

Athletic Trainers As Health Care Providers in the Occupational/Industrial Setting

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PRESENTATION

OVERVIEW

Topics for Discussion

AT Domains

Industrial Athlete

Occupational Health Work Setting

Value of On-site AT Services- ROI

Typical Athletic Training Duties/Responsibilities

Safety And Ergonomics

Future Collaboration



Domains of Athletic Training

DOMAIN 4

Therapeutic Intervention Rehabilitating and reconditioning injuries...

DOMAIN 5

Healthcare Administration and Professional Responsibility Integrating best practices in policy construction and implementation, documentation...

Domains of Athletic Training

DOMAIN 1

Injury and Illness Prevention and Wellness Promotion Promoting healthy lifestyle behaviors with effective education and communication to enhance wellness and minimize the risk of injury and illness

DOMAIN 2

Examination, Assessment and Diagnosis Implementing systematic, evidence-based examinations and assessments to formulate valid clinical diagnoses and determine patients' plan of care

DOMAIN 3

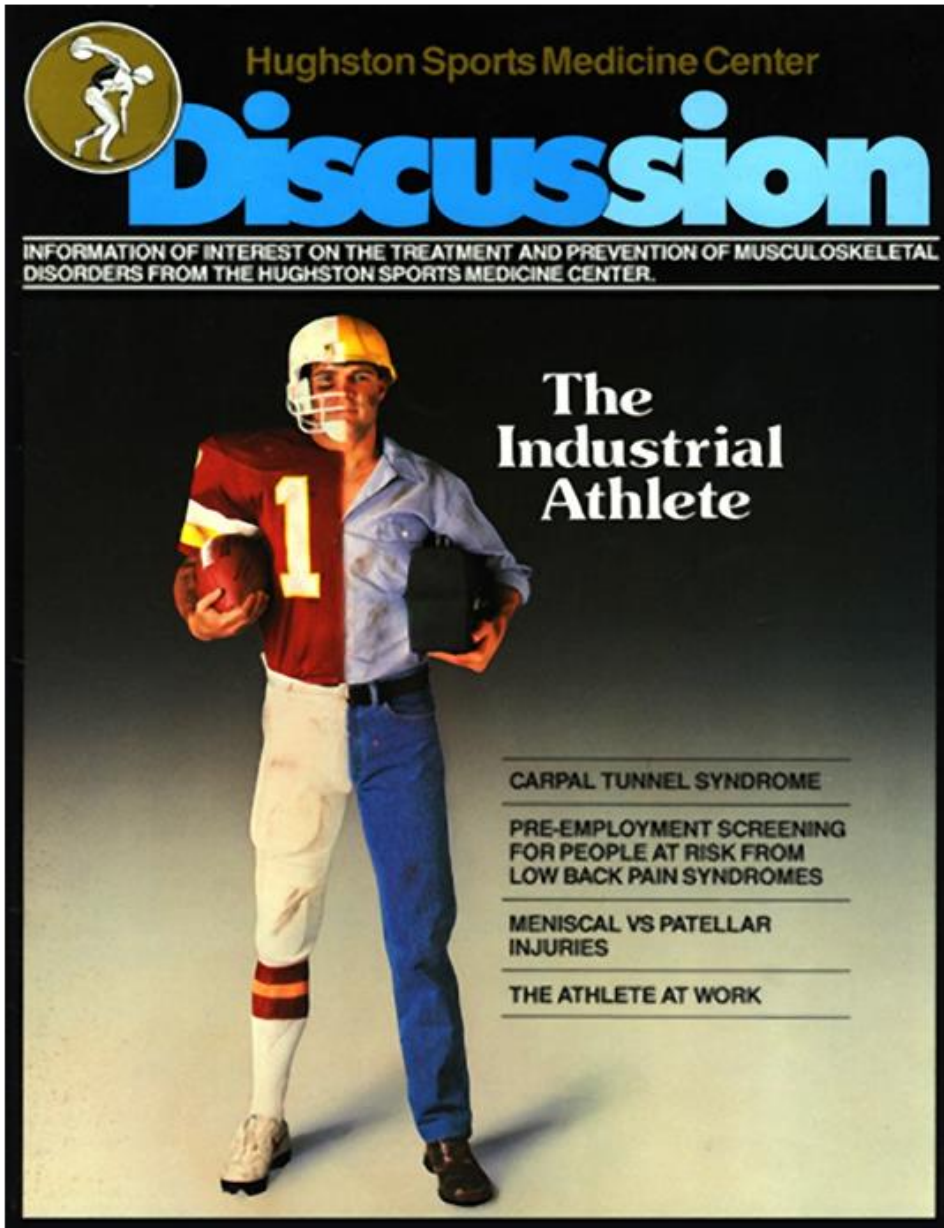
Immediate and Emergency Care...

