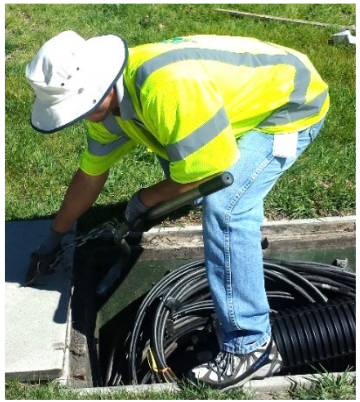
NATIONAL ERGONOMICS Conference & ErgoExpo®

An evidence based injury prevention solution to combating WMSD's in the workplace.

Posture, Pain and Performance

Presented by: Michael Gee ATC. CEES



Your employees work hard for you.
Is your injury prevention program working hard for them?

Learning Objectives

- Explore the greatest challenges we face as ergonomic and safety professionals in keeping our employees injury free.
- Discover the underlying conditions that strongly contribute to increased risk of discomfort, pain and injuries.
- Learn about a revolutionary approach to combating WMSD's and getting employees engaged and empowered to take personal responsibility for their own health and safety.

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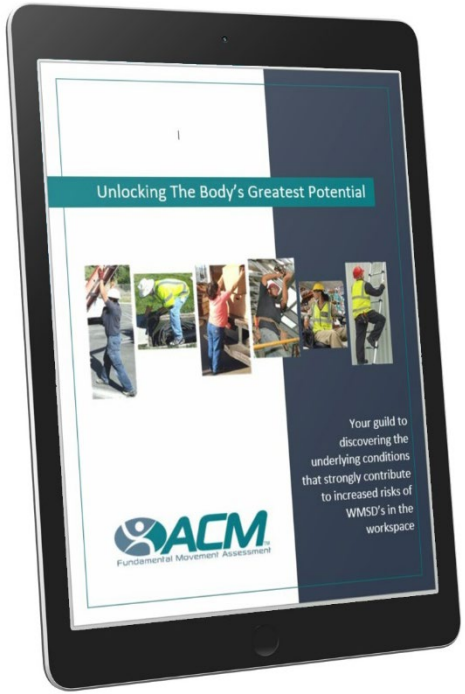
Fundamental Movement Assessment

Free eBook Download



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"Unlocking the Body's Greatest Potential"

The 3 Big Questions for Injury Prevention

How are you responding?

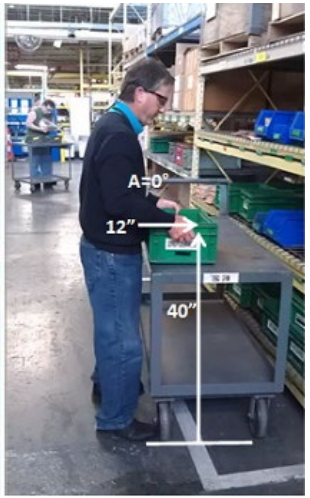
1. What are your current practices for injury prevention and recovery?
2. Are you addressing the problem/cause or just reacting to the symptoms?
3. How can you engage and empower employees in their own health and safety?

