STATE OF ALASKA
LABOR STANDARDS & SAFETY
AKOSH Consultation

Ergonomics In Seafood Processing

Heather Miley, Health Consultant
Christian Hendrickson, Safety Consultant

Website: https://labor.alaska.gov/lss/oshhome.htm

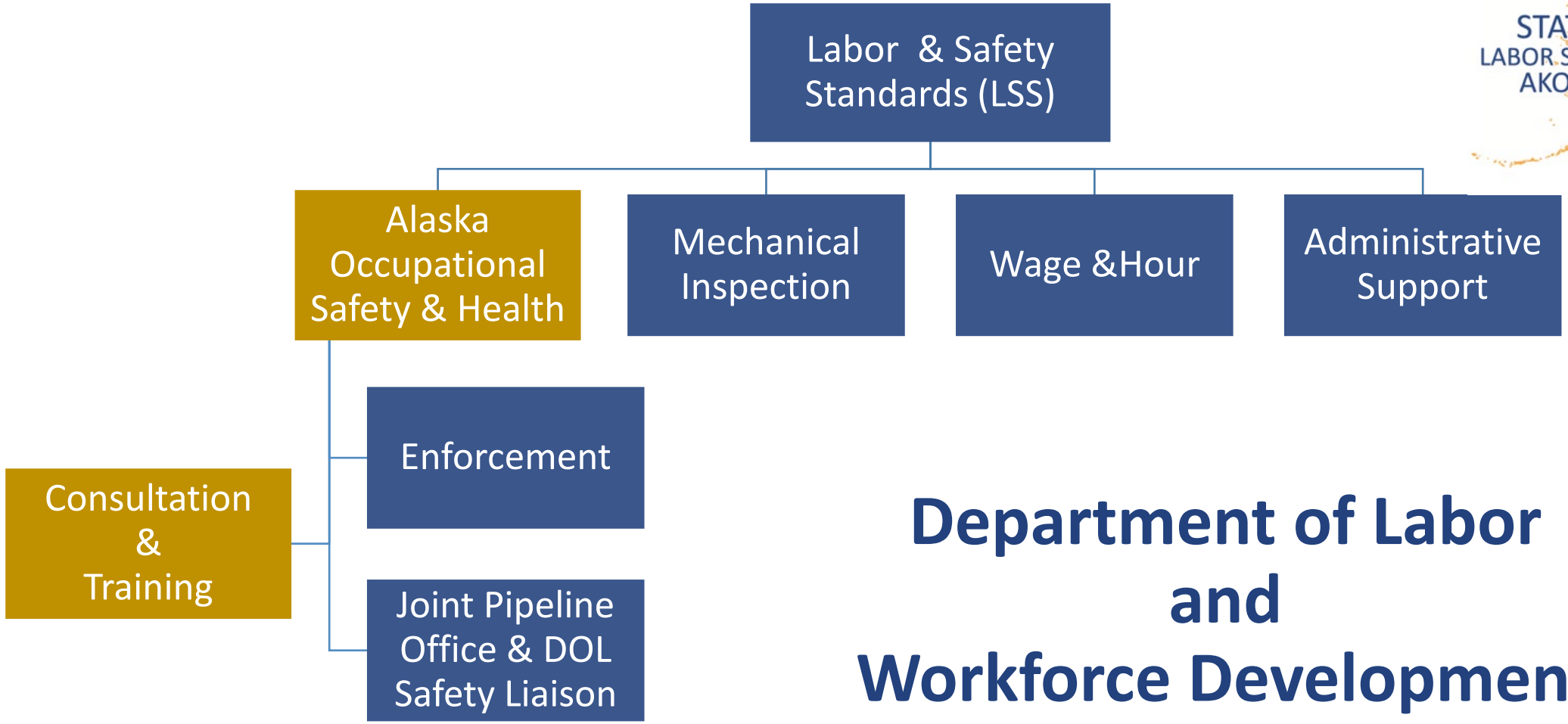
Toll free: (800) 656-4972 | **Local:** (907) 269-4955

Introduction: Consultation and Training (AKOSH C&T)

- **FREE** and **CONFIDENTIAL** assistance
- Priority services for smaller employers
- AKOSH C&T consultants DO NOT issue citations or penalties
- Employers initiate the request for on-site visits and training
- Find the AKOSH C&T request form here:

http://labor.alaska.gov/lss/forms/consultation_training_form.pdf

STATE OF ALASKA
LABOR STANDARDS & SAFETY
AKOSH Consultation



Department of Labor and Workforce Development

Find the AKOSH C&T request form at **http://labor.alaska.gov/lss/forms/consultation_training_form.pdf**

Lesson objectives

Purpose:

- Provide supervisors and workers introductory information about ergonomics.

Topics:

1. Identify common work-related musculoskeletal disorders (MSDs)
2. Recognize risk factors associated with work-related MSDs.
3. How to apply ergonomic guidelines in fish processing to protect workers.
4. Identify ergonomic control methods for eliminating/reducing work-related MSDs.
5. Locate and use ergonomic resources

Ergonomics: Defined

"The scientific discipline concerned with understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, methods and data to design in order to optimize human well-being and overall system performance."

Ergo = Work **Nomos** = Law

311700 Seafood product preparation and Packaging = DART 3.6

711211 Sports Teams and Clubs = DART 11.0

DART of 16 - 20 is not uncommon in Alaska

Common Work-Related MSDs

Musculoskeletal Disorders (MSDs)

- Affect the muscles, nerves, blood vessels, ligaments, and tendons
- Symptoms
  - Discomfort
  - Pain
  - Numbness
  - Loss of motion
  - Spasticity
  - Stiff joints
  - Burning
  - Swelling
  - Tingling
  - Inflammation
  - Throbbing
  - Paralysis

Risk Factors Associated with MSDs

- Examples of risk factors include:
  - Exerting excessive force
    - Lifting heavy objects/people
    - Pushing or pulling heavy loads
    - Manual pouring materials
    - Maintaining control of equipment or tools
  - Performing same/similar tasks repetitively

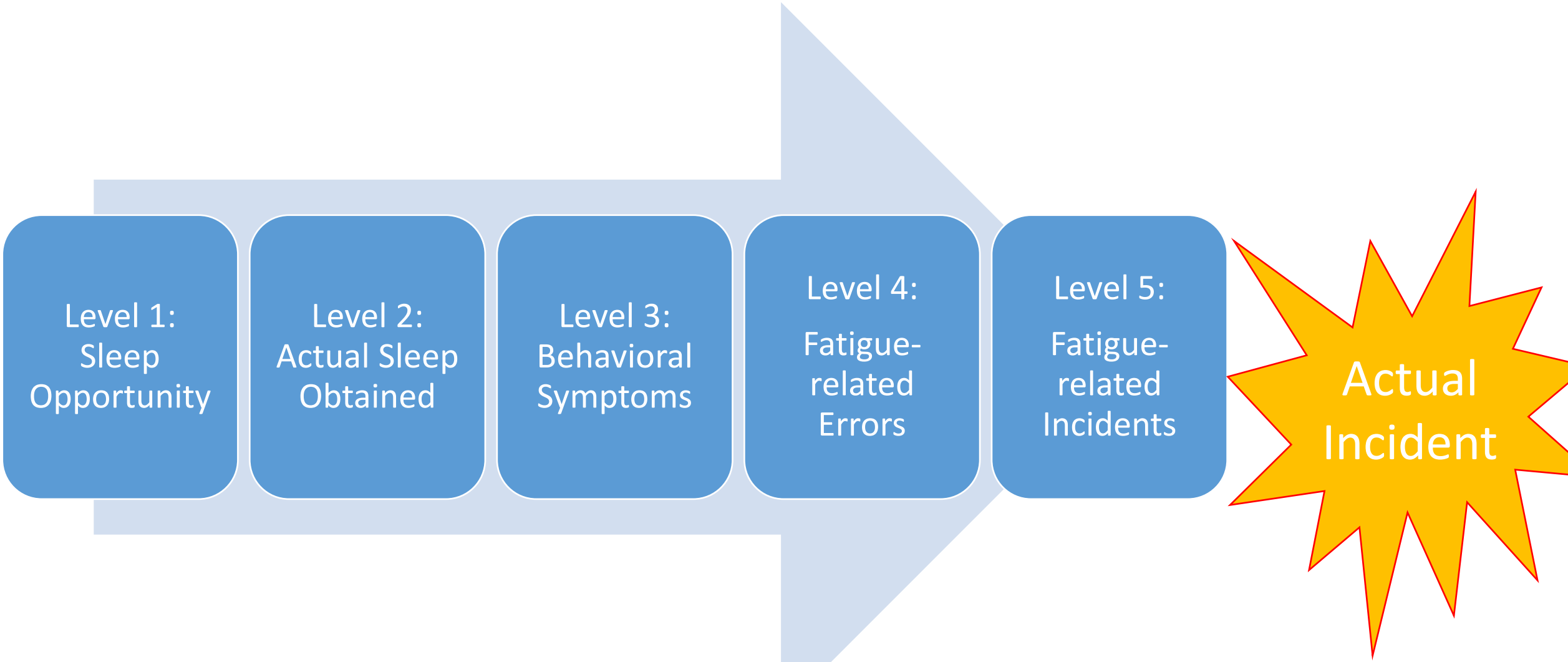
Risk Factors Associated with MSDs

- Working in awkward postures or same postures for long periods
  - Prolonged/repetitive reaching above shoulder height
  - Kneeling
  - Squatting
  - Leaning over a counter/bending
  - Using a knife with wrists bent
  - Twisting the torso while lifting
- Localized pressure into the body part
  - Pressing the body/part of the body against hard or sharp edges