What Is An Industrial Athlete?

Industrial Athlete: "...refers to anyone who makes a living using mental and physical talents to perform jobs that require skill, strength, flexibility, coordination and endurance- just like an athlete."

The Industrial Athlete November 3, 2003





OCCUPATIONAL INJURIES INVOLVING DAYS AWAY FROM WORK UNITED STATES, 2019

#1

Overexertion, bodily reaction

- **Injury rate:** 27.0 per 10,000 full-time workers
- **Age group** most at risk: 45 to 64
- **Industry** most at risk: transportation and warehousing
- **Typical days lost:** 13
- Most frequent **part of body** hurt: back

#2

Falls, slips, trips

- **Injury rate:** 23.9 per 10,000 full-time workers
- **Age group** most at risk: 55 and over
- **Industry** most at risk: transportation and warehousing and agriculture
- **Typical days lost:** 13
- Most frequent **type of injury:** sprains, strains, tears

#3

Contact with objects/equipment

- **Injury rate:** 22.4 per 10,000 full-time workers
- **Age group** most at risk: 16 to 24
- **Industries** most at risk: agriculture, transportation and warehousing, and construction
- **Typical days lost:** 5
- Most frequent **type of injury:** cuts, lacerations, punctures

National Safety Council



National Safety Council



The U.S. Experienced in 2021 National Safety Council (NSC)

4,472
PREVENTABLE
DEATHS

4.26
MILLION
INJURIES

\$167
BILLION
IN COSTS





**Occupational Safety and
Health Administration**

OSHA First Aid 1904.7(b)(5)(ii)

Cleaning, flushing or soaking wounds on the surface of the skin

Using any non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc. (devices with rigid stays or other systems designed to immobilize parts of the body are considered medical treatment...)

Using hot or cold therapy

Using massages (physical therapy or chiropractic treatment are considered medical treatment for recordkeeping purposes)

Drinking fluids for relief of heat stress

ATHLETIC TRAINERS IN A TYPICAL MANUFACTURING SITE

Athletic Trainers Onsite

Primary duties of lineside ATs include:

- Lineside medical assessments of workers
- Provide first aid (OSHA) level care
- Document and track injury trends
- Conduct individual case investigations
- Provide ergonomic countermeasure recommendations
- Conduct pre-hire Physical Performance Testing (PPT or POET)

All daily activities performed under the direction of Clinic Physicians and integrated with Exercise Physiologists, Ergonomists, and Shop Safety staff

Typical Athletic Trainer Encounters

Lineside Medical (LSM) Encounters with Shop Safety Staff

- MSD assessments- linking process to mechanism of injury (MOI)

LSM Follow up visits with Shop Safety Staff

- Provide first aid (OSHA) care
- Heat/Ice, general stretching, taping, massage, and self-care

Physician supervision interaction

- EMR documentation
- Determine “Red flags” and referral to on-site clinic protocols
- Case reviews with multidisciplinary staff