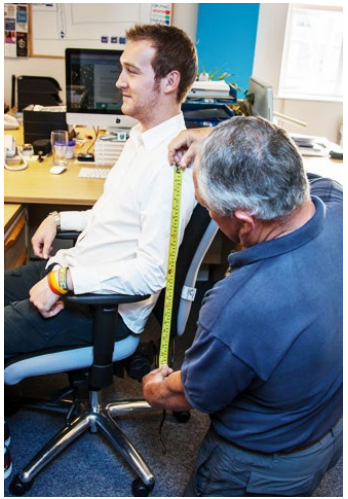
The Ergonomic Perspective

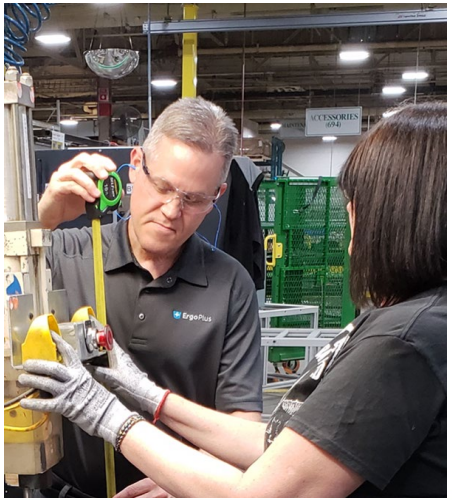
Fitting the Workstation to the Employee

Awkward Posture and Limited Movement Influenced by External Factors

Employee Disengaged

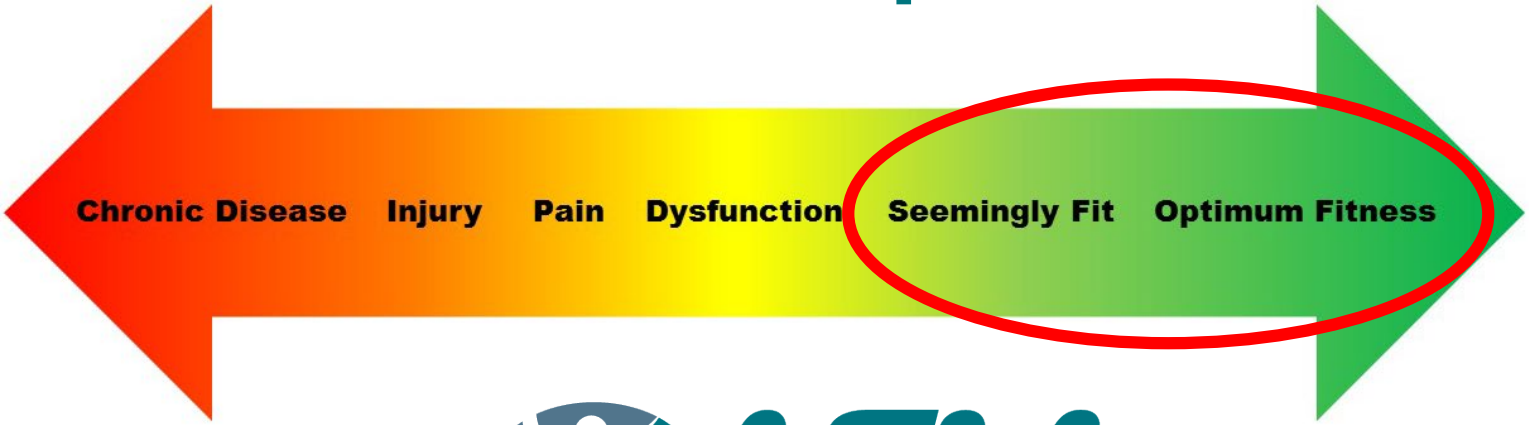






Ergonomic Challenge 1

The Assumptions



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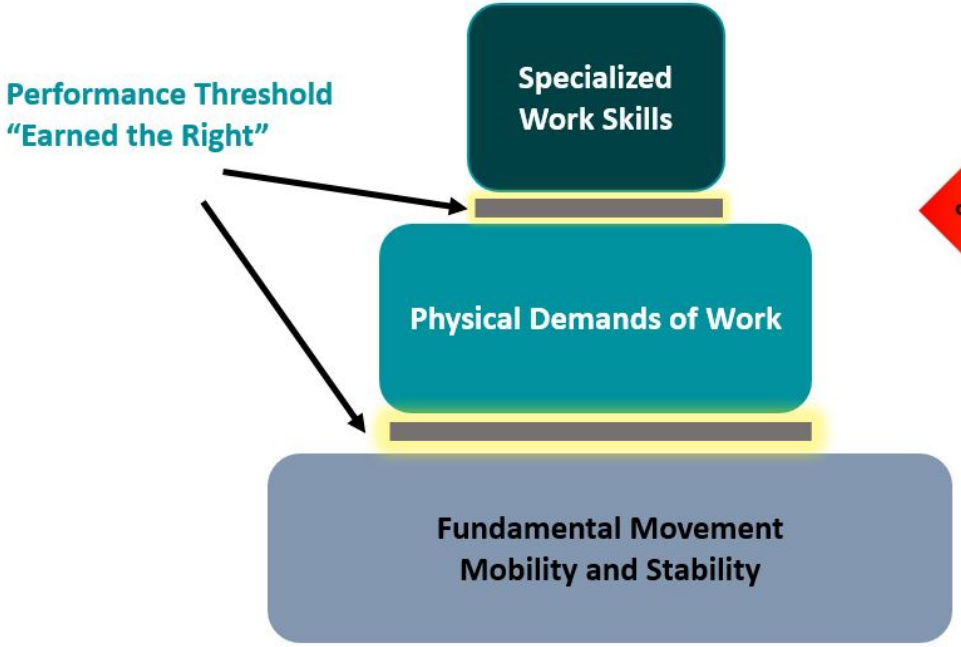
Balanced Performance Pyramid



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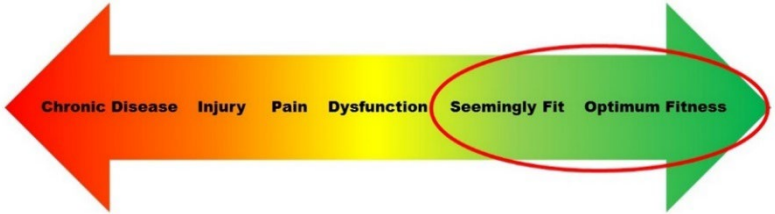

Quality vs. Quantity

“The Signs of an Injury are Present Long Before the Symptoms Occur”

Who has discomfort and pain?