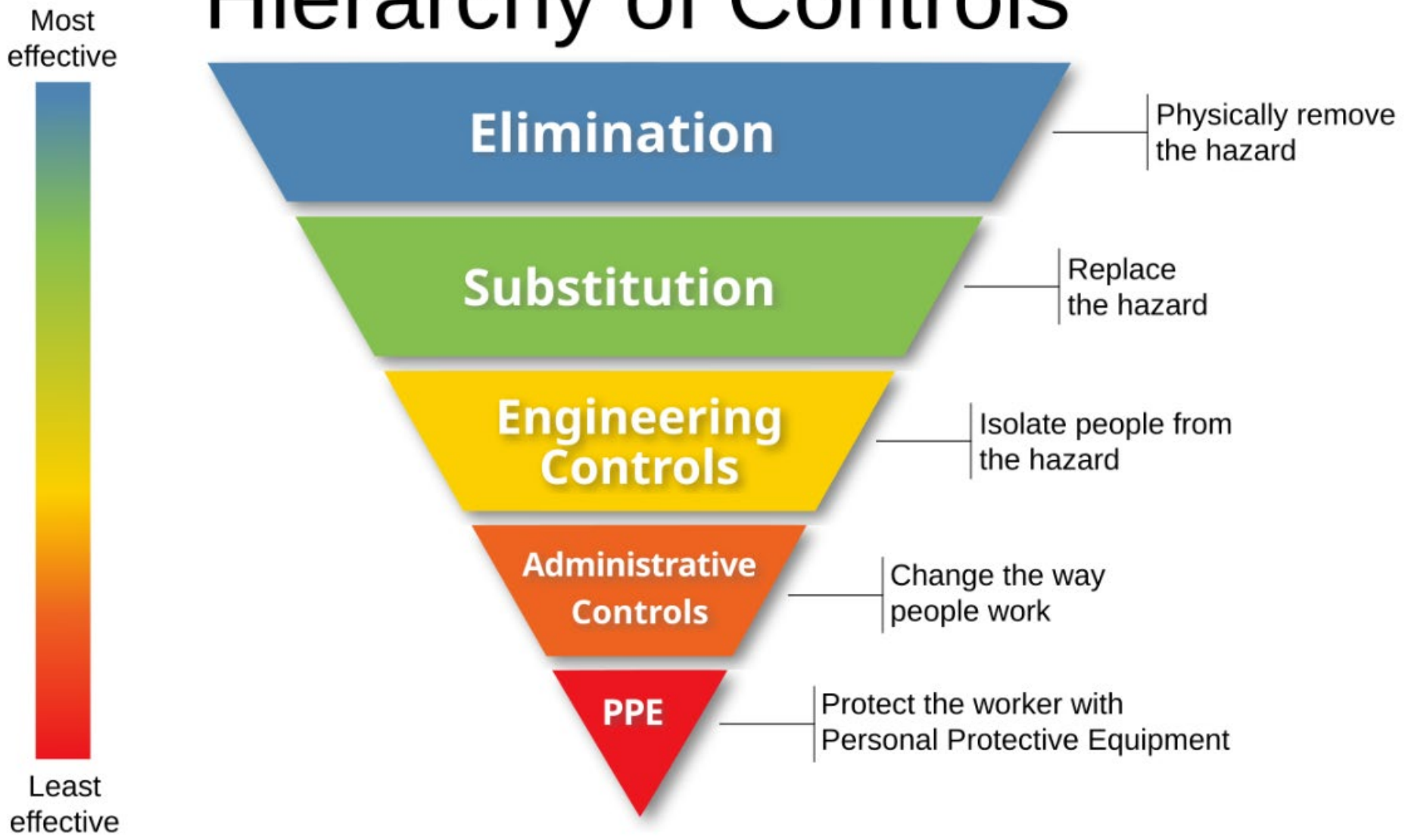
Risk Factors Associated with MSDs

- Cold temperatures (in combination with other risk factors)
- Vibration
  - Whole body
  - Hand-arm
- Combined exposure to several risk factors

Source of graphics: OSHA


Level 1: Sleep Opportunity
Level 2: Actual Sleep Obtained
Level 3: Behavioral Symptoms
Level 4: Fatigue-related Errors
Level 5: Fatigue-related Incidents
Actual Incident

Hierarchy of Controls



Ergonomic Control Methods

Use neutral postures

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

What is a neutral posture? Hands and wrists

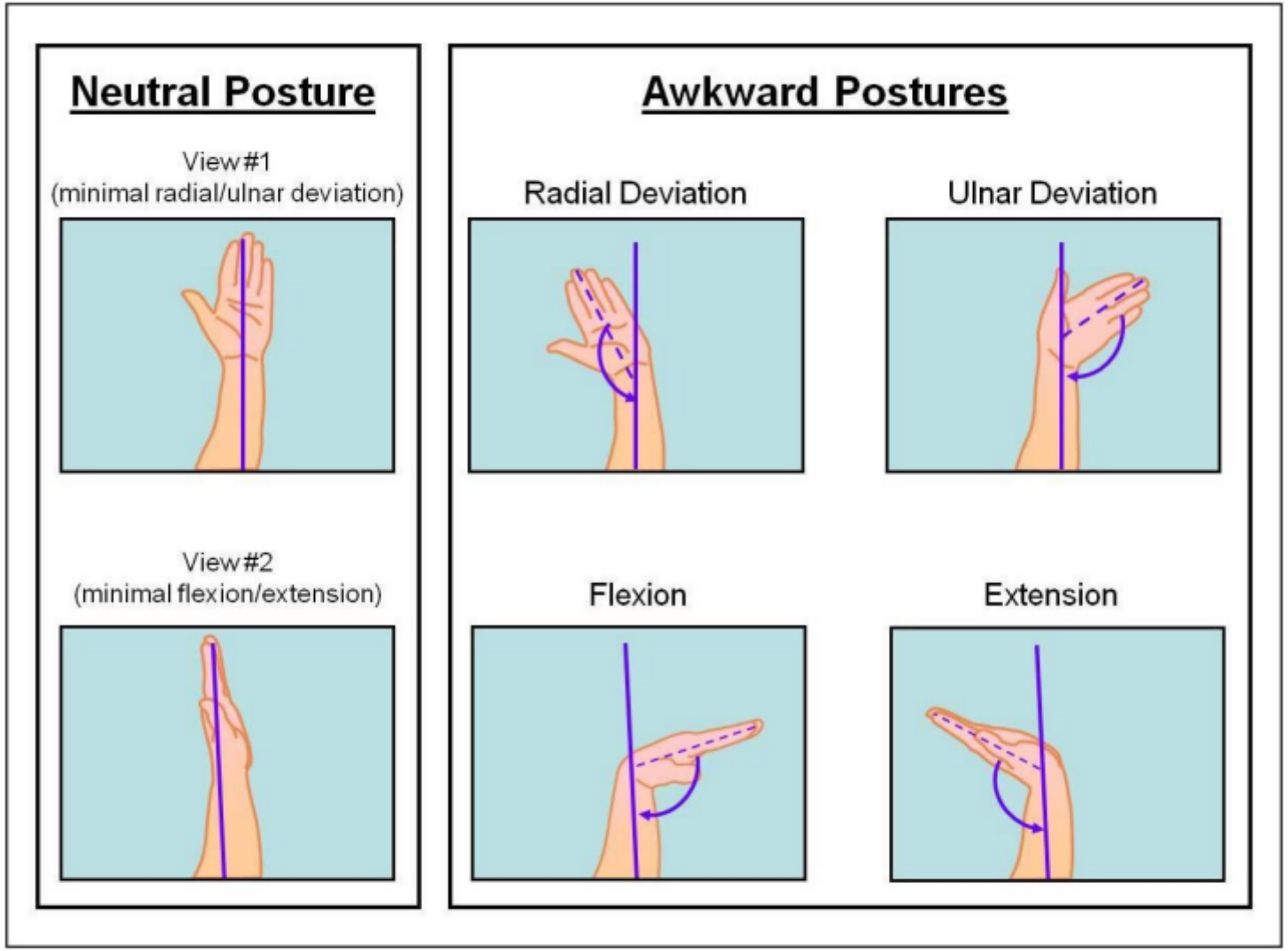


Figure 1. Neutral and awkward wrist postures.

Source: NIOSH
https://www.cdc.gov/niosh/media/pdfs/2011-191_demonsttaion-of-ergonomic-principles.pdf

What is a neutral posture? Arms and elbows

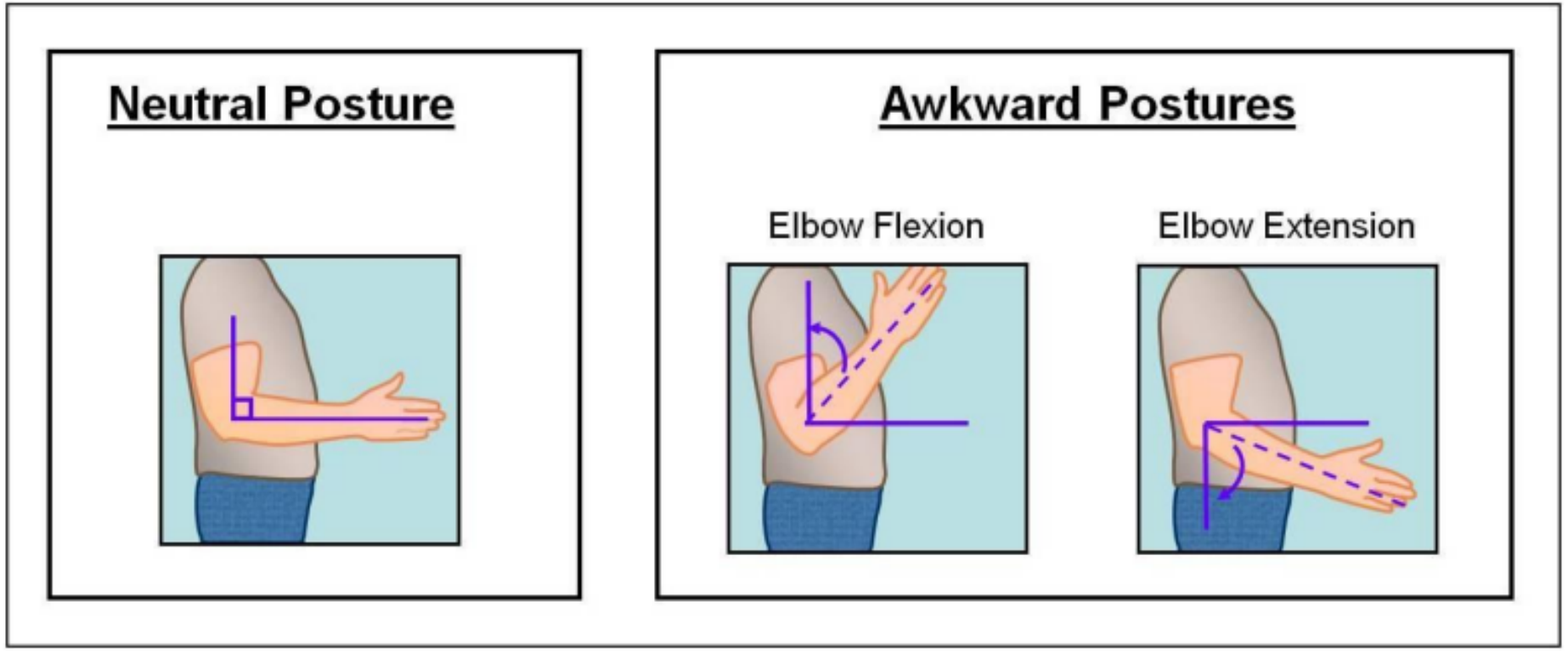


Figure 2. Neutral and awkward elbow postures.