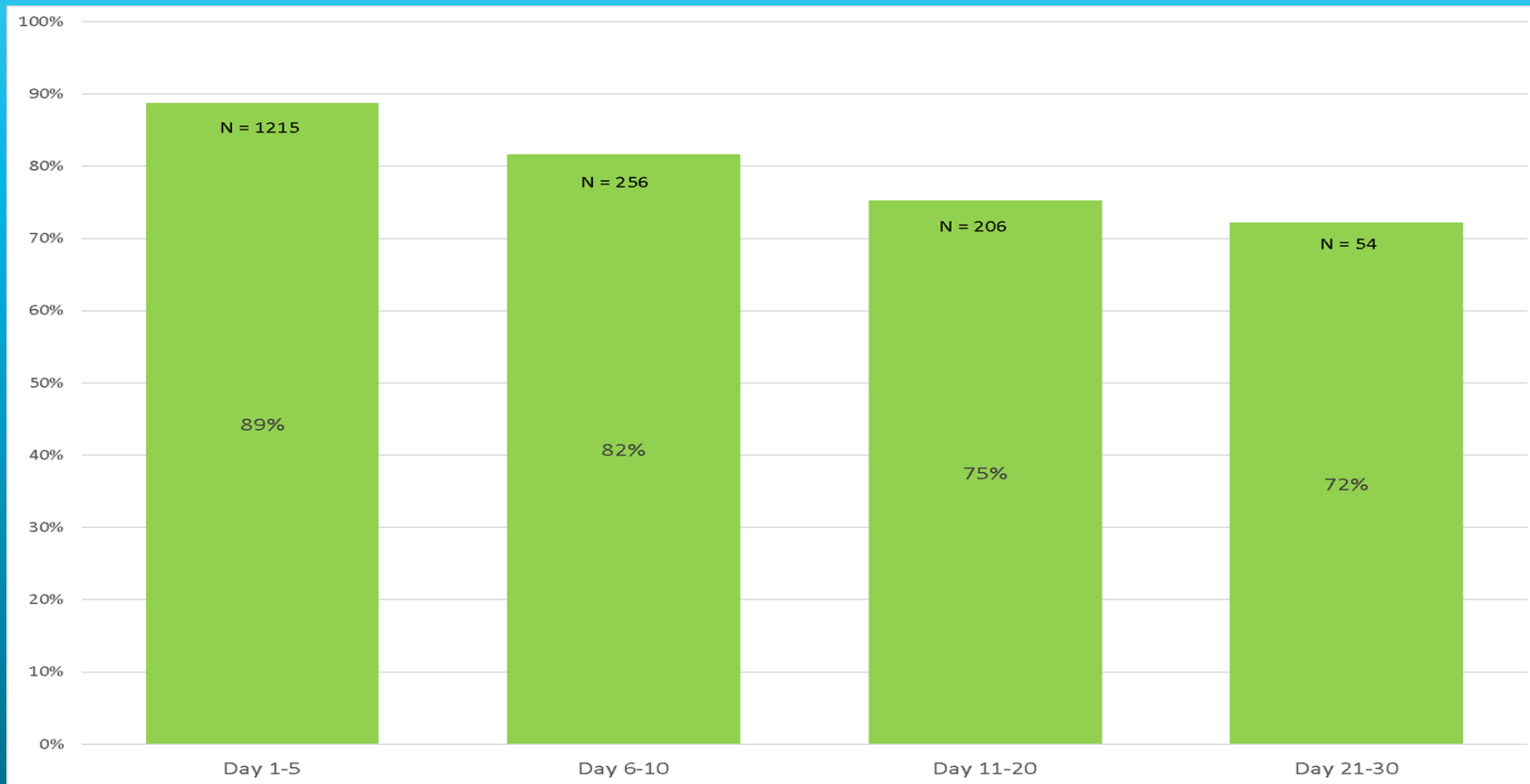
Athletic Trainer Encounters (cont.)

Secondary Encounters Can Include:

- New hire ergonomics orientation
- General strengthening & conditioning and/or wellness programs
- Data trending
- In-depth incident investigations
- Special requests- Lunch & Learn, Group stretching sessions
- Affiliated AT Education Site Agreements

Early Intervention Example

The Early Symptom Investigation (ESI) process is more successful for workers who report their discomfort as soon as possible. Workers who return to regular duty without an OSHA recordable treatment are deemed successful.



Occupational Health Athletic Training

A Healthy Investment

The American Society of Safety Professionals (ASSP):

- For every dollar spent on ergonomic related safety programs results in up to \$3-\$5 in savings

US Bureau of Labor Statistics (www.bls.gov):

- Muscular Skeletal Disorders (MSDs) accounted for 31% (356,910 cases) of total cases in 2015
- MSDs resulted in an incidence rate of 29.8 cases per 10,000 full time workers

Occupational Safety and Health Administration (OSHA), from 2009-11:

- Sprains/strains averaged \$28,866- \$33,528 direct cost per claim
- Contusions averaged \$27,042 direct cost per claim

Occupational Health Athletic Training

A Healthy Investment

Results of a 2009 NATA survey of companies that kept ROI data showed:

- 100% reported a favorable ROI with on-site AT services
- 83% indicated the ROI was more than \$3/employee per \$1 invested
- 30% indicated the ROI was at least \$7/employee per \$1 invested
- 94% indicated the severity of injuries decreased by at least 25%
- 90% indicated days away from work decreased by 25% or more
- 68% indicated a decrease in restricted workdays and a decrease in Workers' Compensation (WC) claims for MSDs by 25%

Athletic Trainers in Occupational Health Settings

Examples include:

- Automotive Manufacturing/ Supply
- Federal Government/ Local Municipalities
- Public Safety
- Airlines/ Manufacturing
- Distribution
- Delivery Services
- Entertainment
- Corporate

Summary of Cost Benefits of Lineside Medical

- ↑ Productivity from EI Cases due to shorter time away from line
- ↓ Worker's Compensation Accruals due to ↓ 1st Occ's
- ↑ First Aid Countermeasures (i.e. Massage, Ice, etc...)
- ↑ Early Intervention Outcomes & ↓ Injury Severity
- ↓ Worker's Compensation Spend
- ↓ Injuries of New Hires
- ↑ Success of Transfers
- Improved Ability to Identify Jobs for Restricted Workers

Summary

- Athletic Trainers are valuable members of the occupational health care team
- AT skills set applies extremely well to the occupational setting
- Occupational setting recognizes value of wellness and prevention
- Early injury intervention provides improved outcomes
- ROI demonstrated value

NATA Resources

NATA COPA website- expanding resources to include committee webpages

Gather:

Developing a list of health care companies who offer an on-site student immersion experience. Launch is TBD

Members can express interest in joining a committee for future openings

Mentorship program- sign up as a mentor or mentee

Role of Safety and Ergonomics

Safety Example

April 27, 1978, the Deadliest Construction Accident in U.S. Killed 51

It was 45 years ago today that a huge scaffold system collapsed inside a cooling tower under construction at a West Virginia power plant, sending 51 workers tumbling to their deaths 170 feet

Ergonomics

The word ergonomics comes from the Greek word “ergon” which means work and “nomos” which means laws. It’s essentially the “laws of work” or “science of work”

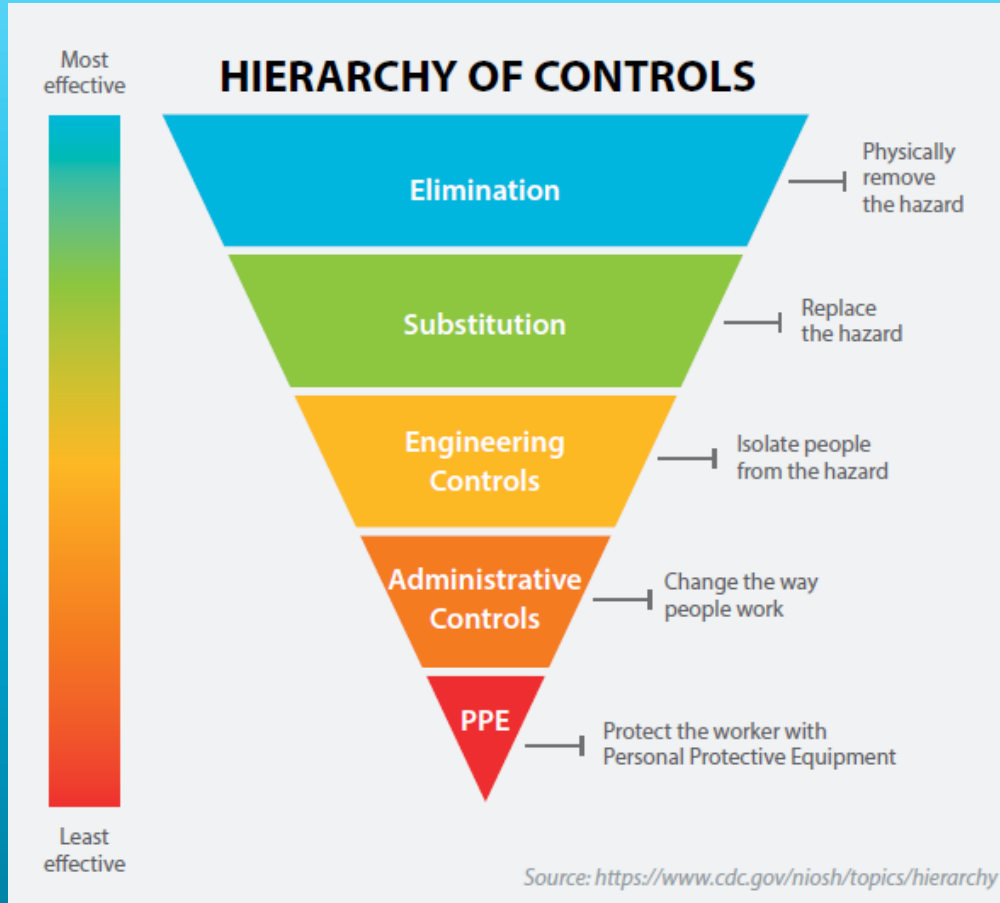
Main goal is to fit the process/ machine to the worker instead of making the worker fit the process.



