

# Managing Occupational Health Risks

Lecture Title: Specific Occupational Health Risks and Manual Handling

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Undergraduate Diploma in  
Occupational Health and Safety

# Noise-Induced Hearing Loss

- Noise-induced hearing loss is a permanent reduction in hearing ability caused by prolonged exposure to high noise levels at work.
- Develops gradually and painlessly
- Caused by damage to inner ear hair cells
- Often irreversible
- Risk increases with higher noise levels and longer exposure
- Common sources:
  - Machinery and power tools
  - Construction equipment
  - Manufacturing processes
- Prevention:
  - Noise elimination or reduction
  - Engineering controls (enclosures, dampening)
  - Administrative controls (exposure time limits)
  - Hearing protection (earplugs/earmuffs)



# Hearing Conservation Programs

## Definition:

A Hearing Conservation Program is a planned system to prevent noise-induced hearing loss at work

## Purpose:

- Protect workers from harmful noise exposure
- Ensure legal compliance
- Promote long-term hearing health



# Hearing Conservation Programs Cont..

- Key Elements of a Hearing Conservation Program
- Noise assessment and monitoring
- Engineering and administrative controls
- Provision of hearing protection (earplugs/earmuffs)
- Audiometric testing (hearing tests)
- Training and awareness
- Record keeping and review



# Importance of Hearing Conservation Programs

- Prevents permanent hearing loss
- Detects early hearing damage
- Improves safety and communication
- Demonstrates employer duty of care



# Link

- <https://www.youtube.com/watch?v=WYVIYQiSomk>



# Musculoskeletal Disorders

Musculoskeletal disorders are injuries or conditions affecting muscles, joints, tendons, ligaments, nerves, and the spine, often caused or worsened by work activities.

## Common causes

- Manual handling
- Repetitive movements
- Awkward or sustained postures
- Forceful exertions
- Vibration

## Common MSDs:

- Back pain and disc injuries
- Tendinitis
- Carpal tunnel syndrome
- Neck and shoulder disorders

## Prevention:

- Ergonomic workplace design
- Mechanical aids
- Job rotation and breaks
- Training and safe work practices



# Manual Handling – Definition and Scope

- Manual handling is any activity that requires bodily force to lift, lower, push, pull, carry, move, hold, support, or restrain a load
- A load can include objects, materials, equipment, tools, animals, or people
- Manual handling occurs in almost all workplaces, including offices, warehouses, healthcare, construction, manufacturing, and retail
- It is one of the leading causes of work-related musculoskeletal disorders (MSDs) worldwide

Manual handling is not limited to heavy lifting; light, repetitive tasks can also cause serious injury.



# Manual Handling as an Occupational Health Issue

- Manual handling injuries often result in long-term or permanent ill health, not just short-term injuries
- MSDs frequently develop gradually, making early symptoms easy to ignore
- Consequences include: Chronic pain and reduced mobility Long-term work restrictions
- Increased absenteeism and presenteeism
- Manual handling injuries create significant financial and operational costs for organisations

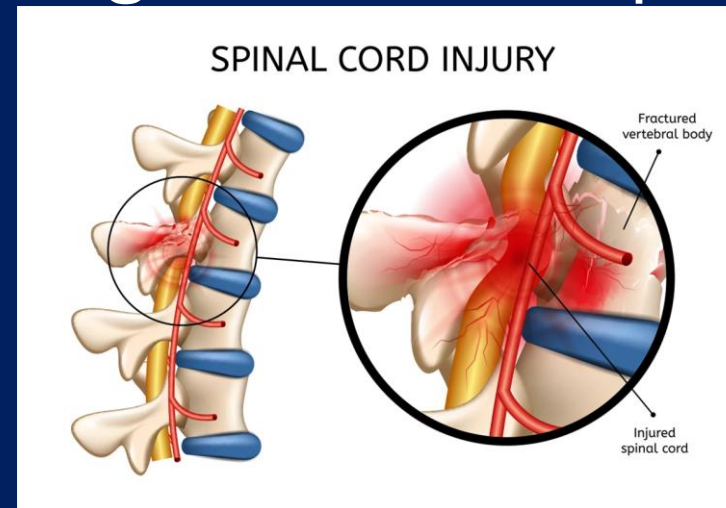


# How Manual Handling Injuries Occur

- Injuries occur due to biomechanical stress on muscles, joints, ligaments, and spinal discs
- Poor posture increases compression and shear forces, especially on the lower back
- Repetition causes cumulative tissue damage over time
- Fatigue reduces muscle support, increasing injury likelihood
- Sudden load shifts can exceed the body's physical capacity

# Body Parts Commonly Affected

- Lower back: disc compression, muscle strain
- Shoulders and neck: repetitive lifting, reaching, overhead work
- Arms, wrists, and hands: gripping, repetitive handling
- Knees and hips: squatting, carrying, pushing loads
- Spine: cumulative degeneration from poor handling