Source: NIOSH
https://www.cdc.gov/niosh/media/pdfs/2011-191_demonsttaion-of-ergonomic-principles.pdf

What is a neutral posture? Arms and shoulders

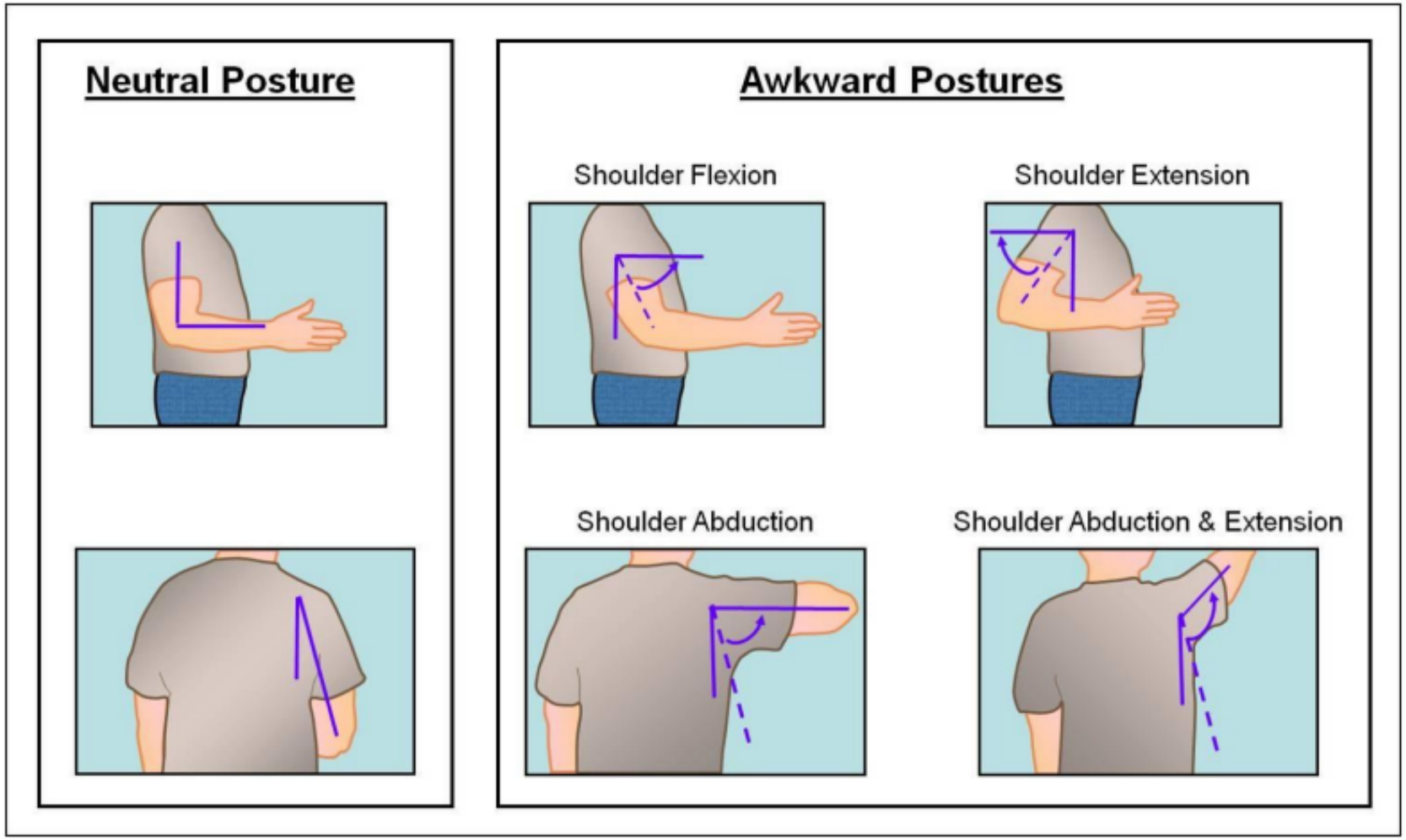


Figure 3. Neutral and awkward shoulder postures.

Source: NIOSH
https://www.cdc.gov/niosh/media/pdfs/2011-191_demonsttaion-of-ergonomic-principles.pdf

What is a neutral posture?

Back posture

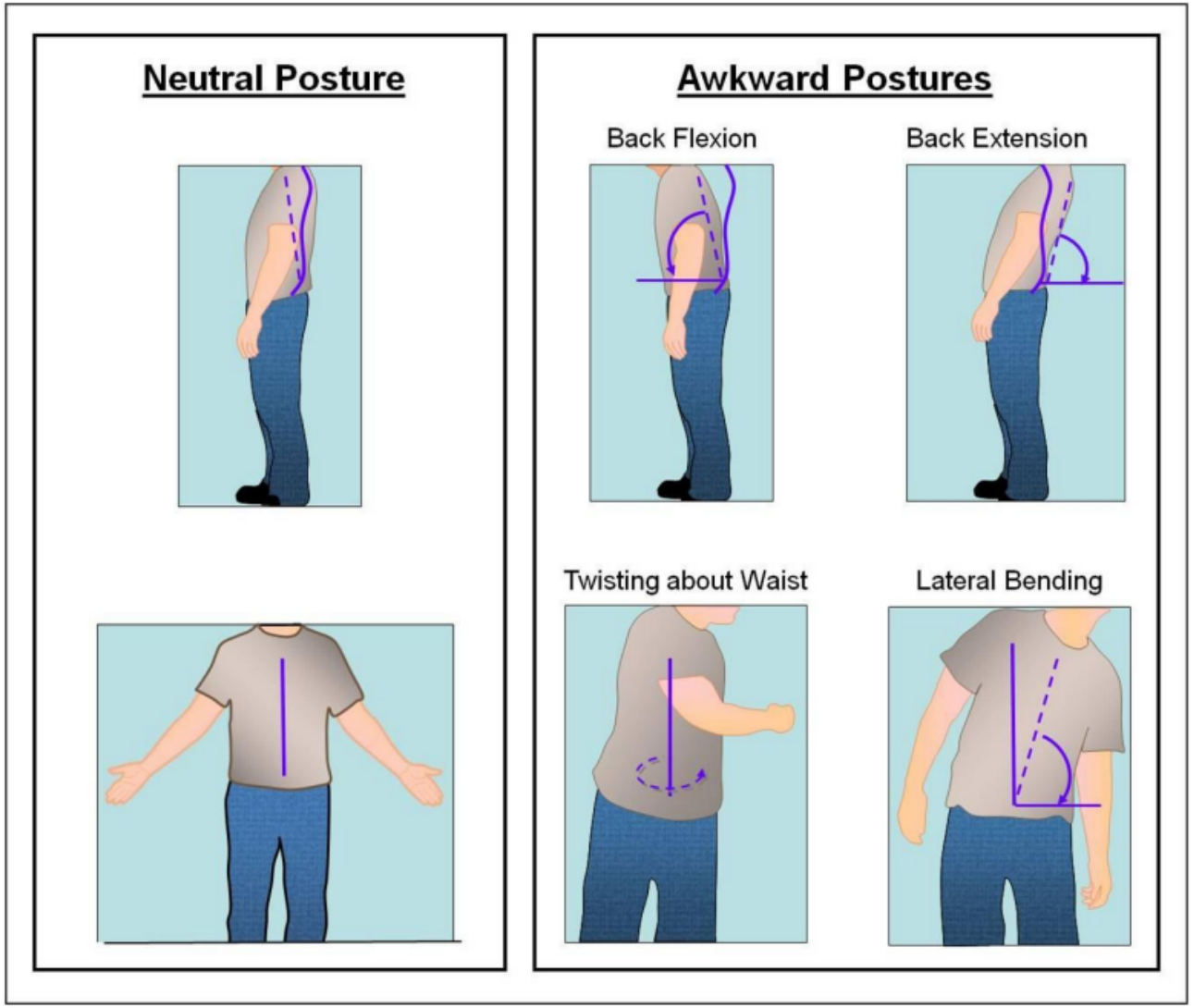


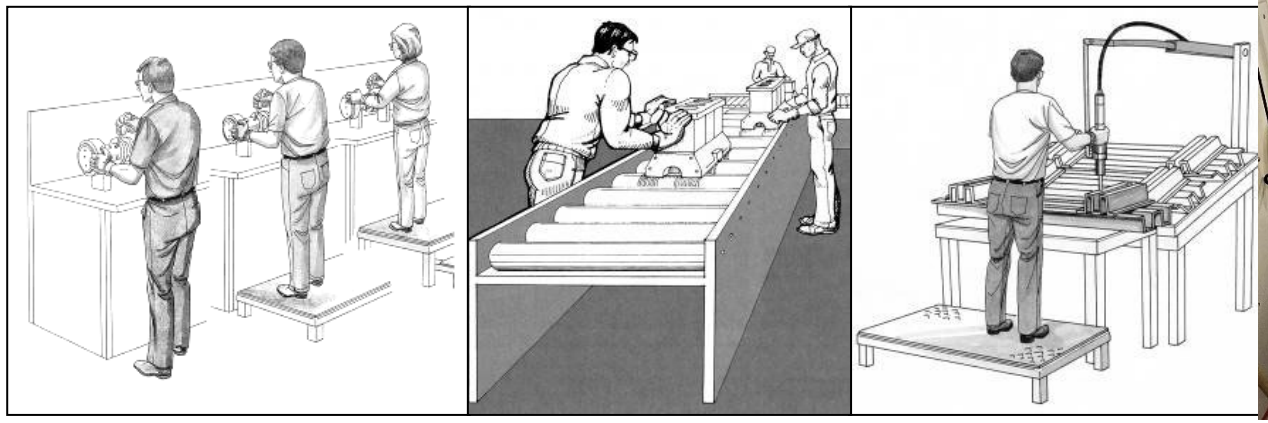
Figure 4. Neutral and awkward back postures.

Source: NIOSH
https://www.cdc.gov/niosh/media/pdfs/2011-191_demonsttaion-of-ergonomic-principles.pdf

Ergonomic Control Methods

Engineering Control Examples

- ❑ Workstation design and setup
- ❑ Ergonomically designed tools
- ❑ Ergonomically designed equipment
- ❑ Load weight reduction

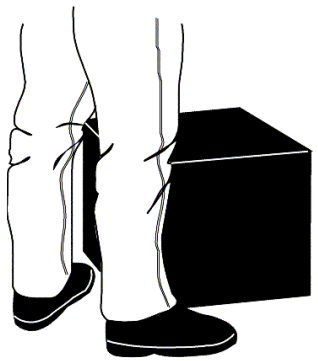


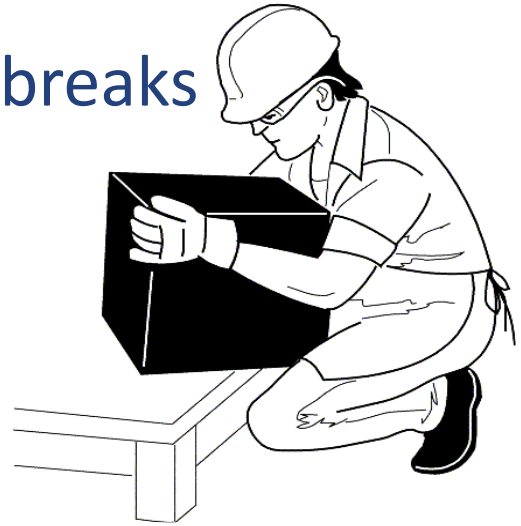
Source: OSHA (International Labor Organization)

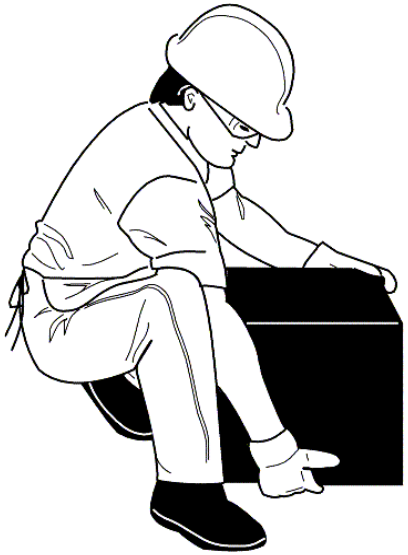
Ergonomic Control Methods

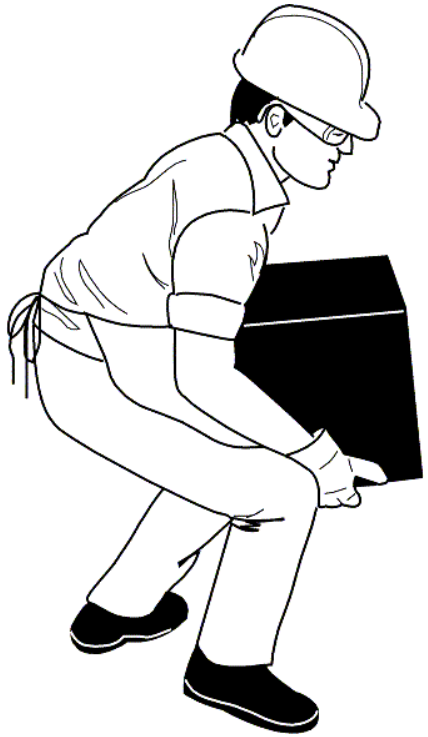
Administrative/Work Practice Control Examples

