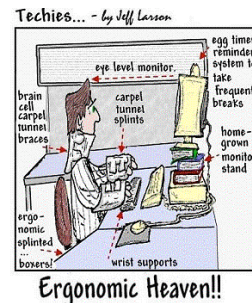


Ergonomics in the Lab



What is ergonomics?

Ergonomics is derived from the Greek word “ergon” which means work and “nomos” which means job. Its focus today is designing jobs that meet the capabilities of the worker. It encompasses both the physical stresses and environmental factors, which effects the overall comfort and health of the employee. It is defined in the online Merriam-Webster's® Collegiate Dictionary as “an applied science concerned with designing and arranging things people use so that the people and things interact most efficiently and safely - called also human engineering”.

Why should we be concerned with ergonomics?

Technologists perform many different tasks which could easily cause injuries. Ergonomic injuries are disorders which accrue over time because of continuous repetition (i.e. pipetting, vortexing, etc.) or exposure to some kind of harmful agent. We need to be aware of the hazardous conditions involved in our jobs and make the appropriate changes so that our workplace is ergonomically friendly. Cumulative Trauma Disorders are injuries caused by ergonomic stress and will be discussed further.

What are the common Cumulative Trauma Disorders?

Cumulative Trauma Disorders(CTDs) are ergonomic injuries which can occur if someone is exposed to a continuous or repetitional task. Keep in mind that these injuries do not occur if the task is performed only once. The key is that it is repetitive nature of the task which causes the injury. For example, tenosynovitis is a disorder which can develop from forceful opening of tightly sealed reagent vials, swelling and tenderness of the thumb can result. Other CTDs which can occur from the continuous actions performed in the lab (i.e. pipetting) is Carpal Tunnel Syndrome. This disorder is swelling of surrounding tissues of the wrist which can cause compression of the median nerve in the carpal tunnel space. The median nerve supplies both sensory and motor innervation to the thumb and middle fingers. The symptoms of this disorder include weakness in the thumb and fingers, numbness, tingling which commonly disturb one's sleep.

What are some protective measures we can take to avoid ergonomic disorders?

Always use correct posture and positioning when using the microscope, pipetting or working at the hood. Whenever sitting is involved ensure that there is adequate knee and leg space. Repetitive task should be limited to 20 minutes or less. Electronic or mechanical pipettes should replace the manual variety. Always keep waste receptacles with reach to avoid stretching and opt for thin walled pipette tips for easy loading and ejecting. A good way to relieve stress and avoid injury is to take short stretching breaks in between each task. For stretching exercises and more information on ergonomics please visit this web site:

<http://www.niehs.nih.gov/odhsb/ergoguid/home.htm>

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