



TRANSFORMING LIVES
Through Skilling

Supporting Partners

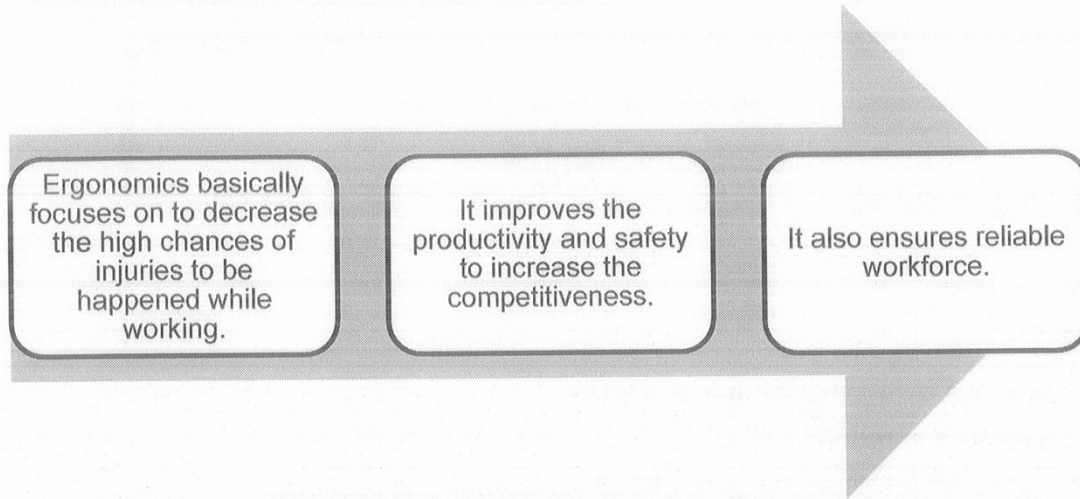


CHAPTER - 12
ERGONOMICS

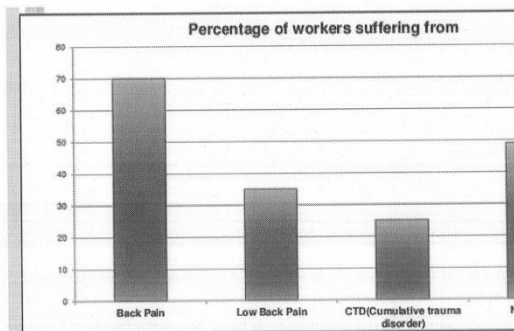
12.1 What is Ergonomics?

Ergonomics is nothing but a scientific path or methodology and the practices of planning jobs. Through this science, a working person can increase his/her ability of working for a long with less pain or hesitation.

12.2 Need of Ergonomics in the Sewing room:



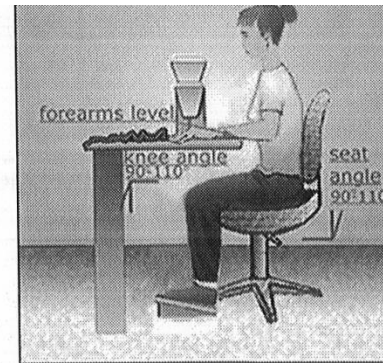
12.3 Injuries and diseases among the sewing machine workers



