



ERGONOMI

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Definisi

- **Ergonomi yaitu ilmu yang mempelajari perilaku manusia dalam kaitannya dengan pekerjaan mereka.**
- Sasaran → manusia pada saat bekerja dalam lingkungan.
- penyesuaian tugas pekerjaan dengan kondisi tubuh manusia
 - untuk menurunkan stres yang akan dihadapi.



- **Upaya:**

- menyesuaikan ukuran tempat kerja dengan dimensi tubuh agar tidak melelahkan,
- pengaturan suhu, cahaya dan kelembaban

→ agar sesuai dengan kebutuhan tubuh manusia.

- 
- ditujukan untuk “fitting the job to the worker”

ILO:

- sebagai ilmu terapan biologi manusia dan hubungannya dengan ilmu teknik bagi pekerja dan lingkungan kerjanya, agar mendapatkan kepuasan kerja yang maksimal selain meningkatkan produktivitasnya.

Tujuan

- Penerapan Ergonomi di tempat kerja bertujuan agar pekerja saat bekerja selalu dalam keadaan sehat, nyaman, selamat, produktif, dan sejahtera.

Ruang Lingkup

- Teknik
- Fisik
- Pengalaman psikis
- Anatomi dan fisiologi
- Anthropometri
- Sosiologi
- Desain, dll

Metode Ergonomi

Diagnosis

- Wawancara dengan pekerja.
- Inspeksi tempat kerja.
- penilaian fisik pekerja, uji pencahayaan, ergonomik checklist dan pengukuran lingkungan kerja lainnya.

Metode Ergonomi

Treatment

- tergantung data dasar pada saat diagnosis.
- merubah posisi meubel, letak pencahayaan atau jendela yang sesuai.
- Membeli furniture sesuai dengan dimensi fisik pekerja.

Metode Ergonomi

Follow-up

- evaluasi secara subyektif dan obyektif.
- menanyakan kenyamanan, bagian badan yang sakit, nyeri bahu dan siku, keletihan, sakit kepala dll.
- Parameter produk yang ditolak, absensi sakit, angka kecelakaan dll.

Penerapan Ergonomi

1. Posisi Kerja

- posisi duduk di mana kaki tidak terbebani dengan berat tubuh dan posisi stabil selama bekerja.
- posisi berdiri di mana posisi tulang belakang vertikal dan berat badan tertumpu secara seimbang pada dua kaki.

2. Proses Kerja

Para pekerja dapat menjangkau peralatan kerja sesuai dengan posisi waktu bekerja dan sesuai dengan ukuran anthropometrinya.

3. Tata letak tempat kerja

Display harus jelas terlihat pada waktu melakukan aktivitas kerja.

Simbol yang berlaku secara internasional lebih banyak digunakan daripada kata-kata.

4. Mengangkat beban

Bermacam-macam cara dalam mengangkat beban yakni, dengan kepala, bahu, tangan, punggung dsbnya.

a. Menjinjing beban

Beban yang diangkat tidak melebihi aturan yang ditetapkan ILO sbb:

- | | |
|------------------------|----------|
| - Laki-laki dewasa | 40 kg |
| - Wanita dewasa | 15-20 kg |
| - Laki-laki (16-18 th) | 15-20 kg |
| - Wanita (16-18 th) | 12-15 kg |

b. Organisasi kerja

- Alat bantu mekanik diperlukan kapanpun
- Frekuensi pergerakan diminimalisasi
- Jarak mengangkat beban dikurangi
- Dalam membawa beban perlu diingat bidangnya tidak licin dan mengangkat tidak terlalu tinggi.

c. Metode mengangkat beban

- Otot lengan lebih banyak digunakan dari pada otot punggung
- Untuk memulai gerakan horizontal maka digunakan momentum berat badan.

Metoda ini termasuk 5 faktor dasar :

- o Posisi kaki yang benar
- o Punggung kuat dan kekar
- o Posisi lengan dekat dengan tubuh
- o Mengangkat dengan benar
- o Menggunakan berat badan

d. Supervisi medis

- Semua pekerja secara kontinyu harus mendapat supervisi medis teratur.
- Pemeriksaan sebelum bekerja → menyesuaikan dengan beban kerjanya
- Pemeriksaan berkala → memastikan pekerja sesuai dengan pekerjaannya dan mendeteksi bila ada kelainan
- Nasehat harus diberikan tentang hygiene dan kesehatan, khususnya pada wanita muda dan yang sudah berumur.