- CDC reports 30% (EXCLUDING BACK AND NECK PAIN!?)
- 80 – 95% experience low back pain in lifetime (Sources vary)
- 91% of Employees surveyed reported 5 or greater discomfort levels. (800 + employee call center)
  - Post intervention: 59% reduction in subjective discomfort
  - 60% reduction in recordable claims

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Shoulder Pain Statistics

- Shoulder disorders 7% - 25%
- RC pathology most common after age of 40 years old.
- 34% Asymptomatic – mild to moderate RC tears

Knee Pain Statistics

- Meniscal injuries may be the most common knee injury.
- The prevalence of acute meniscal tears is 61 cases per 100,000 persons.
- The peak incidence of meniscal injury for males is in those aged 31-40 years. For females, the peak incidence is in those aged 11-20 years.
- In patients older than 65 years, the rate of degenerative meniscal tears is 60%.
- 79% of 100 cadavers 65+ years of age diagnosed with OA

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Spinal Pain Statistics

- Back pain is the number one reason a person visits a doctor
- Back Pain is the **number one reason** for missed days of work
- **95%** of population will have at least one episode of serious spinal pain.
  - Neck 22%
  - Mid Torso 8%
  - Low Back 70%
- **84%** will suffer multiple episodes
  - 33% will suffer chronic pain
  - 7% Substantially limited in their ability to work
- Low back pain is the **single leading cause of disability** worldwide, according to the Global Burden of Disease 2010.

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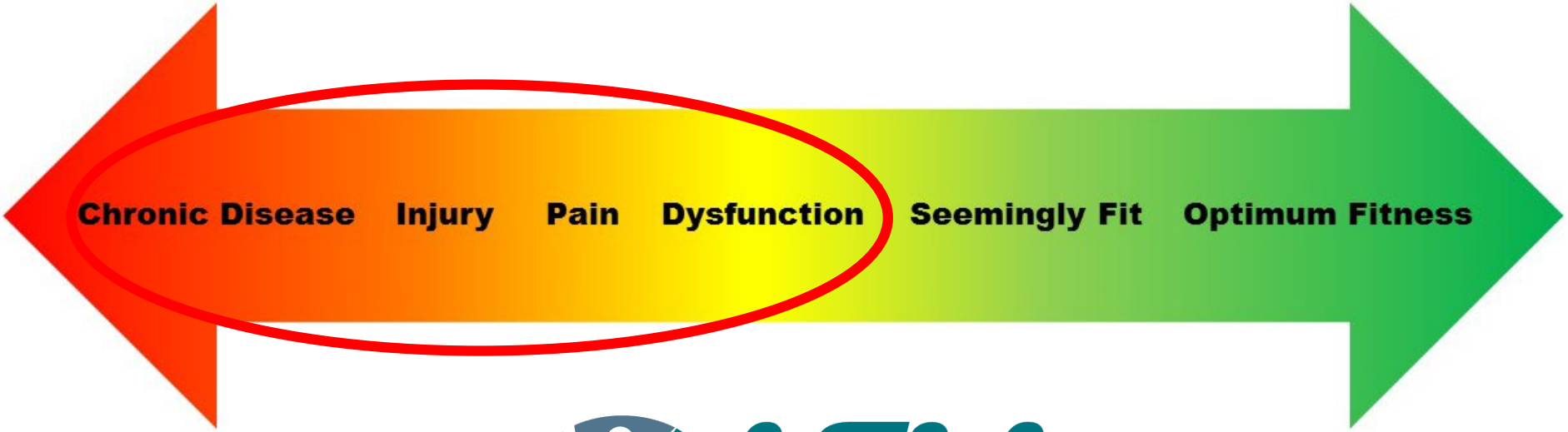
“The number one predictor of an injury is a previous injury”