IMPACT OF ERGONOMICS

Ergonomics: Possible Solutions & Success Stories

- \$9-\$23 Billion reduction in Workers Comp expenses if we invest in Ergonomics
 - Janet Froetscher, President & CEO National Safety Council - Keynote Applied Ergonomics Conference, Dallas, TX - March 19, 2013
www.nsc.org
- Every \$1 invested in Safety/Ergo has a \$3 to \$6 return on investment
 - Liberty Mutual Insurance Co. www.libertymutual.com
- Goldman Sachs study determined that corporate investment in safety showed increased value (\$\$\$) in stock prices
 - www.goldmansachs.com



Ergonomic Tools





Non- Ergonomic Tool/ Poor Posture



Better Ergonomic Tool/ Improved Posture



BENEFITS OF ERGONOMICS

- Reduce MSDs & Expenses
- Reduce Wasteful Motions
- Less Fatigue
- Increase Productivity
- Time Savings
- Error Rates Decreased
- Decreased Turnover & Absenteeism

What are the Primary Risk Factors for Ergonomics Injuries?

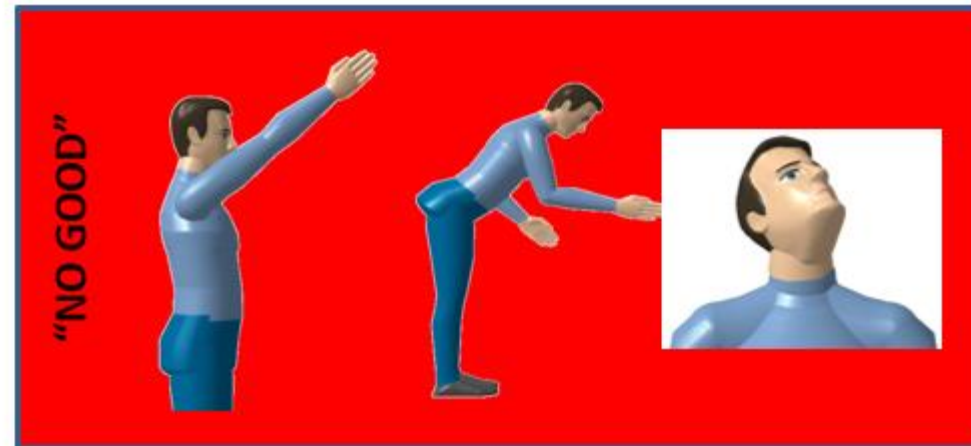
- **Posture** – awkward, static positions
- **Force** – lift, push/pull, grip, pinch
- **Repetition** – frequency & speed over time
- **Contact Stress** – focused sustained or suddenly applied with compressive force
- **Vibration** – segmental or whole body over time, frequency and amplitude

What is Neutral Posture?

"Neutral Posture" refers to the resting position of each joint

While working, it is recommended to maintain neutral postures as much as possible to prevent injury.

