

October is National Ergonomics Month!

In 2003, the Human Factors and Ergonomics Society (HFES) designated October to be annual National Ergonomics Month (NEM). The purpose of NEM is to focus on promoting human factors/ergonomics to corporate executives, students, and the general public by providing information and services to the community.

What is Ergonomics?

Ergonomics derives from two Greek words: Έργον, meaning "work", and Νόμος, meaning "natural laws." Therefore, ergonomics is the science of work and a person's relationship to that work. Ergonomics is also a science that focuses on the ways in which products fit the user; specifically, how products can be designed to decrease user fatigue, stress, injury, and discomfort, and to improve safety and efficiency. Ergonomists contribute to the design and evaluation of tasks, jobs, products, environments and systems in to make them compatible with the needs, abilities and limitations of people.

Backpack Ergonomics

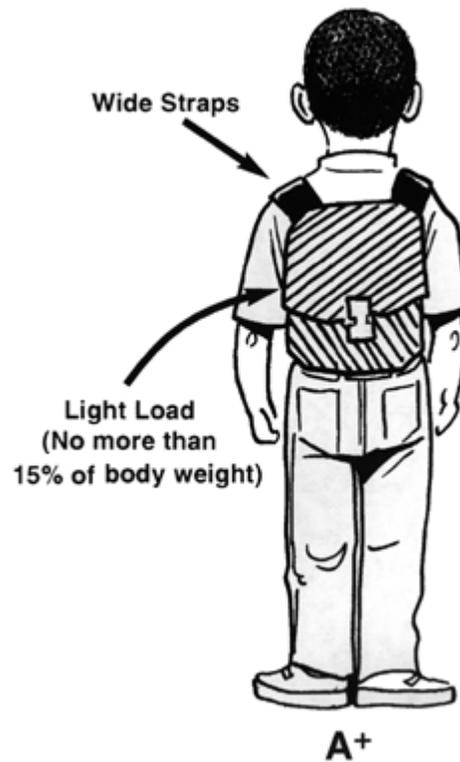
Backpacks are a practical solution for carrying daily essentials. Students of all ages rely on backpacks to transport books and other items to and from school. Backpacks are generally comfortable to use because they are specifically designed to distribute the weight of the load among strong core muscles in the back and abdomen. However, when used improperly, backpacks can have negative physical consequences.

The most common cause of backpack-related pain is carrying too much weight in the bag. Hefty backpacks may require the wearer to lean forward to compensate for the backward pull of the load. This forward arching of the back can cause the spine to compress unnaturally, leading to muscle fatigue or strain in the back and shoulders.

To prevent discomfort or pain, the American Physical Therapy Association suggests the weight of a backpack is limited to less than 15% of a person's weight. A 150-lb person should not carry more than 20 lbs, and a 70-lb. child should not carry more than 10 lbs. More tips for preventing backpack-related injuries are listed in the next column.

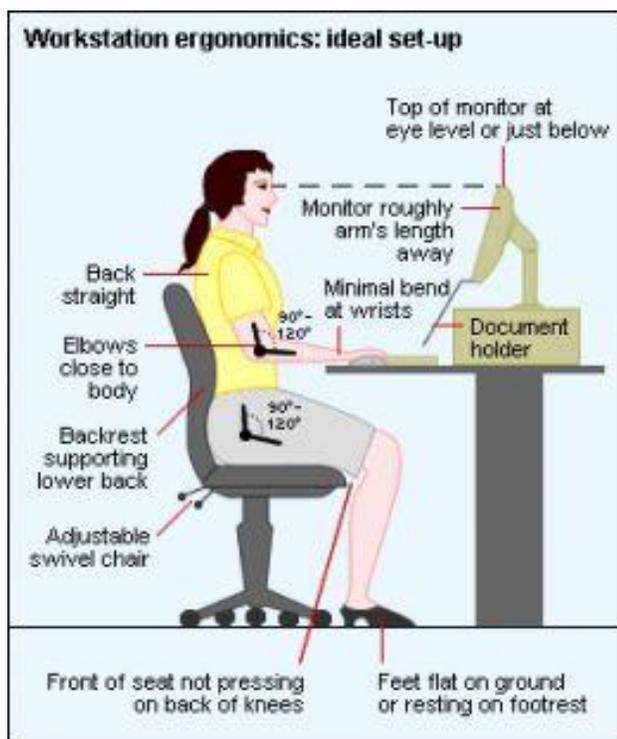
Tips for injury prevention:

- Remove unnecessary items from the backpack.
- Pack heavy items at the bottom to transfer weight to hips.
- Place pointy or bulky items so they do not rest against back.
- Choose backpacks with two straps, which are better options than messenger bags, and use both straps to equally distribute weight.
- Choose backpacks with wide, padded straps to prevent the straps from cutting off circulation in shoulders and arms.
- Tighten shoulder straps so that the backpack is close to the body and rests slightly below the shoulders.
- Use waist straps (if available) to take pressure off the neck and shoulders.



Tips for Healthy Posture While Computing

By giving consideration to healthy postures when designing computer workspaces, we can mitigate common problems like lower back pain and repetitive strain injuries. The body should work in a neutral, natural position to reduce unnecessary stress and strain. This can be achieved using the following tips:



1) Position monitor so it does not cause unnecessary neck pain, shoulder pain, or eye strain. Center the monitor in front of your body to avoid awkward twisting. Place your monitor an arm's length from your position while sitting at your desk to prevent eye strain while viewing the screen.

2) Provide enough space under the desk space for comfortable leg movement. There should be enough room so that you can frequently switch working postures. Sitting in static postures for too long may result in circulation restrictions or contact stress from pressing body parts against objects. This may mean relocating objects like desktop towers or filing cabinets to give your legs enough space to stretch and move.

3) Place the keyboard so your wrists and forearms lay straight while typing. The elbows should be at the sides of the body and bent between 90 and 120 degrees.

4) Select a chair that is adjustable, with proper back support. When computing, adjust the chair so the upper legs and forearms are parallel to the floor. The chair should provide lumbar (lower back) support. Our spines are curved, so the back of your chair should be curved, too.

References

- American Academy of Orthopedic Surgeons. <http://orthoinfo.aaos.org/topic.cfm?topic=a00043>
- BIFMA International, Ergonomics Guidelines for VDT (Video Display Terminal) Furniture Used in Office Workspaces. Document G1-2002. February 28, 2002.
- Kroemer, K.H.E., H.B. Kroemer and K.E Kroemer-Elbert. Ergonomics: How to Design for Ease and Efficiency. New Jersey: Prentice Hall, 2001.
- National Ergonomics Month. <http://hfesnem.org/>
- OSHA. <http://www.osha.gov/SLTC/etools/computerworkstations/positions.html>
- Safe Computing Tips. <http://www.safecomputingtips.com/ergonomic-desk1.html>
- Salvendy, Gavriel (ed.). Handbook of Human Factors and Ergonomics. New York: John Wiley & Sons, Inc., 1997
- Working Well. <http://www.working-well.org/articles/backpacks.html>

What is the HFES?

Human Factors and Ergonomics Society (HFES) is the national professional organization for human factors specialists. The society is concerned with the study of human characteristics and capabilities and with the application of the knowledge to the design of the products, systems, and environments that people use.

Old Dominion University's student chapter of HFES is geared towards professional development and service in the areas of Human Factors and Ergonomics. The ODU HFES Student Chapter engages in academic, charity, outreach, and social activities. You can read more about us here:

<https://sites.google.com/site/oduhfes/>

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