The Reality



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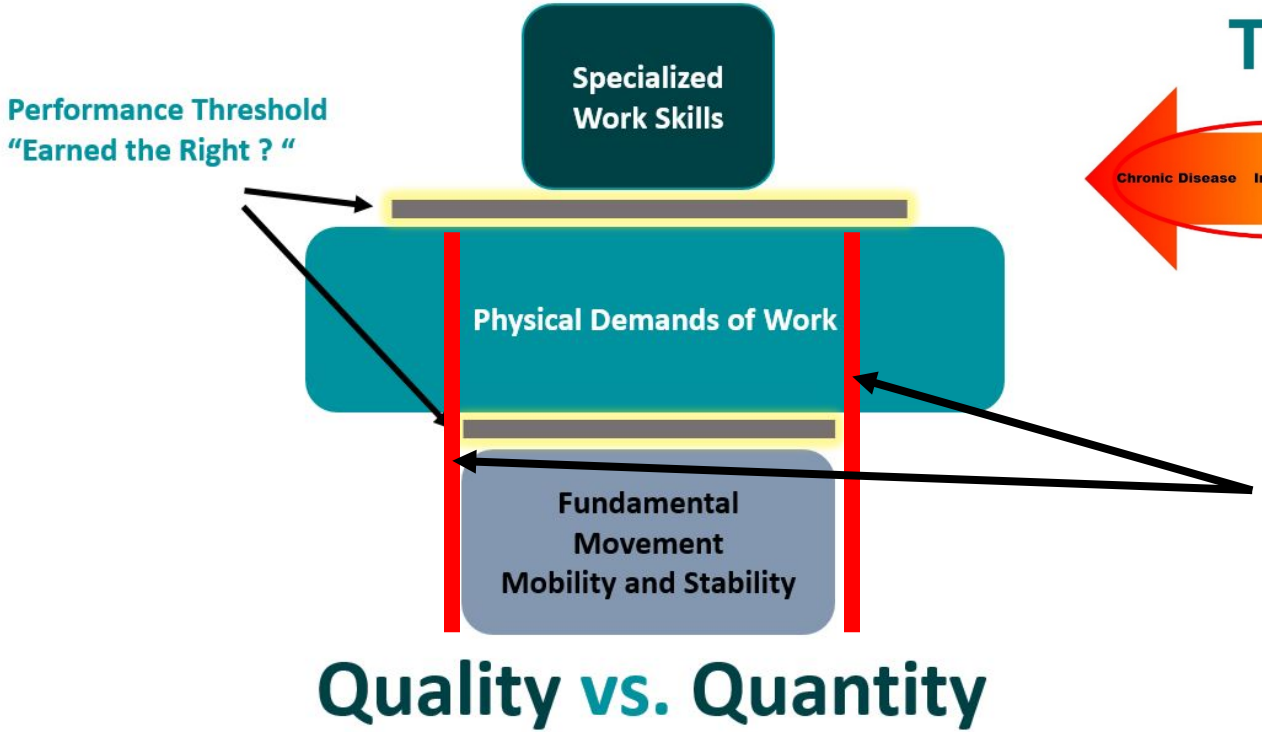
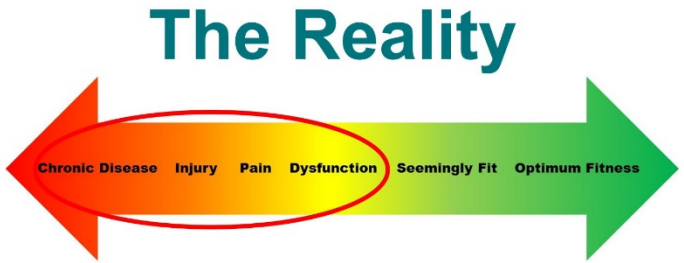
Unbalanced Performance Pyramid

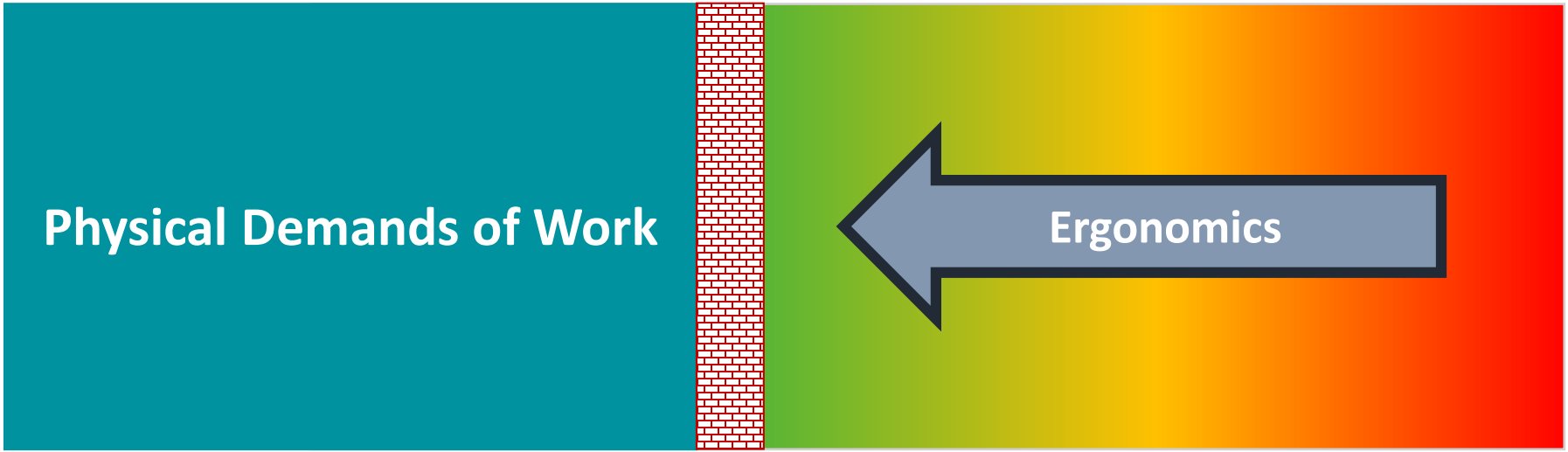




Discomfort, Pain and Injury Threshold

When we exceed the foundation of physical capabilities

Ergonomic Challenge 2



Hitting the “Brick Wall”

Job tasks where ergonomic interventions are challenging

“Most people don’t care how well they move until they can’t’”

Limiting Movement Patters and Poor Posture

Putting the brakes on

Awkward Posture is an ergonomic problem.

Fitting the workstation to employee

Poor Posture is a Biomechanical problem.

