

GreenVETAfrica

Training of Trainers Programme



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GreenVETAfrica mission is to offer an innovative capacity building programme on Green Waste Management in Nigeria and Ghana

UNIT TWO

HEALTH, SAFETY, AND ENVIRONMENT (HSE)

Objectives

- ❑ Demonstrate a profound understanding of health, safety, and environmental (HSE) principles within the context of waste management.
- ❑ Identify and assess potential health and environmental hazards in waste handling processes.
- ❑ Conduct risk assessments to ensure the safety and environmental integrity of waste management operations.

Importance of HSE in Waste Management

- ❑ Waste management is a critical sector responsible for handling and disposing of various types of waste, including municipal, industrial, and hazardous waste.
- ❑ HSE, which stands for Health, Safety, and Environment, plays a pivotal role in this industry to safeguard the well-being of workers, protect the public, and minimize environmental impact.

Importance of HSE in Waste Management

- ❑ The primary objective of HSE in waste management is to ensure the health and safety of workers involved in waste collection, transportation, treatment, and disposal.
- ❑ Hazardous materials, pathogens, and other risks are prevalent in waste, making safety measures essential to prevent accidents, injuries, and health hazards.



Health care waste is a risk to all, it affects us in different ways

Importance of HSE in Waste Management

- ❑ Beyond worker safety, HSE extends to environmental protection. The improper handling of waste can lead to soil, air, and water pollution, harming ecosystems and public health.
- ❑ Sustainable waste management practices, guided by HSE principles, aim to mitigate these environmental risks.

Importance of HSE in Waste Management

- ❑ Waste management operations are subject to stringent regulations and guidelines set forth by local, national, and international authorities.
- ❑ Compliance with these regulations is not only a legal requirement but also a fundamental aspect of responsible waste management.

Importance of HSE in Waste Management

- ❑ Recent advancements in technology, techniques, and equipment have revolutionized the waste management sector, leading to improved efficiency, safety, and environmental performance.
- ❑ This presentation will focus on the role of skills, equipment, and technology in advancing HSE (Health, Safety, and Environmental) objectives within the waste management industry.

UNIT 2.1

SAFETY MEASURES FOR WASTE COLLECTION AND HANDLING

Understanding Hazard Identification

- ❑ Waste handling involves various materials, some of which can be hazardous to human health and the environment.
- ❑ Identifying these hazards is the first step in ensuring safety and environmental protection.

Hazard Identification

- ❑ In Nigeria, one common hazard in waste handling is the presence of electronic waste (e-waste). Informal e-waste recycling activities, often conducted without protective measures, expose workers to toxic substances like lead, cadmium, and mercury, which can cause severe health issues.



Types of Hazards

- ❑ Chemical Hazards: Used batteries from electronic waste can leak hazardous chemicals into the soil and groundwater if not properly managed.



Types of Hazards

- ❑ Biological Hazards: Waste from healthcare facilities, if not treated properly, can contain infectious materials, posing risks to waste handlers and the public.



Types of Hazards

- ❑ Physical Hazards: Sharp objects like broken glass in waste can cause injuries to waste handlers.



Types of Hazards

- ❑ Ergonomic Hazards: Frequent lifting and carrying of heavy waste containers can lead to musculoskeletal problems among waste collectors.



Safety Protocols For Waste Collection

- ❑ Waste collection is the initial stage of waste management and involves various risks, especially for workers.
- ❑ Safety measures include the proper handling of waste containers, loading waste onto collection vehicles, and securing loads to prevent spillage during transportation.

Preventive Measures

- ❑ To mitigate the hazards of e-waste, proper disposal and recycling facilities with protective measures and training for workers can be established.
- ❑ Hazardous waste materials can be securely stored in designated containers, reducing the risk of spills or contamination.

Preventive Measures

- ❑ Waste collection workers can receive training on recognizing hazardous waste materials and using appropriate personal protective equipment (PPE) in Nigeria.
- ❑ We will take some time to look at the PPE relevant to waste management in the next few slides.

Utilization of Safety Gears



- ❑ Waste management workers are equipped with appropriate safety gear, which may include gloves, helmets, safety vests, and respiratory protection.
- ❑ This protective equipment minimizes the risk of physical harm and exposure to harmful substances



Safety Gloves



- ❑ Example: Heavy-duty, puncture-resistant gloves made of materials like nitrile or latex.
- ❑ Purpose: Protect hands from sharp objects, chemicals, and biological hazards present in waste.



Safety Boots or Shoes



- ❑ Example: Steel-toed boots with slip-resistant soles.
- ❑ Purpose: Prevent injuries from heavy objects, sharp debris, or accidental contact with hazardous substances.



Safety Vest



- ❑ Example: High-visibility reflective vests.
- ❑ Purpose: Ensure visibility of workers, especially during early morning or night, reducing the risk of accidents involving vehicles.



