

Name: Suhel Miah

Organization: Cardinus UK

Height: 157 cm

Date: Mar-27-2025

Video ID: Lifting box onto shelf (24860_risk)

ASSESSMENT OVERVIEW

Ergonomic Risk Score

Overall

60

High Risk

Upper Body

60

Lower Body

59

Activated Analyses

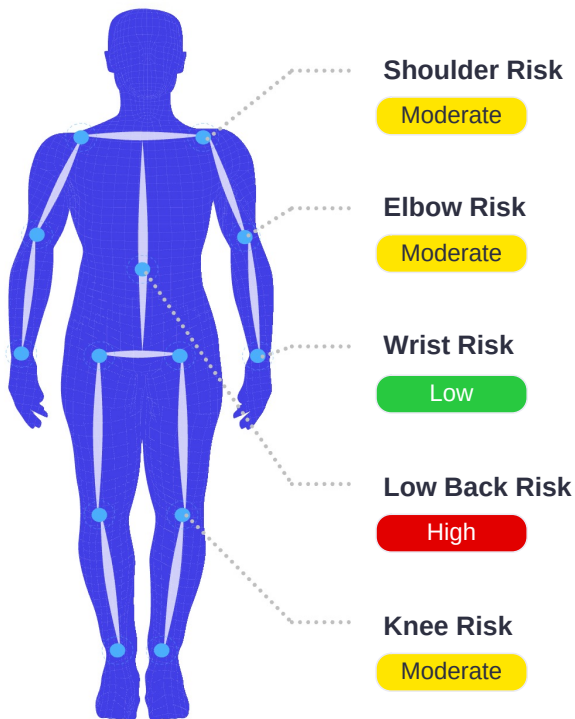
3motionAI Risk Scores

REBA Assessment

MAC Assessment

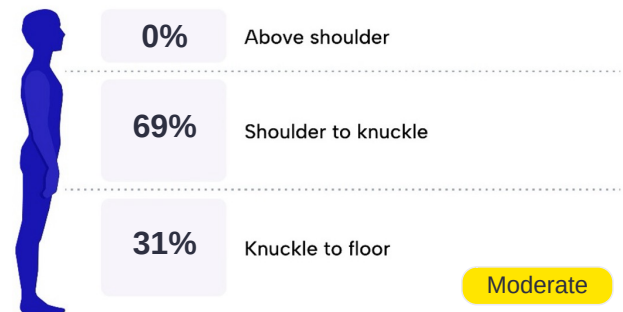
Joint Posture Risk

Low - Moderate - High

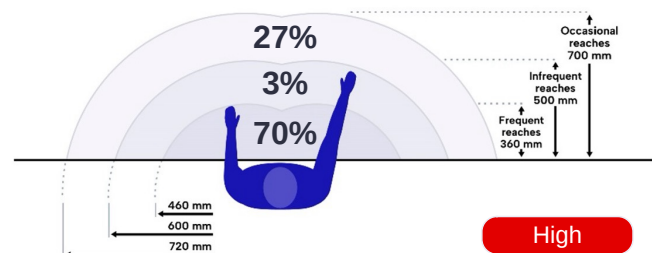


Reach Envelope

Hand Height Distribution



Reach Distance Distribution



Recommendations to Reduce Risk

Your analysis showed high overall risk (particularly for the upper body) with the low back as the riskiest joint. Consider raising the work location to limit low back flexion and reduce the risk level.