Kelelahan/Fatigue

- Kelelahan fisik
- Kelelahan patologis
- Psikologis dan emotional fatigue

Resiko Kesehatan:

- RSI in wrists and hands
- CTS
- Eye strain and lighting
- Back and neck ache

Pemeriksaan Kelelahan

- tes pada kelopak mata
- kecepatan reflek jari dan mata
- kecepatan mendeteksi sinyal
- pemeriksaan pada serabut otot secara elektrik dll

Important: kelelahan yang terjadi apakah ada hubungannya dengan masalah ergonomi??

Head

Head back,
chin tucked,
Ears, shoulder,
hips aligned.

Neck

Use headphones.
Do not cradle
phone between
head and
shoulder!

Elbows

At sides - slightly
more than 90
degree bend.

Chair

Fully adjustable with
lumbar support in
small of the back.

Eyes

Level with top
1/3 of screen.
18-24"



Document Holder

Adjacent to and at
same height as
monitor.

Keyboard

Same height as elbow
with wrists slightly bent.
Keystroke gently!

Mouse

Adjacent to and
at same height
as keyboard.

Chair Height

Hips slightly more than 90
degrees, feet flat on the floor

**Take breaks
every
30 minutes!**



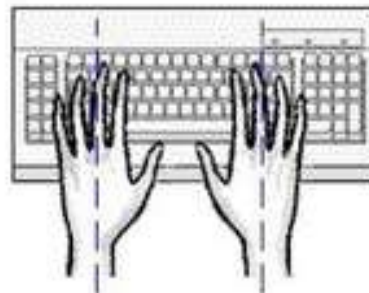


WRONG!

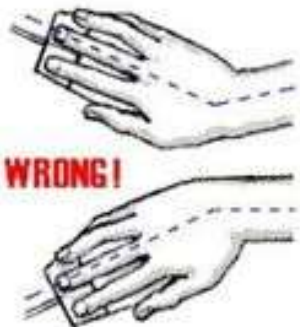
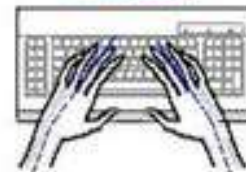


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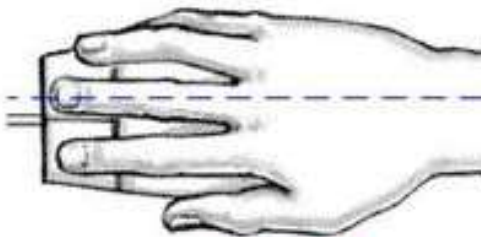
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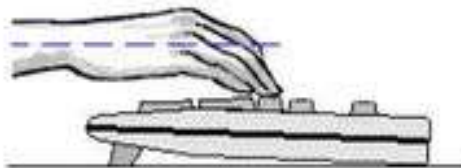


WRONG!



RIGHT!

RIGHT!



WRONG!



Ergonomics

Healthcare Workers



Session Objectives

You will be able to:

- Identify ergonomic risk factors in your job
- Recognize musculoskeletal disorders (MSD) signs and symptoms
- Lift and carry objects safely
- Take other precautions specific to your job to prevent ergonomic injuries

What You Need to Know

- What ergonomics is and why it is important
- What MSDs are and how you could be at risk
- Symptoms of injuries and what to do about them
- Safe lifting technique
- Ergonomic safety precautions for each task you perform on the job

What Is Ergonomics and Why Is It Important?

- Ergonomics fits jobs to people
- It helps prevent injuries

Musculoskeletal Disorders

MSDs involve injuries to:

- Muscles
- Nerves
- Tendons and ligaments
- Joints
- Cartilage



Major Risk Factors

- Repetition
- Force
- Awkward postures
- Contact stress
- Vibration

MSD Hazards on the Job

- Housekeeping, laundry, and food service
- Patient care
- Maintenance
- Central supply
- Office



MSD Signs and Symptoms

- Back and neck: shooting pain, stiffness
- Shoulders: pain, stiffness, loss of mobility
- Arms and legs: shooting pain, numbness
- Elbow and knee joints: pain, swelling, stiffness



MSD Signs and Symptoms

(cont.)