Please note: Not all "NO GOOD" postures are unavoidable but there are countermeasures that may help decrease physical burden



Head/Neck Posture

- Rotation (side to side)

**NO
GOOD**



GOOD



Coaching Tips:

- Align shoulders and body in front of work area ("face work")
- Use eyes to look as opposed to turning head
- Adjust work station if able

Shoulder Posture

- Reaching Behind

NO
GOOD



GOOD



Coaching Tips:

- “Face” Work
- Avoid rushing through takt time

Shoulder Posture

- Overhead Movement

**NO
GOOD**



GOOD



Coaching Tips:

- Some postures may be unavoidable
- Utilize reaching tools, ramps, etc. to elevate body or lower work station.
- Step closer to work.

Arm/ Elbow Posture

- Angle of Wrist - Flexion

NO
GOOD

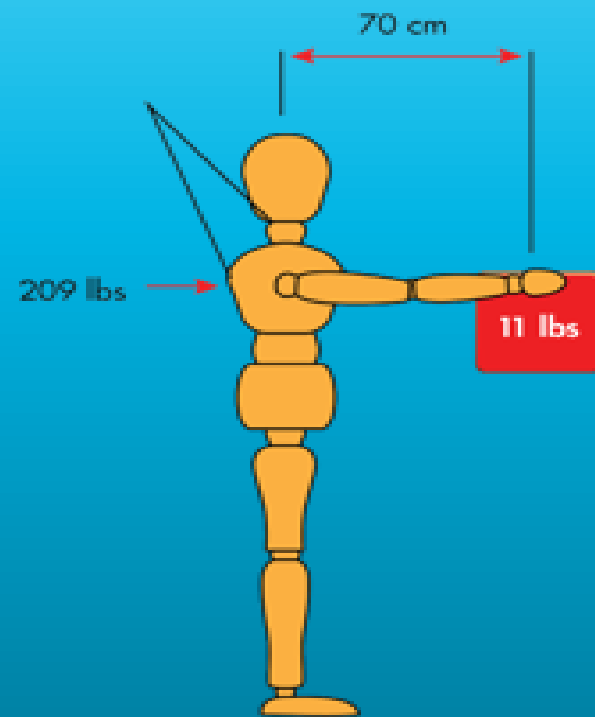
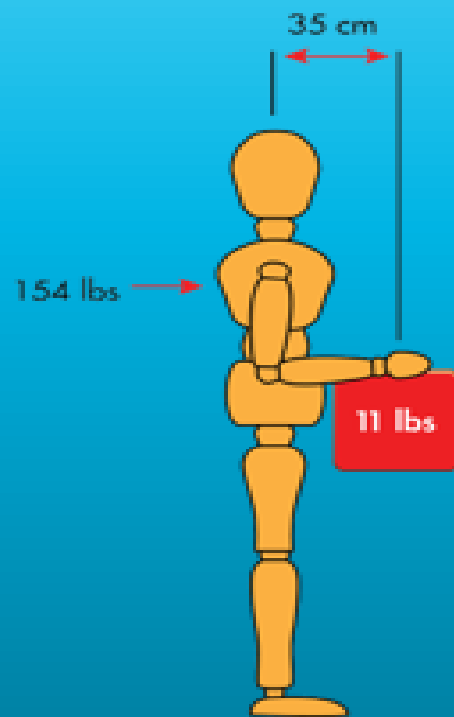
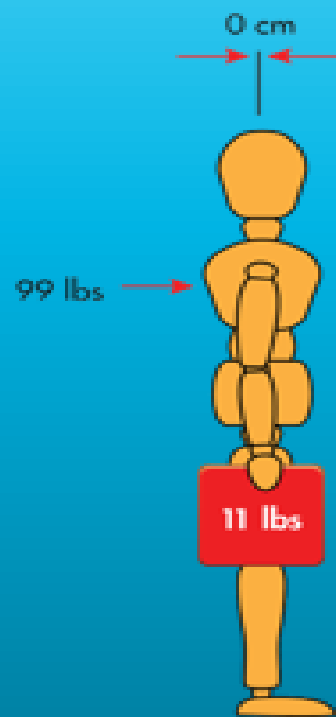


GOOD



Coaching Tips:

- Maintain a neutral posture (keep wrists straight) when gripping hand tools or parts



OSHA W-1 Basic Screening Tool





Table W-1 - Basic Screening Tool

You need only review risk factors for those areas of the body affected by the MSD incident.