Respirator Protection



- ❑ Example: N95 respirators or full-face respirators with appropriate filters.
- ❑ Purpose: Prevent inhalation of dust, fumes, or airborne contaminants, which can be prevalent in waste handling.



Safety Goggles or Face Shield



- ❑ Example: Impact-resistant goggles or face shields.
- ❑ Purpose: Protect the eyes and face from splashes, chemical exposure, or flying debris.



Hearing Protection



- ❑ Example: Earplugs or earmuffs.
- ❑ Purpose: Minimize exposure to loud noise, which can be generated by heavy machinery used in waste handling.



Coveralls or Protective Clothing



- ❑ Example: Disposable or reusable coveralls made of durable material.
- ❑ Purpose: Prevent skin contact with hazardous waste and chemicals, keeping workers' clothing clean and safe.



Operator Training

- ❑ Proper training is essential for waste collectors and equipment operators to ensure safe practices.
- ❑ Workers must be trained in the correct operation of waste collection equipment, emergency procedures, and the identification of hazardous materials.

Safe Handling of Hazardous Materials



- ❑ Hazardous waste, such as chemicals or biomedical waste, requires specialized handling and disposal to prevent health and environmental risks.
- ❑ Strict protocols, protective gear, and specially designed containers are used for the safe collection and transportation of hazardous materials.