ERGONOMIC RISK SCORE

Overall

60

High Risk

Upper Body

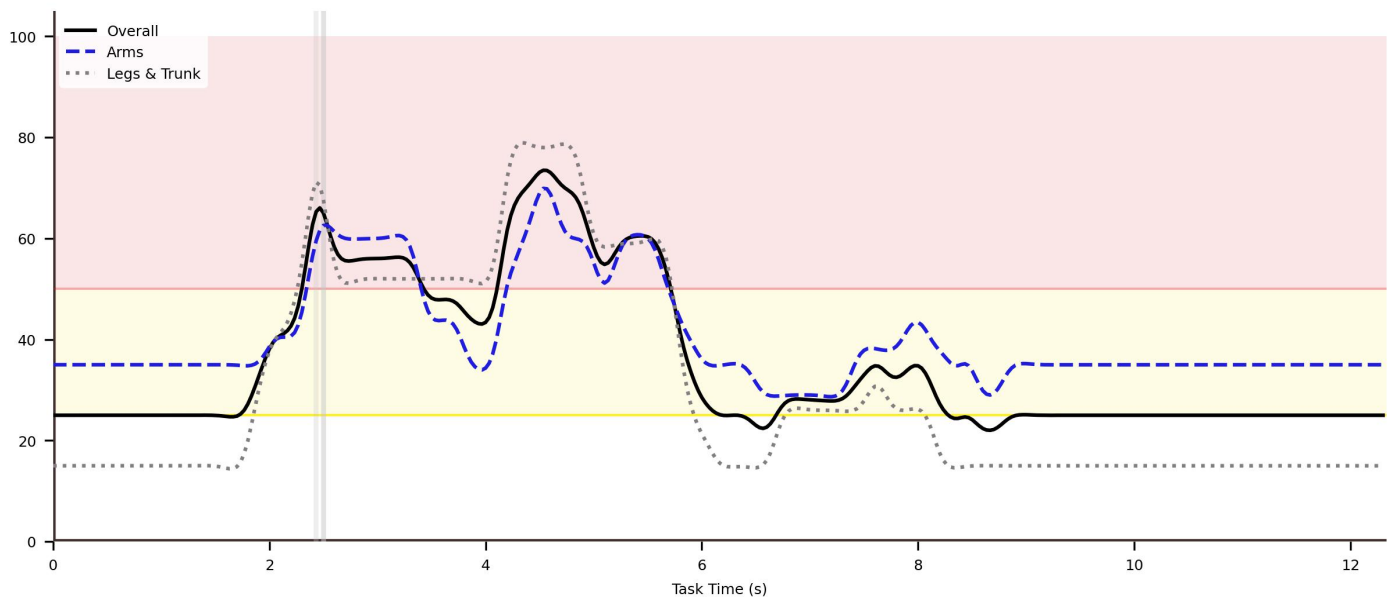
60

Lower Body

59

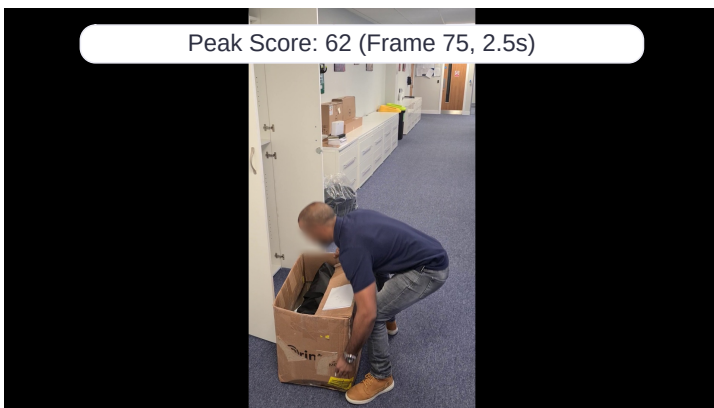
Peak Overall Risk Score: 65 (Frame 75, 2.5s)

The "Risk Score" indicates muscular or soft tissue injury risk based on joint postures, reach envelope, hand load, task frequency, and joint loads.



Upper Body

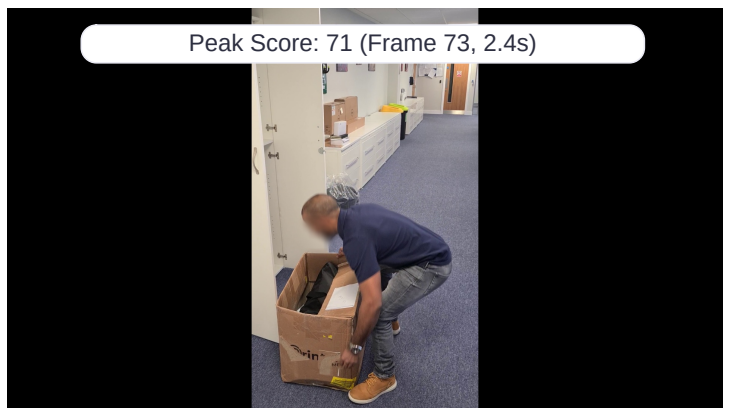
Peak Score: 62 (Frame 75, 2.5s)



The Upper Body "Risk Score" targets injury risk related to the neck, shoulders, elbows, and wrists. These joints are most affected by reaching and work above the shoulders.

Lower Body

Peak Score: 71 (Frame 73, 2.4s)



The Lower Body "Risk Score" targets injury risk related to the low back and knees. These body regions are most affected by working close to ground level.

