Ergonomic Screening Tool: Manual Material Handling Tasks

Nationwide
is on your side

Location: _____ Date: _____ Job/Task: _____

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This screening tool has been designed to identify common manual material handling problems found in workplaces. Note the risk factor levels and provide additional details as appropriate. Document potential solutions to observed risk factors. Use the last page of this document for additional assistance.

Risk Factor	Observation/Evaluation	Score	Comment (Use "Additional Comments" Section if Needed)
A. Repetition	☐ Low (0) ☐ Moderate (1) ☐ High (2)		
B. Duration	☐ Low (0) ☐ Moderate (1) ☐ High (2)		
C. Object Weight (lbs)	☐ <30 (0) ☐ 31-50 (1) ☐ 51-70 (2) Tasks with weights over 70 lbs are high risk and should be reduced		
D. Awkward Posture	☐ No (0) ☐ Yes (1)		
E. Lift—Starting Height	☐ Floor (2) ☐ Knee (1) ☐ Waist (0) ☐ Above Shoulder (2) ☐ Shoulder (1)		
F. Lift—Ending Height	☐ Floor (2) ☐ Knee (1) ☐ Waist (0) ☐ Above Shoulder (2) ☐ Shoulder (1)		
G. Horizontal Reach (inches)	☐ Under 13" (0) ☐ 13-24" (1) ☐ Greater than 24" (2)		
H. Twist at Waist (degrees)	☐ Under 30 (0) ☐ 30-60 (1) ☐ Greater than 60 (2)		

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Manual Material Handling Tasks, Continued

Risk Factor	Observation / Evaluation	Score	Comment
I. Static Postures / Hold	☐ No (0) ☐ Yes (1)		
J. Unusual Object Features	☐ No (0) ☐ Yes (1)		
K. Environmental Factors	☐ No (0) ☐ Yes (1)		
	Total Score: (max 18)	0	

Possible Solution	Observation / Evaluation	Comment
L. Material Handling Equipment	☐ Yes ☐ No	
M. Tool and Workstation Improvements	☐ Yes ☐ No	
N. Other	☐ Yes ☐ No	
If needed, include additional comments here:		

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Definitions

Risk Factors	Definitions
Repetition	Select from the following: **Low** – Less than 20 lifts per hour. **Moderate** – 20-60 lifts per hour. **High** – More than 60-lifts per hour.
Duration	Select from the following: **Low** – Task performed for less than 1 hour. **Moderate** – performed 1-4 hours. **High** – performed more than 4 hours.
Object Weight (pounds)	Measure the weight of the lift. Select the option which includes the final measurement. **Lifts above 70 pounds are very high risk!**
Awkward Posture	A normal standing posture is upright with hands resting at sides. Mark **Yes** if any awkward postures exist, such as bending, kneeling, etc.
Lift - Starting Height	Select the option which is closest to the starting point of the lift, from floor to above shoulder.
Lift - Ending Height	Select the option which is closest to the ending point of the lift, from floor to above shoulder.
Horizontal reach (inches)	Measure the distance between the spine and the hands. Select the option which includes the final measurement.
Twist at waist (degrees)	Measure the angle of twist at the waist. No twist is 0 degrees. Select the option which includes the final measurement.
Static Postures/Hold	Select Yes if workers maintain a consistent posture for several hours, putting pressure on the same muscle and joint groups. If none, select No.
Unusual Object Features	Select Yes if the object is slippery, bulky, off-center, prone to shift, requires a one-handed lift, or other unique circumstances. If none, select No.
Environmental Factors	Select Yes if any of the following are present. If none, select No. **Temperature/Humidity:** When body is exposed to hot or cold temperatures (greater than 85 F or below 45 F) it produces physiological effects. Hot Temperatures: elevate heart and breathing rates and can increase fatigue. Cold Temperatures: decrease blood flow to muscles. **Noise:** When the body is exposed to noise greater than 80 dBA it produces physiological effects. Muscles contract plus heart and breathing rates can elevate. **Vibration:** Pneumatic tool use for more than one hour, or electric/gasoline powered tools used for more than two hours produce physiological effects. Muscles contract, heart and breathing rates elevate and can increase fatigue.

5 Lifting Light Bulb Moments				
The safest lift is the one that's never made. If we see risky lifts, start at the top of the hierarchy of controls and see what can be done to eliminate the lift all together. It's not always possible to eliminate the lift, so drop down to controls like lift tables, hoists, and other ways to make it a better lift.	**The force is against you.** The more weight involved in the lift, the more risk. The NIOSH Lifting Equation starts with a max safe lift of 51 lbs. and went down from there. Ohio BWC starts at 70 lbs., but that's under ideal conditions. Consider the items listed next, and the safe lift weight can be much lower.	**Keep it in the strike zone.** The safest lifts occur between the shoulders and the knees – similar to baseball's strike zone. Getting items off the ground and out of overhead areas is a quick way to reduce the amount of lifting risk.	**Distance is the enemy.** The farther the load is away from the body, the more risk exists. Hugging the load is safer than lifting it with arms extended.	**Don't do the twist.** If there's simply no way to avoid a lift where some turning must occur, keeping the nose and toes aligned can make it a safer lift. The more angle between the nose and the toes, the riskier the lift.

Prefer a web-based lifting assessment? Find one from the Ohio Bureau of Workers' Compensation at: **bwc.ohio.gov/employer/programs/safety/liftguide/liftguide.asp**

Niosh Lifting Equation: **cdc.gov/niosh/topics/ergonomics/nlecalc.html**