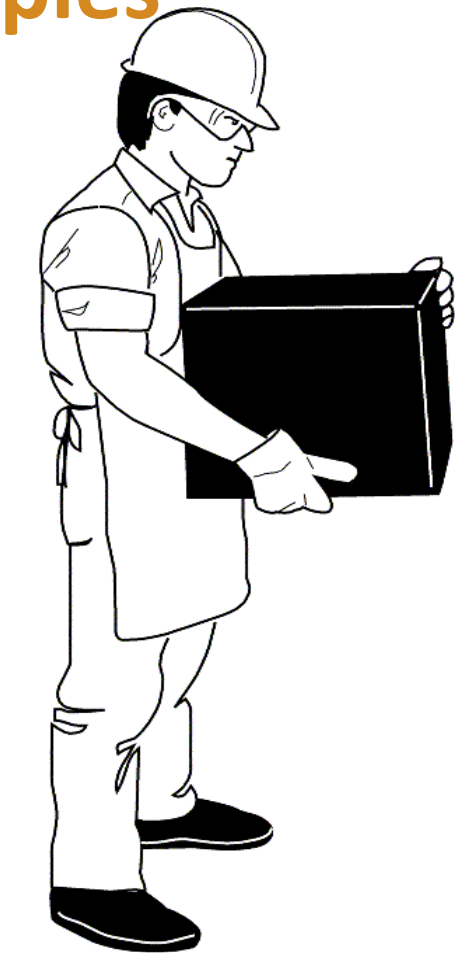
- ❑ Proper lifting techniques (NIOSH)
- ❑ Team lift heavy/bulky/awkward loads
- ❑ Stretch
- ❑ Work rotation
- ❑ Task variety
- ❑ Increase rest breaks











Source of graphics: OSHA

Lifting

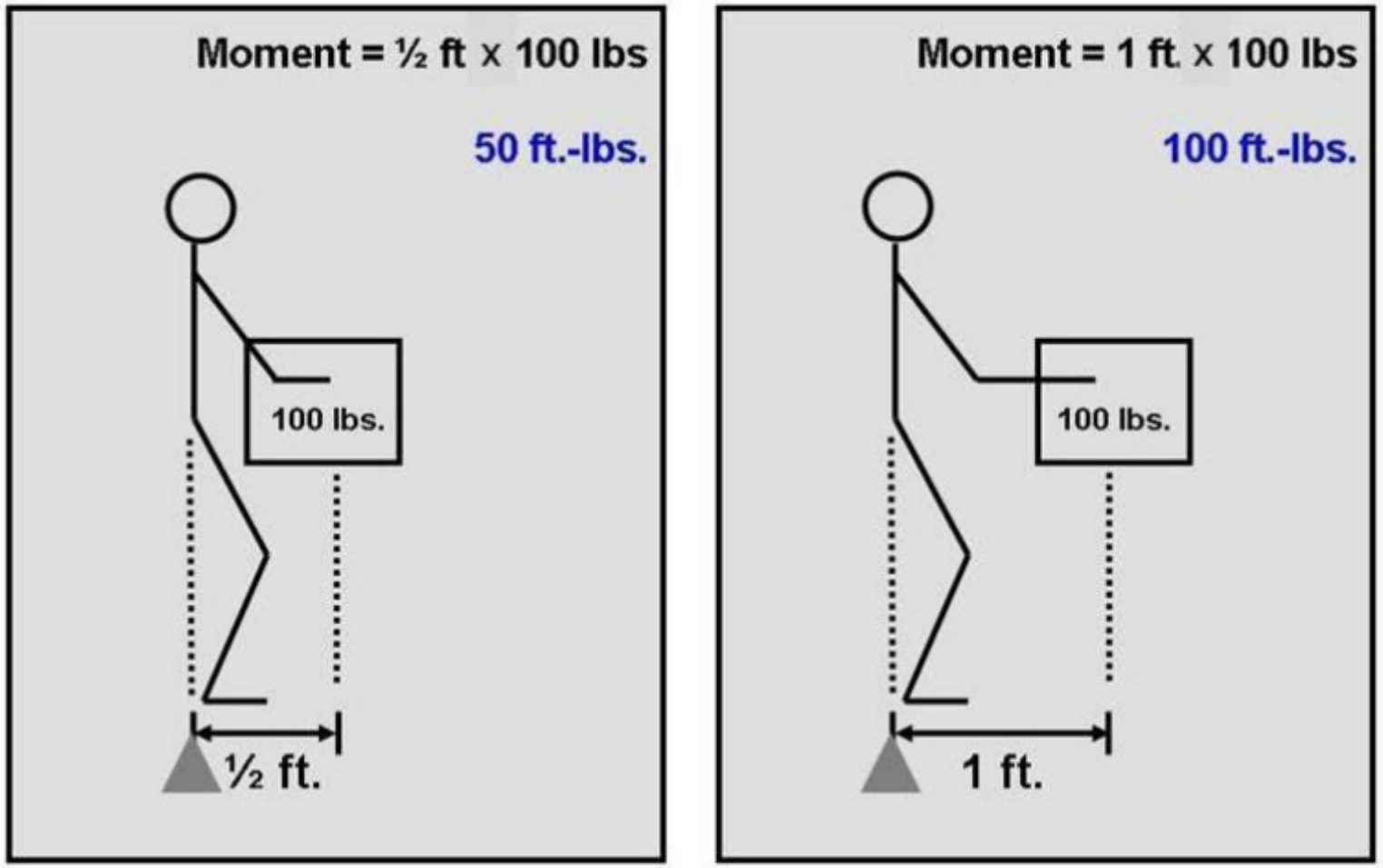
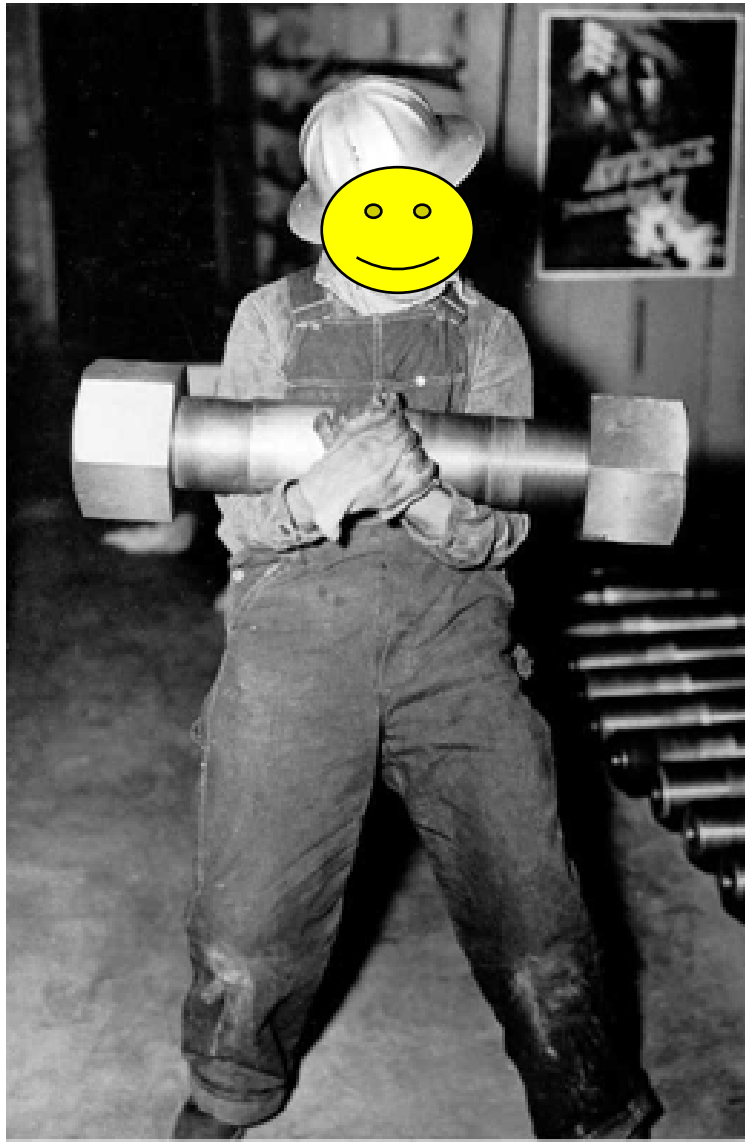


Figure 25. These schematics illustrate how increasing the distance between the worker and the object being lifted increases the overall moment (i.e., torque) for which the back muscles must compensate by expending more force.

Source: NIOSH
https://www.cdc.gov/niosh/media/pdfs/2011-191_demonsttaion-of-ergonomic-principles.pdf

Ergonomic Control Methods
How Much Can You Lift?

- Use NIOSH Lifting Equation
- Consider individual factors
- Most but not all people can lift up to 51 pounds if the lift is **perfect,** with item **close to the spine, no twisting, minimal repetition, minimal distance**, and **great hand holds**. So, **at least less than 51 pounds**.
  - Not meant for lifting humans, shoveling, lifting hot and cold objects, asymmetrical lifts, etc.
  - http://www.cdc.gov/niosh/docs/94-110/
  - https://www.cdc.gov/niosh/ergonomics/about/rnle.html



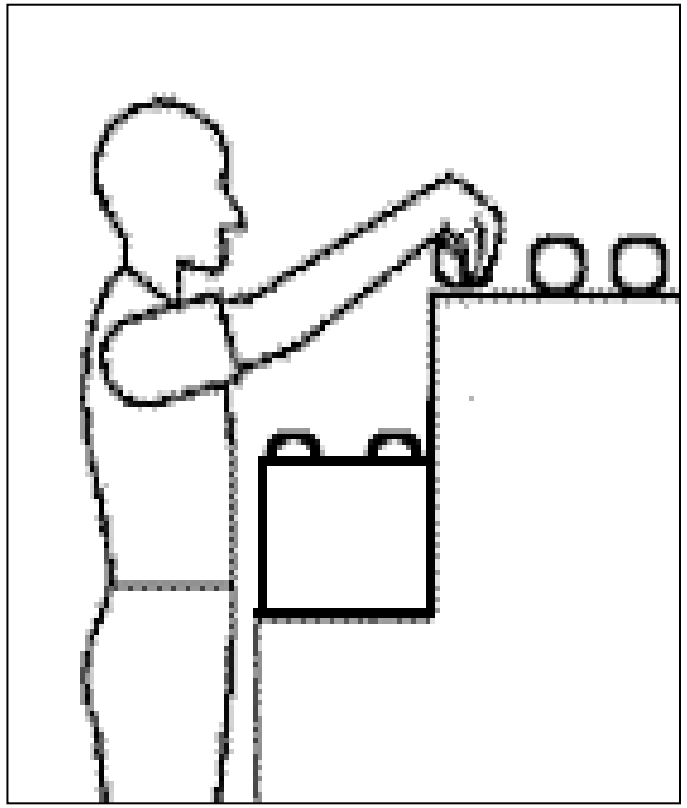
Repetition

- *The number of times the same movement is repeated during essential tasks.*
- Engineering Control: Develop machine or equipment to replace employee exposure.
- Administrative Control: Job Rotation
- *Example: Auto Stacker to eliminate repetitive motion of stacking boxes of product*