Fitting the employee to the workstation

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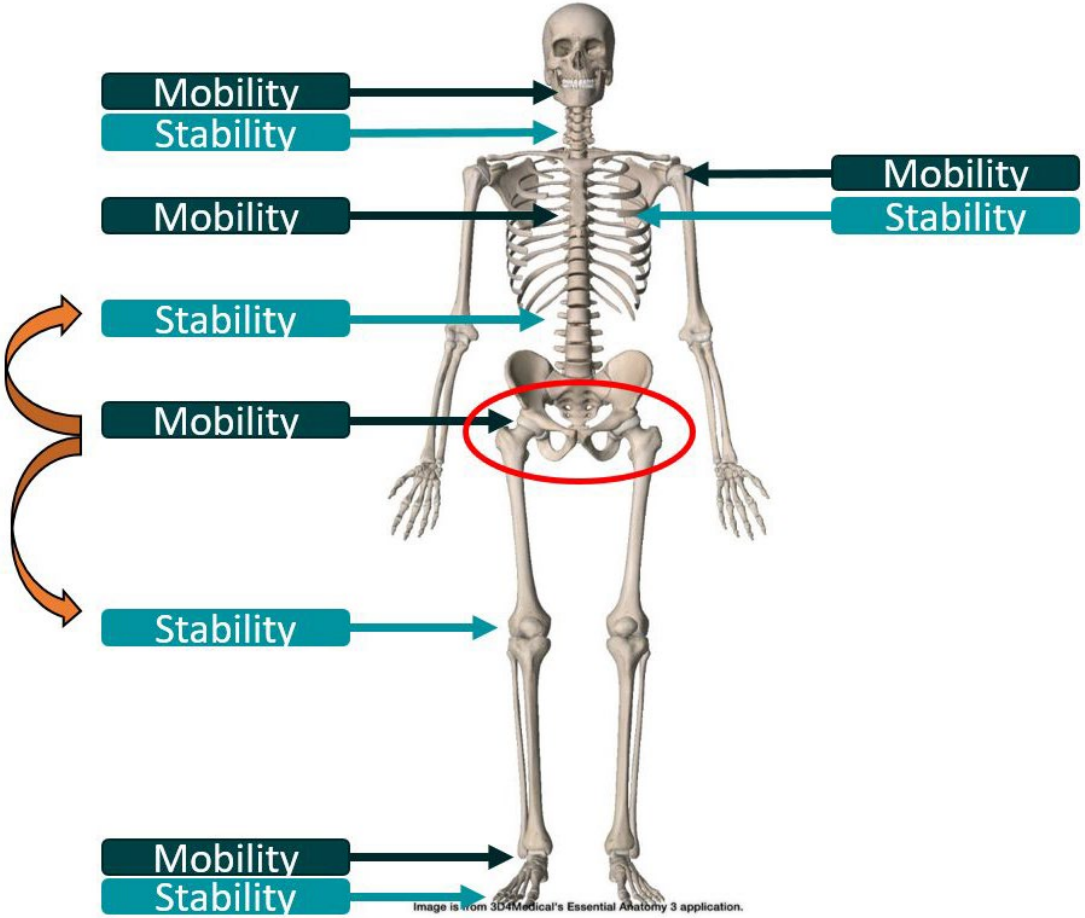
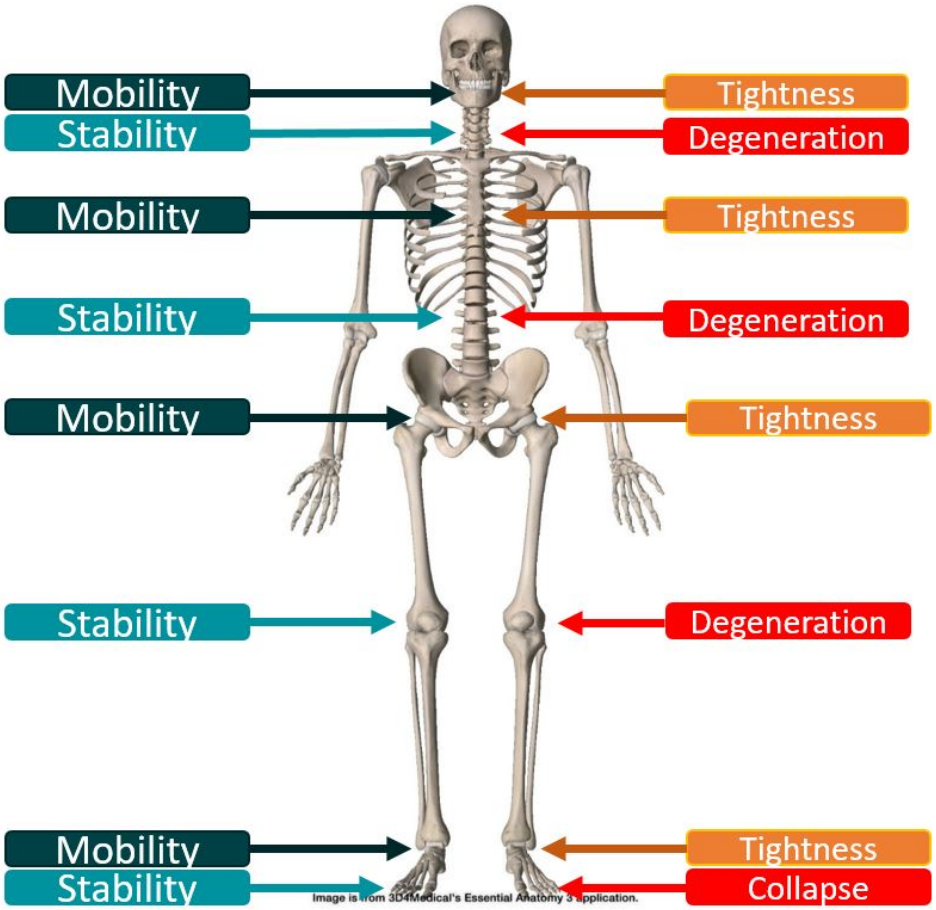


