ERGONOMICS-How's That Back Pain?

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Objectives:

1. Define ergonomics
2. Describe the individual safety agencies
3. Discuss effective exercises to prevent MSD

Ergonomics is the science of fitting workplace conditions and job demands to the capabilities of the working population. Effective and successful "fits" assure high productivity, avoidance of illness and injury risks, and increased satisfaction among the workforce. Although the scope of ergonomics is much broader, the term here refers to assessing those work-related factors that may pose a risk of musculoskeletal disorders (MSD) and recommendations to alleviate them. Common examples of ergonomic risk factors are found in jobs requiring repetitive, forceful, or prolonged exertions of the hands; frequent or heavy lifting, pushing, pulling, or carrying of heavy objects; and prolonged awkward postures. Vibration and cold may add risk to these work conditions. Jobs or working conditions presenting multiple risk factors will have a higher probability of causing a musculoskeletal problem. The level of risk depends on the intensity, frequency, and duration of the exposure to these conditions and the individuals' capacity to meet the force of other job demands that might be involved

The National Institute for Occupational Safety and Health (NIOSH) is the Federal agency responsible for conducting research and making recommendations for the prevention of work-related disease and injury. The Institute is part of the (CDC). NIOSH is responsible for conducting research on the full scope of occupational disease and injury ranging from lung disease in miners to carpal tunnel syndrome in computer users. In addition to conducting research, NIOSH: investigates potentially hazardous working conditions when requested by employers or employees; makes recommendations and disseminates information on preventing workplace disease, injury, and disability; and provides training to occupational safety and health professionals.

The CDC (The Centers for Disease Control and Prevention), is recognized as the lead federal agency for protecting the health and safety of people - at home and abroad, providing credible information to enhance health decisions, and promoting health through strong partnerships. The CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States.

OSHA has concluded that effective management of worker safety and health is a decisive factor in reducing the extent and the severity of work-related injuries and illnesses. Effective management addresses all work-related hazards, including those potential hazards that could result from a change in worksite conditions or practices. It addresses hazards whether or not they are regulated by government standards.

OSHA's experience in the Voluntary Protection Program has also indicated that effectively managing safety and health protection programs improve employee morale and productivity, as well as significantly reduce workers' compensation costs and other less obvious costs of work-related injuries and illnesses.

Repetitive, prolonged, reaching, when sorting sterilized packages or lifting above shoulder height to reach high shelves of equipment or when pushing and pulling heavy carts full of dirty or clean items can cause employee exposure to Musculoskeletal Disorders (MSD). Static postures may occur from continuously standing in one position while sorting instruments. Contact trauma to forearm area can occur if employee rests wrists on hard sharp counter surfaces when sorting.

Increased potential for employee injury exists when awkward postures are used when handling or lifting patients/residents. Awkward postures include:

Twisting while lifting
Bending over to lift
Lateral or side bending
Back hyperextension or flexion

Forces on the spine increase when lifting, lowering or handling objects with the back bent or twisted. This occurs because the muscles must handle your body weight in addition to the weight of the patient/residents being lifted.
More muscular force is required when awkward postures are used because muscles cannot perform efficiently.
Fixed awkward postures (i.e., holding the arm out straight for several minutes) contribute to muscle and tendon fatigue, and joint soreness.
To be considered a risk factor, awkward postures need to last more than 1 hour continuously or for several hours in the work shift.
Reaching forward or twisting to support a patient/residents from behind to assist them in walking.

Possible Solutions
Good work practice recommends avoiding awkward postures while lifting or moving patients/residents.

Educate and train employees about safer lifting techniques.

Use assist devices or other equipment whenever possible.

Team lifting based on assessment.

Four Basic Exercises for Good Back Care

The following exercises are helpful for many people. They can be done every day in the order listed below.

Note: Everyone's body is different. Don't do any exercise that causes pain or gets more difficult to do over time. If the exercise relieves pain or gets easier after a few repetitions, keep doing it.

If you are under medical care for a back problem or if you have back pain, be careful. Ask your health-care provider before you try these exercises.

THE PELVIC TILT

The pelvic tilt exercise helps strengthen your stomach, buttocks, and thigh muscles as well as stretching the lower back muscles. This exercise flattens the back and then let the back return to its natural curve.

1 Lie flat on your back on a hard surface with head resting on a small pillow.
2 Bend knees and hips so both feet are flat on the hard surface.

3 Push lower back flat to the floor. Make sure your back is flat by trying to place your hand between your back and the hard surface. When done correctly, your hand shouldn't fit.

4 Tighten your "stomach" (abdominal) muscles.

5 Tighten your "buttock" (gluteal) muscles.

6 Lift your hips from the floor and tilt your whole pelvis forward while keeping your back flat against the hard surface.

7 Hold for a count of ten.

8 Slowly relax.

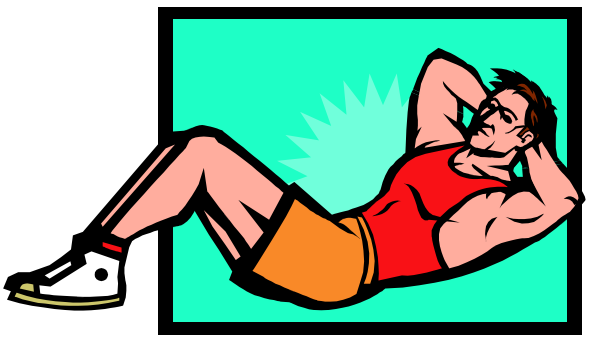
9 Repeat this exercise ten times.