Ergonomic Control Methods

Awkward posture **hazards**:

Working with the **elbows above shoulders** for more than 2 hours per day



Source of graphics: OSHA

Ergonomic Control Methods

Awkward posture **solutions**:

- ❑ Keep items within close reach
- ❑ Elevate work areas

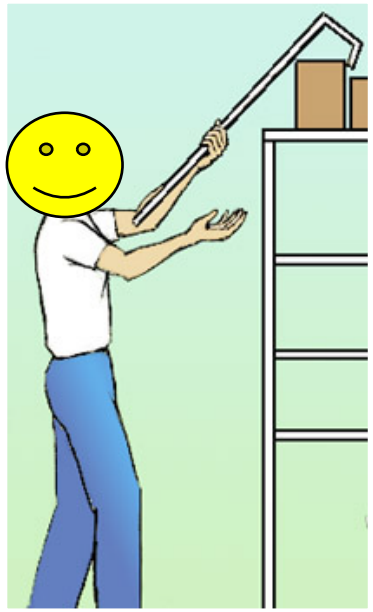
Source: NIOSH

Source: OSHA

Ergonomic Control Methods

Awkward posture/positions **solutions**:

- ❑ Remove obstacles
- ❑ Use equipment to raise and lower items or move items closer to worker



Source: OSHA

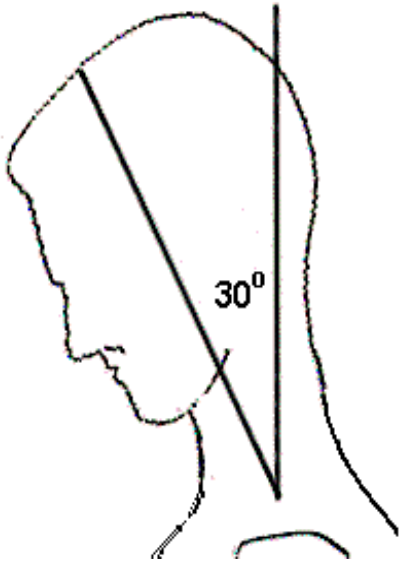
Source: OSHA

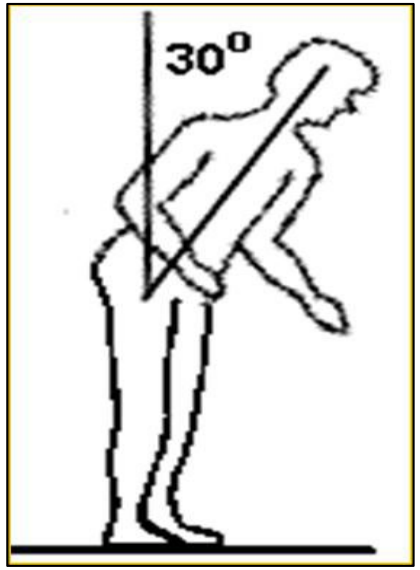
Source: NIOSH

Ergonomic Control Methods

Awkward postures **hazards**:

- ❑ Working with the neck or back bent forward more than 30° for more than 2 hours per day





Source of graphics: OSHA

Ergonomic Control Methods

Awkward posture **solutions**:

- ❑Raise and/or tilt the work for better access
- ❑Use a stool for ground-level work

Source: NIOSH

Source: OSHA

Ergonomic Control Methods

Awkward posture **hazards**:

Squatting for more than 2 hours per day

Source of graphics: OSHA

Ergonomic Control Methods

Awkward posture **solutions**:

- Awkward body postures
  - Use **tools with longer handles**
  - **Alternate** between bending, kneeling, sitting, and squatting

Ergonomic Control Methods

Awkward grips **hazards**:

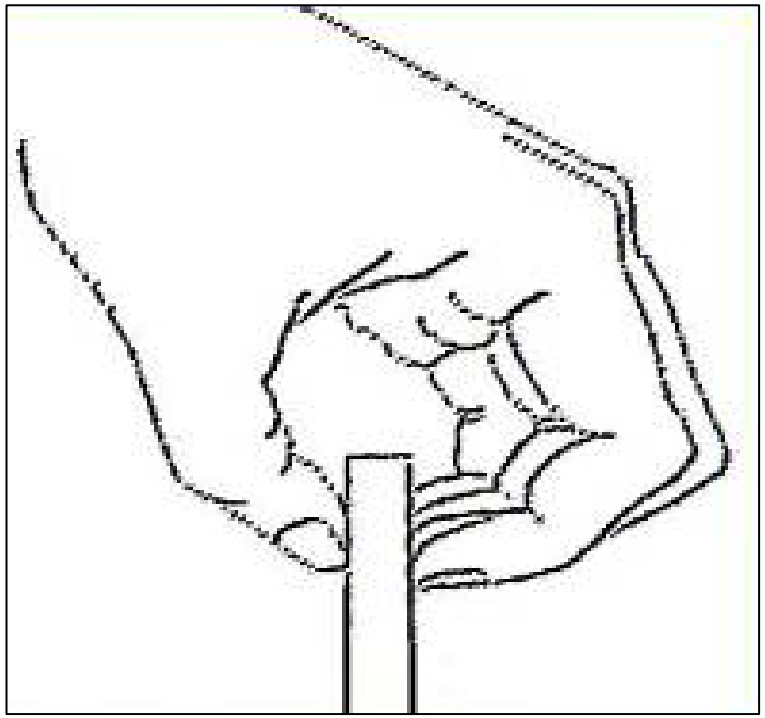
Awkward grips: Gripping 10 or more pounds or force for 2 or more hours per day.

Source of graphics: OSHA

Ergonomic Control Methods

Awkward grips **hazards**:

Awkward grips: Pinching **2 or more pounds** of weight or **4 or more pounds of force** for 2 or more hours per day.



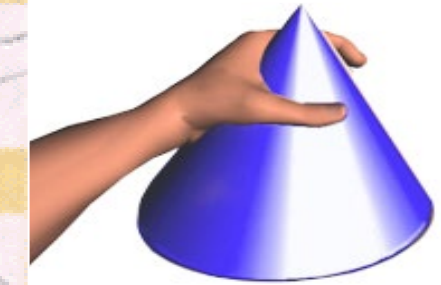
Source of graphics: OSHA

Ergonomic Control Methods

Awkward grips, ergonomic **solutions**:

- ❑ Design work layout to **reduce hand-carrying**
- ❑ Reduce **number of items carried** at one time
- ❑ Use **non-pinch grip** postures
- ❑ Use **ergonomically designed** tools/aids
- ❑ Use job/task **rotation**

Source of graphics: OSHA



"C" shaped posture

Ergonomic Control Methods

Repetitive motions **hazards**:

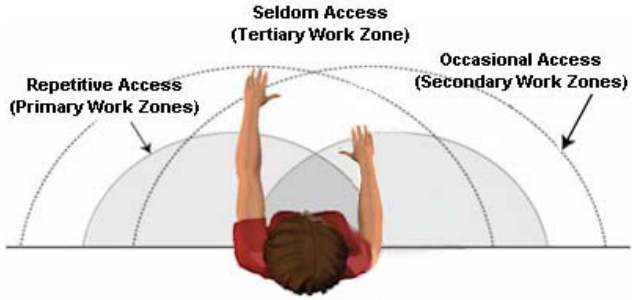
Repetitive motions: Repeating same motion for more than two hours per day with hands, wrists, elbows, shoulders, or neck.

Source: OSHA

Ergonomic Control Methods

Repetitive motions **solutions**:

- ❑ Arrange work to avoid unnecessary motions
- ❑ Let power tools and machinery do the work
- ❑ Spread repetitive work out during the day
- ❑ Take stretch pauses
- ❑ Rotate task with co-workers if possible
- ❑ Change hands or motions frequently

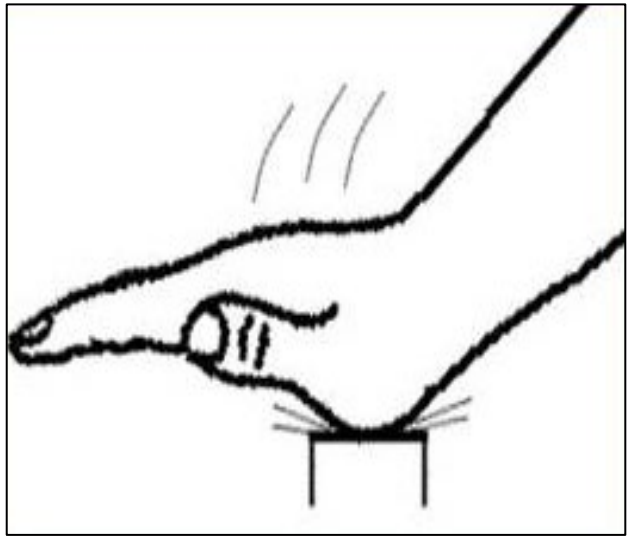


Source of graphics: OSHA

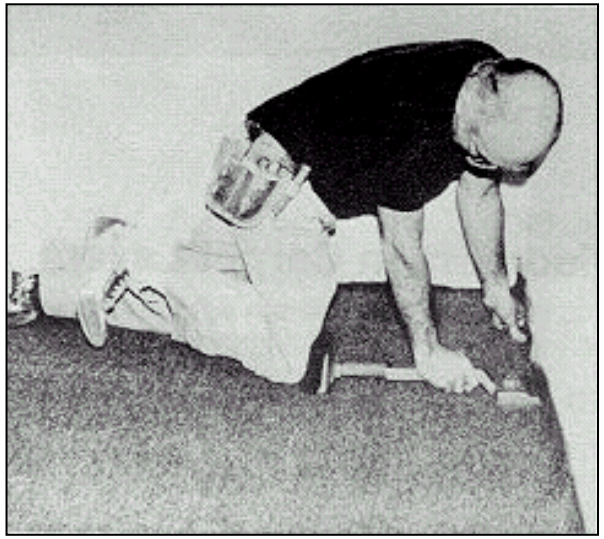
Ergonomic Control Methods

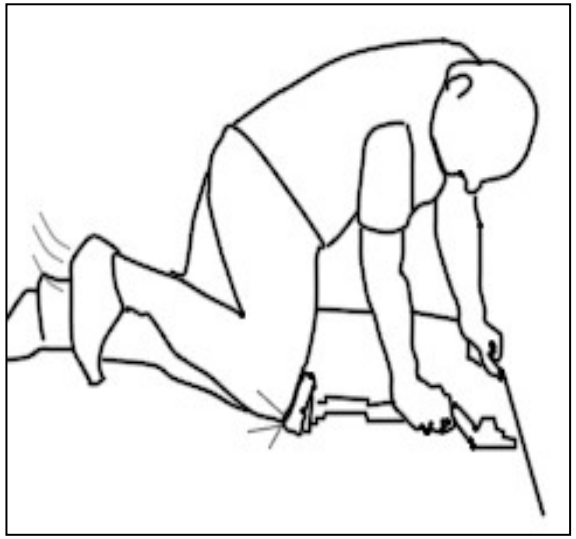
Localized pressure on body part **hazards**

Using hands/knees **as a hammer** more than 10 times in 1 hour or more than 2 times per day (long-term)



Source of graphics: OSHA





Ergonomic Control Methods

Localized pressure on body part **solutions**

- ❑ Use tools with longer handles
- ❑ Use tools with padded grips
- ❑ Alternate between bending, kneeling, sitting, and squatting; use sit/stand stools or tables

