Preventing Strains and Sprains Meeting Kit

WHAT ARE SPRAINS?

A sprain is an injury to a ligament (tissue that connects two or more bones at a joint). In a sprain, one or more ligaments is stretched or torn.

WHAT ARE STRAINS?

A strain is an injury to a muscle or a tendon (tissue that connects muscle to bone). In a strain, a muscle or tendon is stretched or torn.

A Proactive, Prevention-focused Approach to Sprains and Strains in the Workplace

Prevention is, of course, better than treatment. Sprains and strains are a painful (and unnecessary) experience that we want to prevent from happening.

To do that, you need a comprehensive prevention process to systematically identify and remove the risk factors present in your workplace and workforce through the use of controls.

There are two primary types of controls; **ergonomic (workplace) controls** to reduce/remove ergonomic risk factors and **individual controls** to reduce/remove individual risk factors.

ERGONOMIC (WORKPLACE) RISK FACTORS:

- **Excessive Force:** Many work tasks require high force loads on the human body. Muscle effort increases in response to high force requirements, increasing associated fatigue which can lead to MSD.
- **Excessive Repetition:** Many work tasks and cycles are

repetitive in nature, and are frequently controlled by hourly or daily production targets and work processes. High task repetition, when combined with other risks factors such high force and/or awkward postures, can contribute to the formation of MSD. A job is considered highly repetitive if the cycle time is 30 seconds or less.

- **Awkward Posture:** Awkward postures place excessive force on joints and overload the muscles and tendons around the affected joint. Joints of the body are most efficient when they operate closest to the mid-range motion of the joint. Risk of MSD is increased when joints are worked outside of this mid-range repetitively or for sustained periods of time without adequate recovery time.
- **Other environmental factors:** Slip, trip and fall hazards increase risk of a sudden / acute soft tissue injury.

INDIVIDUAL RISK FACTORS:

- **Poor work practices.** Workers who use poor work practices, body mechanics and lifting techniques are introducing unnecessary risk factors that can contribute to MSDs. These poor practices create unnecessary stress on their bodies that increases fatigue and decreases their body's ability to properly recover.
- **Poor overall health habits.** Workers who smoke, drink excessively, are obese, or exhibit numerous other poor health habits are putting themselves at risk for not only musculoskeletal disorders, but also for other chronic diseases that will shorten their life and health span.
- **Poor rest and recovery.** MSDs develop when fatigue outruns the workers recovery system, causing a musculoskeletal imbalance. Workers who do not get adequate rest and recovery put themselves at higher risk.
- **Poor nutrition, fitness and hydration.** For a country as developed as the United States, an alarming number of people are malnourished, dehydrated and at such a poor level of physical fitness that climbing one flight of stairs puts many people out of breath. Workers who do not take care of

their bodies are putting themselves at a higher risk of developing musculoskeletal and chronic health problems.

- **No recognition of early signs and symptoms:** Many MSDs develop over the course of time. At the first signs of excessive fatigue/discomfort, the worker has an opportunity to recognize the early signs and symptoms and proactively use recommended injury prevention tools and principles. Not recognizing early warning signs lends to a reactive approach – and it's only a matter of time until these signs and symptoms develop into a musculoskeletal injury.

ELIMINATE/ REDUCE RISK FACTORS

- **Warm up and stretch.** Athletes warm up by stretching their muscles to reduce sprains and strains. So should you.
- **Use proper lifting and carrying techniques.** Squat to the floor, keeping your heels off the floor; lift with your legs, not your back; keep the load close to your body; and don't twist your upper body to turn. Turn your feet instead.
- **Know when to get help.** Ask for assistance if a job is too big for you to physically handle on your own.
- **Plan ahead for safety.** Before starting a task, place the materials and equipment you will need close to where they're going to be used.
- **Use the right personal protective equipment (PPE) for the job.** Knee pads, shoulder pads, or vibration reducing gloves are examples of equipment that can help reduce sprains and strains.
- **Power up.** Use power tools whenever possible to reduce repetitive motions and vibration.

STRAIN & SPRAIN PREVENTION

Strains and sprains related to lifting and material handling are some of the most frequent types of injuries, both on and off the job. While some factors that contribute to the potential for injury cannot be controlled, others can be reduced or minimized. Poor physical fitness, obesity, smoking, poor posture, and

medical/physical deficiencies are personal factors that may contribute to strains and sprains. Workplace factors may include inadequate workplace design, improper or defective material handling equipment, improper manual or mechanical handling methods, and inadequate training.

Strains and sprains may appear suddenly, but are often the result of numerous micro-traumas to the body, involving improper sitting or lifting over a long period of time. While no approach has been found for totally eliminating material handling injuries, an injury prevention program can minimize their occurrence by identifying risk factors and developing means to reduce their impact.

FINAL WORD

Preventing sprains and strains requires but a simple strategy in the workplace. That is, the reduction and/ or elimination of all risk factors by implementing ergonomic and individual controls.