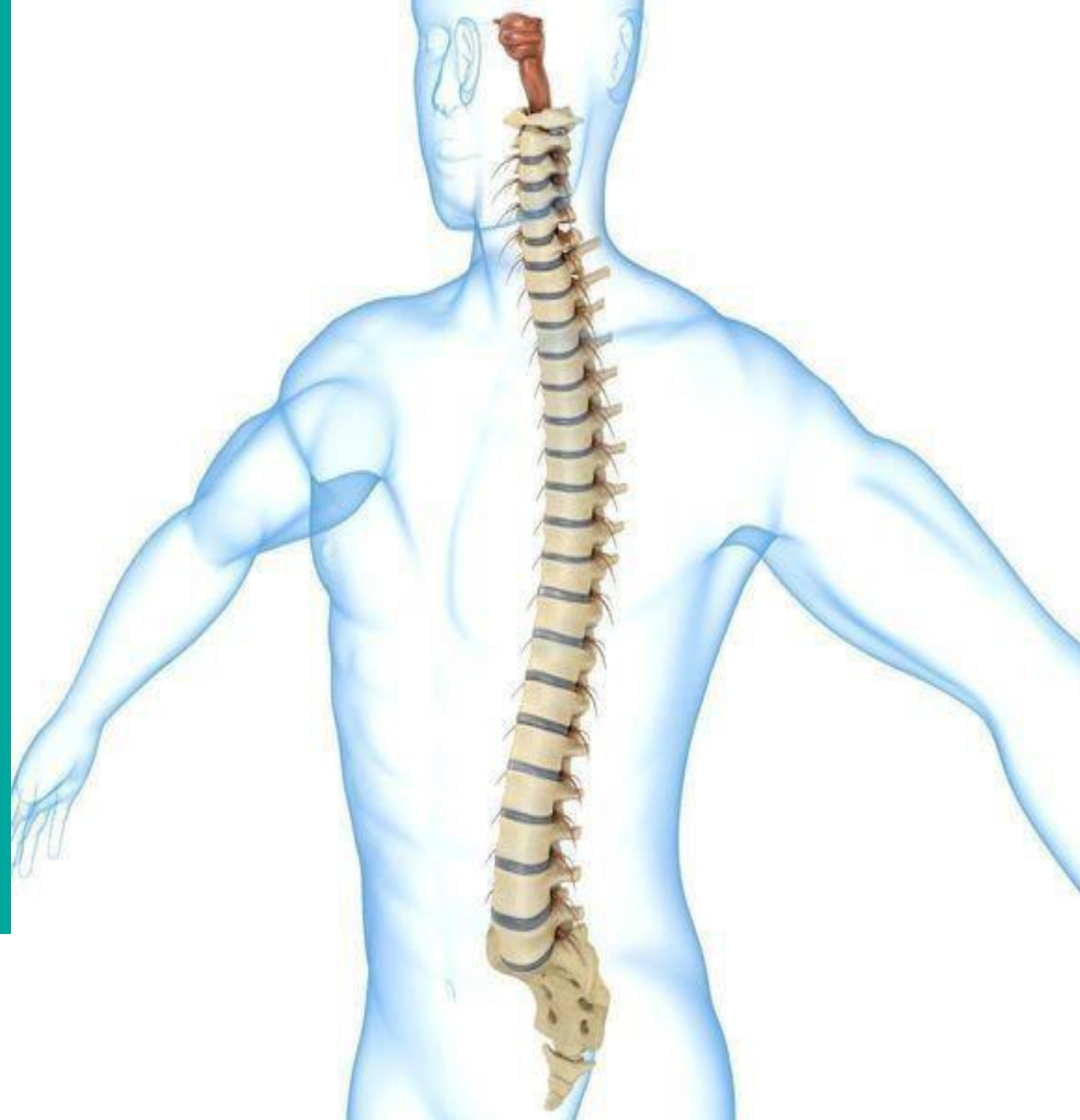


UNIT 2.2

MANUAL HANDLING IN WASTE MANAGEMENT LIFTING, CARRYING, AND AVOIDING BACK PAIN

The Back

- ❑ The back is a vital part of the body, consisting of the spinal cord, back muscles, and ligaments. It comprises 33 carefully aligned bones that are slightly offset from one another, forming a column. Ensuring proper alignment of these bones is crucial for safety during manual handling tasks.



The Back

- ❑ Maintaining the integrity of the back's structure is essential for safety in manual handling situations. The 33 interconnected bones are supported by muscles and ligaments, and between each pair of adjacent bones, soft disks act as shock absorbers, preventing bone-to-bone damage. Displacement of these disks due to improper handling can result in back injuries and pain.

Back Pain

- ❑ Back pain is a prevalent issue affecting people of all ages, often caused by factors like poor posture, muscle strain, or minor injuries, and it is typically short-lived.
- ❑ However, in some cases, back pain can become chronic, lasting for months or even years, which may require more complex treatments and significantly impact a person's daily life and well-being.

Causes of Back Pain

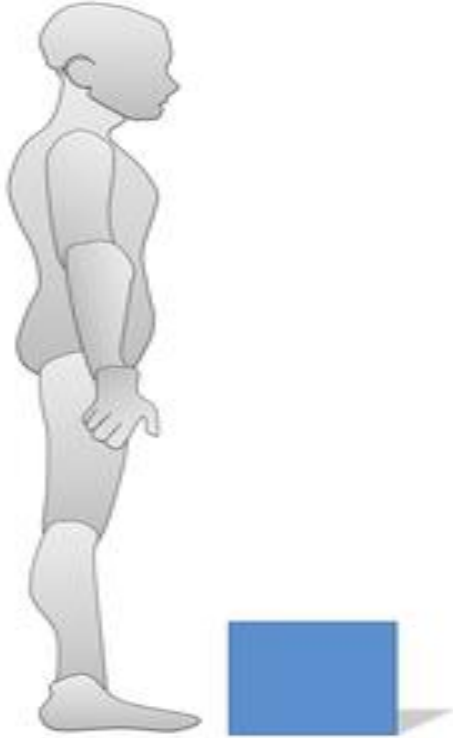
- ❑ **Improper Lifting Technique:** Using incorrect lifting techniques, such as bending at the waist instead of the knees, can strain the back muscles and lead to pain.
- ❑ **Excessive Load:** Lifting or carrying objects that are too heavy or awkwardly shaped for one's capacity can cause back strain and injury.

Causes of Back Pain

- ❑ Repetitive Movements: Engaging in repetitive tasks that involve bending, twisting, or lifting can lead to cumulative trauma to the back, resulting in pain over time.
- ❑ Lack of Breaks: Prolonged periods of continuous manual handling without sufficient rest can increase the risk of back strain and discomfort.

HOW TO LIFT

1



- Get close to the object
- Gloves may improve grip
- Ensure loads are lightweight
- Avoid lifting from the floor

2



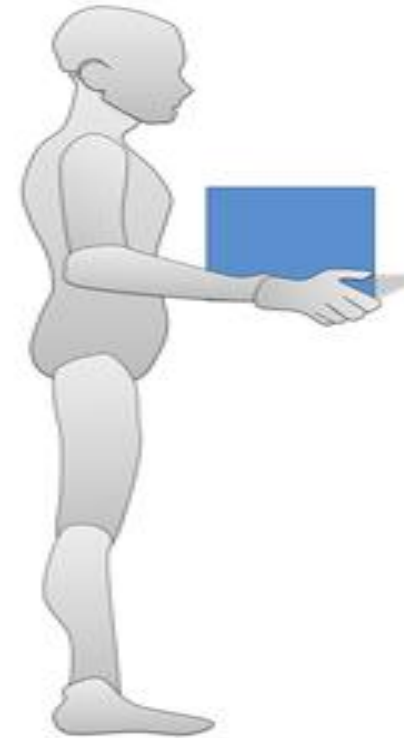
- Bend at the waist
- Use both hands
- Have a good grip

3



- Keep close to body
- Push up with legs
- Use forearms & thighs to rest load

4



- Get help, if needed
- Keep it tucked in
- Pivot with your feet, not your back

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