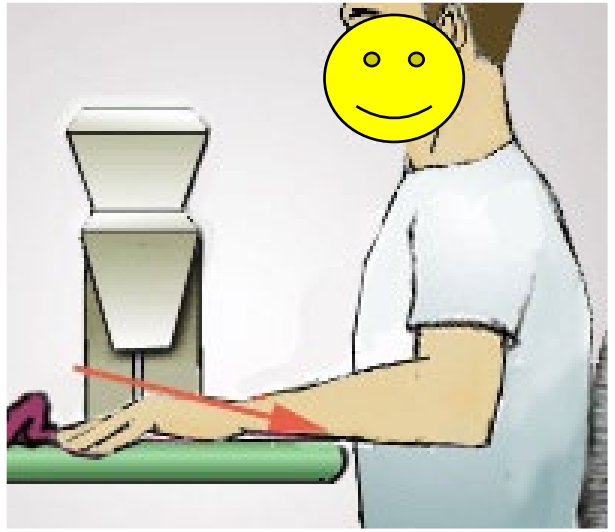
Image source: NIOSH, Easy Ergonomics: A Guide to Selecting Non-Powered Hand Tools, 2004. https://www.cdc.gov/niosh/docs/2004-164/pdfs/2004-164.pdf

Source of graphics NIOSH

Ergonomic Control Methods

Localized pressure on body part **solutions**

- ❑ Pad table edges or use tables/desktops with rounded edges
- ❑ Use wrist rests, anti-fatigue mats, knee pads, shoe inserts or other items that reduce stress on body parts



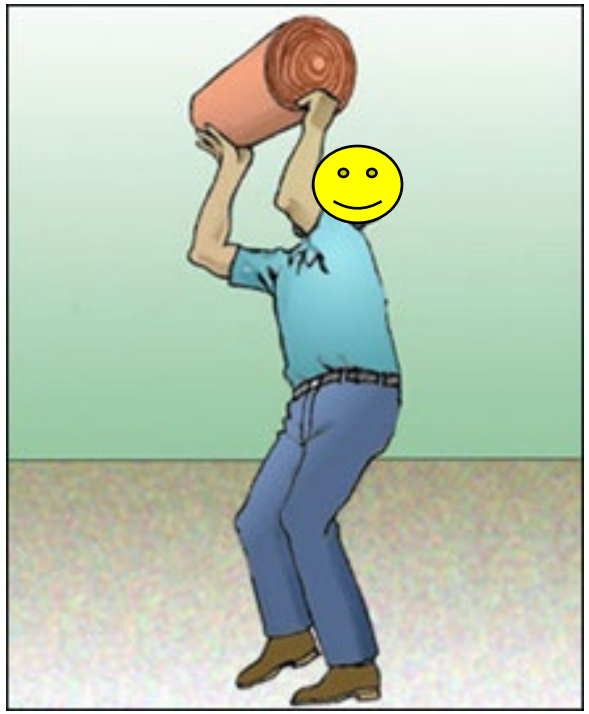
Source of graphics: OSHA

Ergonomic Control Methods

Lifting objects **hazards**

Lifting more than:

- ❑ 75 lbs. once/day
- ❑ 55 lbs. ten times/day
- ❑ 10 lbs. more than twice/minute or for more than 2 hours/day
- ❑ 25 lbs. above shoulders, below knees, or at arms length more than 25 times/day



Source of graphics: OSHA

Ergonomic Control Methods

Lifting objects **solutions**

Managing safer lifting

- ❑ Plan lifts
- ❑ Minimize lifting distances
- ❑ Position materials to power zone levels
- ❑ Avoid manually lifting/lowering loads to/from floor
- ❑ Identify/reduce unstable or heavy loads
- ❑ Reduce frequency of lifting and duration of lifting tasks
- ❑ Provide clear access

Source of graphics: NIOSH

Ergonomic Control Methods

Lifting objects **solutions**

- Employee guidelines for safer lifting
  - Stretch before lifting
  - Check for tags on loads
  - Test load for stability and weight
  - Plan the lift
  - Use proper lifting techniques
  - Get assistance when necessary

Source of graphics: OSHA

Ergonomic Control Methods

Lifting - **solutions**

Use proper lifting techniques

Lean the sack onto your kneeling leg.

Slide the sack up onto your kneeling leg.

Slide the sack onto the other leg while keeping the sack close to your body.

As you stand up, keep the sack close to your body.

Source: NIOSH

Implementing an Ergonomics Program

S M A R T

Specific

Who, what, where, when, why

Measured

You can't improve what you don't measure

Achievable

Challenging but not impossible

Relevant

Closely connected to the objective

Timed

A completion date holds you accountable

Ergonomic Control Tools

Example of a tool that can be used when conducting an ergonomic job hazard analysis for a single task.

JOB ANALYSIS WORKSHEET

DEPARTMENT _____ JOB DESCRIPTION _____

JOB TITLE _____ _____

ANALYST'S NAME _____ _____

DATE _____ _____

STEP 1. Measure and record task variables

Object Weight (lbs.)		Hand Location (in.) Origin		Hand Location (in.) Destination		Vertical Distance (in.)	Asymmetry Angle (degrees) Origin	Asymmetry Angle (degrees) Destination	Frequency Rate Lifts/min.	Duration Hours	Object Coupling
L (avg.)	L (max.)	H	V	H	V	D	A	A	F		C

STEP 2. Determine the multipliers and compute the RWL's

RWL = LC × HM × VM × DM × AM × FM × CM

ORIGIN RWL = 51 × ____ × ____ × ____ × ____ × ____ × ____ = ____ Lbs.

DESTINATION RWL = 51 × ____ × ____ × ____ × ____ × ____ × ____ = ____ Lbs.

STEP 3. Compute the LIFTING INDEX

ORIGIN Lifting Index = Object Weight (L) / RWL = _____ = ____

DESTINATION Lifting Index = Object Weight (L) / RWL = _____ = ____

Figure 3: Single Task Job Analysis Worksheet

Source: Applications Manual for the Revised NIOSH Lifting Equation. https://www.cdc.gov/niosh/docs/94-110/default.html

Ergonomic Control Tools

Example of a tool that can be used when conducting an ergonomic job hazard analysis for jobs with multiple tasks.

MULTI-TASK JOB ANALYSIS WORKSHEET

DEPARTMENT _____ JOB DESCRIPTION _____

JOB TITLE _____

ANALYST'S NAME _____

DATE _____

STEP 1. Measure and Record Task Variable Data

Task No.	Object Weight (lbs.)		Hand Location (in.) Origin		Hand Location (in.) Destination		Vertical Distance (in.)	Asymmetry Angle (degrees) Origin	Asymmetry Angle (degrees) Destination	Frequency Rate Lifts/min.	Duration Hours	Coupling
	L (avg.)	L (max.)	H	V	H	V	D	A	A	F		C

STEP 2. Compute multipliers and FIRWL, STRWL, FILI, and STLI for Each Task

Task No.	LC ×	HM ×	VM ×	DM ×	AM ×	CM	FIRWL ×	FM	STRWL	FILI = L/FIRWL	STLI = L/STRWL	New Task No.	F
	51												
	51												
	51												
	51												
	51												

STEP 3. Compute the Composite Lifting Index for the Job (After renumbering tasks)

	$STLI_1$	+ $\Delta FILI_2$	+ $\Delta FILI_3$	+ $\Delta FILI_4$	+ $\Delta FILI_5$	
CLI=		$FILI_2(1/FM_{1,2} - 1/FM_1)$	$FILI_3(1/FM_{1,2,3} - 1/FM_{1,2})$	$FILI_4(1/FM_{1,2,3,4} - 1/FM_{1,2,3})$	$FILI_5(1/FM_{1,2,3,4,5} - 1/FM_{1,2,3,4})$	
CLI=						

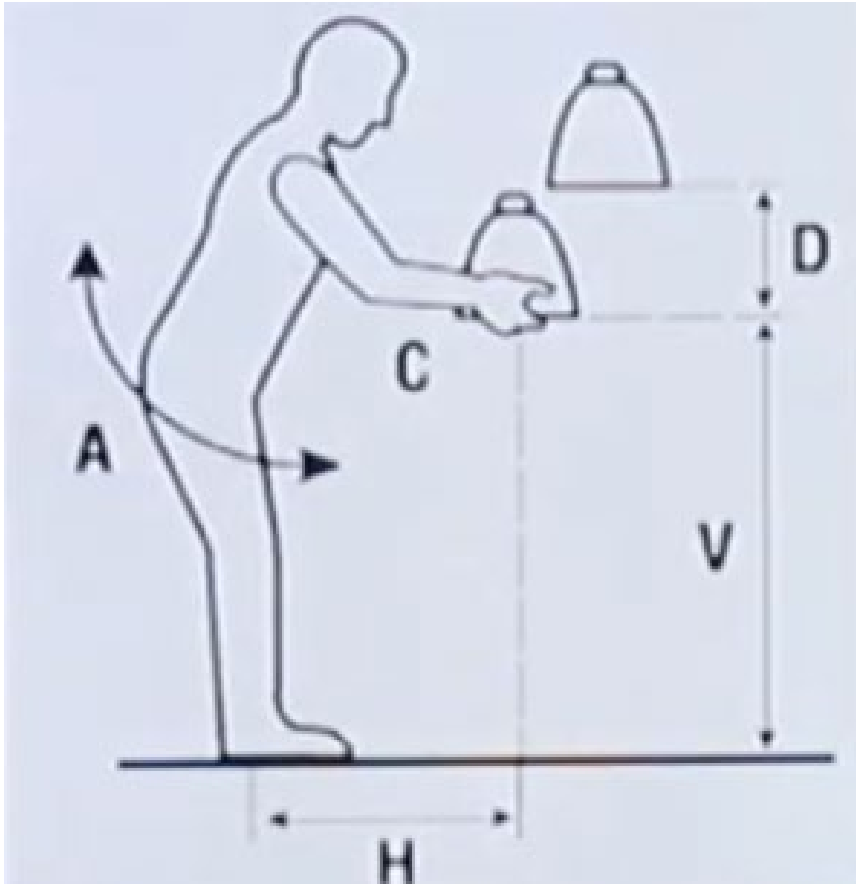
Figure 4: Multi-Task Job Analysis Worksheet

Source: Applications Manual for the Revised NIOSH Lifting Equation. https://www.cdc.gov/niosh/docs/94-110/default.html

Revised NIOSH Lifting Equation

Task variables needed to calculate the RWL:

- ❑ H = Horizontal location of the object relative to the body
- ❑ V = Vertical location of the object relative to the floor
- ❑ D = Distance the object is moved vertically
- ❑ A = Asymmetry angle or twisting requirement
- ❑ F = Frequency and duration of lifting activity
- ❑ C = Coupling or quality of the workers grip on the object