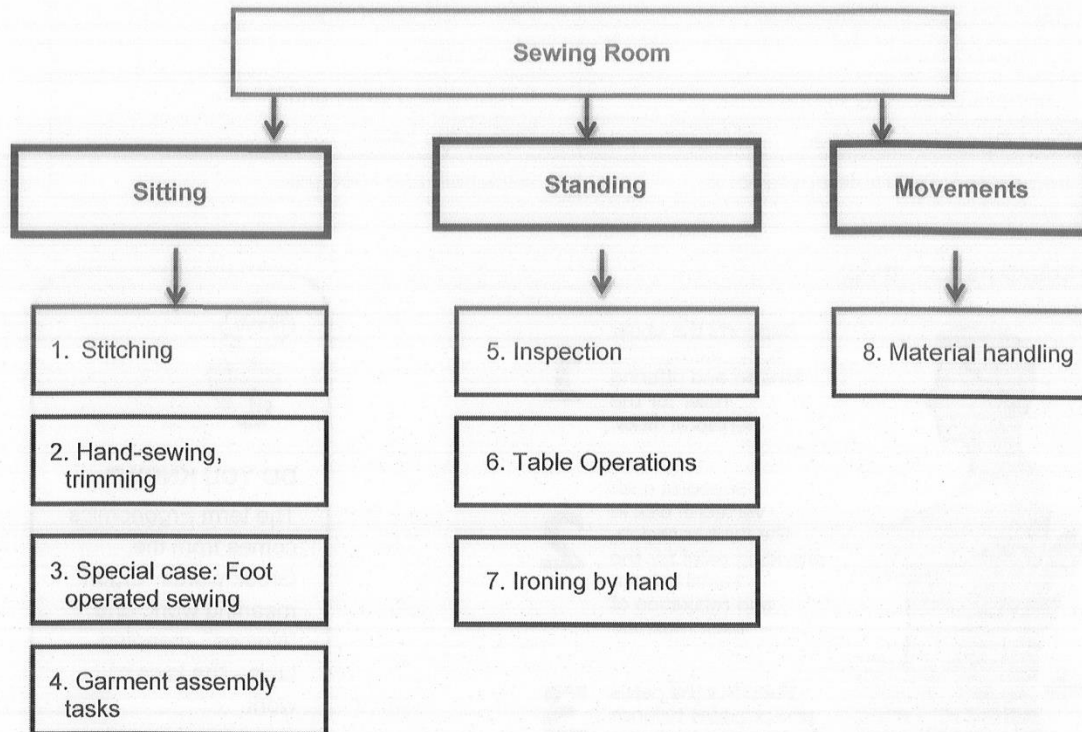
Source: National Institute of Occupational Safety and Health (NIOSH), Elements of Ergonomics Programs, January 1997

12.4 Principles of Ergonomics:

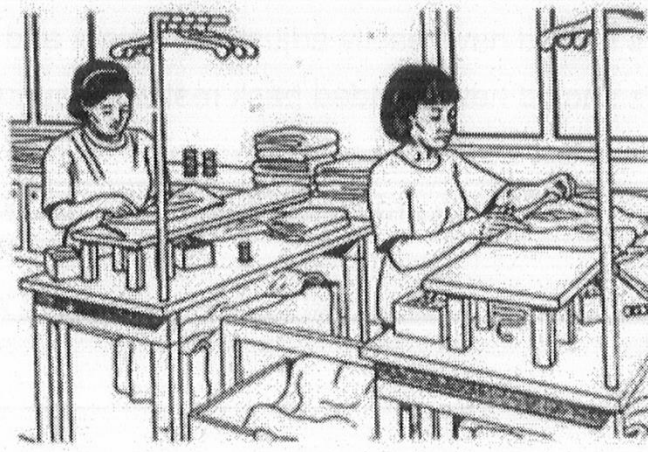
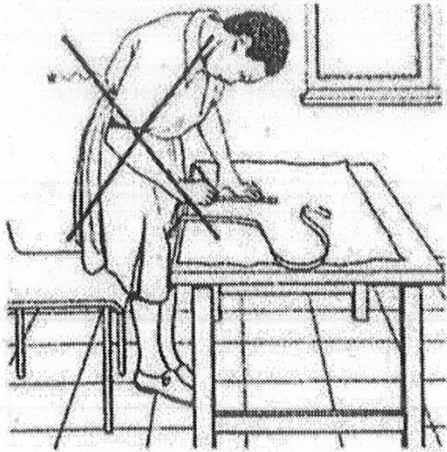
1. To use the proper tools.
2. To get proper time for taking rest.
3. To know avoiding awkward situations.
4. To keep on repeat motions to minimum.



