

# ERGONOMICS

Facilities/maintenance employees often perform tasks that involve forceful lifting, awkward body postures, pushing and pulling of heavy or bulky objects, vibration, or prolonged repetitive motion. Ergonomic strategies should be employed to fit and prepare an employee better for these tasks and help to reduce injury.



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## STRETCHING

No baseball player would start a game without an extensive warm-up involving stretches. The demands on building maintenance employees may not be the same as that of baseball players, but many tasks can put strain on their musculoskeletal system.

Simple stretching exercises before performing tasks that demand a great deal of physical effort can better prepare muscles for the job. Only use stretching techniques that are safe and work for each individual. Stretching should never reach the point of experiencing pain.

## TAKING MICROBREAKS

When performing prolonged work, it is important to take microbreaks. These short breaks do not have to be more than a minute but should include time to stretch and relax. This allows the body time to recover and brings blood and oxygen to fatigued muscles and joints. Microbreaks should be regularly scheduled every 20 minutes or so during prolonged exertion.

## USING SAFER LIFTING TECHNIQUES, ELIMINATING LIFTS

Handling heavy materials is common during the workday. Employees should focus attention on proper body mechanics when lifting, shoveling or handling heavy tools and equipment.

Safer lifting techniques include:

- Standing close to the load with solid footing.
- Bending at the knees and not the back.
- Keeping the back straight.
- Lifting with the legs.
- Contracting stomach muscles during the lift.
- Holding the load close to the body.
- Avoiding twisting or other awkward movements.
- Asking for help if the load is too heavy, awkward or long.
- Using handles or carrying tools when available.



*Proper lifting technique prevents injuries while shoveling snow.*

If possible, consider using equipment designed to ease or eliminate lifting or carrying. A movable hoist or a dolly can make moving materials and lifting less strenuous. Carts can help move objects around in offices. Even a properly sized shovel handle can help reduce the amount of bending needed.



*A cart makes awkward or heavy items easier to move.*

When storing materials, consider how they will be lifted off the shelf or pallet rack. If the materials are meant to be manually lifted from a shelf, positioning is important to reduce strain. Heavier objects should be stored between knee and shoulder height. This will reduce the amount of reaching or lifting required to move that object. Only lighter objects should be stored above shoulder height.

## REDUCING VIBRATION

Regular exposure to vibration can create tingling and numbness in fingers, hands and arms. Prolonged exposure can result in a condition known as vibration syndrome.

Measures should be taken to reduce vibration in power tools and equipment. Among the types of equipment that pose vibration hazards are sanders, grinders, saws and other power tools or equipment.

Both administrative and engineering controls can be used to mitigate vibration. If possible:

- Alternate work involving vibration with tasks that do not, or allow rest breaks to reduce continuous exposure.
- Check tools before use to make sure they are in good working condition and operate without excess vibration.
- Keep cutting tools sharp. Dull blades can create more vibration.
- Let the tool do the work; maintain only enough grip to operate equipment safely and effectively. Do not force a tool more than is needed.
- Wear vibration-reducing gloves. They not only help decrease vibration, they also keep hands warm.
- Add anti-vibration tape to handles of power tools.

## PLANNING AHEAD

Thinking about the different requirements of a coming task can help identify alternative ways to do the job more safely. For example:

- If the task requires handling large or awkward objects, consider ways to do this more safely and with less strain. Will there be obstacles in the path of movement or uneven ground? Is there equipment that can help move these objects more safely?
- If the task requires hand tools, are they the best for the job? Do they fit the employee's hand comfortably? Can they be used while maintaining a straight wrist?
- If power tools are used, can they be supported to relieve some force? Is the working surface at a height that reduces back strain or overextension of the arms?

- Does the task require squatting or kneeling? Consider using personal protective equipment, such as knee pads, to reduce impact from hard surfaces. Could a stool be used while performing this job?

**More information about ergonomics can be found in the OSHA publication No. 3125, "Ergonomics: The Study of Work" found at [OSHA.gov](https://www.osha.gov).**



### Job Hazard Analysis

Job hazard analysis can be an effective way to plan a job by breaking it down into separate actions. Each of these actions should be looked at from an ergonomic and safety perspective. Listing the exposures of each action can then help identify ways to remedy the hazards. **For more information about job hazard analyses, please see Chapter 29.**



## ERGONOMICS CHECKUP

ITEM	YES	NO	ACTION ITEM
Is task rotation or are rest breaks encouraged when employees are engaged in a repetitive activity for a prolonged period?			
Are safe stretching exercises encouraged before engaging in strenuous activities?			
Are tools the proper size and shape to fit the individual employee's hands?			
Are tools used during hand-intensive tasks designed so the wrist can remain straight?			
Is equipment vibration mitigated through the use of anti-vibration gloves or tape?			
Are cutting tools kept sharp to minimize vibration?			
If tasks require kneeling, are knee pads or cushions provided?			
Can equipment be used to reduce kneeling?			
If tasks require squatting, can equipment be used to reduce squatting?			
Are employees using safe lifting techniques?			
Is equipment available to help minimize strain when lifting heavy objects (e.g., carts, etc.)?			
Are materials stored with ergonomics in mind (e.g., heavy objects between knee and shoulder height)?			
Has a job hazard analysis been performed on each common task?			