JOINT KINETICS

Compression

9310

N

LB Moment

280

N.m

SH Moment

34

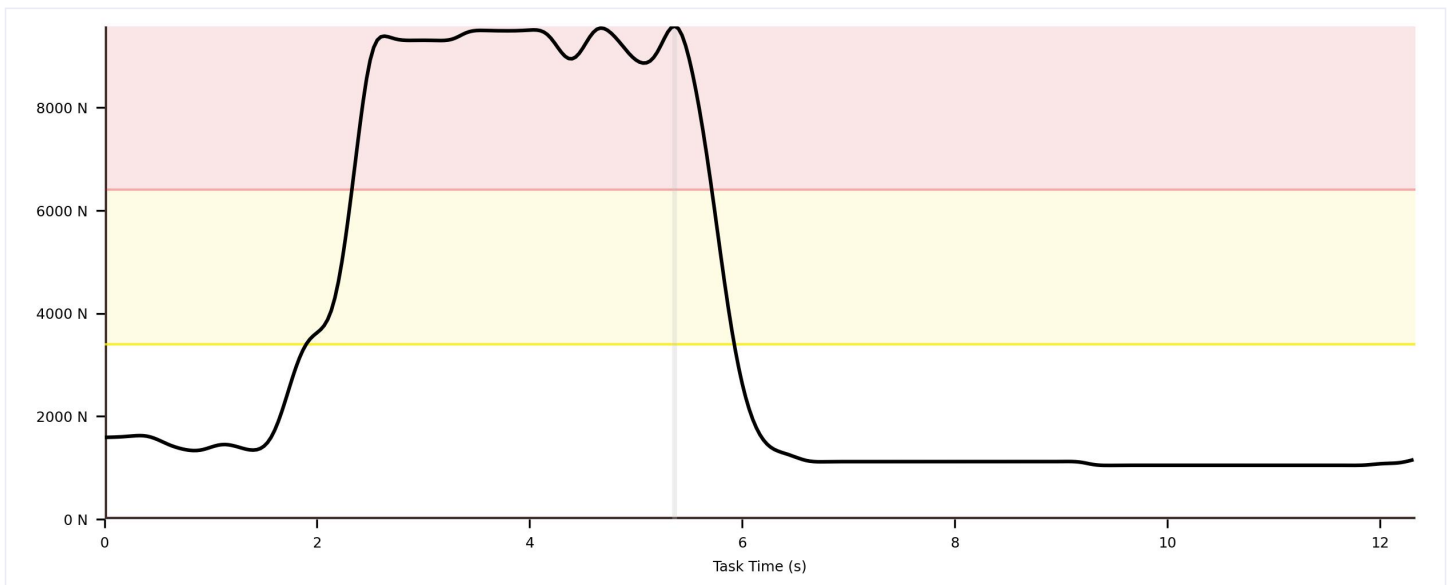
N.m

To limit low back (LB) disorders, NIOSH recommends compression below 3400 N (765 lb) for any single activity. Exceeding 6400 N (1440 lb) presents a significant hazard.

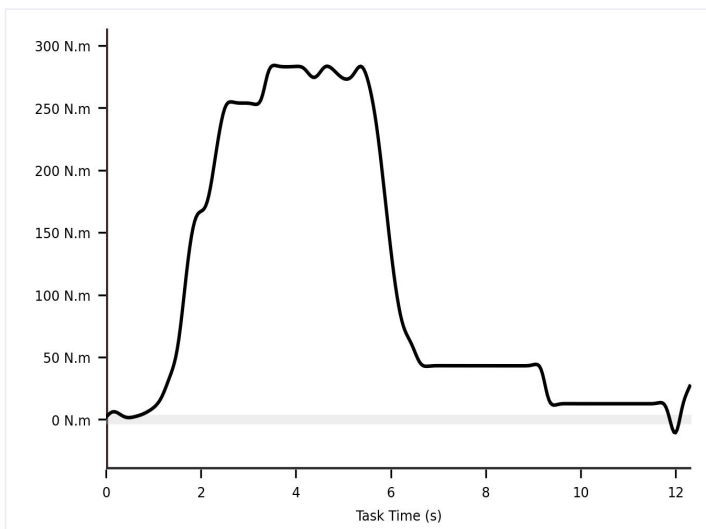
Peak LB Compression: 9579 N (Frame 161, 5.4s)