12.5 Classification of the tasks according to the postures of the workers while working:

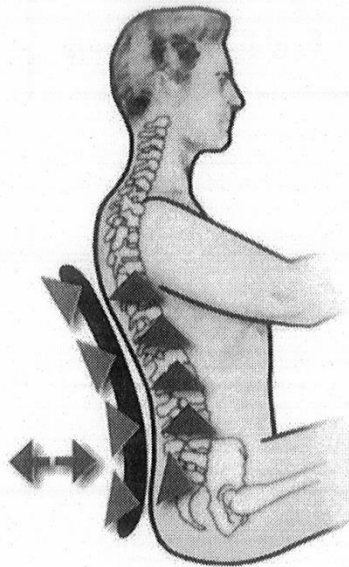


12.6 Sewing Room Tasks associated with Injuries and Illness:



Sewing Machine Tasks	Injuries or illness
• Stitching tasks.	• Pain in the shoulders, wrists and hands.
• Hand sewing and trimming.	• Pain in the upper limbs.
• Ironing by hand.	• Elbow pain.
• Garment assembly tasks.	• CTDs of the Hands and Wrists.
• Foot Operated Sewing.	• Pain in the back.
• Inspection and table operations.	• Back pain and knee pain.

12.7 Solutions for sitting:



Supports the upper body, easing neck tension and offering relief for the vertebral disks.

1

Supports each vertebral disk in the lumbar region, providing relief for the spinal column and relaxation of back muscles.

2

Supports the pelvis and provides balance for the spinal column.

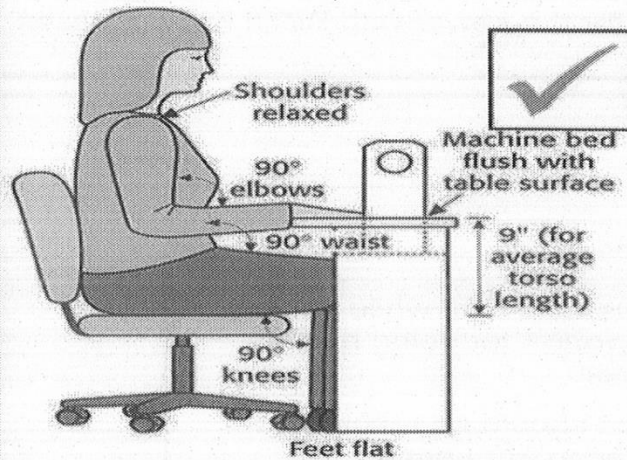
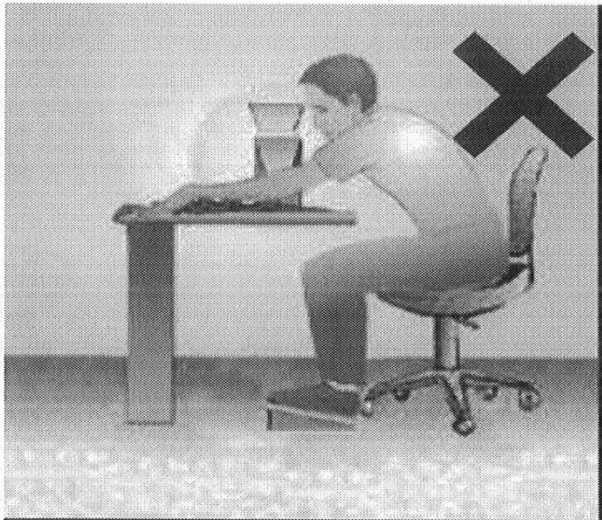
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DO YOU KNOW?

The term Ergonomics comes from the Greek words "Ergon", meaning work, and "Nomos", meaning laws—the laws of work.

