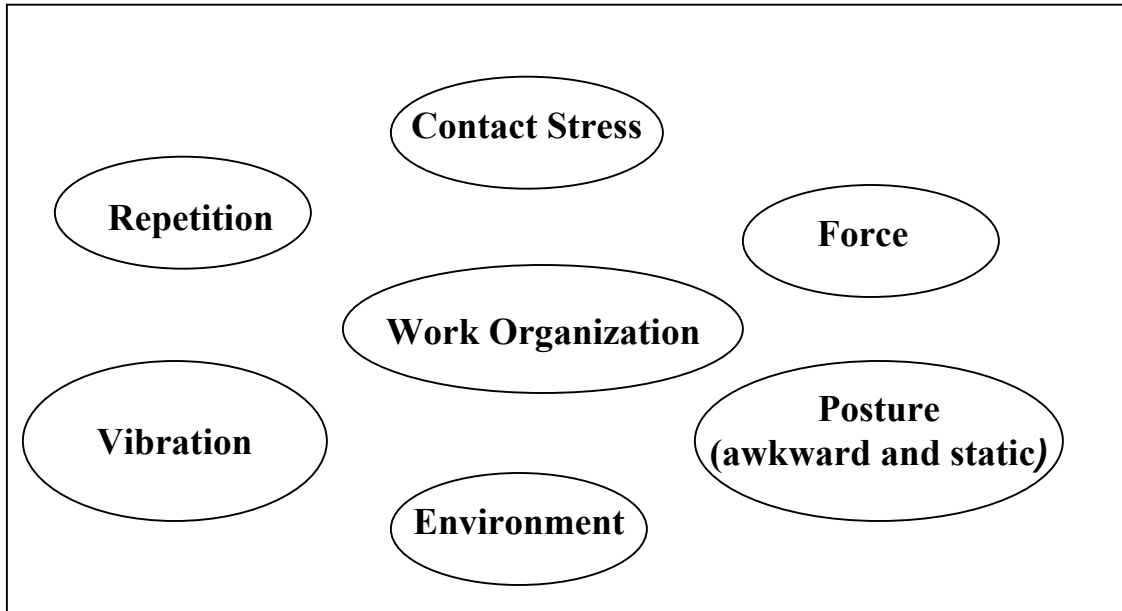


RISK FACTORS FOR MUSCULOSKELETAL DISORDERS



Risk factors for musculoskeletal disorders are aspects of a job or working conditions that can cause wear and tear on your body and increase your risk of being injured. Any one of the following risk factors, or a combination of them, can cause a musculoskeletal disorder.

RISK FACTOR

DEFINITION

EXAMPLE

FORCE	Physical effort needed to do the work – pulling, pounding, pushing, or lifting. Can cause damage to various body parts and tissues. Forces on the arms, shoulders, back and legs can affect tendons, blood vessels, nerves, muscles and other soft tissues.	Lifting heavy boxes; keying on a keyboard.
REPETITION	Performing the same motion over and over without adequate breaks “overuses” the same muscles, tendons, and other soft tissues. Tasks that are done repeatedly require the same muscles to contract over and over. If the pace of work is increased (as in "speed-up") the number of repetitions increases.	Doing same task on an assembly line all day; working on a computer all day.
AWKWARD POSTURE	Bending, twisting or reaching with any part of your body. Working in an awkward posture can stretch a person’s physical limits and can compress nerves and irritate tendons.	Working with arms over head; working with a bent back, wrist or knees

STATIC POSTURE	Working in one position too long. Static posture can restrict blood flow and damage muscles.	Standing or kneeling for prolonged period of time.
CONTACT STRESS	Prolonged contact of the body with a hard surface or edge. Contact stress concentrates force in a small area. It puts pressure on soft tissues and results in damage to those tissues.	Tool handle or edge digging into palm of hand; hand used as a hammer; working on knees.
VIBRATION	Using vibrating tools or equipment. Vibration can damage nerves.	Working with a jackhammer.
ENVIRONMENT	Prolonged exposure to extreme heat or cold, poor lighting, and/or excessive noise. Cold reduces feeling and blood flow. Heat increases fatigue.	Working in a freezer; working outside in extreme heat.
WORK ORGANIZATION	The way jobs are designed and performed. How people and technology work together to produce a product or provide a service; involves choices about “technical aspects” (production methods, technology, etc.) and choices about “people aspects” (how people will use the technology, whether people will work alone or with others, etc.).	Excessive workload; insufficient staffing; long hours of work; machine-paced work; fast pace of work; production quotas; inadequate breaks.

The Result of Exposure to Risk Factors for Musculoskeletal Disorders

Work organization is at the center of the chart on the first page because work organization is a central; it is often the reason that many other risk factors are present. How work is organized can increase (or decrease) workers' exposure to risk factors for musculoskeletal disorders. For example, if the speed of an assembly line is increased to maximize production, this will often increase the number of repetitive motions workers on that assembly line will have to perform. Working under deadlines or production quotas can cause muscles to tense up, adding to "wear and tear" on soft tissues and increasing the risk of musculoskeletal disorder.

Exposure to risk factors for musculoskeletal disorders often results in workers working in pain. If wear and tear reaches a certain point, disability can result. This can affect not only a worker's ability to work, but also to do other activities such as opening a jar, chopping an onion, driving a car, lifting a child, turning a door knob, getting dressed, and holding a toothbrush. In severe cases of musculoskeletal disorders, this damage can be permanent (irreversible).

Note – this material was developed from a resource handout developed by the Labor Safety and Health Project, George Meany Center – National Labor College