The Functional Design Of Human Movement

- Every joint has a specific design and function
- Alternating Patterns of **Stability** and **Mobility**
- Dysfunction in one joint leads to compensation to joints above and below



Dysfunction and tissue breakdown patterns

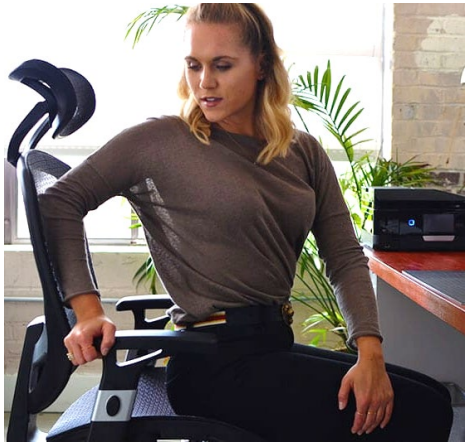
- Joints designed for **Mobility** tend to be Tight (inflexible)
- Joints designed for **Stability** show greater signs of degeneration. (unstable)

New Ergonomic Perspectives

Fitting the Employee to the Workstation

Poor Posture and Limited Movement Caused by

Intrinsic Factors Employee Engaged



Why “general” stretching programs are ineffective

- Not focused on specific limited movement patterns (the assumption)
- Increase compensation (path of least resistance)
- Not engaging (why am I doing this?)
- False sense of security (employee / employer)

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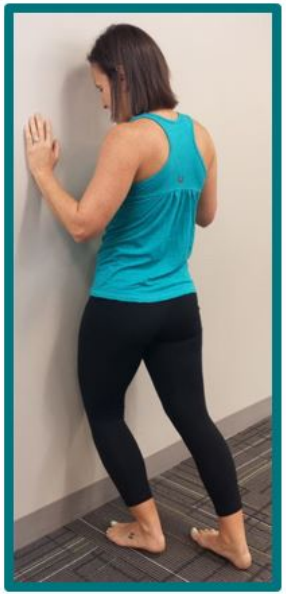
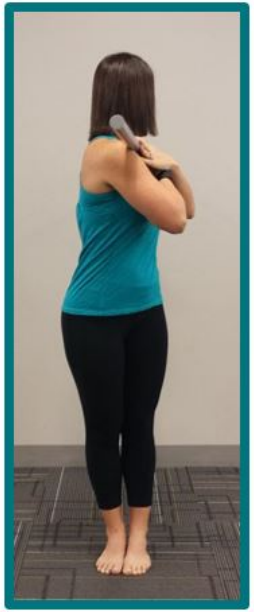
The 6 Fundamental Movement Patterns



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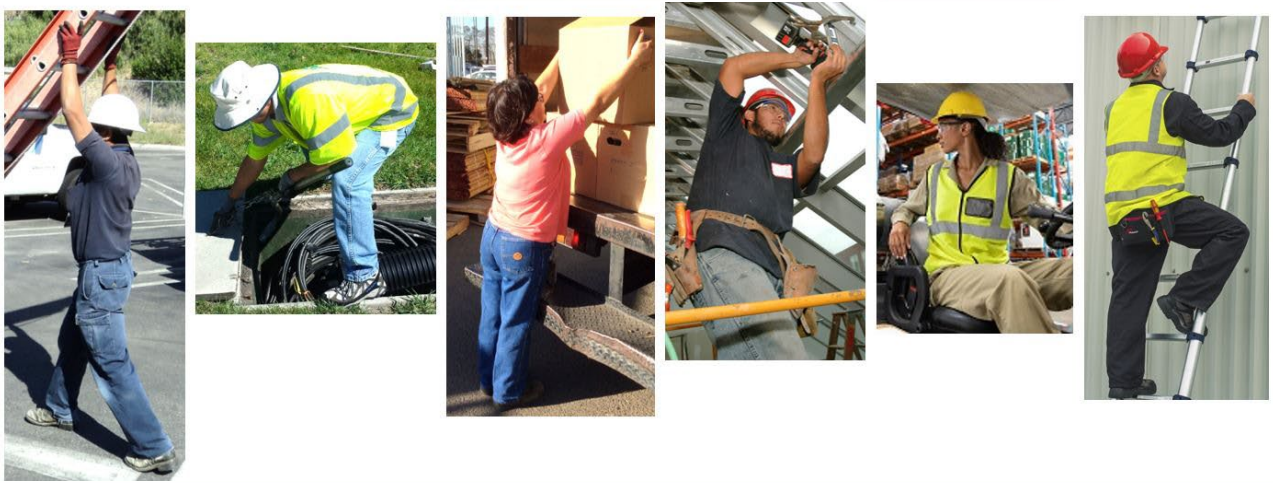