# Types of Manual Handling Activities

- Lifting and lowering loads from different heights
- Carrying loads over short or long distances
- Pushing and pulling wheeled or fixed loads
- Holding or supporting loads in static positions
- Repetitive handling on production or packing lines
- Team handling of heavy or awkward loads



# Load-Related Risk Factors

- Heavy loads increase physical strain and spinal compression
- Large or awkward loads restrict posture and visibility
- Unstable or shifting loads create sudden force changes
- Poor grip surfaces increase hand and arm strain
- Sharp, hot, or cold loads increase injury risk

# Task-Related Risk Factors

- Repetitive handling without adequate recovery time
- Twisting or bending while lifting or carrying
- Lifting from floor level or above shoulder height
- Long carrying distances or frequent transfers
- Fast-paced work and time pressure



# Environmental Risk Factors

- Restricted space limiting safe movement
- Uneven, wet, or slippery floors
- Poor lighting affecting visibility
- Temperature extremes increasing fatigue
- Poor workstation layout



# Individual Risk Factors

- Physical capability and fitness
- Fatigue and lack of recovery
- Poor training or inexperience
- Previous injuries or medical conditions
- Age-related changes in strength and flexibility



# Manual Handling Risk Assessment

- Identifies hazardous manual handling tasks
- Evaluates:
  - The load
  - The task
  - The environment
  - The individual
- Determines who may be harmed and how
- Forms the basis for selecting appropriate control measures



# Role of Training and Safe Practice

- Training should cover:
- Risk awareness
- Use of mechanical aids
- Safe handling principles
- Safe practice includes:
- Planning the task
- Keeping loads close to the body
- Avoiding twisting
- Asking for assistance



# Legal and Organisational Responsibilities

- Employers must:
  - Avoid hazardous manual handling where possible
  - Assess risks and implement controls
  - Provide information, training, and equipment
- Workers must:
  - Follow safe systems of work
  - Use provided equipment
  - Report hazards and early symptoms



# Key Takeaways on Manual Handling

- Manual handling is a major cause of occupational ill health
- Most injuries are predictable and preventable
- Effective control focuses on:
  - Task and workplace design
  - Reducing physical demands
  - Continuous monitoring and improvement



# Link

- Manual Handling Injuries & Controls
- <https://www.youtube.com/watch?v=egW9IEzRP2Q>





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# Ergonomic Control Programs

- Planned systems to identify and control ergonomic risks
- Aim to prevent musculoskeletal disorders (MSDs)
- Focus on fitting work to the worker
- Part of a preventive occupational health approach



# Key Elements of an Ergonomic Control Program

- Ergonomic risk assessments
- Workstation and task redesign
- Use of mechanical aids
- Job rotation and work–rest schedules
- Training on posture and safe techniques
- Early reporting of discomfort or pain

# Chemical Health Risks

- Chemical health risks occur when workers are exposed to hazardous substances
- Exposure can be acute or chronic
- Common in many workplaces, including manufacturing, healthcare, construction, and cleaning



# Link

- <https://www.youtube.com/watch?v=VoQPUSTu4X8>



# Health Surveillance

## What It Is ???

- Systematic monitoring of workers' health
- Used where there is exposure to health risks
- Aims to detect early signs of work-related ill health
- Supports prevention of occupational diseases



# When and How Health Surveillance Is Used

- When required:
  - Exposure to chemicals, noise, vibration, or biological agents
  - Risk of musculoskeletal disorders
  - Legal or risk assessment requirements
- How it is carried out:
  - Health questionnaires
  - Medical examinations
  - Hearing, lung, and skin checks



# Importance of Health Surveillance

- Detects problems before serious harm occurs
- Evaluates effectiveness of control measures
- Protects workers' long-term health
- Supports employer legal duty of care



# Psychosocial Risks – What They Are

- Psychosocial risks are work-related factors that can harm mental health, emotional wellbeing, and physical health
- They arise from the design, organisation, and management of work
- Unlike physical hazards, they are often invisible but cumulative
- Main sources:
  - Work demands and workload
  - Work organisation and scheduling
  - Workplace relationships



# Common Psychosocial Risk Factors

- Work demands:
  - Excessive workload and unrealistic deadlines
  - Long working hours and lack of rest breaks
  - High work pace and constant time pressure
- Control and role factors:
  - Lack of control over how work is carried out
  - Unclear job roles and conflicting responsibilities
  - Limited involvement in decision-making
- Organisational and social factors:
  - Poor communication and weak leadership
  - Lack of support from supervisors or colleagues
  - Bullying, harassment, discrimination, or violence
  - Job insecurity, temporary contracts, or fear of redundancy



# Group Activity

Discuss a chosen workplace scenario in which musculoskeletal disorders (MSDs), ergonomic factors, and psychosocial effects are present and interrelated.





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