ZURICH

Minimizing lower back injuries caused by lifting, pushing and pulling

Evaluation guide

Table of contents

Minimizing lower back injuries caused by lifting, pushing and pulling

Lower back injuries disrupt a person's work experiences as well as their personal life. This injury is most likely to occur to those age 30 to 45, the time when both the employer and the employee can least afford the consequences. This type of injury usually affects at least one out of every four of your workers and 40 percent of those persons will likely suffer reinjury.

Contrary to popular belief, many of these lower back injuries are not the result of sudden mishaps that damage spinal discs or strain muscles and sprain tendons and ligaments. Rather, these injuries may develop gradually over a period of weeks, months or even years as a result of repeated stresses on the back.

Risk factors

The five major "risk factors" or sources that may be individually, or in combination, related to the development of lower back injuries are force, repetition, duration, posture and shape and design of the object.

There are two types of controls: administrative and engineering. Administrative controls include items such as training, job rotation, shift/break schedules and careful selection of workers. Engineering controls include redesign of the job, a tool or a workstation. Ideally, engineering controls are the controls on which you should focus.

Good job design reduces the worker's exposure to the hazards of lower back injuries. It also reduces the medical and legal problems of selecting the worker for the job, as well as finding replacements for absent workers. Good job design also places less reliance on the worker's willingness to follow safety procedures.

This guide will help you identify risk factors and choose control options. Keep in mind that lower back injuries may be the result of more than one risk factor. Your chances of minimizing low back injuries improves by controlling as many risk factors as possible.

Using the guide

1. Observe the task being performed.
2. Consider each identifying risk factor and determine how these factors relate to the job or task.
3. Identify the effects of performing that task in the current manner. Examples: strained back, pinched fingers, object dropped on foot causing foot injury or damaged product.
4. Review and choose the appropriate control.

Please understand that these factors and controls cannot possibly be all-inclusive. Feel free to use your knowledge, creativity and judgement in utilizing this information. If you are interested in a more in-depth evaluation for the prevention of back injuries, please ask for our "Back on Track" program. If you have questions regarding the hazards, causes or effects of these disorders, please contact your risk engineering representative at 800-982-5964.

Identifying risk factors for lifting, pushing and pulling

Force

Do you have any jobs requiring a worker to lift, push or pull weighted objects?

Some examples include:

- Sliding materials, containers or boxes to the front or rear of pallets
- Use of hand jacks
- Pulling containers off of storage racks
- Picking up dropped parts
- Cleaning up workstations
- Lifting items off of pallets or floor

Repetition

Do you have any jobs requiring a worker to move objects over and over?

Some examples include:

- Frequently moving materials in and out of the working area of the machine
- Frequently picking up and sorting materials
- Frequently moving materials from storage to shelving

Duration

How much time is spent lifting, pushing or pulling?

Considerations include:

- This is the worker's full-time job every day.
- It is done frequently over an eight-hour shift.
- It is done occasionally throughout the shift.

Shape and design of object

Is it difficult to handle or move your materials?

Considerations include:

- The objects moved do not have handles or hand grips.
- The hand grips are poorly placed.
- The objects handled are awkward and difficult to grasp.

Posture

Do any workers twist or bend while moving objects?

Some examples include:

- Reaching away from the body to the front or sides
- Bending to lift objects from the floor
- Bending at the waist to lift objects
- Moving objects to above shoulder height

Controlling risk factors for lifting, pushing and pulling

Force

Increase the weight to necessitate mechanical handling:

- Bags with greater weight
- By packaging many objects together
- By changing the size of the object

Reduce the weight by decreasing

- Size
- Container capacity
- Load in the container
- Container weight
- Number of objects being handled at the same time
- Purchase materials in less than 50-pound containers

Repetition/duration

Eliminate the need to handle manually.
Use mechanical devices whenever possible.

Reduce repetitions

- Cross-train workers to keep them from doing the same task over and over
- Rotate workers between job stations frequently
- Broaden jobs to use different muscles

Shape and design of object

- Reduce the size of the container
- Add handles that will aid in grasping
- Encourage grasping and carrying objects with two full handgrips instead of just using finger grips

Posture and technique

Bending

- Keep materials at waist level during processing
- Use mechanical devices to raise items to about waist level

Twisting

- Keep materials in front of worker
- Provide swivel seats
- Use mechanical devices to change material flow direction
- Allow enough space to turn and step into work area

Reaching

- Reduce the size of the object
- Place items (materials, tools, controls) as close to the worker as possible
- Allow space to walk around and get closer to objects
- Pad conveyor edges to allow workers to stand closer

Analysis example

Department: _____

Date: _____

Hazards (jobs)	Identifying	Loss drivers/ root causes	Controlling
Receiver unloads trailer at dock; places cargo on pallets	**Weight** 20 to 60 lbs.	Back/shoulder sprains, could drop item on foot, item could break	Weight: Suppliers place cargo on pallets or reduce carton weight
	Repetition Five cartons per minute	Same	Repetition: Mechanical assist or rotate worker
	Shape/design Large cartons; difficult to hold	Same	Shape/design: Smaller cartons, cartons with handholds
	Posture Twisting to pallet	Same	Technique: Turn whole body, raise pallet, rotate pallet
	Bending to floor level; reaching across pallet	Same	

Analysis worksheet

(Copy as needed)

Department: _____

Date: _____

Hazards (jobs)	Identifying	Loss drivers/ root causes	Controlling

Analysis worksheet

(Copy as needed)

Department: _____

Date: _____

Hazards (jobs)	Identifying	Loss drivers/ root causes	Controlling

Notes

Evaluation guide

Notes

Evaluation guide

Zurich Services Corporation

1400 American Lane, Schaumburg, Illinois 60196-1056
800 982 5964 www.zurichservices.com

Zurich Services Corporation
Risk Engineering

ISO 9001:2000
Quality-Assured Solutions Provider

A1-10565-F (12/08) 08-3940

ZURICH®

Because change happenz℠