- Hands and wrists: pain, swelling, numbness
- Fingers: pain, loss of strength or mobility
- Thumbs: pain at the base
- Feet and toes: numbness, stiffness, burning sensation

Be sure to report any signs or symptoms of MSDs to your supervisor right away and seek prompt medical treatment

Basic MSD Prevention: Safe Lifting Technique

- Plan your lift
- Stand close to the load
- Squat down
- Get a firm grasp
- Lift with your legs
- Keep the object close to your body



Basic MSD Prevention: Safe Lifting Technique (cont.)

- Carrying
- Unloading



MSD Risks and Basic Prevention

- Do you understand the information presented so far?



Planning Patient Lifts

- Get help if necessary
- Stretch briefly
- Select the method and equipment you'll use
- Lock the bed or chair
- Decide on your route
- Explain your plan to the patient



Lifting Patients Safely

Helping patients:

- Sit up in bed
- Stand up



Lifting Patients Safely (cont.)

Helping patients:

- Sit down
- Get up from the floor



Lifting Patients Safely (cont.)

- Bed to chair, chair to bed, or chair to chair
- Lateral transfer



Lifting Patients Safely (cont.)

- Chair to exam table
- Repositioning in bed



Handling Carts Safely

- Place heavy and frequently used items within easy reach
- Remove unnecessary items
- Balance loads
- Push, don't pull



Transporting Portable Equipment

- Rolling devices
- Obstacles
- Medical equipment
- Oxygen tanks



Managing Liquid Transfers

Housekeepers should:

- Use buckets with casters
- Use a hose to fill buckets
- Make sure casters roll easily
- Use proper lifting technique to empty buckets
- Get help emptying buckets if necessary

Managing Liquid Transfers (cont.)

Kitchen workers should:

- Use proper lifting and carrying techniques
- Use elevated faucets or hoses to fill large pots with water
- Use ladles or saucepans to empty pots
- Get help lifting or shifting heavy pots and pans

Selecting and Using Hand Tools to Prevent Injury

- Make sure handle fits your grip
- Use firm but comfortable grip
- Choose the lightest tool
- Select tools that have minimal vibration
- Keep tool blades sharp



Handling Heavy Bags

- Use a materials handling device
- Slide bags on and off carts
- Get help lifting large, heavy bags



Loading and Unloading Laundry

- Handle only a few items at a time
- Brace your body against the machine when lifting
- Brace with one hand, while using the other to pull knotted items free
- Use a cart to transport heavy baskets or bags

Housekeeping Precautions

- Use carts to transport supplies
- Avoid bending or twisting
- Alternate tasks
- Clean objects at waist level whenever possible
- Push with the leading edge when dusting
- Work spray triggers with index and middle fingers

Housekeeping Precautions

(cont.)

- Mopping and sweeping
- Kneeling
- Scrubbing
- Vacuuming



Sit Properly to Reduce Strain on Your Back

- Sit up straight
- Lean back
- Keep your chair close to the work surface
- Turn with your whole body
- Hold paperwork upright



Sit Properly to Reduce Strain on Your Back (cont.)

- Adjust your chair and work surface
- Arrange your work area to minimize reaching and bending
- Position your computer correctly
- Maintain a neutral position while keyboarding
- Change positions regularly

Preventing Ergonomic Injuries on the Job

- Do you understand the information about preventing ergonomic injuries?



Take Good Care of Your Back

- Wear proper shoes
- Practice good posture
- Get regular exercise
- Sleep on a firm mattress
- Try to keep your weight down
- Don't overexert



Don't Ignore Back Problems or Other Injuries

- Tell your supervisor
- Seek medical treatment
- Follow your doctor's advice



Key Points to Remember

- Make sure you can recognize MSD symptoms
- Be aware of ergonomic risk factors
- Take proper precautions to prevent injuries
- Report any symptoms immediately and seek medical treatment