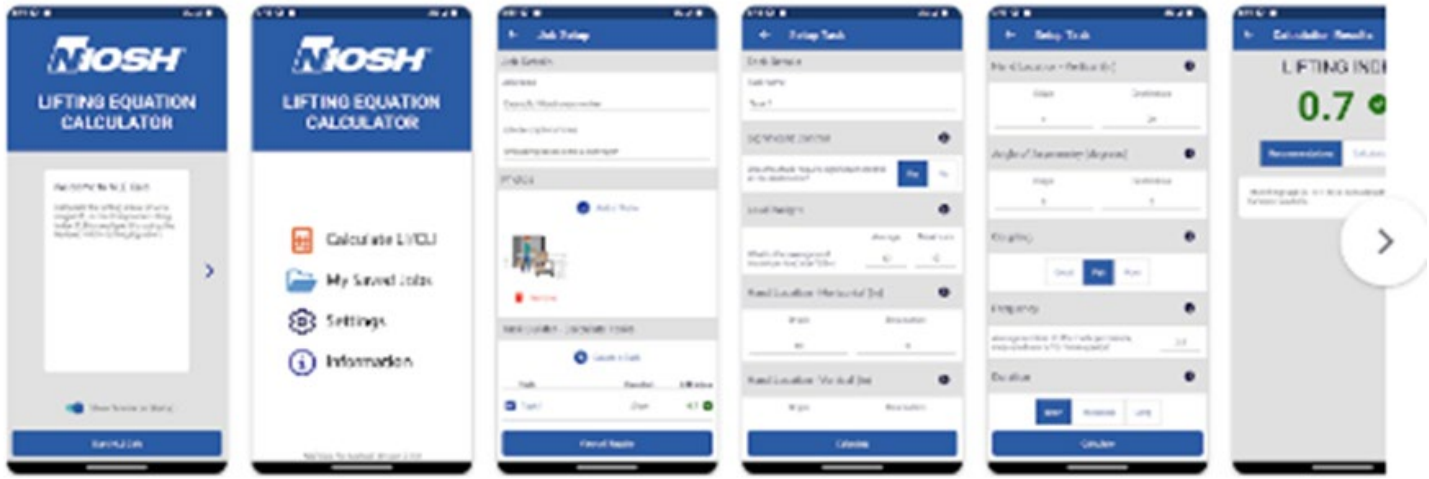
NLE Calc

Centers for Disease Control and Prevention

Government ⓘ | 1K+ Downloads | E Everyone ⓘ

Install | Share | Add to wishlist

You don't have any devices



RULA Employee Assessment Worksheet

based on RULA: a survey method for the investigation of work-related upper limb disorders, McAtamney & Corlett, Applied Ergonomics 1993, 24(2), 91-99

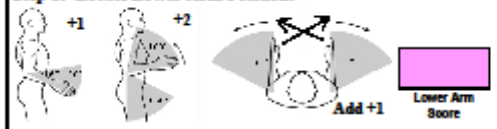
A. Arm and Wrist Analysis

Step 1: Locate Upper Arm Position:

Step 1a: Adjust...
If shoulder is raised: +1
If upper arm is abducted: +1
If arm is supported or person is leaning: -1

Upper Arm Score

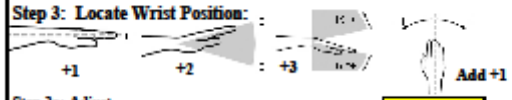
Step 2: Locate Lower Arm Position:



Lower Arm Score

Step 2a: Adjust...
If either arm is working across midline or out to side of body: Add +1

Step 3: Locate Wrist Position:



Step 3a: Adjust...
If wrist is bent from midline: Add +1

Wrist Score

Step 4: Wrist Twist:
If wrist is twisted in mid-range: +1
If wrist is at or near end of range: +2

Wrist Twist Score

Step 5: Look-up Posture Score in Table A:
Using values from steps 1-4 above, locate score in Table A

Posture Score A

+

Step 6: Add Muscle Use Score
If posture mainly static (i.e. held[redacted]
Or if action repeated occurs 4X per minute: +1

Muscle Use Score

+

Step 7: Add Force/Load Score
If load < 4.4 lbs (intermittent): +0
If load 4.4 to 22 lbs (intermittent): +1
If load 4.4 to 22 lbs (static or repeated): +2
If more than 22 lbs or repeated or shocks: +3

Force/Load Score

=

Step 8: Find Row in Table C
Add values from steps 5-7 to obtain
Wrist and Arm Score. Find row in **Table C**.

Wrist & Arm Score

SCORES

Table A: Wrist Posture Score

Upper Arm	Lower Arm	1 Wrist Twist 1	1 Wrist Twist 2	2 Wrist Twist 1	2 Wrist Twist 2	3 Wrist Twist 1	3 Wrist Twist 2	4 Wrist Twist 1	4 Wrist Twist 2
1	1	1	2	2	2	2	3	3	3
	2	2	2	2	2	3	3	3	3
	3	2	3	3	3	3	3	4	4
2	1	2	3	3	3	3	4	4	4
	2	3	3	3	3	4	4	4	4
	3	3	4	4	4	4	4	5	5
3	1	3	3	4	4	4	4	5	5
	2	3	4	4	4	4	4	5	5
	3	4	4	4	4	4	5	5	5
4	1	4	4	4	4	4	5	5	5
	2	4	4	4	4	4	5	5	5
	3	4	4	4	5	5	5	6	6
5	1	5	5	5	5	5	6	6	7
	2	5	6	6	6	6	7	7	7
	3	6	6	6	7	7	7	7	8
6	1	7	7	7	7	7	8	8	9
	2	8	8	8	8	8	9	9	9
	3	9	9	9	9	9	9	9	9

Table C: Neck, trunk and leg score

Wrist and Arm Score	1	2	3	4	5	6	7+
1	1	2	3	3	4	5	5
2	2	2	3	4	4	5	5
3	3	3	3	4	4	5	6
4	3	3	3	4	5	6	6
5	4	4	4	5	6	7	7
6	4	4	5	6	6	7	7
7	5	5	6	6	7	7	7
8+	5	5	6	7	7	7	7

Scoring: (final score from Table C)
1 or 2 = acceptable posture
3 or 4 = further investigation, change may be needed
5 or 6 = further investigation, change soon
7 = investigate and implement change

Final Score

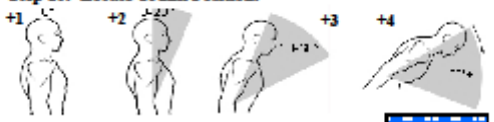
B. Neck, Trunk and Leg Analysis

Step 9: Locate Neck Position:

Step 9a: Adjust...
If neck is twisted: +1
If neck is side bending: +1

Neck Score

Step 10: Locate Trunk Position:



Step 10a: Adjust...
If trunk is twisted: +1
If trunk is side bending: +1

Trunk Score

Step 11: Legs:
If legs and feet are supported: +1
If not: +2

Leg Score

Table B: Trunk Posture Score

Neck Posture Score	1 Legs 1	1 Legs 2	2 Legs 1	2 Legs 2	3 Legs 1	3 Legs 2	4 Legs 1	4 Legs 2	5 Legs 1	5 Legs 2	6 Legs 1	6 Legs 2
1	1	3	2	3	3	4	5	5	6	6	7	7
2	2	3	2	3	4	5	5	5	6	7	7	7
3	3	3	3	4	4	5	5	6	6	7	7	7
4	5	5	5	6	6	7	7	7	7	8	8	
5	7	7	7	7	7	8	8	8	8	8	8	
6	8	8	8	8	8	8	9	9	9	9	9	

Step 12: Look-up Posture Score in Table B:
Using values from steps 9-11 above,
locate score in Table B

Posture Score B

+

Step 13: Add Muscle Use Score
If posture mainly static (i.e. held[redacted]
Or if action repeated occurs 4X per minute: +1

Muscle Use Score

+

Step 14: Add Force/Load Score
If load < 4.4 lbs (intermittent): +0
If load 4.4 to 22 lbs (intermittent): +1
If load 4.4 to 22 lbs (static or repeated): +2
If more than 22 lbs or repeated or shocks: +3

Force/Load Score

=

Step 15: Find Column in Table C
Add values from steps 12-14 to obtain
Neck, Trunk and Leg Score. Find Column in **Table C**.

Neck, Trunk & Leg Score

Task name: _____ Reviewer: _____ Date: _____/_____/_____

provided by Practical Ergonomics

rbanker@ergosmart.com (816) 444-1667

REBA Employee Assessment Worksheet

based on Technical note: Rapid Entire Body Assessment (REBA), Hignett, McAtamney, Applied Ergonomics 31 (2000) 201-205

A. Neck, Trunk and Leg Analysis

Step 1: Locate Neck Position

Step 1a: Adjust...
If neck is twisted: +1
If neck is side bending: +1

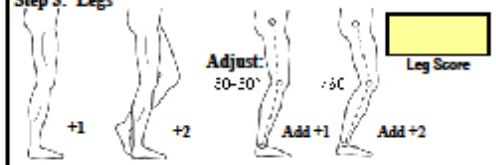
Neck Score

Step 2: Locate Trunk Position

Step 2a: Adjust...
If trunk is twisted: +1
If trunk is side bending: +1

Trunk Score

Step 3: Legs



Leg Score

Step 4: Look-up Posture Score in Table A

Using values from steps 1-3 above, locate score in Table A

Posture Score A

+

Step 5: Add Force/Load Score

If load < 11 lbs : +0
If load 11 to 22 lbs : +1
If load > 22 lbs: +2
Adjust: If shock or rapid build up of force: add +1

Force/Load Score

=

Step 6: Score A, Find Row in Table C

Add values from steps 4 & 5 to obtain Score A.
Find Row in Table C.

Score A

Scoring:
1 = negligible risk
2 or 3 = low risk, change may be needed
4 to 7 = medium risk, further investigation, change soon
8 to 10 = high risk, investigate and implement change
11+ = very high risk, implement change

SCORES

Table A		Neck 1				Neck 2				Neck 3			
	Legs	1	2	3	4	1	2	3	4	1	2	3	4
Trunk Posture Score	1	1	2	3	4	1	2	3	4	3	3	5	6
	2	2	3	4	5	3	4	5	6	4	5	6	7
	3	2	4	5	6	4	5	6	7	5	6	7	8
	4	3	5	6	7	5	6	7	8	6	7	8	9
	5	4	6	7	8	6	7	8	9	7	8	9	9

Table B		Lower Arm 1			Lower Arm 2		
	Wrist	1	2	3	1	2	3
Upper Arm Score	1	1	2	2	1	2	3
	2	1	2	3	2	3	4
	3	3	4	5	4	5	5
	4	4	5	5	5	6	7
	5	6	7	8	7	8	8
	6	7	8	8	8	9	9

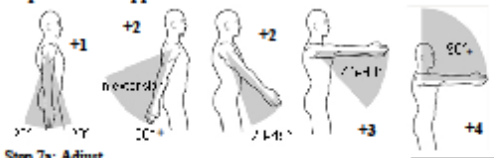
Score A (score from table A +load/force score)	Table C: Score B, (table B value +coupling score)											
	1	2	3	4	5	6	7	8	9	10	11	12
1	1	1	1	2	3	3	4	5	6	7	7	7
2	1	2	2	3	4	4	5	6	6	7	7	8
3	2	3	3	3	4	5	6	7	7	8	8	8
4	3	4	4	4	5	6	7	8	8	9	9	9
5	4	4	4	5	6	7	8	8	9	9	9	9
6	6	6	6	7	8	8	9	9	10	10	10	10
7	7	7	7	8	9	9	9	10	10	11	11	11
8	8	8	8	9	10	10	10	10	10	11	11	11
9	9	9	9	10	10	10	11	11	11	12	12	12
10	10	10	10	11	11	11	11	12	12	12	12	12
11	11	11	11	11	12	12	12	12	12	12	12	12
12	12	12	12	12	12	12	12	12	12	12	12	12

Table C Score + Activity Score

Final REBA Score

B. Arm and Wrist Analysis

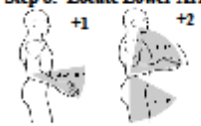
Step 7: Locate Upper Arm Position:



Step 7a: Adjust...
If shoulder is raised: +1
If upper arm is abducted: +1
If arm is supported or person is leaning: -1

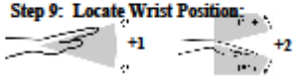
Upper Arm Score

Step 8: Locate Lower Arm Position:



Lower Arm Score

Step 9: Locate Wrist Position:



Step 9a: Adjust...
If wrist is bent from midline or twisted : Add +1

Wrist Score

Step 10: Look-up Posture Score in Table B

Using values from steps 7-9 above, locate score in Table B

Posture Score B

+

Step 11: Add Coupling Score

Well fitting Handle and mid rang power grip, *good: +0*
Acceptable but not ideal hand hold or coupling acceptable with another body part, *fair: +1*
Hand hold not acceptable but possible, *poor: +2*
No handles, awkward, unsafe with any body part, *Unacceptable: +3*

Coupling Score

=

Step 12: Score B, Find Column in Table C

Add values from steps 10 &11 to obtain Score B. Find column in Table C and match with Score A in row from step 6 to obtain Table C Score.

