NOISE EXPOSURE AND ERGONOMIC AT WORKPLACE
- The Way Forward

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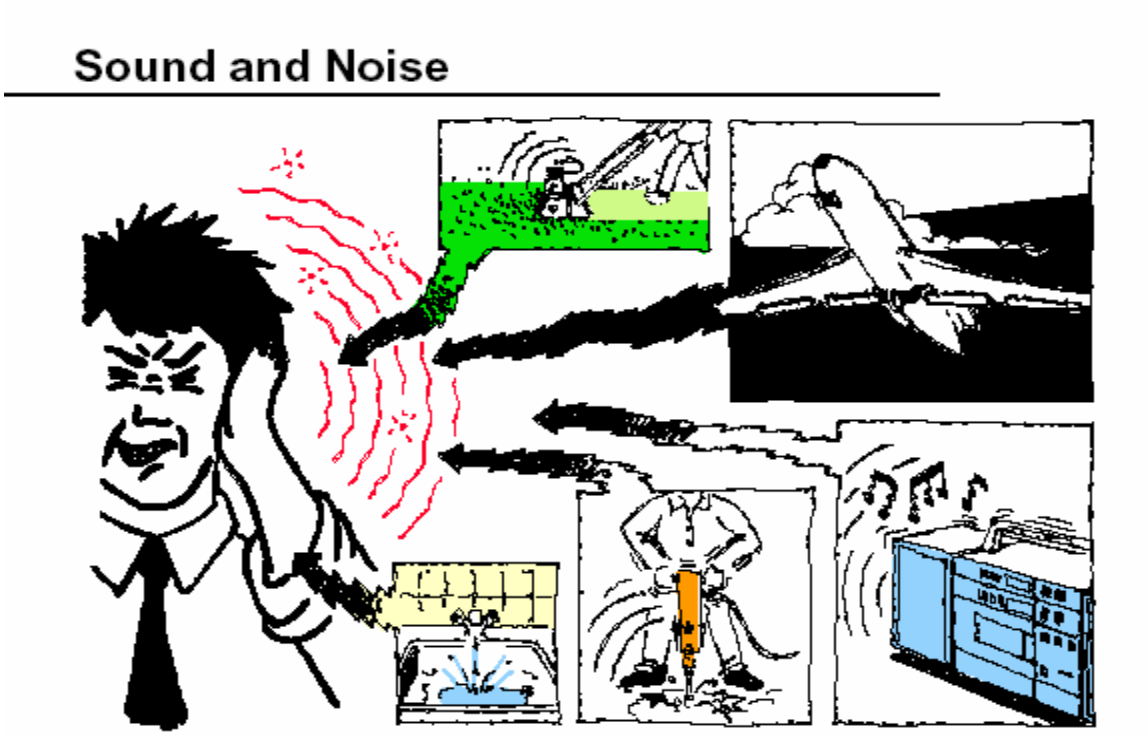
NOISE EXPOSURE AT WORKPLACE

SOUND is a sensation of acoustic waves (disturbance/pressure fluctuations setup in a medium)

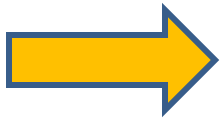


Unpleasant, unwanted, disturbing sound is generally treated as **NOISE** and is a highly subjective feeling

Factories & Machinery (Noise Exposure) Regulations, 1989

- Permissible exposure limit (PEL): 90 dB(A) 8-hr TWA
- Action level (AL): 85 dB(A) 8-hr TWA
- x ≥ 115 dB(A) at any time
- Impulsive noise w peak level ≥ 140 dB

