



❖ Vision and Hearing

Vision

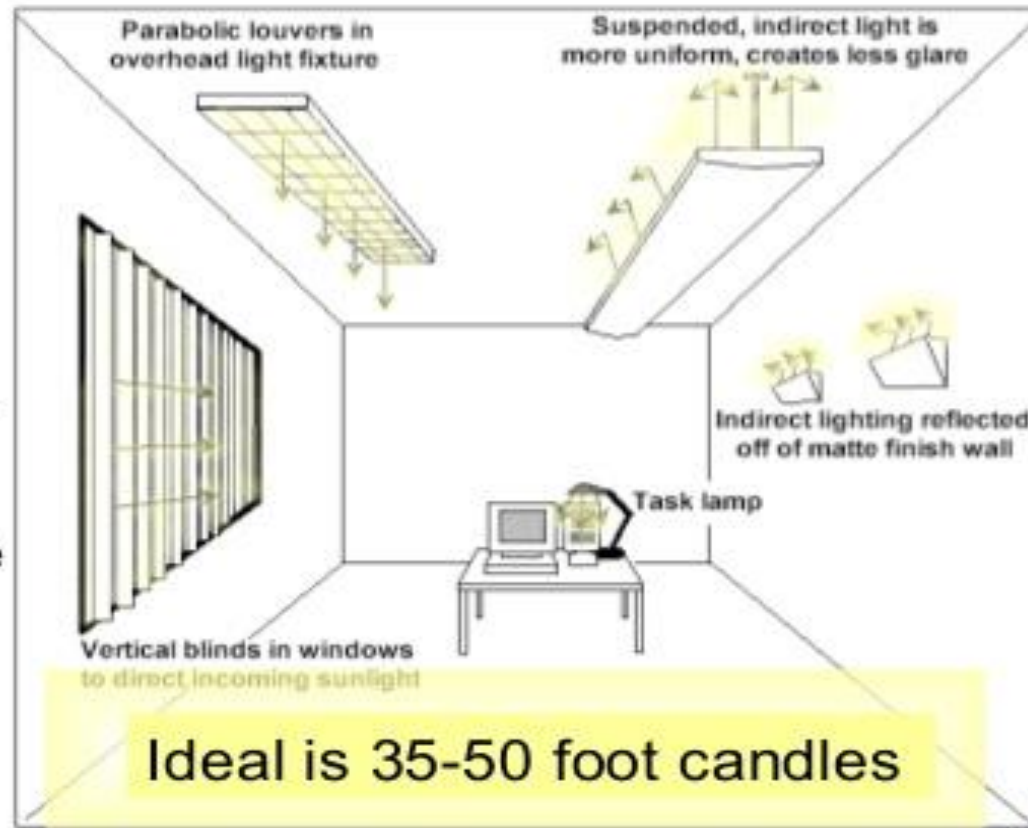
- Clean lighting fixtures
- Glare control
- Monitor controls- *contrast, font size, monitor(aging screen)*
- Document holders

Hearing

- Reduce background noise

LIGHTING & MONITOR GLARE

- Lighting should be indirect and adequate
- Not too much light, or it may cause a glare, headaches and eye fatigue
- If there is a glare on our eyes as we work, use anti-glare screens on computers, or adjustable blinds at windows

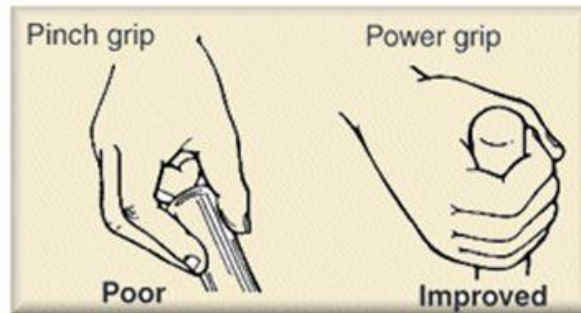


Power grip vs. pinch grip

- A power grip is any carrying or grasping task where the fingers flex toward the palm. 75% stronger than pinch grips.
- Power grip is the strongest human grip.
- Pinch grip is fingers flexing toward the tip of the thumb.
- Researchers have estimated that a pinch grip can be 3 to 5 times more stressful on the tendons.
- Grips can be made less stressful by using objects that have between a one and three inch diameter.

