Ergonomics

Ergonomic Risk Factors & Control Methods

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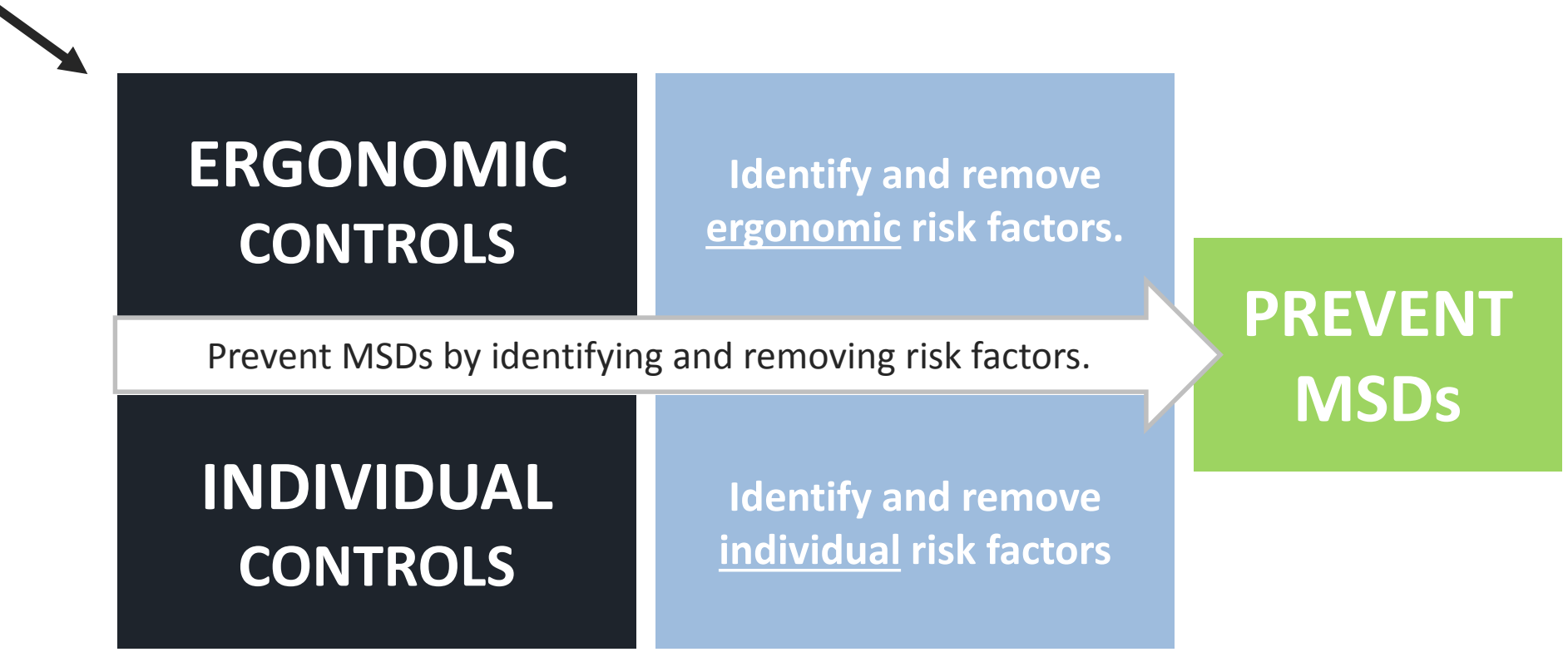
ERGONOMICS PLUS

MSD Risk Factors

MSD Prevention Controls



Primary Ergonomic Risk Factors

There are three primary ergonomic risk factors:

1. **HIGH TASK REPETITION**
2. **FORCEFUL EXERTIONS**
3. **REPETITIVE / SUSTAINED AWKWARD POSTURES**

Primary Ergonomic Risk Factors

REPETITION FORCE POSTURE

RISK FACTOR: HIGH TASK 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.

Primary Ergonomic Risk Factors

REPETITION FORCE POSTURE

CONTROL METHODS FOR HIGH TASK REPETITION

Engineering Controls

Eliminating excessive force and awkward posture requirements will reduce worker fatigue and allow high repetition tasks to be performed without a significant increase in MSD risk for most workers.

REPETITION FORCE POSTURE

CONTROL METHODS FOR HIGH TASK REPETITION

Work Practice Controls

Providing safe & effective procedures for completing work tasks can reduce MSD risk. In addition, workers should be trained on proper work technique and encouraged to accept their responsibilities for MSD prevention.

CONTROL METHODS FOR HIGH TASK REPETITION

Job Rotation

Job task enlargement is a way to reduce duration, frequency and severity of MSD risk factors. Workers can rotate between workstations and tasks to avoid prolonged periods of performing a single task, thereby reducing fatigue that can lead to MSD.

CONTROL METHODS FOR HIGH TASK REPETITION

Counteractive Stretch Breaks

Implement rest or stretch breaks to provide an opportunity for increased circulation needed for recovery.

Primary Ergonomic Risk Factors

REPETITION | **FORCE** | POSTURE

RISK FACTOR: 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.

REPETITION **FORCE** POSTURE

CONTROL METHODS FOR EXCESSIVE FORCE

Engineering Controls

Eliminating excessive force requirements will reduce worker fatigue and the risk of MSD formation in most workers. Using mechanical assists, counter balance systems, adjustable height lift tables and workstations, powered equipment and ergonomic tools will reduce work effort and muscle exertions.

REPETITION **FORCE** POSTURE

CONTROL METHODS FOR EXCESSIVE FORCE

Work Practice Controls

Work process improvements such as using carts and dollies to reduce lifting and carrying demands, sliding objects instead of carrying or lifting, and eliminating any reaching obstruction to reduce the lever arm required to lift the object.

CONTROL METHODS FOR EXCESSIVE FORCE

Proper Body Mechanics

Workers should be trained to use proper lifting and work techniques to reduce force requirements.

Primary Ergonomic Risk Factors

REPETITION FORCE **POSTURE**

RISK FACTOR: SUSTAINED AWKWARD POSTURES

Awkward postures place excessive force on joints and overload the muscles and tendons around the effected 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.

Primary Ergonomic Risk Factors

REPETITION FORCE **POSTURE**

CONTROL METHODS FOR SUSTAINED, AWKWARD POSTURES

Engineering Controls

Eliminate or reduce awkward postures with ergonomic modifications that seek to maintain joint range of motion to accomplish work tasks within the mid-range of motion positions for vulnerable joints. Proper ergonomic tools should be utilized that allow workers to maintain optimal joint positions.

CONTROL METHODS FOR SUSTAINED, AWKWARD POSTURES

Work Practice Controls

Work procedures that consider and reduce awkward postures should be implemented. In addition, workers should be trained on proper work technique and encouraged to accept their responsibility to use their body properly and to avoid awkward postures whenever possible.

Primary Ergonomic Risk Factors

REPETITION FORCE **POSTURE**

CONTROL METHODS FOR SUSTAINED, AWKWARD POSTURES

Job Rotation

Job rotation and job task enlargement is a way to reduce repeated and sustained awkward postures that can lead to MSD.

CONTROL METHODS FOR SUSTAINED, AWKWARD POSTURES

Counteractive Stretch Breaks

Implement rest or stretch breaks to provide an opportunity to counteract any repeated or sustained awkward postures and allow for adequate recovery time.

Learn more about ergonomic risk factors.

Click the link below:

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