

## **Great Western Painting Cumulative Trauma Program**

Cumulative trauma would be better identified as repetitive stress injury which would be a subset of work-related musculoskeletal disorder (WMSD).

This program is designed to reduce the risk of these repetitive stress injuries.

Common construction job activities such as gripping, kneeling, lifting, working in an awkward position, applying force, bending, working overhead, twisting, using vibrating equipment, squatting, and over-reaching can cause injury (trauma) to the body. Constantly repeating the above activities can lead to more serious injuries

When you bend forward, your back muscles work harder and the ligaments flex and stretch. The discs get squeezed and press on different parts of the spine, including nerves. If you bend forward over and over for months or years, the discs are weakened, which may lead to disc rupture (or "herniation"). Twisting your body while bending puts even more pressure on the discs, and more stress on the cartilage and ligaments, especially when you are exerting force to lift, push, or pull objects.

Continual stress on your knee can cause the bursa (small sacs of fluid) to get squeezed, swollen, stiff and inflamed (bursitis). Frequent kneeling, stooping, or squatting increases the risk of bursitis, tendinitis, or arthritis in the knee. The risk of arthritis increases for workers who already have had a knee injury and work in these positions.

Continual stress on the shoulder can also cause the shoulder tendons to become inflamed resulting in pain (tendinitis) or tension neck syndrome (a type of muscle strain that can cause neck stiffness, muscle spasms, and pain in the neck or radiating from the neck). It also affects the trapezius muscle, a large, thin muscle that runs from the upper back through the shoulder area to the neck.

If you carry heavy objects with hard sharp edges, they can dig into your skin and injure the soft tissues in your hands. Or, if you carry objects that are hard to grip and hold, they may force your hand or wrist into awkward, stressful positions and cause disorders like tendinitis or carpal tunnel syndrome.

### **Solutions:**

The order of precedence and effectiveness of hazard control cumulative trauma is:

1. Engineering controls.
2. Administrative controls.
3. Personal protective equipment.

Supervisors will inspect and enforce the use of the above controls.

Engineering controls include the following use of mechanical devices such as:

1. Dollies.
2. Hand trucks.
3. Lift assist devices.
4. Jacks.
5. Carts.
6. Conveyors.

7. Increasing the heat – muscles are less likely to cramp in warmer temperatures.
8. Utilizing newer more ergonomically designed tools and equipment which is lighter, quieter, less vibrating

Administrative controls include the following use of mechanical devices such as:

1. Using multiple persons to perform a manual task.
2. Increasing time between tasks. Provide for breaks and fluids.
3. Training

Personal Protective Equipment would include, but not be limited to:

1. Using gloves to address cuts, firm grip and warmth.
2. Appropriate steel toed footwear to address slips and items falling on feet
3. Eye protection to prevent items hitting eyes.
4. Ear protection
5. Back braces.

### **Ergonomics & Manual Lifting:**

#### **Correct Neutral Postures:**

Postures where the body is aligned and balanced, while sitting or standing. The head is kept upright and is not turned to either side more than about 30 degrees or tilted forward or backward more than about 15 degrees. When the worker is standing, the torso is not bent more than 10 to 20 degrees from the vertical position and the natural curves of the spine are maintained. The pelvis and shoulders should face straight ahead to avoid twisting the torso. The shoulders are relaxed and knees slightly bent. The arms hang normally at the side, with elbows close to the body. The elbows are not bent more than about 90 degrees and the palms face in toward each other and the center line of the body. The wrists are in line with the forearms and are not bent sideways, forward (towards the palm), or backward (towards the back of the hand.)

When lifting, every attempt should be made to not put stress on the body which is beyond the correct neutral posture.

#### **Proper Lifting Techniques:**

Musculoskeletal Injuries are often caused by the obvious -- putting excessive strain on the lower back by lifting an object that is too heavy or awkward, or by bending and/or twisting while lifting.

However, lifting injuries are also caused by less obvious reasons:

- a. poor physical condition
- b. poor posture
- c. poor judgment (lifting, pulling, pushing an object that is obviously too heavy or awkward without seeking assistance or a mechanical lifting device.)

**Note: Where the use of lifting equipment is impractical, two man lifts must be performed.**

- d. lack of exercise
- e. excessive body weight

Training will be given in proper lifting techniques. Below are lifting techniques that will reduce the likelihood of injury:

- a. lift objects comfortably, not necessarily the quickest or easiest way.
- b. lift, push, and pull with your legs, not your arms or back.
- c. when changing direction while moving an object, turn with your feet, not by twisting at the waist.
- d. avoid lifting higher than your shoulder height.
- e. when standing while working, stand straight.
- f. when walking, maintain an erect posture; wear slip-resistant, supportive shoes.
- g. when carrying heavy objects, carry them close to the body and avoid carrying them in one hand.
- h. when heavy or bulky objects need to be moved, obtain help or use a mechanical aid such as a dolly, hand truck, forklift, etc..
- i. when stepping down from a height of more than eight inches, step down backwards, not forward.
- j. Lift heavy objects close to the body -- avoid reaching out. The power zone for lifting is close to the body, between mid-thigh and mid-chest height. Comparable to the strike zone in baseball, this zone is where arms and back can lift the most with the least amount of effort.
- k. lift gradually and smoothly. Avoid jerky motions.
- l. maintain a clear line of vision.

### **Investigation of Injuries:**

The Safety Director will investigate all repetitive stress injuries and, as part of that investigation, incorporate those findings into work procedures to preclude a reoccurrence.

Injuries will be recorded and reported in compliance with 29 CFR 1904, *Recording and Reporting Occupational Injuries and Illnesses*.

A concentrated effort will be made to ensure that the corrective measures do not create hazards in and of themselves.

To prevent injuries in the first place, supervisors will periodically evaluate our manual lifting techniques to assess the potential for and prevention of injuries.

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Robert Evans  
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