

A

Seminar report

On

Ergonomics

Submitted in partial fulfillment of the requirement for the award of degree
of CIVIL

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Acknowledgement

I would like to thank respected Mr..... and Mr.for giving me such a wonderful opportunity to expand my knowledge for my own branch and giving me guidelines to present a seminar report. It helped me a lot to realize of what we study for.

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Last but clearly not the least, I would thank The Almighty for giving me strength to complete my report on time.

Preface

I have made this report file on the topic **Ergonomics**; I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude towho assisting me throughout the preparation of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

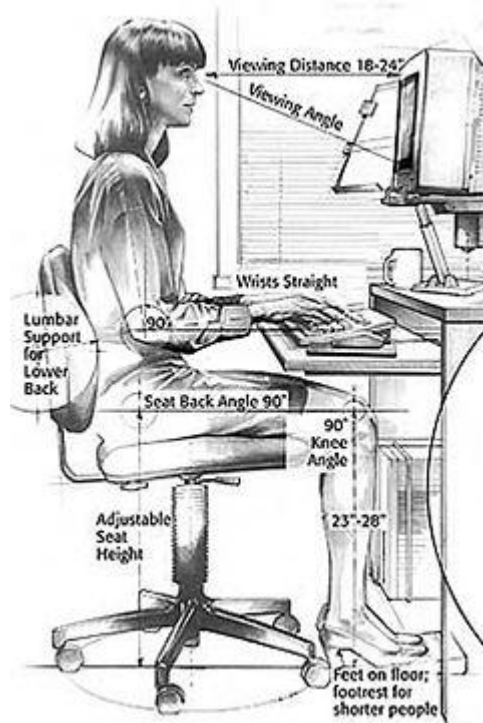
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Introduction

Ergonomics is a multi disciplinary science that applies principles based on the physical and psychological capabilities of people to the design or modification of jobs, equipment, products, and workplaces.

The goals of ergonomics are to decrease risk of injuries and illnesses (especially those related to the musculoskeletal system), to improve worker performance, to decrease worker discomfort and to improve the quality of work life

The benefits of well-designed jobs, equipment, products, work methods and workplaces include: enhanced safety and health performance; reductions in cases of musculoskeletal disorders; improved quality and productivity; reductions in errors; heightened employee morale; reduced compensation and operating costs; and accommodation of diverse populations, including those with disabilities. Although ergonomics is an evolving field, proper application of its principles can achieve benefits that are significant and immediate.



Ergonomic Tips for Computer Users. Employees who use a desktop computer, whether at work or home, can improve their own personal ergonomics — and avoid injury — by incorporating a few basic principles. Go here to learn more about making computer use safer and more comfortable.



Fundamentals for the Flexible Workplace Variability and compatibility with desk components, that flex from individual work activities to team settings. Workstations provide supportive ergonomics for task-intensive environments.



OKAY!
Float the hands with arms at sides and keyboard set low over your lap



OKAY!
Pivot the forearms on chair armrest and float the hands



OKAY!
Pivot the forearms on the desktop or on a forearm board and float the hands



AVOID!
Planting the wrists while keying

Good keying/mousing technique can reduce stresses on the wrists, arms and elbows. It can also minimize static loads on the shoulders to ensure good blood flow to the extremities.

- Float your hands and arms while keying or pivot the mid-forearms on armrest or work surface
- Avoid planting your palms/wrists or bearing weight on elbows while keying and mousing
- Keep your wrists straight...minimize bending the wrists up/down or inward/outward
- Keep an open elbow angle at 120 degrees or more...avoid tighter than 90 degrees
- Take 5 minute breaks from your computer at least once per hour...stretch or walk



Forward Sitting

good for combination of computer work and active reaching tasks, i.e., paper work, writing, and phone