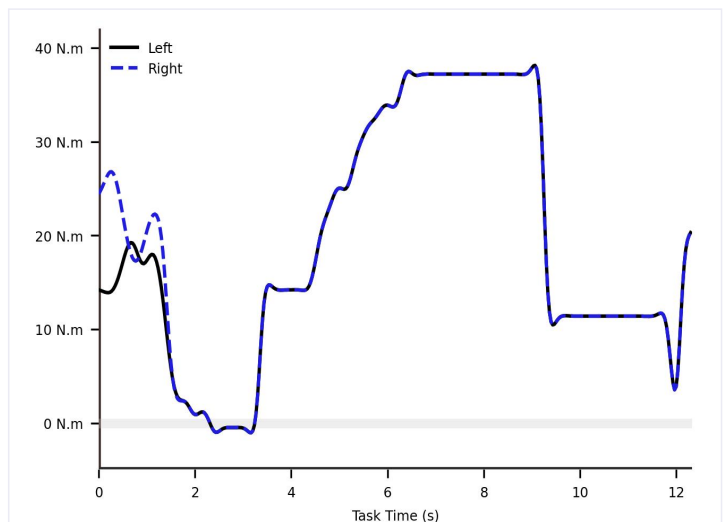
Low Back (LB) Compression



Low Back (LB) Moment



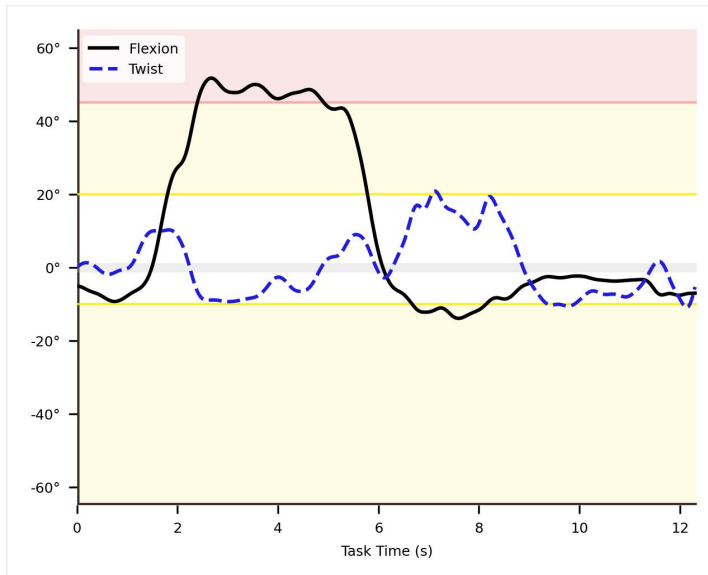
Shoulder (SH) Moment



JOINT KINEMATICS

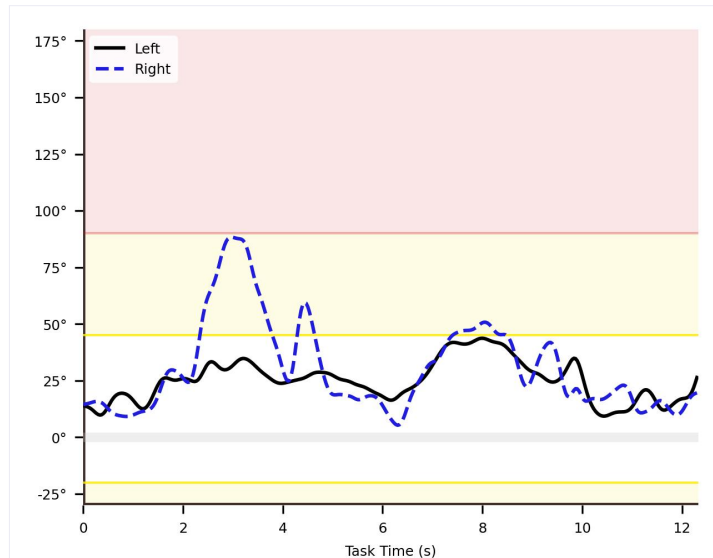
The 3motionAI system uses advanced computer vision and artificial intelligence (AI) to track human body motion. It creates a detailed, scaled 3D body model, which is used to calculate 3D joint angles. Research shows that injury risk is minimized when joints are in a neutral posture, while extreme postures can increase the likelihood of injury.