Risk Factors This Standard Covers	Performing job or tasks that involve:	Body Part Associated With MSD Incident			
		Neck/ Shoulder	Hand/ Wrist/ Arm	Back/ Trunk/ Hip	Leg/ Knee/ Ankle
Repetition	(1) Repeating the same motions every few seconds or repeating a cycle of motions involving the affected body part more than twice per minute for more than 2 consecutive hours in a workday.	**	**	**	**
	(2) Using an input device, such as a keyboard and/or mouse, in a steady manner for more than 4 hours total in a workday.	**	**		
Force	(3) Lifting more than 75 pounds at any one time; more than 55 pounds more than 10 times per day; or more than 25 pounds below the knees, above the shoulders, or at arms' length more than 25 times per day.	**	**	**	**
	(4) Pushing/pulling with more than 20 pounds of initial force (e.g., equivalent to pushing a 65 pound box across a tile floor or pushing a shopping cart with five 40 pound bags of dog food) for more than 2 hours total per day.	**	**	**	**
	(5) Pinching an unsupported object weighing 2 or more pounds per hand, or use of an equivalent pinching force (e.g., holding a small binder clip open) for more than 2 hours total per day.		**		
	(6) Gripping an unsupported object weighing 10 pounds or more per hand, or use of an equivalent gripping force (e.g., crushing the sides of an aluminum soda can with one hand), for more than 2 hours total per day.		**		

Table W-1 - Basic Screening Tool - continued

You need only review risk factors for those areas of the body affected by the MSD incident.

Risk Factors This Standard Covers	Performing job or tasks that involve:	Body Part Associated With MSD Incident			
		Neck/ Shoulder	Hand/ Wrist/ Arm	Back/ Trunk/ Hip	Leg/ Knee/ Ankle
Awkward Postures	(7) Repeatedly raising or working with the hand(s) above the head or the elbow(s) above the shoulder(s) for more than 2 hours total per day.	**	**	**	
	(8) Kneeling or squatting for more than 2 hours total per day.			**	**
	(9) Working with the back, neck or wrists bent or twisted for more than 2 hours total per day (see figures.)    	**	**	**	
Contact Stress	(10) Using the hand or knee as a hammer more than 10 times per hour for more than 2 hours total per day.		**		**
Vibration	(11) Using vibrating tools or equipment that typically have high vibration levels (such as chainsaws, jack hammers, percussive tools, chiseling or chipping hammers) for more than 30 minutes total per day.	**	**	**	
	(12) Using tools or equipment that typically have moderate vibration levels (such as jig saws, grinders, or sanders) for more than 2 hours total per day.	**	**		

WAC Form

Heavy, Frequent or Awkward Lifting

Box Lifting Example

employers who choose the Specific Performance Approach.

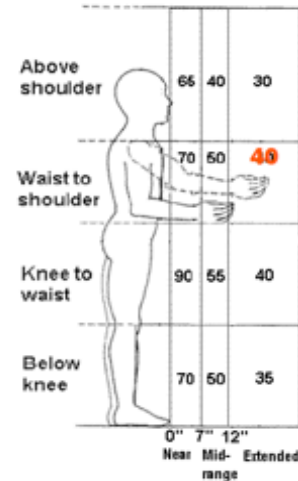
Heavy, Frequent or Awkward Lifting

This analysis only pertains if you have "caution zone jobs" where employees lift 10 lbs. or more (see WAC 296-62-05105, Heavy, Frequent, or Awkward Lifting) and you have chosen the specific performance approach.

Step 1 Find out the actual weight of objects that the employee lifts.

Actual Weight = 27 lbs.

Step 2 Determine the Unadjusted Weight Limit. Where are the employee's hands when they begin to lift or lower the object? Mark that spot on the diagram below. The number in that box is the Unadjusted Weight Limit in pounds.



Unadjusted Weight Limit: 40 lbs.

Step 3 Find the Limit Reduction Modifier. Find out how many times the employee lifts per minute and the total number of hours per day spent lifting. Use this information to look up the Limit Reduction Modifier in the table below.

How many lifts per minute?	For how many hours per day?		
	1 hr or less	1 hr to 2 hrs	2 hrs or more
1 lift every 2-5 mins.	1.0	0.95	0.85
1 lift every min	0.95	0.9	0.75
2-3 lifts every min	0.9	0.85	0.65
4-5 lifts every min	0.85	0.7	0.45
6-7 lifts every min	0.75	0.5	0.25
8-9 lifts every min	0.6	0.35	0.15
10+ lifts every min	0.3	0.2	0.0

Note: For lifting done less than once every five minutes, use 1.0

Limit Reduction Modifier: .2

Step 4 Calculate the Weight Limit. Start by copying the Unadjusted Weight Limit from Step 2.

