CUMULATIVE TRAUMA DISORDERS

There are five main risk factors that can contribute to the development of a CTD:

1. ***Position*** *- When working with the wrists approximately straight, elbows at about 90°, shoulders relaxed and the spine kept in its natural "S" curve, the strain placed on muscles, tendons, discs and ligaments is minimized.*

2. ***Force*** *- The more force required to perform a particular task, or the longer that force must be applied, the greater the risk of developing a CTD.*

3. ***Repetition*** *- Tasks that use the same muscles and tendons over and over, require more muscle effort and allow less recovery time. Often jobs that require high repetition rates can lead to fatigue and injury.*

4. ***Vibration*** *- The use of vibrating or impact tools or equipment for hours at a time can stress the hands and arms, the lower back and the neck.*

5. ***Lifting*** *- Unassisted, frequent or heavy lifting, especially when performed improperly, can stretch the ligaments of the back and cause the vertebrae to become misaligned.*

Other factors such as extreme temperatures, poor lighting, general health, age and gender can also have an effect. In fact, it is impossible to predict exactly who might develop a CTD.

Because cumulative trauma disorders are so unpredictable, it is especially important for you to be able to recognize symptoms of common CTDs in their early stages. Take symptoms seriously. Medical costs and time away from the job both increase as the illness progresses.

Tendonitis, carpal tunnel syndrome, and lower back problems are the most common cumulative trauma disorders—both in the office and on the shop floor.

Tendonitis

Tendonitis, an inflammation of a tendon, can occur at any joint in your body. Tendonitis associated with office work is most likely to occur at the wrist because of the stresses that can be involved in typing or filing. In industry, tendonitis is also common at the elbow and shoulder.

Tendons connect muscle to bone. Any work that is done, any movement that is made, requires muscles to expand and contract, and moves tendons back and forth through a joint. When a tendon is used too long or too hard, the result can be tendonitis, a painful condition that usually takes a long time to heal.

To avoid developing tendonitis, employees should be able to work without straining.

Carpal Tunnel Syndrome

Carpal tunnel syndrome affects feeling and movement in the thumb and first three fingers. It is caused by pressure on a nerve in the wrist.

Carpal tunnel syndrome can begin with tendonitis in the wrist—often from typing or doing any kind of repetitive hand work with an awkward wrist position. When the tendons become inflamed, they swell and put pressure on a major nerve that passes through a small opening called the carpal tunnel. This nerve, the median nerve, controls feeling and movement in the thumb and first three fingers.

Anything that creates pressure on the median nerve can affect a person's ability to use his or her hand. Other causes of pressure could be the accumulation of excess fluid caused by injury, hormonal changes or certain medical conditions.

The first symptoms of carpal tunnel syndrome often occur at night or during periods of rest. If the illness continues, the symptoms may also begin to occur during the day.

This is usually what happens if the illness is allowed to continue:

- *Tingling or numbness in the hand at night or during rest.*
- *Tingling or numbness in the hand during the day.*
- *Pain in the hand and possibly up the arm.*
- *Difficulty holding onto objects.*
- *Wasting of muscle in the heel of the hand below the thumb.*

It is extremely important to get medical help for carpal tunnel syndrome while the symptoms are in the early stages. If intervention is significantly early, it may be possible to treat the condition successfully using rest and medications. If carpal tunnel syndrome progresses too far, surgery may be the only recourse for relief of symptoms.

Do NOT ignore the early symptoms of carpal tunnel syndrome. Encourage employees to report symptoms and to get treatment.

Lower Back Pain

Many back problems, especially of the lower back, can be the result of minor stresses that accumulate over a long period of time. These can be caused by sitting without adequate support, or by lifting, lowering, carrying and even getting up and down in ways that put unnecessary stress on the back.

The spine supports a lot of weight and the effects of the daily stresses that are put on the muscles, joints and discs in the back can eventually add up to a real problem.

The backbone is a series of vertebrae separated and cushioned by strong, resilient discs. The weight of the entire upper body, plus anything else that a person picks up, is supported by the back muscles. This weight also puts pressure on the discs in the spine. Working with fatigued back muscles can often result in a stiff or aching back at the end of the day. But it can also lead to a much more serious problem. Over a period of time many of the conditions that overwork back muscles can also lead to a very painful problem with discs - especially the discs in the lower back.

The actions that most often lead to lower back problems are:

- Twisting with a load.
- Lifting a load too far out from the body.
- Lifting too frequently.
- Lifting a load that is too heavy.
- Carrying a heavy load in one hand instead of two.
- Leaning forward, backward or to either side without support.
- Sitting for long periods without support for the weight of the upper body.

All of these things can put unnecessarily high pressure on discs. They actually overload the discs with too much weight, or they load the discs unevenly. Instead of being evenly distributed, the weight of the load is concentrated on one side of the discs.

Too much pressure on a disc can result in premature wear. It can also create tiny tears in the disc wall, eventually causing it to bulge out or rupture. When a disc ruptures, the result can be very serious - often disabling.

To help employees avoid problems with the lower back, be sure they sit, stand, lift and carry in the best way possible.