Use Power Grip

- Design tasks so that a power rather than a pinch grip can be used to grasp materials.
 - A pinch grip is five times more stressful than a power grip.
 - The greater the effort to maintain control of a hand tool, the higher the potential for injury.

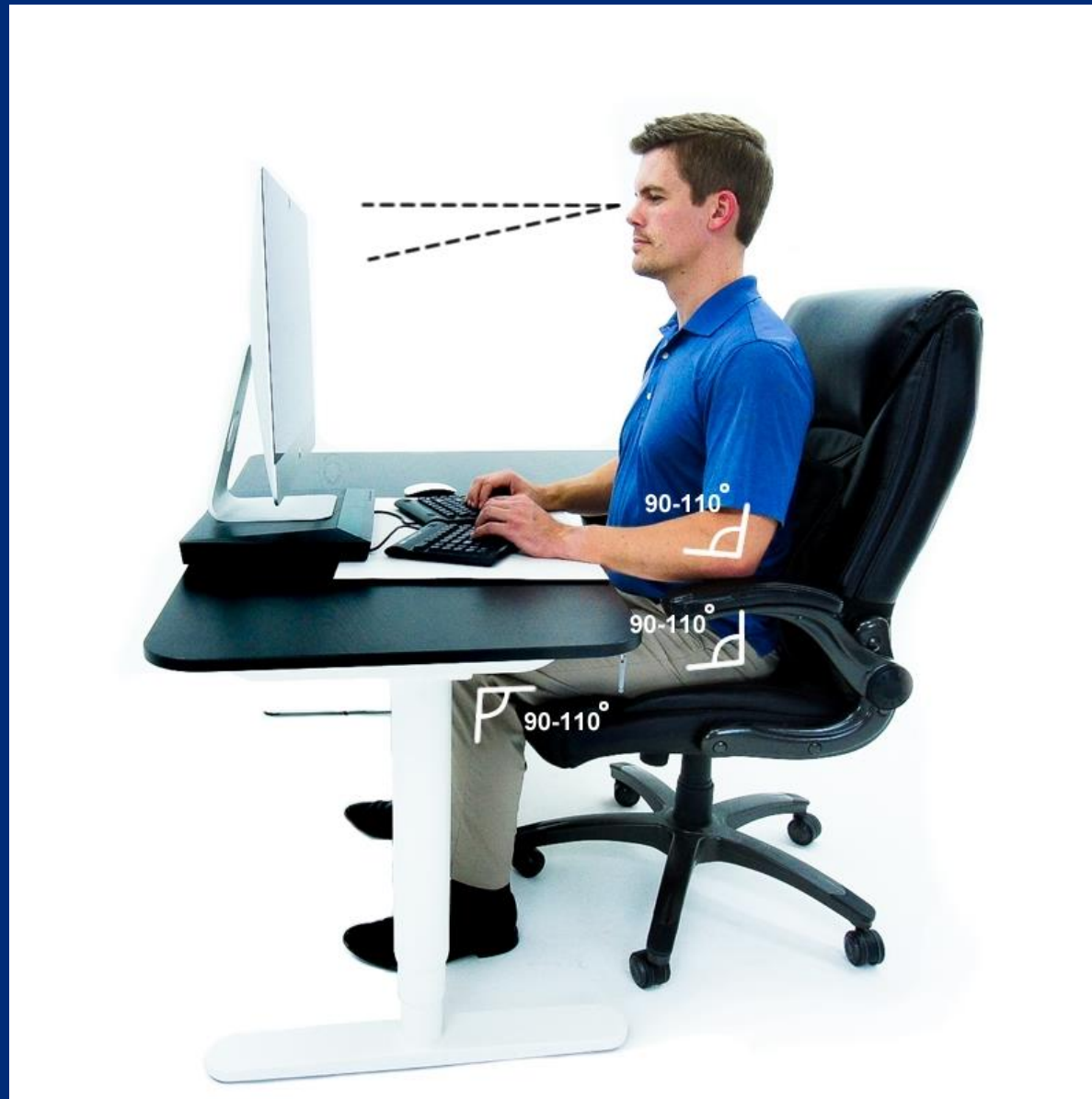


Repetition

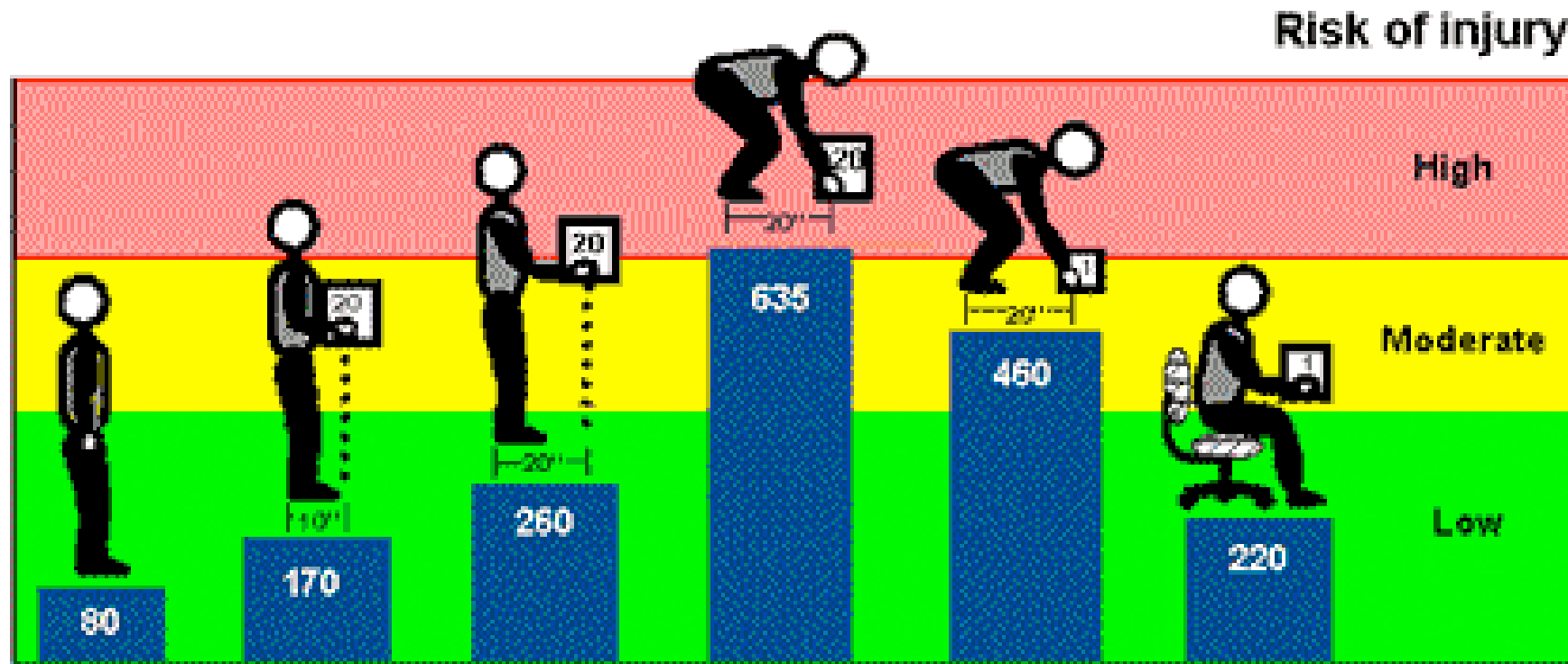
- Most commonly involves the upper extremities – e.g. carpal tunnel, lateral epicondylitis.
- Can involve low back esp. with repetitive bending and twisting activities - e.g. low back strain, disc injuries.

Age Neutral Ergonomics

- Proper ergonomics should be a priority for all employers regardless of industry or age.
 - *Adjustability- chair height, work table, equipment*
 - *Seating design- lumbar support, armrests, cushioned surfaces, leg space*
 - *Lighting-illumination, glare reduction, font size*
 - *Hearing- reduction of background noise*



Pounds of compressive force on lower back



Standing upright

Standing upright, lifting 20 lbs. 10" away from low back

Standing upright, lifting 20 lbs. 20" away from low back

Bent over, lifting 20 lbs. 20" away from low back

Bent over, lifting 1 lb. 20" away from low back

Sitting, leaning forward and lifting 1 lb.

Conclusion

- With the increasing age of the workforce , it is critical now more than ever, that employers make effective workplace ergonomics a priority!

“Chronologically Gifted”

- Robert DeNiro