Unadjusted Weight Limit: = 40 lbs.

If the employee twists more than 45 degrees while lifting, reduce the Unadjusted Weight Limit by multiplying by 0.85. Otherwise, use the Unadjusted Weight Limit

Twisting Adjustment: = .85

Adjusted Weight Limit: = 34 lbs.

Multiply the Adjusted Weight Limit by the Limit Reduction Modifier from Step 3 to get the Weight Limit.

Limit Reduction Modifier: .2

Weight Limit: = 6.8 lbs.

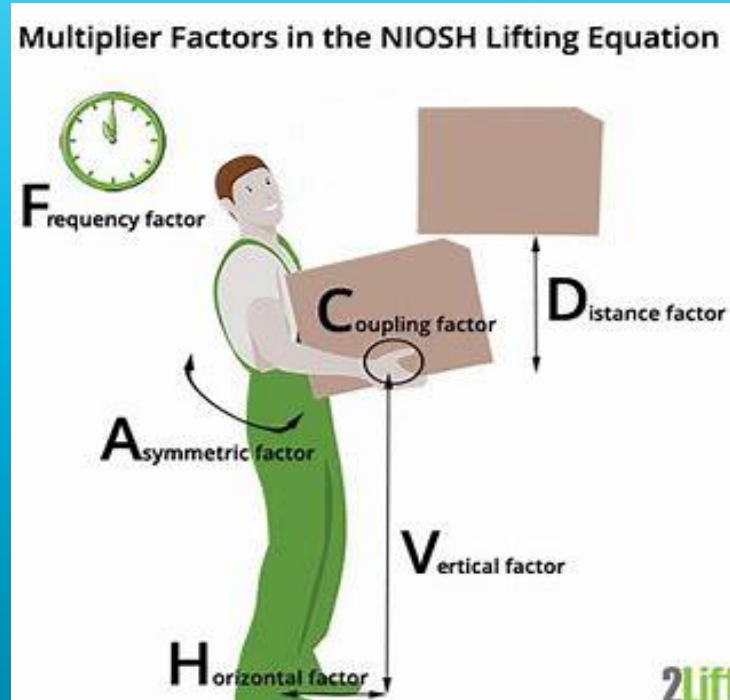
Step 5 Is this a hazard? Compare the Weight Limit calculated in Step 4 with the Actual Weight lifted from Step 1. If the Actual Weight lifted is greater than the Weight Limit calculated, then the lifting is a WMSD hazard and must be reduced below the hazard level or to the degree technologically and economically feasible.

Note: If the job involves lifts of objects with a number of different weights and/or from a number of different locations, use Steps 1 through 5 above to:

1. Analyze the two worst case lifts -- the heaviest object lifted and the lift done in the most awkward posture.
2. Analyze the most commonly performed lift. In Step 3, use the frequency and duration for all of the lifting done in a typical workday.



NIOSH Lifting Equation



NIOSH LIFTING EQUATION

- The NIOSH lifting equation defines a recommended weight limit (**RWL**) for lifting and lowering of objects.
- The RWL represents a load that nearly all (90% of the adult population) can lift over a substantial period (up to 8 hours) without placing an excessive load on the back, causing excess fatigue or increasing the risk of MSDs to the lower back.

NIOSH LIFTING EQUATION

Assumptions

Best case scenario

- The load is evenly distributed between both hands.
- The load is lifted with two hands.
- The distance between the hands is 25 inches or less.
- The hands are in front of the torso.

FUTURE COLLABORATION

Most countries seem to have a governmental agency or department overseeing workers' health and safety

Examples:

- Israel: Israel Institute for Occupational Safety and Hygiene- IIOSH
- Canada: Canadian Centre for Occupational Health and Safety
- Great Britain: Health and Safety Executive
- Japan: Japan Society for Occupational Health
- Greece: Ministry of Labour and Social Security

EU-OSHA- monitors the incidence, causes, and prevention of MSDs

OiRA — Online interactive Risk Assessment

Questions or Comments?

Contact:

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