- ✓ The chairs should have easily adjustable height and backrest position.
- ✓ The chairs should have padded back rest with rounded edges that supports worker's lower back.
- ✓ There should not be any wheels or wheels that lock.
- ✓ The seat should have a proper cushion so that no body parts of a worker get pressure while working.
- ✓ The seat should have the swivel motion so that the worker does not have to twist to reach the side or behind.



Ergonomics of machine sewing

12.8 Table: Problem and solutions:

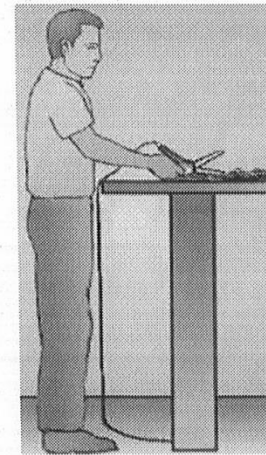
Problem	Solutions
<ul style="list-style-type: none">• While sewing, due to the improper table height, the workers will face awkward shoulder, elbow and wrist postures.	<ul style="list-style-type: none">• The tables should have adjustable heights. The heights should be adjustable for both sitting and standing posture.
	<ul style="list-style-type: none">• The height should be proper so that elbows and wrists can be kept straight.
	<ul style="list-style-type: none">• The edges of the tables should be padded or covered.

12.8.1 Tilt Table and its advantages:

This kind of tables generally tilted a bit towards the workers, so that they can see things more easily and reduce awkward wrist postures.

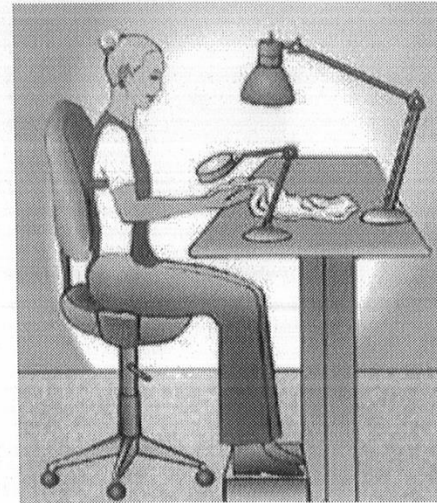
Advantages:

- Pain free sewing.
- Supplies better view of sewing work area.
- Allows sewer to keep back straight for back pain.
- Perfect for the sewer with Bi/Tri Focal glasses.



12.9 Lighting:

- Use adjustable light while sewing, helps a worker for doing his/her task easier.
- The bulbs should be rechecked and replaced frequently.



12.10 Space requirements:

- There should be enough space for the workers to do work. Minimum 0.5m x 0.5m area should be given while sitting.
- Proper aisle space: If the trolleys of dimensions 1m x 1m are required for shifting a material then the aisle space should be 1.5m.

12.11 Material Handling:

The workers should be responsible for:

- Sometimes the workers may have to go to large bundles of cut fabric from delivery or between stations.
- Rejects Heavy Lifting by Operators or "Bundle Boys".
- Use trolleys with proper height and wheels, so that the stress on the helper is limited.

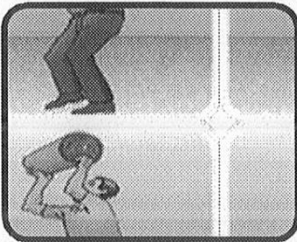
12.11.1 Potential Hazards:



Generally the employees bend at the waist and reach into the transportation tubs to load or retrieve cut fabric, causing stress on the back and arms.



Employees repeatedly bend to lift bins or bundles of fabric.



Employees lift bins or bundles over chest height, which may cause injury to the shoulders and back.

12.11.2 Possible Solutions:

The worker should use height-adjustable carts to reduce the need to bend or reach into the carts.

The workers should use bins with good handles to make lifting easier.