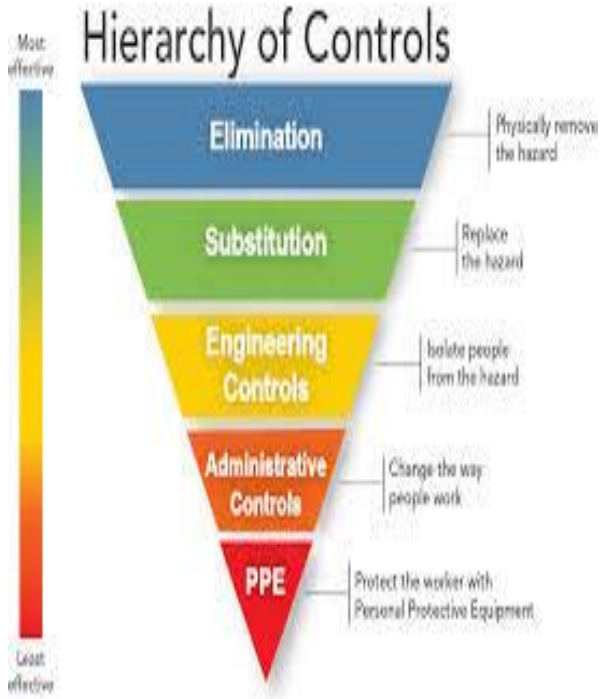
Regulatory Provisions



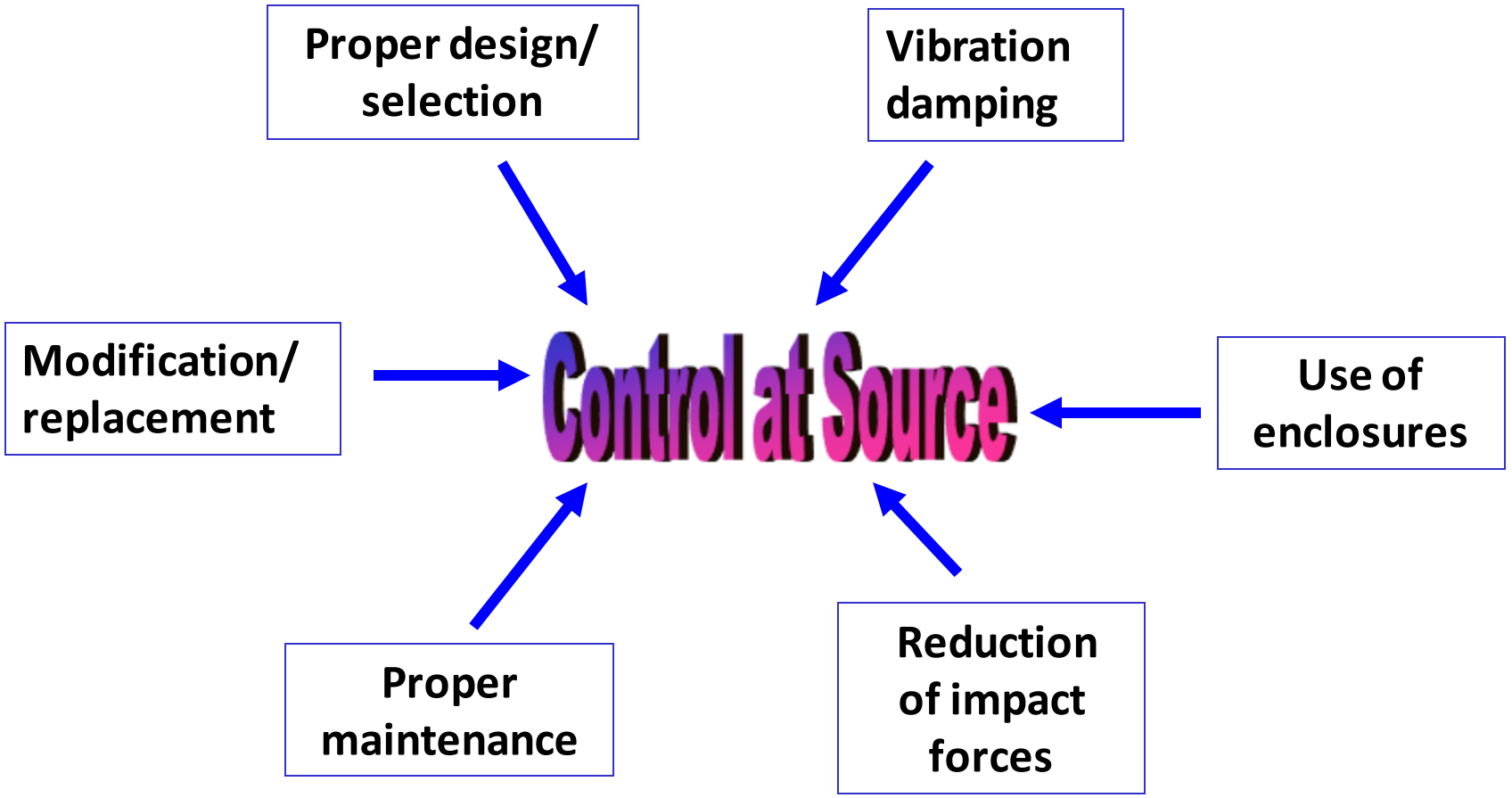
- Employee noise exposure monitoring
- Issuance, maintenance, inspection & training of hearing protection devices
- Audiometric testing programme
- Noise Awareness Training for employees with exposure ≥ 85dB(A): biennially
- Noise warning signs at areas ≥ 90dB(A)