Low Back Angles



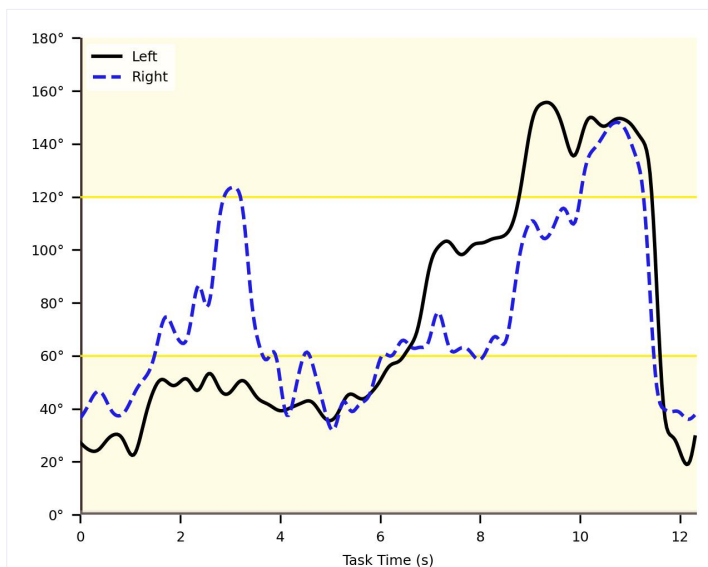
EXTENSION (<-10°)	█	12%
NEUTRAL (-10-20°)	█	56%
MODERATE FLEXION (20-45°)	█	12%
SEVERE FLEXION (>45°)	█	21%

Shoulder Elevation Angles



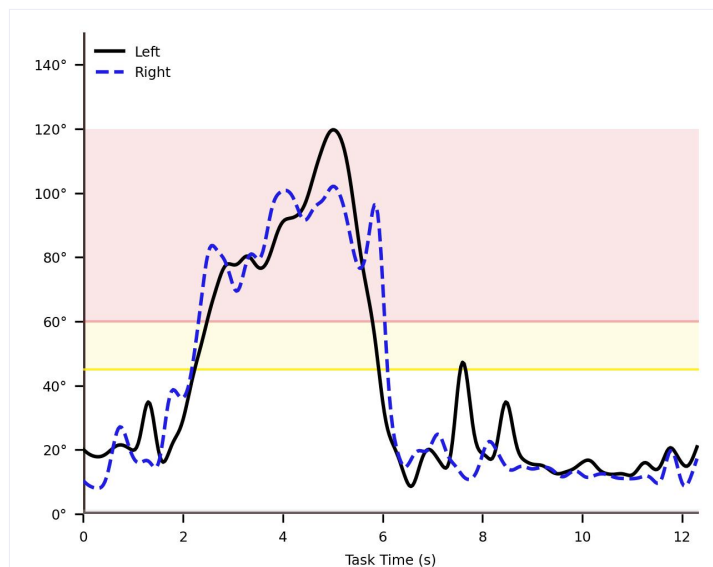
NEUTRAL (0-45°)	█	100% / 76%
MODERATE ELEVATION (45-90°)	█	0% / 24%
SEVERE ELEVATION (>90°)	█	0% / 0%

Elbow Flexion Angles



EXTENSION (<60°)	█	58% / 38%
NEUTRAL (60-120°)	█	20% / 49%
FLEXION (>120°)	█	22% / 13%

Knee Flexion Angles



NEUTRAL (0-45°)	█	69% / 68%
MILD FLEXION (45-60°)	█	4% / 1%
SEVERE FLEXION (60-120°)	█	27% / 30%

RAPID ENTIRE BODY ASSESSMENT (REBA)

Scoring outcomes based on Rapid Entire Body Assessment (REBA), Highnett & McAtamney, Applied Ergonomics 31 (2000), 201-205.