Strengthen
the Pattern
Improve
the Potential
Reduce
The Injuries

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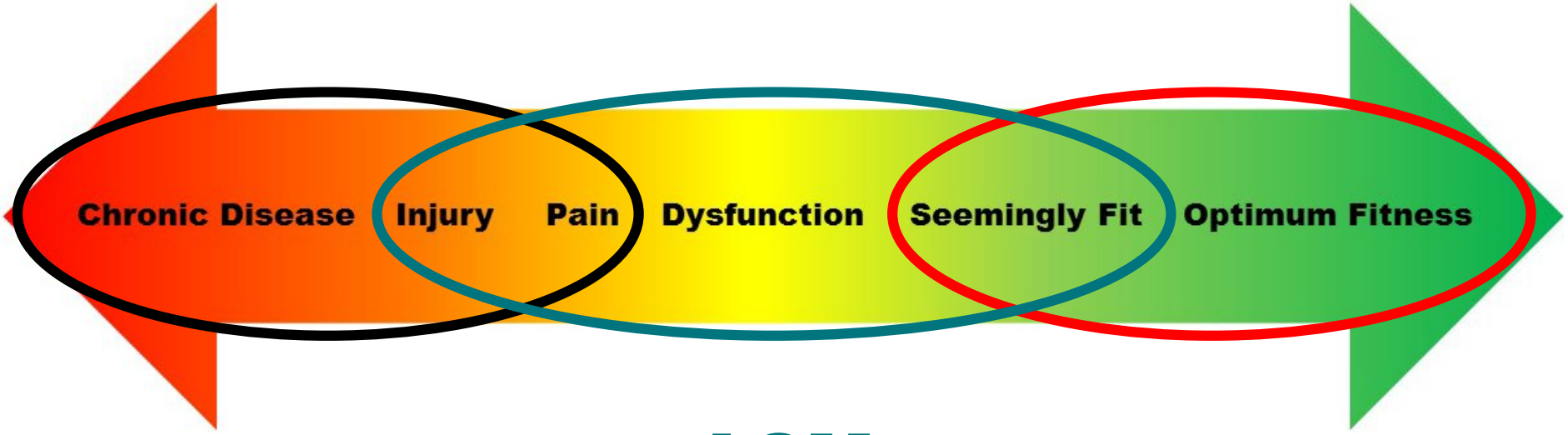
Bridging The Gap



Health Care **ACM** **Ergonomics/Safety**

Assess Correct then Move…

- Developed for safety and ergonomic professional to compliment current injury prevention and recovery programs
- An evidence based approach to Identify and Correct limited movement patterns and postural compensations that strongly contribute to increased risk of discomfort, pain and injury
- Unlike general stretching programs, ACM utilizes specific corrective exercises that focus on and correct the most underlying movement pattern dysfunctions leaving your employees engaged and empowered

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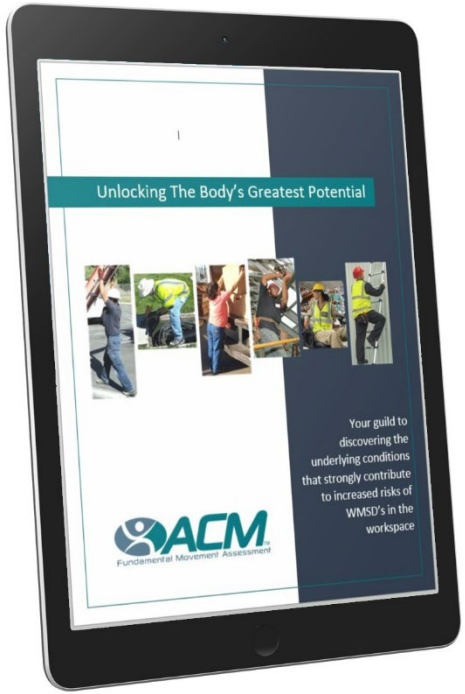

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NATIONAL ERGONOMICS Conference & ErgoExpo®

Every Movement Matters:

How Changing Posture and Movement Habits can Reduce Injuries

Presented by: Alicia Crelinsten, MSc., CAT(C), ATC, CSCS

DOES YOUR BACK LOOK LIKE

Every Movement Matters.

ReAlign Your Spine!

Posture Check

Make a fist with your hand

Bring your fist under your chin, with your pinky towards your chin

Tuck chin down into fist

…keep chin a fist width above the collar bone at all times!

Goal:

Eliminate preventable injuries.

Are you moving properly?

Or are you one move away from pain and injury?

Why do most people move wrong?

When do we learn about posture and movement?