Noise Control

- Noise reduction activities to less than 85 dB(A)
  - Engineering control
  - Administrative control
  - Both methods
- Control strategies:
  - Sources
  - Path
  - Receiver



CONTROL AT SOURCE



CONTROL AT PATH

Noise Control

Administrative Control

- Prevent unnecessary exposure
  - Rescheduling of noisy operation
  - Education/awareness
  - Safe work practices
- Reduce exposure time
  - Job rotation
- Minimise number of employee exposed to high noise level

Hearing Protection Devices

- Attenuation - Process of reducing noise to acceptable levels
- **NRR** – Noise Reduction Rating
- Ear plugs and muffs are rated with an NRR
- NRR marked on the package
- NRR is a measure of how much noise is filtered out

Way Forward.. NEW NOISE EXPOSURE REGULATION (201X)

NOISE EXPOSURE (1989)

- Under **FMA 1967**
- "**Action Level**" = **85 dB(A**) or daily noise dose equal to 0.5;
- "**P.E.L**" = **90 dB(A)** eight-hour;
- **Penalty – RM1,000 (Apply to all provisions)**

NOISE EXPOSURE (201X)

- Under **OSHA 1994**
- "**Action Level**" = **82 dB(A)** or daily noise dose equal to 0.5;
- "**P.E.L**" = **85dB(A)** eight-hour;
- **Penalty**

- **RM 50,000 and / or 2 years jailed** (Failed to conduct noise assessment)
- **RM 1,000 and / or 3 months jailed** (Employees)
- **RM 10,000 and / or 1 year jailed** (other provisions)

Additional Provisions For New Noise Exposure Regulation 201X

- Have an ICOP – for details
- Reduction of Noise Exposure – To provide evidences if only Personal Hearing Protectors can be used.
- Duties of designer, manufacturer, importer and supplier of plant for use at work

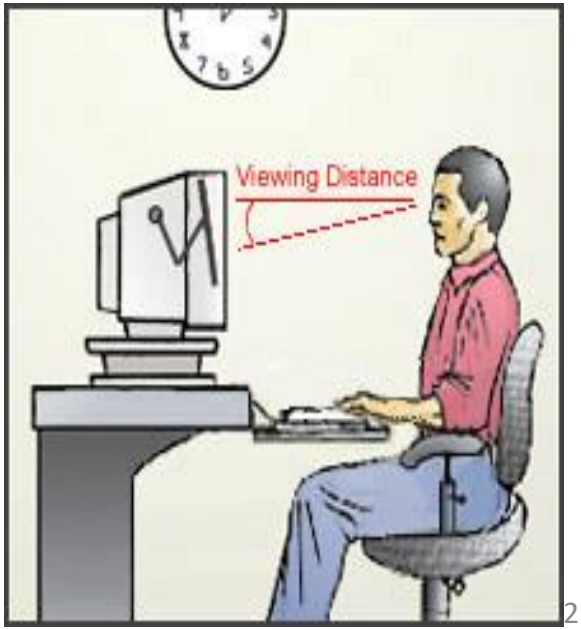
ERGONOMIC
AT WORKPLACE

Now, that's more ergonomic...

