



Basics of Occupational Safety
Lecture Notes

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Chapter 2

Accidents and Their Effects



Costs of Accidents

The approximate cost of accidents in the United States is \$150 billion annually. This includes the direct and indirect costs of accidents that occur on and off the job.

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Accidental Deaths in the United States

The leading causes of accidental deaths in the United States are:

- Motor vehicle accidents
- Falls
- Poisoning
- Drowning
- Fire-related injuries
- Suffocation

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Leading Causes of Death

•The leading causes of death in the United States are:

- Heart disease
- Cancer
- Stroke

However, these causes are concentrated among people at or near retirement age. Among people 37 years of age and younger, accidents are the number one cause of death.

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Deaths in Work Accidents

Between 1912 and 1998, the number of accidental work deaths per 100,000 population declined by 81 percent, from 21 to 4.

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Work Injuries by Type of Accident

Approximately 35,000,000 work hours are lost annually as a result of accidents. This is actual time lost from disabling injuries and does not include additional time lost to medical checkups after the injured employee returns to work.

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Leading Causes of Death in Work Accidents

- Motor vehicle related
- Falls
- Electric current
- Drowning
- Fire related
- Air transport related
- Poisoning
- Water transport related

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Leading Causes of Work Injuries

- Overexertion
- Impact Accidents
- Falls
- Bodily Reaction
- Compression
- Motor vehicle accidents
- Exposure to radiation or caustics
- Rubbing or abrasions
- Exposure to extreme temperature

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Death Rates by Industry Category

When death rates are computed on the basis of number of deaths per 100,000 workers, the industry categories are ranked as follows (from highest death rate to lowest):

- Mining/quarrying
- Agriculture
- Construction
- Transportation/public utilities
- Government
- Manufacturing
- Services
- Trade

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Ranking of Injuries According to Body Parts

Typically the ranking of injuries to specific parts of the body are as follows (from most frequently injured to least):

- | | |
|---------------------------------------|----------------|
| • Back | ■ Head |
| • Legs and fingers | ■ Feet |
| • Arms and multiple parts of the body | ■ Neck |
| • Trunk | ■ Toes |
| • Hands | ■ Body Systems |
| • Eyes | |

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Chemicals Most Frequently Involved in Chemical Burns

The chemicals most frequently involved in chemical burn injuries include:

- Acids and alkalies
- Soaps
- Detergents
- Cleaning compounds
- Solvents and degreasers
- Calcium hydroxide
- Potassium hydroxide
- Sulfuric acid

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Most Frequent Cause of Heat Burn

The most frequent causes of heat burn are:

- Flame
- Molten metal
- Petroleum
- Asphalt
- Steam
- Water

Carpal Tunnel Syndrome

Carpal tunnel syndrome (CTS) is an injury to the median nerve in the wrist that typically results from repeated stress placed on the nerve. Symptoms of CTS include:

- Numbness
- A tingling sensation
- Pain in the hand and/or wrist

Repetitive Strain Injury

Repetitive strain injury (RSI) is a broad and generic term that encompasses a variety of injuries resulting from cumulative trauma to the soft tissues of the body, including:

- Tendons
- Tendon sheaths
- Muscles
- Ligaments
- Joints and nerves

Such injuries are typically associated with the soft tissues of the hands, arms, neck, and shoulders.

Accident Rates

Accident rates are especially high in developing countries because these countries are responding to the pressures of global competition without first putting a safety and health infrastructure in place (e.g., regulations, training, record keeping, etc.)
