College of Health & Rehabilitation Sciences: Sargent College

ERGONOMIC STRATEGIES
LIGHTING

What are the Effects of Improper Office Lighting?
- Inadequate office lighting may cause visual discomfort, which can lead to neck, shoulder, and/or forearm pain.

- Severe headaches account for 48% of work-related aches and pains and are directly correlated with problematic office lighting.

- Computer workers with improper office lighting may experience symptoms of visual discomfort such as red-eye, a gritty sensation within the eye, and sensitivity to light.

- Visual discomfort has been proven to interfere with employee's job performance and overall productivity.

What are the Causes and Effects of Glare?
- Excessive office lighting via natural means (i.e.: bright sun coming through the window) or artificial means (i.e.: overhead lighting or one's own reflection when wearing light-colored clothes) can act as a major source of glare, which can become a significant problem.

- Glare can significantly reduce visibility depending on the proximity of the source of glare to the viewer.

- Glare has significant correlations to eye focusing problems and tired eyes and has been shown to lead to an increased number of typing errors.

Tips for Safe Office Lighting
- The Human Factors and Ergonomics Society recommends that any luminous source within the computer user's field of view should not exceed three times the screen luminance.

- There is considerable literature to support the fact that the room's surrounding light should be brighter than the central target, in this case, the computer display.

Why is Proper Lighting Important?
- Appropriate office lighting has been shown to increase creativity potential, especially if the office contains windows.

- Higher visual acuity due to optimal office lighting conditions leads to better performance and/or lower levels of eye strain.

QUESTIONS? Contact Rachel Neuman: raneuman@bu.edu or Karen Jacobs: kjacobs@bu.edu

Aaras, A, Horgen, G, et al. (2006). Do visual discomfort influence on muscle pain for visual display unit workers? *International Ergonomics Association*.

Brombach, J, Schneider, JV, et al. (2006). Ergonomic impact of lighting scenarios on contrast and visual acuity. *International Ergonomic Association.*

Ceylan, C, Dul, J, et al. (2006). Empirical evidence of the relationship between the physical work environment and Creativity. *International Ergonomics Association.*

Pentikis, J, Lopez, MS, et al. (2002). Ergonomics evaluation of a government office building. *Work, 18*(2): 123-131.

Robertson, MM, Larson, NL, et al. (2006). A cross-sectional survey of computer workers: Examining the relationships of workstation design, tasks, psychosocial, work-related musculoskeletal and visual discomfort. *International Ergonomics Association.*

Sheedy, JE, Smith, R, et al. (2005). Visual effects of the luminance surrounding a comouter display. *Ergonomics, 48*(9): 1114-1128.