Ergonomics

- Adoption of the job and workplace to the worker by designing tasks depending upon:
  - **worker's capabilities**
  - **limitations**

→ fitting the task/job and work environment to workers



Legal Requirement
Objective of Occupational Safety and Health Act (OSHA) 1994

- To secure the safety, health and welfare of persons at work
- To protect person (other than person at work) at place of work
- To promote the occupational environment adaptable to the person's physiological and psychological needs
- To provide the means towards a legislation system based on regulation and industry code of practice in combination with the provisions of the Act.

Why We Don't Expect People To Fit To Things?

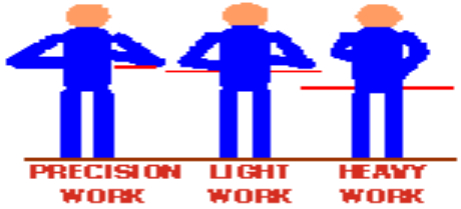
- Demands and stresses imposed could leads to:
  - discomfort
  - errors
  - lower productivity
  - dissatisfaction
  - injuries
  - accidents

WMSD – Workplace MusculoSkeletal Disorders

Principles of Ergonomics

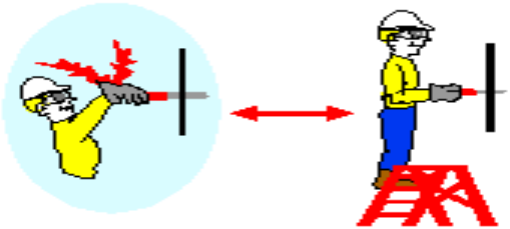
1. Keep Everything in Easy Reach

2. Work at Proper Heights



3. Reduce Excessive Force

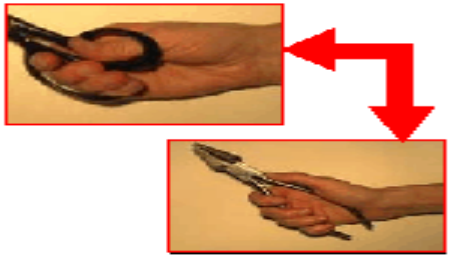
4. Work in Good Postures



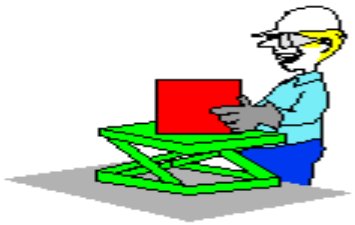
5. Reduce Excessive Repetition

6. Minimize Fatigue

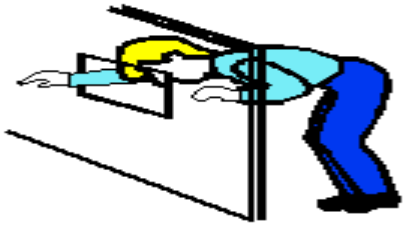
7. Minimize Direct Pressure



8. Provide for Adjustability and Change of Posture



9. Provide for Clearance & Access