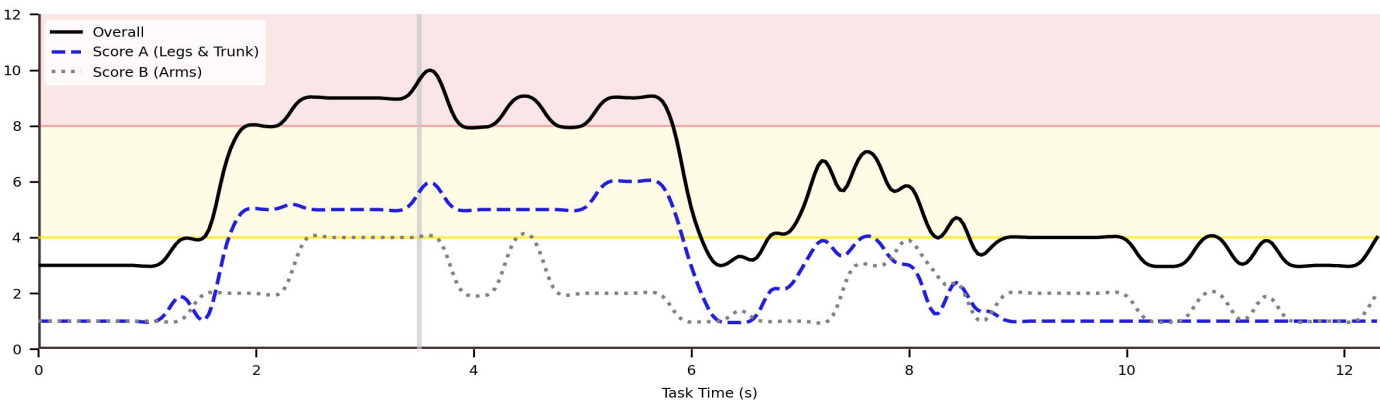
1: Negligible Risk

2-3: Low Risk. Change may be needed.

4-7: Medium Risk. Further investigate and change soon.

8-10: High Risk. Investigate and implement change.

11+: Very High Risk. Implement change.



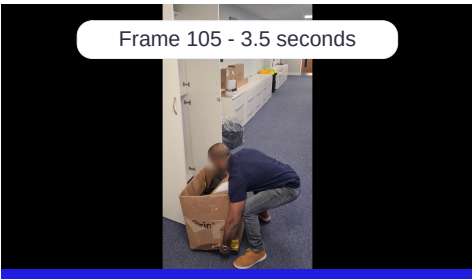
Peak Overall REBA Score



Peak A Score (Legs & Trunk)



Peak B Score (Arms)



	Posture	Adjust	Score
NECK	2	0	2
TRUNK	3	0	3
LEGS	1	2	3
UPPER ARM	3	0	3
LOWER ARM	2	-	2
WRIST	1	0	1
LOAD	2		
COUPLING	0		
ACTIVITY	1		
15.0 KG	Good		10.0 / MIN
A SCORE	B SCORE	OVERALL	
6	4	10	

	Posture	Adjust	Score
NECK	2	0	2
TRUNK	3	0	3
LEGS	1	2	3
UPPER ARM	3	0	3
LOWER ARM	2	-	2
WRIST	1	0	1
LOAD	2		
COUPLING	0		
ACTIVITY	1		
15.0 KG	Good		10.0 / MIN
A SCORE	B SCORE	OVERALL	
6	4	10	

	Posture	Adjust	Score
NECK	2	0	2
TRUNK	3	0	3
LEGS	1	2	3
UPPER ARM	3	0	3
LOWER ARM	2	-	2
WRIST	1	0	1
LOAD	2		
COUPLING	0		
ACTIVITY	1		
15.0 KG	Good		10.0 / MIN
A SCORE	B SCORE	OVERALL	
6	4	10	

MANUAL HANDLING ASSESSMENT CHARTS (MAC) - LIFTING ASSESSMENT

The Manual Handling Assessment Charts (MAC)

This tool is designed for employers, health and safety managers, safety representatives, and inspectors. It helps assess common risk factors in lifting, lowering, and carrying tasks, identifying high-risk manual handling activities. The tool provides guidance on the key factors to modify and control these risks to improve safety.

COLOR INDEX

Low Risk



Moderate Risk



High Risk



Unacceptable Risk

RISK FACTOR (Lifting)**RISK LEVEL****SCORE**

Load weight / frequency

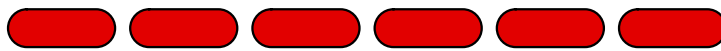
15.0 kg, 10.0 lifts per min



4

Hand distance from the lower back

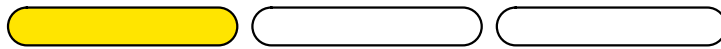
Hands far from low back



6

Vertical lift zones

Hands outside knee to elbow range



1

Torso twisting / bending

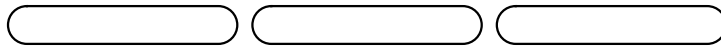
Little or no torso twisting or bending



0

Postural constraints

No postural constraints



0

Grip on the load

Reasonable grip



1

Floor surface

Good floor surface



0

Environmental factors

No environmental factors observed



0

TOTAL SCORE:**12****Action Your Risk Data**

Review the color and numerical scores, focusing on amber and red risks. Modify tasks to reduce these risks and prioritize actions by addressing the task with the highest total score first.