Workplace Noise Monitoring Activity Using the NIOSH Sound Level Meter (SLM) App

Objective

Equip workers with the skills to use the NIOSH Sound Level Meter app to identify potentially hazardous noise levels in their work environment and understand how to interpret key noise exposure metrics.

Duration

Approximately 60 minutes

Materials Needed

- iOS devices (iPhone or iPad) with the NIOSH SLM app installed
- Personal protective equipment (PPE) as appropriate for the work environment
- Notebooks or printed worksheets for recording measurements

Step-by-Step Instructions

1. Introduction (2 minutes)

- Briefly explain the importance of monitoring noise levels to prevent occupational hearing loss.
- Introduce the NIOSH SLM app, highlighting its key features:
- Instantaneous sound level (dBA)
- Time-weighted average (TWA)
- Noise dose percentage
- Maximum and peak levels
- A-, C-, and Z-weighted measurements

2. App Setup and Calibration (2 minutes)

- Demonstrate how to launch the app and navigate its interface.
- If using an external microphone, show how to connect and calibrate it using an acoustical calibrator.
- Discuss the importance of selecting the appropriate weighting (A, C, or Z) based on the noise assessment context.

3. Conducting Noise Measurements (5 minutes)

- Divide participants into small groups and assign them to different areas of the workplace.
- Instruct each group to:
- Hold the device at arm's length, with the microphone pointed toward the noise source.
- Record measurements for at least 2 minutes to capture representative noise levels.
- Note the following metrics:
- Instantaneous sound level
- LAeq (equivalent continuous sound level)
- TWA
- Noise dose percentage
- Maximum and peak levels

4. Data Analysis and Discussion (5 minutes)

- Reconvene as a group and share the recorded data.
- Compare noise levels across different workplace areas.
- Discuss whether any areas exceed the recommended exposure limits (e.g., 85 dBA TWA).
- Brainstorm possible noise control measures or PPE usage for high-noise areas.