

Gloves in the workplace

Are your gloves helping or hurting you?

Though gloves are often necessary to protect the hands, they can cause increased muscular effort as they place additional strain on the fingers, wrists, hands and arms. Even a glove as thin as a dish glove can cause reductions in your grip strength and increases in the muscle force required to perform a manual task. As manual work becomes more forceful, the risk of injury increases.

How a glove's characteristics affects effort

Bending the glove requires effort

- A thick, non flexible glove, makes your fingers work harder to move the glove when you grasp an object.

Thick or bulky gloves can change the geometry of your hand

- Extra material forces your fingers further apart, affecting your grip strength, and reduces your ability to exert maximum effort. The awkward posture also places additional strain on your muscles and tendons as your muscles have to work harder to exert the same force.

Gloves interfere with your sense of touch

- There are nerve receptors in your skin and muscles that give you information about the object in your hand. Gloves decrease this feedback, and the thicker or looser they are, the less feedback you receive. As a result, your grip force increases, which increases your muscular effort. This decreased sensation is also one of the reasons why dexterity and manual performance suffers.

Looser gloves lessen dexterity

- The looser the glove, the more effort is required to perform a task. Think about how well you think you could pick up a quarter off the floor while wearing typical work gloves. Not so easy!

Tips to reduce injury risk associated with glove use

The Right Fit

A properly fitted glove increases dexterity and reduces the extra material that gets in the way.



Thinner is Better

Thicker gloves interfere with your sense of touch, resulting in a need to grip the object tighter.

Be Flexible

A glove that is too stiff is harder to move!



Get a grip

Increased friction on the glove's gripping surface helps reduce the force needed to grip an object.

Additional Information

Choosing the right glove for the job:

Cotton gloves:

- Provides basic protection and keeps hands clean
- Not recommended for work involving rough or sharp materials
- Some cotton or fabric gloves have a rubberized pattern on the inside hand to assist in gripping an object



Rubber, plastic or synthetic gloves:



- Protects hands when working with oils, solvents and other chemicals
- If working with harsh chemicals (i.e.: hydrochloric acid, hydraulic fluids, or chlorinated solvents), look for gloves that are chemical and liquid resistant.
 1. Butyl rubber
 2. Natural latex/rubber
 3. Neoprene gloves
 4. Nitrile rubber gloves

Leather gloves:

- Use leather gloves to keep hands safe from sharp objects as well as sparks from welding equipment.
- Provides some protection from heat

Aluminized gloves:

- Increased protection from heat over leather gloves - use for welding or furnace work.



Kevlar gloves:

- Protects against heat, cold, and are most of all cut resistant. These gloves are perfect for sheet metal work, glass handling, and automotive work.

Reference

National Safety Council "Safety + Health" magazine, September 1, 2012.