The best way to do this exercise is on the floor. You can also do it against a wall. Once you are familiar with the "feel" of the pelvic tilt, you can do this exercise in any position and you can practice at work or at home. The pelvic tilt can be done standing up against a wall or while you are standing in line, waiting at a red light, or wherever you can focus on your back for a few minutes.

LUMBAR STRETCHES

When lumbar muscles are tight, they become shortened and interfere with bending, twisting, and pelvic rotating. Keeping these muscles stretched also helps keep the natural curves of the spine in shape.

1 Lie flat on your back on a floor or hard surface with your head on a small pillow.



2 Bend your knees and slowly bring them toward your chest. Reach your hand behind your thigh to help bend the knees. (Note: pulling from the top of the knee isn't good for the knees.) Don't bounce.

3 Keep your head on the pillow and elevate your butt as high as possible off the floor. Your knees should be as close as possible to your chest.

4 Hold this position for a count of 10. Relax, but continue to hold onto your thighs.

5 Again, pull knees as close to your chest as possible. Do this exercise 10 times.

HAMSTRING STRETCHES

When hamstring muscles are shortened or tight they interfere with bending. You can stretch them by doing the following exercise. Begin by lying on a hard surface.

1 With your knees close to the chest but in a relaxed position, slowly extend one leg toward the ceiling.

2 Flex your foot and push your heel upward to feel the hamstring muscles stretch. Count to 10 while holding this position.

3 Now bend this leg and bring the knee back toward your chest, while extending the other leg. Repeat Step 2 with the other leg.

4 Repeat this exercise 10 times, one leg at a time.

5 When you are done, bring both knees toward your chest and roll to the side as a safe way of returning to a standing position.

REVERSE SITUPS

Many people have weak abdominal ("stomach") muscles and tend to arch their backs while doing sit-ups.

That's why we recommend "reverse" sit-ups to strengthen the three groups of muscles that make the abdomen strong.

1 Sit on the floor in an upright position with knees bent.

2 Lock hands together behind your head and hold your arms out to your side.

3 Tighten your stomach muscles and slowly lean back about 15 degrees, which is like going from 12 noon to 11 o'clock on a timepiece. Hold this position for a count of 5, and 10 if you can.

4 Slowly lean back to the 10 o'clock position. Hold and count again.

5 Return slowly to an upright position.

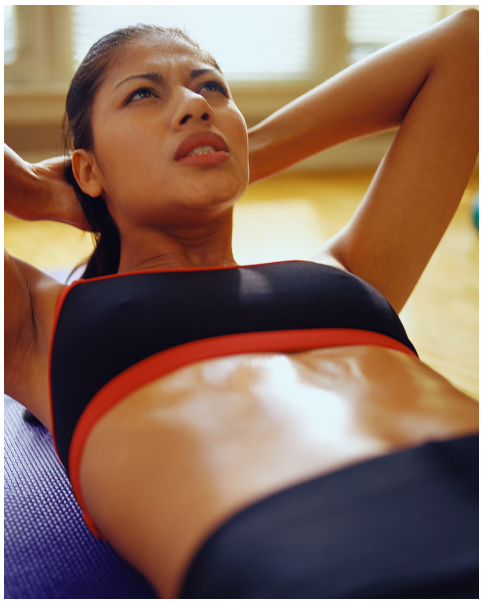
6 Repeat the whole exercise.

As you can see, there are many agencies aware of the damage you can do to yourself. Please be aware of how you are lifting, standing, sitting, squatting or moving to ensure you are aware of how you need to protect yourself, no matter what. After all, your back is the only one you have.

Resources:
Steris: Study Guide

NIOSH Website—Articles on Ergonomics

United States Department of Labor (OSHA)-Hospital etool



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1. Ergonomics is the study of the right job for the right person.
   True False

2. Ergonomics can refer to those work related factors that pose a risk of MSD.
   True False

3. Vibration and cold are helpful to certain working conditions.
   True False

4. Common ergonomic risk factors are found in jobs requiring repetitive, forceful or prolonged exertion.
   True False

5. NIOSH investigates only those working conditions that are beneficial to the employee.
   True False

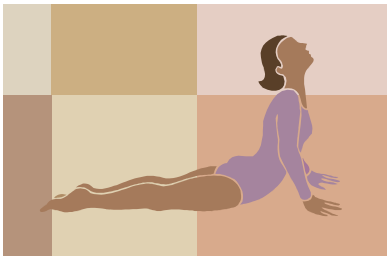
6. NIOSH is a part of the CDC.
   True False

7. The CDC is recognized as the lead federal agency for protecting the health and safety of people.
   True False

8. Static postures can occur from continuously standing in one position while sorting instruments.
   True False

9. Some awkward postures include bending over to lift, twisting while lifting, or lateral or side bending.
   True False

10. Employees do not need to be educated and trained about safe lifting techniques.
    True False



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