Score B

Step 13: Activity Score

+1 1 or more body parts are held for longer than 1 minute (static)
+1 Repeated small range actions (more than 4x per minute)
+1 Action causes rapid large range changes in postures or unstable base

Task name: _____ Reviewer: _____ Date: ____/____/____

provided by Practical Ergonomics
rbarker@ergosmart.com (816) 444-1667

Worker Engagement

- Engagement NOT optional
- Only workers know
  - Which tasks hurt
  - Which fixes actually work

- Engagement → better solutions → higher adoption → **lower exposure** → **fewer MSDs**

Worker Participation

- ❑ Identify high-risk tasks (repetition, force, awkward posture)
- ❑ Explain *how* pain develops during the shift
- ❑ Test solutions & give feedback
- ❑ Catch problems early before they become injuries

Encourage Injury Reporting

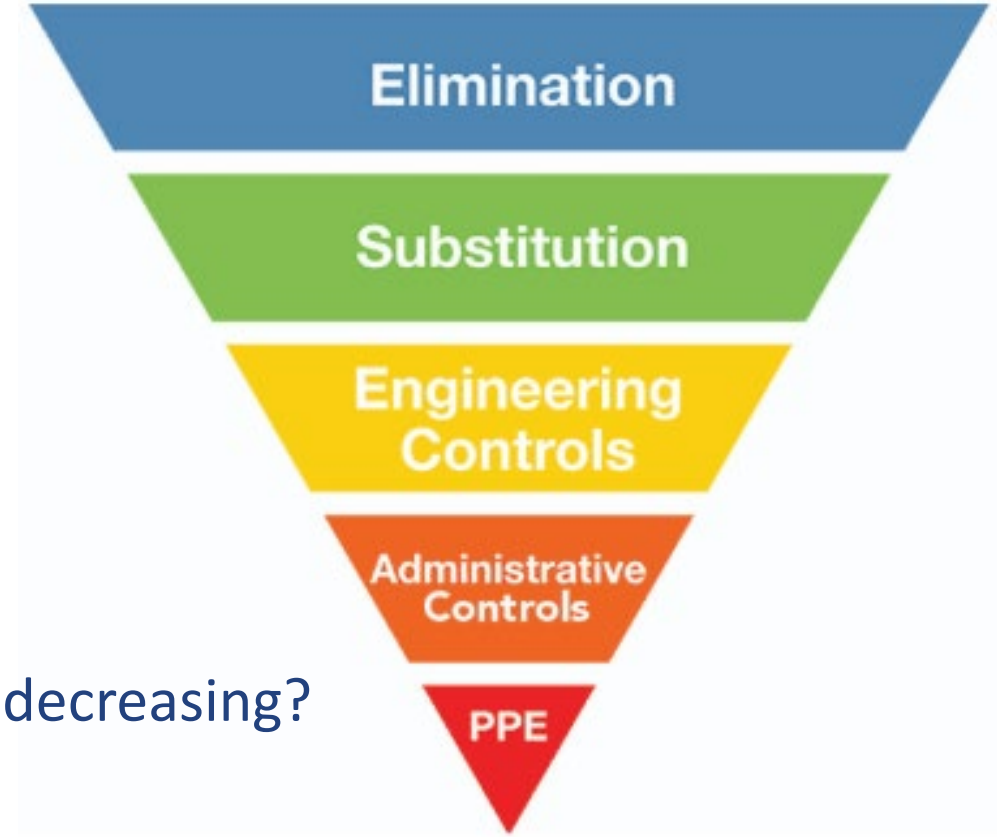
- When to report?
  - When there is pain, tingling, weak grip, numbness
  - When near misses happen
- Who to report?
  - Supervisor, Safety rep, Reporting process…
- Why workers may not report
  - Disengagement, workplace culture
  - Fear of negative feedback
  - Seasonal employment

Using Reporting Data & Problem Correction

- What early reporting does
  - Triggers assessment
  - Prevents progression and number of injuries
- Incident management
  - Worker reports, supervisor observations
  - Near-miss discomfort reports
  - Review: injury data, job-rotation patterns, high-turnover jobs
- Management commitment reinforcement
  - No retaliation, no disciple for reporting. Reporting = problem solving

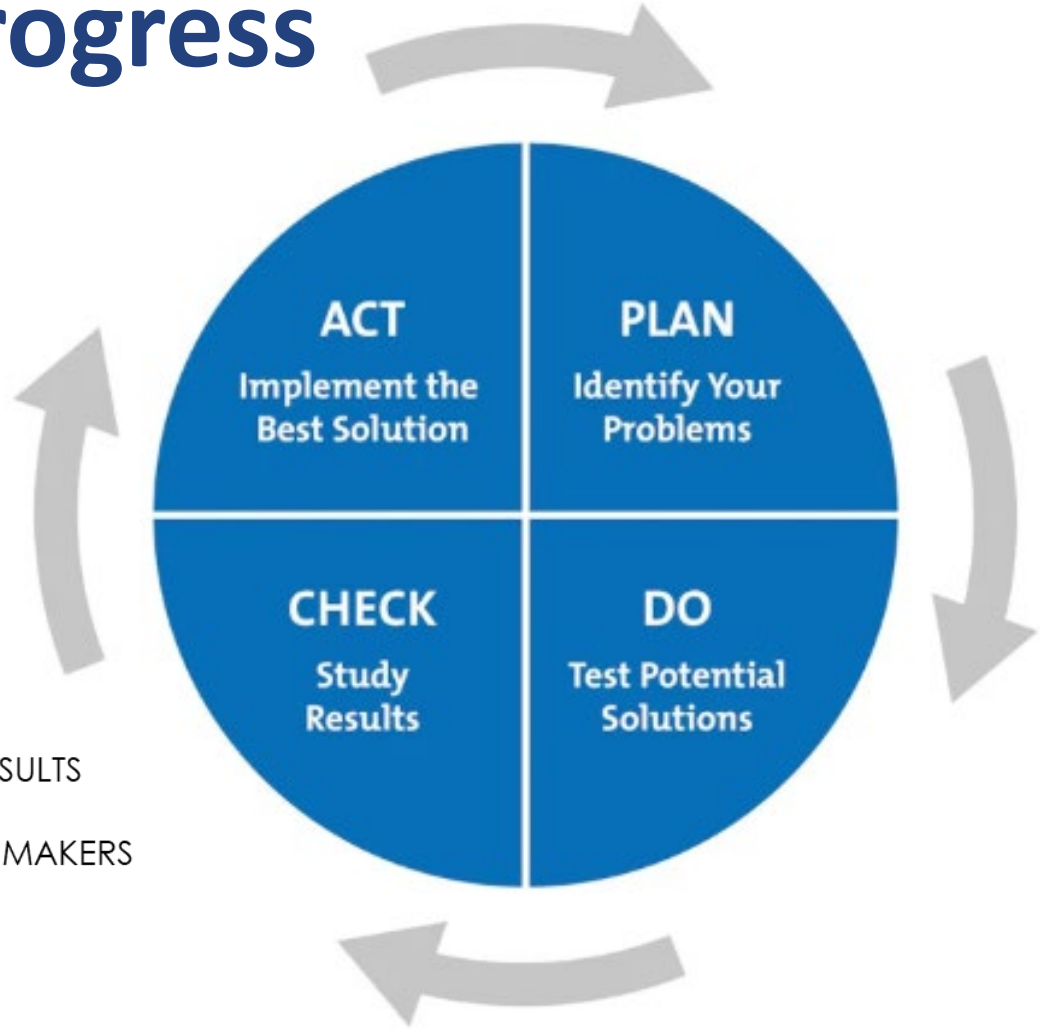
Implement Solutions to Control Hazards

- Engineering controls
  - Adjustable work heights, mechanization
- Administrative
  - Job rotation, Breaks
  - Maintenance programs
- Evaluate Progress
  - Are workers still reporting early?
  - How specific jobs improved, MSD issues decreasing?



Evaluation Progress

- ❑ Time from report → FIX
- ❑ MSD – related claims
- ❑ Time-loss days
- ❑ *Note: if employee reporting stops the system is not working*



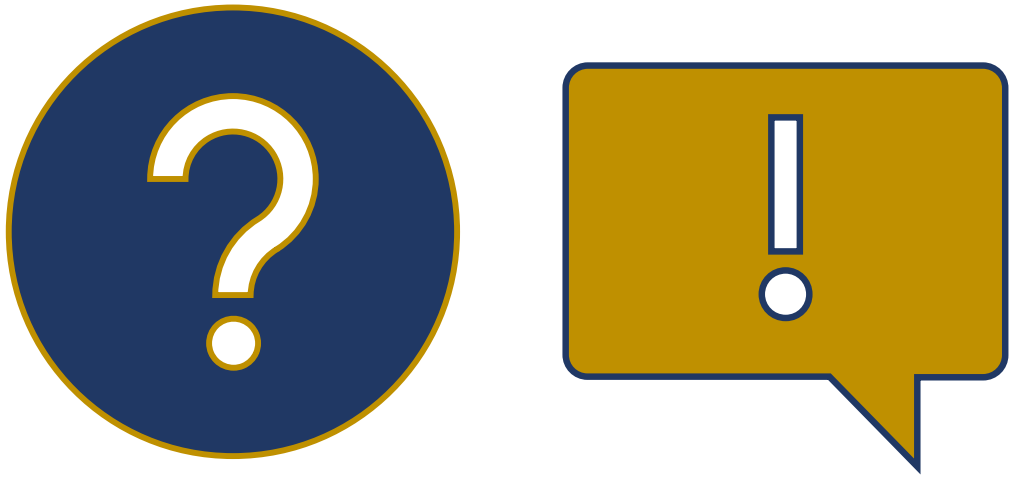
PLAN: DESIGN OR REVISE BUSINESS PROCESS COMPONENTS TO IMPROVE RESULTS
DO: IMPLEMENT THE PLAN AND MEASURE ITS PERFORMANCE
CHECK: ASSESS THE MEASUREMENTS AND REPORT THE RESULTS TO DECISION MAKERS
ACT: DECIDE ON CHANGES NEEDED TO IMPROVE THE PROCESS

DEMING'S PDCA CYCLE

Build an effective ergonomics program - RECAP

- ❑ Step 1: Identify Risk Factors
- ❑ Step 2: Involve and Train Management and Workers
- ❑ Step 3: Collect Health and Medical Evidence
- ❑ Step 4: Implement Your Ergonomic Program
- ❑ Step 5: Evaluate Your Ergonomic Program
- ❑ Step 6: Promote Worker Recovery
- ❑ Step 7: Maintain Commitment and Involvement

Questions and Comments



Thank You!