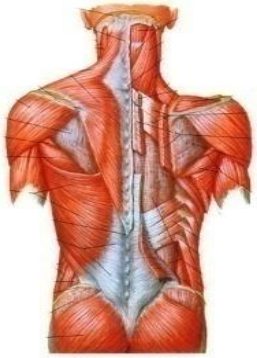


10. Consider the Organization of Your Work

Workplace Ergonomics Risk Factors

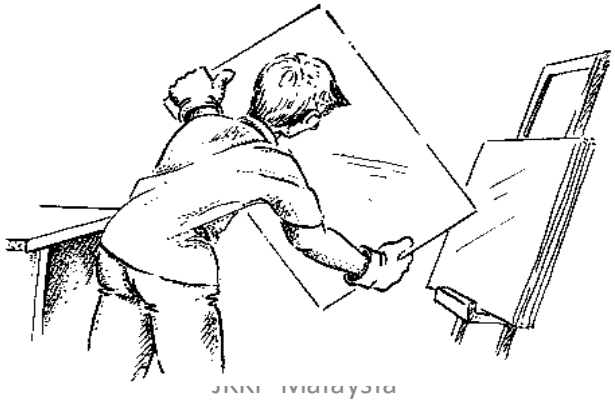
Risk Factor due to work activities/task which can lead to fatigue, musculoskeletal disorders (MSD) symptoms and injuries or other types of problem:

- Physical risk factors
- Environmental factors



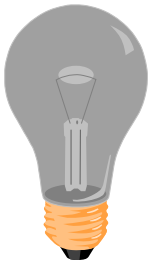
Physical Risk Factors

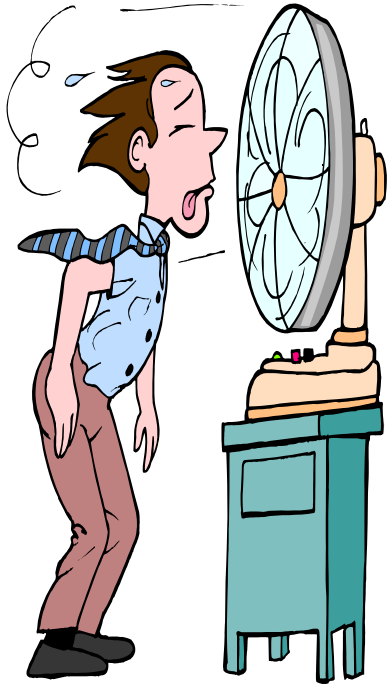
- Awkward or static postures
- Forceful exertions
- Repetitive motions
- Contact stresses/ pressure point
- Vibration



Environmental Factors

- Temperature – hot/ cold
- Noise
- Lighting





Way Forward..GUIDELINES ON ERGONOMIC RISK ASSESSMENT AT WORKPLACE 2017

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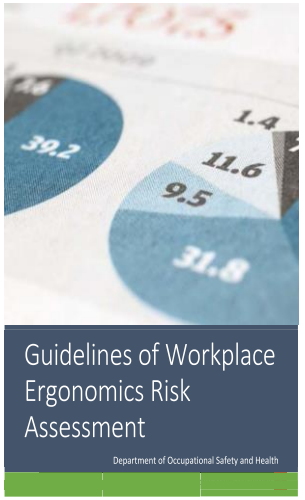
1. Introduction
2. Planning and Conducting Ergonomics Risk Assessment
3. Process for Initial Era
4. Process for Advanced Era
5. Hierarchy of Control Based on Ergonomics Approach
6. Review of Assessment
7. Responsibility and Accountability
8. Documentation
9. Instruction, Training and Consultation
10. Record Keeping

Purpose

The purpose of this Guideline is to provide a systematic plan and an objective approach in ***identifying, assessing and controlling*** ergonomics risk factors associated with the work tasks and activities in the workplace.



Why Ergonomics Risk Assessment (ERA)?

