

Article Reading and Discussion Questions

20 marks

The Ergonomically Correct Workplace

An Introduction to Ergonomics

Ergonomics is the study of how the physical health of workers is affected by their workplace. Studies have shown that certain things in the workplace (including temperature, lighting, air, and furniture and equipment design) can affect the speed at which employees work, workers' health, and how often they are absent. Ergonomic design means creating a healthier work area for employees.

When work environments are designed to be ergonomically correct, employees are happier, healthier, produce more work in a shorter period of time, miss fewer days, and quit their jobs less frequently. As a result, businesses can save a lot of money.

When workplaces are not designed ergonomically, they can cause many types of injuries to employees. The most common type of injury is **musculoskeletal injuries (MSI)**. MSI happens when a worker performs the same task over and over, causing stress on nerves, muscles, tendons, or other body parts. The most frequently reported MSI in North America is **carpal tunnel syndrome (CTS)**. CTS occurs when a nerve in the wrist is used over and over with the wrong equipment. The wrist is then unable to move properly, and the person suffering cannot input data or hold objects in their hand. CTS is often caused by long hours of keying at a computer workstation that is not properly adjusted to the worker's height.

Other illnesses caused by poor ergonomically designed work areas are eye strain, headaches, tiredness, allergies, backaches, and poor circulation.

Work Environment

The **temperature** of the workplace should be kept between 15°C and 22°C (62°F and 78°F). Plenty of **air circulation** (but not drafts from open windows) is important. This reduces the amount of dust and bacteria in the air, keeping workers healthier. **Cleanliness** is important because workers can develop allergies from exposure to dust, mold, and other particles in the air. **Lights** should not flicker because this causes eye strain. The colour of workrooms should be neutral and soft. Pure white, very dark, or shiny surfaces can cause tiredness.

Furniture

Chairs should have five legs for stability. The height of the seat should be between 37.5 and 52.5 cm (15 and 21 inches) from the floor, and a firm seat back should allow the elbows to be bent at a 90° angle. The seat should be padded for comfort, but firm enough to maintain good posture. A good chair will help the worker's back and circulation remain healthy. Tables and desks should provide enough space for workers to do their jobs without bumping into one another. There should be enough space under the desk to allow workers to change seating position to avoid leg injuries. The edges of tables and desks should be smooth and rounded to avoid injuries. Also, medium- and light-coloured surfaces help ease eye strain when reading. Surfaces should have a dull finish to reduce glare, which hurts the eye.

Computer Hardware

Monitors should have flat screens to reduce eye strain. They should be positioned so that the top of the screen is at eye level and at a distance of 45 cm to 60 cm (18 to 24 inches) from the face to reduce stress on the eyes and neck. Because monitors attract dust, then send it towards the user's face, they should be cleaned often.

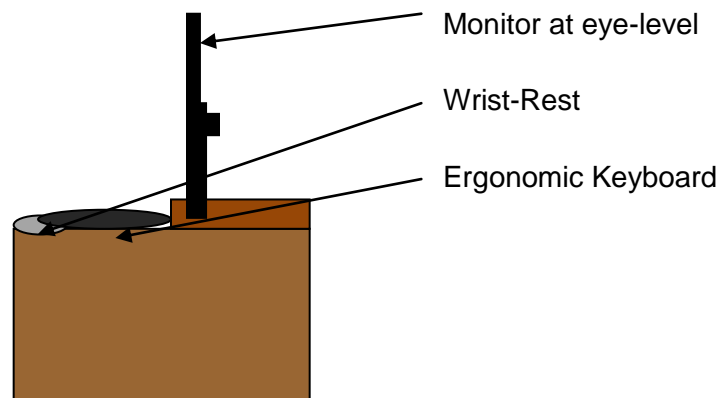
Keyboards should be kept at elbow height and at an angle that causes the fingers to land on the *home row* and a 90° elbow angle. This prevents strain on the wrists. CTS occurs when these things are not adjusted properly.

Questions:

Answer the following questions, using the report above, in MS Word. Use proper formatting (ie. Format, Paragraph, Indent, etc.) Be sure to include the question in your response. Add any creative flair to your document that you wish (marks will be given).

1. Define the term ergonomics.
2. Define the terms *musculoskeletal injuries* & *carpal tunnel syndrome*.
3. Describe why cleanliness is important in an ergonomically correct workplace.
4. What types of office equipment can be made ergonomically correct?
5. Explain what flickering lights and shiny surfaces can do to workers.
6. Explain what to do with a monitor to reduce neck strain.
7. What are the benefits to employers of making a workplace ergonomically correct?
8. What are the benefits to employees of making a workplace ergonomically correct?

Using the shapes tools in Microsoft Word, design an ergonomically-correct workspace. Label the various parts of your diagram. Here is a very simple example:



There should be at least TEN (10) ergonomic things in your workspace setup.

Marking Scheme:

Each correct response will earn you 2 marks. Your creativeness and formatting can earn you up to 4 marks. A perfect score on this assignment is 20 marks.

You will also received 10 marks for a completed Workspace Design.