

Before you begin:

- Ask if anyone knows what ergonomics is.
- Ask for examples of ergonomics in everyday life.



Introduction

Ergonomics is the field that designs work to fit the workers. This is different from the traditional approach in which workers were required to adapt themselves to the job. Often, this meant employers hired the “right” person for the job, but that approach sometimes limits the pool of potential workers. In contrast, ergonomics uses knowledge about workers – their bodies, minds, and capabilities – to design the work. This ensures that the work can be safely performed by a wide number of people.

Definitions

Ergonomics is the discipline that uses scientific knowledge about people to design work that fits their capabilities.

Musculoskeletal disorders or MSDs are injuries that develop in soft tissues (such as tendons, ligaments, muscles, nerves, and blood vessels) as a result of cumulative damage.

Ergonomic risk factors are factors such as excessive forces, repetitive motion, awkward postures, or vibration that increase the risk for developing an MSD.

Discussion

Ergonomics is a way to make jobs “worker friendly.” By using ergonomics to design jobs, workers can work safely and comfortably. This means taking into account the size of the worker, their strength and endurance, and other factors such as the environment’s temperature and humidity. Ergonomically designed jobs, workstations, and tools are easier on the worker, resulting in less stress and strain. The risk for musculoskeletal disorders or MSDs is also lower. Productivity may increase since workers aren’t as tired or worn out. Not surprisingly, morale goes up and turnover goes down.

Risk factors for MSDs include repetitive motions, forceful exertions, awkward postures, and vibration from hand tools or other equipment. Having any of these in a job increases the wear-and-tear on the worker. The longer the worker is exposed to these risk factors, the greater the cumulative damage. Eventually, the damage can lead to inflammation in a tendon, a sprain in a muscle, or damage to spinal discs. Overexertion injuries are the most common type of nonfatal injuries in the workplace and are also very expensive in workers compensation costs.

Ergonomists evaluate jobs for ergonomic risk factors, then figure out ways to reduce or eliminate the risky parts of the job. Sometimes it’s a simple matter of raising items off the floor, so workers don’t have to bend down so far when lifting. Other times it might involve redesigning a workstation to reduce how far a worker must reach to get parts from a bin. Tool balancers that render tools almost weightless, height-adjustable carts, or powered pallet jacks are other ergonomic solutions that can reduce the wear-and-tear on the workers. In other cases, the solution to an ergonomic issue is “upstream” at a different job.

The key to successful ergonomics is to develop solutions with workers’ input, so the solutions work for them – their physical size and abilities. Often, it is an iterative process of assessing the work, trying out an ergonomic solution (new or redesigned equipment, workstation, process), then re-assessing the changes to see how well the solutions worked. The ergonomic solution may need tweaking to make it work for everyone.

Ergonomic training can involve everyone in finding easier, worker-friendly ways to work. Workers know the job better than anyone, so they have a good idea of what needs to be done. Ergonomic training gives them “ergo eyes” so they can spot ergonomic problems and come up with solutions. A bit of solutions brainstorming among all the stakeholders will ensure that the solutions are practical, productive and do not create unintended consequences.

Conclusion

Ergonomics is a proven way of improving worker safety by designing jobs that fit the workers, rather than requiring workers to fit themselves to the job. Although the upfront costs of ergonomic solutions may seem steep, the ultimate payoff is fewer injuries, increased productivity, and better morale.

Group Activity

- Ask for examples of “problem” jobs – jobs with the most complaints, turnover, or injuries.
- Brainstorm solutions to the worst of the jobs.
- What will it take to make those solutions a reality? How much do they cost? How long to install? Who needs to approve?

Resources

[OSHA Ergonomics Website](#)

[OSHA Ergonomic Assessment Checklist](#)

[OSHA Solutions to Control Ergonomic Hazards](#)

[BLS Fact Sheet on MSDs](#)