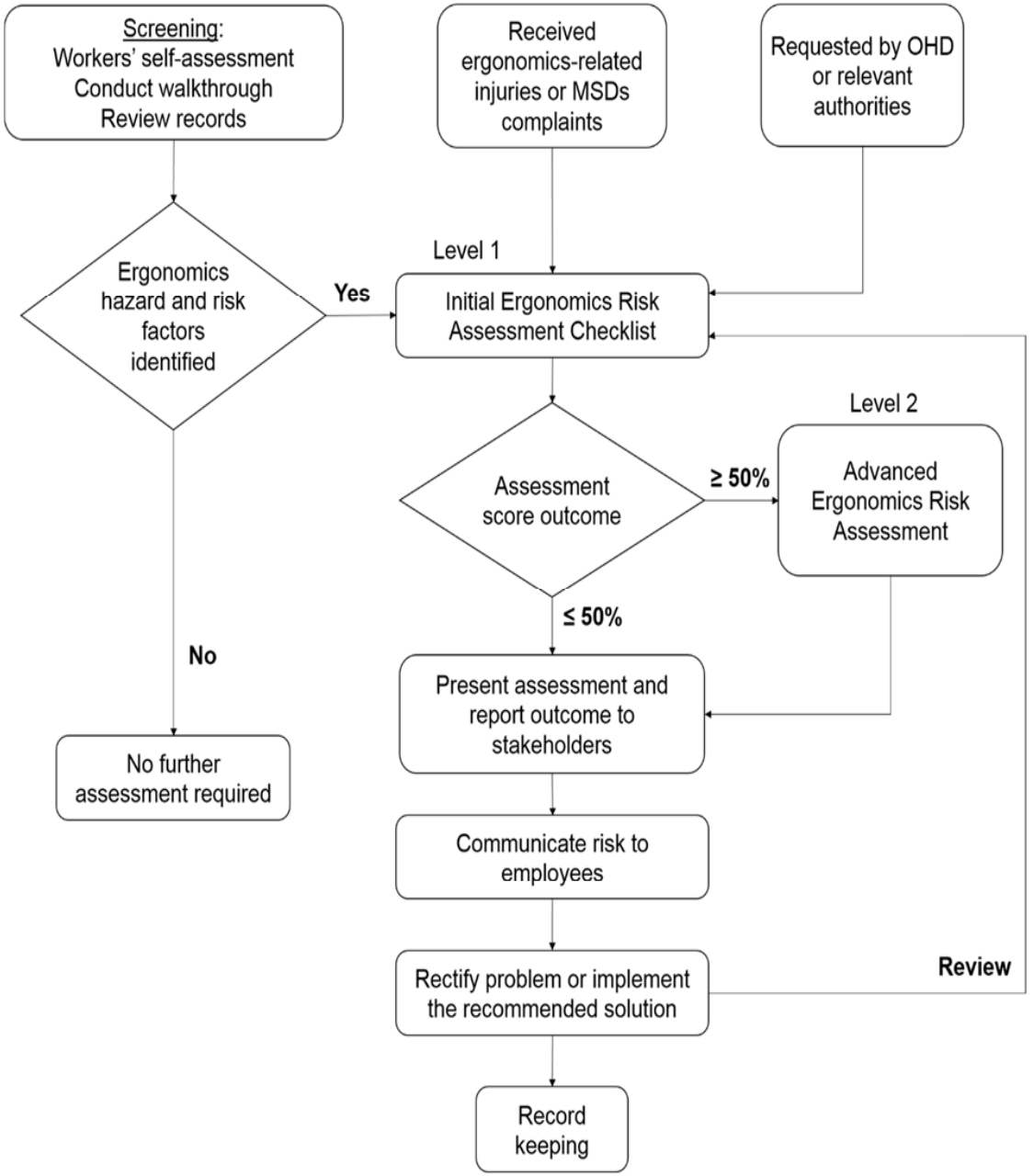
Enable us to:

1. Identify most ergonomics risk factors that may cause harm to employees;
2. Determine the likelihood of harm arising from exposure to the ergonomics risk factors;
3. Recommend appropriate control measures towards risk reduction.

The benefits are: -

1. Enable employers to plan, implement and monitor preventive measures;
2. Reduce the risks of ergonomics-related injuries and MSDs;
3. Reduce compensation cost, medical expenses and employee absenteeism.

Planning and Conducting of ERA



THANK YOU