Upright Sitting

good for combination of computer and reading/referencing of hardcopy

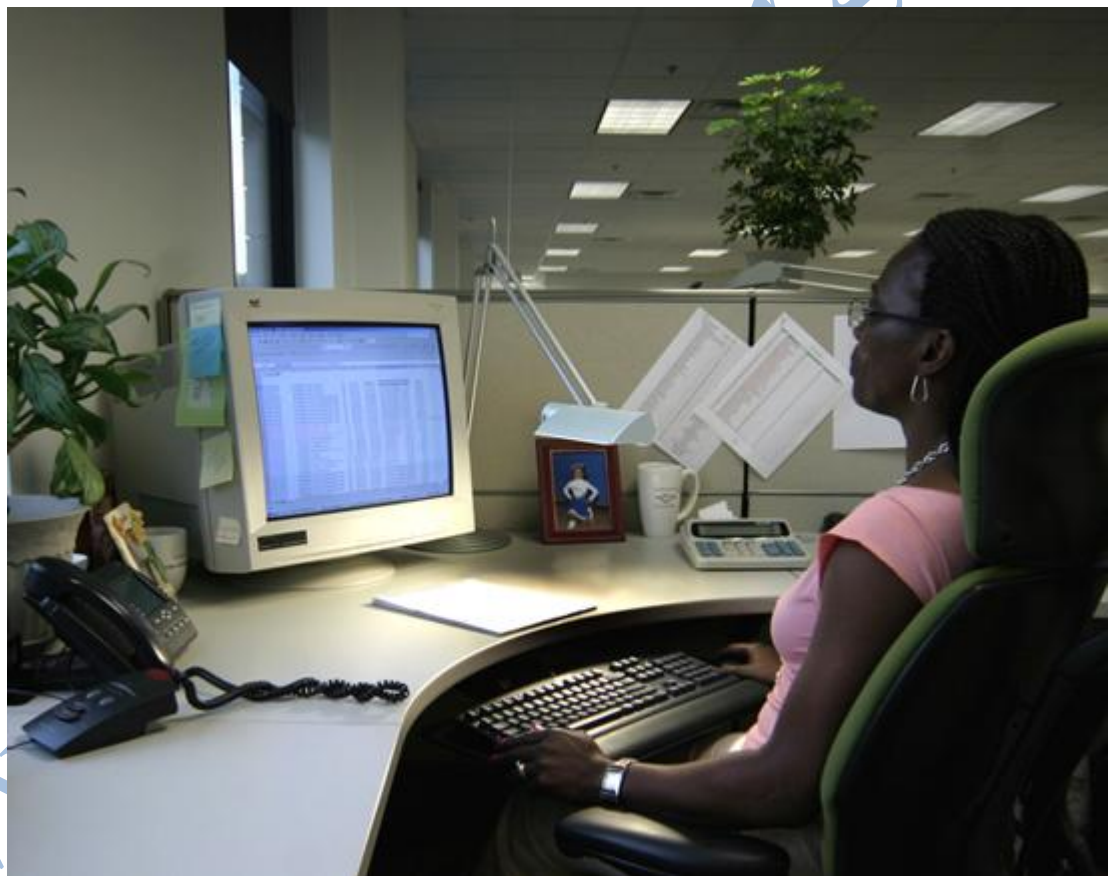
Reclined Sitting

good for dedicated computer work that doesn't involve reaching, writing or paperwork



A poorly set-up workstation (pictured, left) will force the user to twist in her seat and risk repetitive stress injury to the neck, back and shoulders. Here the monitor is misaligned with the keyboard and document surface, and the

desktop is cluttered with the CPU, monitor, keyboard and mouse. Use of a flat panel display supported by a monitor arm and a properly aligned, negative tilt keyboard tray will maximize the likelihood that the user maintains neutral postures throughout the day (pictured, right). The neck, back and shoulders align, and the workspace is clear of clutter with the CPU mounted under the desk and the monitor, keyboard and mouse off the work surface.



People require approximately 5 times more light to read standard documents than to view a monitor. That's why single source overhead lighting is not an effective lighting solution, because different parts of the workstation require different amounts of light. Task lighting, an essential component of an ergonomic workstation, allows users the ability to direct light where they need it (e.g., on documents) for maximum visual comfort and minimal glare.



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What is Ergonomics?

Simply put, Ergonomics is fitting the task to the person. Too often employees perform job tasks that expose them to potential injuries and illnesses due to the poor design of a workstation or tool they are using. Ergonomics involves the assessment of job tasks to identify ergonomic risk factors and appropriate engineering or work practice controls to reduce or eliminate the identified risk factors. Generally, ergonomic changes are made to improve the fit between the demands of the job tasks and the capabilities of the employees.

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What Can the Employer Do?

Much like overall health and safety programs, effective ergonomic programs utilize a systems approach involving the following:

- **Management Commitment and Employee Involvement** – Successful ergonomic programs are those that have everyone moving in the same direction working towards a common set of goals. The full backing of management is necessary which includes allocating resources and time resolving identified issues. Employees perform the job tasks and often are best prepared to assist with solving the problem.
- **Worksite Hazard Assessments** – Establish an ergonomic committee comprised of management and employees to devote time to ergonomic issues. Conduct assessments of job tasks to identify risk factors, and identify jobs that are showing early signs of, or are actually causing WMSDs.
- **Hazard Prevention and Control** – Pursue equipment purchases, workstation design, modified work practices, and other tools that are designed to reduce or eliminate ergonomic risk factors.
- **Education and Training** – Provide ergonomic training for appropriate employees and management staff on how to recognize the primary ergonomic risk factors of Force, Repetition, and Posture. Educate personnel on the early symptoms of WMSDs and the proper procedures for reporting and/or recording them. Encourage early reporting of symptoms.
- **Medical Management** – Implement a medical management program that includes establishment of one occupational physician or group that is familiar with your work operation. Refer all employees who have suspected workplace WMSDs to this physician or group for appropriate diagnosis and treatment.

How Do I Control Ergonomic Hazards?

There are simple things that employers can implement and workers can do to reduce ergonomic stress, such as:

- Use a buddy system or the proper lifting device to carry heavy loads. To the extent feasible, use your legs to push up and lift the load, not the upper body or back. Do not twist the body during a lift - step to one side or the other to turn.
- Design work activities so employees do not have to work on their knees. If the job requires it, use knee pads.
- Avoid repeatedly twisting the hands and wrists. Provide proper hand tools that are designed to keep the hand and wrist in a comfortable, neutral position.
- Avoid stretching or unnecessary stress to do overhead work where possible. For example, adjust scaffolds to the appropriate working height and use a lifting device to hold drywall or other material in place for overhead work.
- Use vibrating tools such as a jack-hammer or abrasive wheel saw that are equipped with built-in vibration dampers. Wear gloves to help absorb energy.
- Use the appropriate tools such as hammers that are designed to absorb shock and tools with handles that aid in maintaining a neutral wrist position when used.
- Rotate job tasks to reduce repetitiveness.

Conclusion

Ergonomics is the systematic study of people at work with the objective of improving the work situation, the working conditions and the tasks performed. The emphasis is on acquiring relevant and reliable evidence on which to base recommendation for changes in specific situations and on developing more general theories, concepts, guidelines and procedures which will contribute to the continually developing expertise available from ergonomics.

References

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