From our parents…?

When do we learn about posture and movement?

In elementary or high school…?

When do we learn about posture and movement?

In trade and technical school…?

When do we learn about posture and movement?

At work…?

Has anyone commented on your posture at work?

Why do most people move wrong?

- People don’t know the right way to move
- People don’t know the consequences of their movement
- Poor habits
- Pain is not immediate

Injury Prevention Principles

1. The human body is designed to move.

2. How we move matters.

When moving correctly, we are getting stronger.

When sitting correctly, we are getting stronger.

It is important to move correctly all of the time!

ReAlign Your Spine!

How Our Back is Put Together

- Small bones (vertebrae)
- Cartilage discs between these bones
- Ligaments connecting the bones

Age-specific prevalence estimates of degenerative spine imaging findings in asymptomatic individuals (n=3110)

W. Brinjikji, SPINE, Nov. 27, 2014

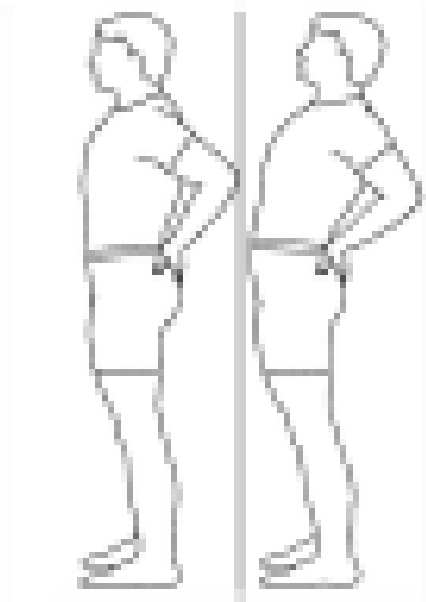
				Age			
Imaging Finding	20	30	40	50	60	70	80
Disk degeneration	37%	52%	68%	80%	88%	93%	96%
Disk height loss	24%	35%	45%	56%	67%	76%	84%
Disk bulge	30%	40%	50%	60%	69%	77%	84%
Annular fissure	19%	20%	22%	23%	25%	27%	29%
Facet degeneration	4%	9%	18%	32%	50%	69%	83%

Hinging at Our Hips

Feet Stable: Your Foundation

Hinge at the hips,
keeping a neutral spine.

ReAlign Your Spine



Place hands behind hips and gently bring hips forward (as shown).

Slowly breathe out.

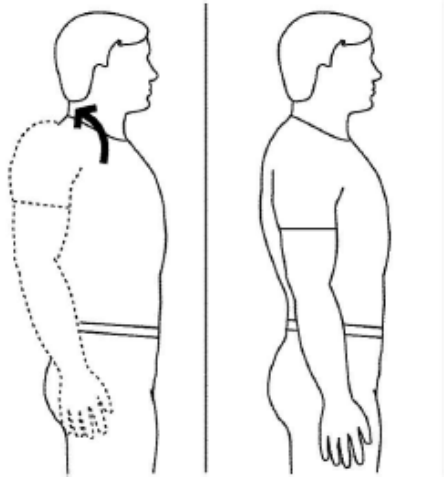
Return to start position as you breathe in.

Repeat 3 times.

Anchoring Our Shoulder Blades

- Head over your shoulders and anchor your shoulder blades.
- Keep chin a fist width above the collar bone.
- Keep your elbows close to the sides of your body, and your palms facing each other or up

ReAlign Your Shoulders



Roll shoulders upwards towards ears, as you breathe in.

Roll your shoulders backwards squeezing shoulder blades together in the back and returning to start position as you breathe out.

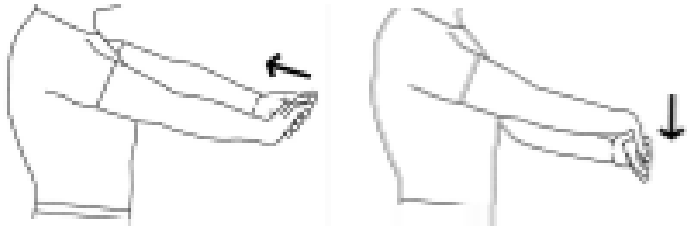
Repeat 10 times.

Keeping Our Wrists Neutral

- Keep your elbows close to the sides of your body, and your palms facing each other or up

- Keep your wrist in a neutral position while working.

ReAlign Your Wrists



Grasp palm of one hand with other hand.

Keeping elbow straight on involved arm, pull hand gently (as shown).

Hold for 10 seconds each way. (palm down and palm up)

How do we change HABITS?

- Understand the consequences of the poor habits
- Repeat good habits

Habit Loop: Cue, Routine, Reward

How do we eliminate preventable injuries?

…by changing posture and movement habits.

How do we change habits?

Training

Daily Practice and Feedback

Monitoring and Integration

ReAlign Habits:

Start your shift with ReAlign Exercises

Posture-check every 20 minutes
(chin, shoulders, elbows, wrists)

Stand up and do one ReAlign exercise every hour

Result:

Eliminate preventable injuries.

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