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ABC'S of Backpack Use

08.08.2008 | Health, Students More than 40 million students, from grade school to college, use backpacks to carry their school-related materials. Proper fit and use is important in order to maintain good health, posture and prevent injury, according to Philip Anloague, director of the University of Dayton's Doctor of Physical Therapy program.

"An overloaded backpack or improper fit may place unbalanced stress on a student's neck, shoulders and back leading to pain or posture problems," Anloague said.

Posture changes may include alterations in head position, shoulder elevation, increased curvature of the spine away from the pack, forward lean and a decreased ability to straighten the hip and knee.

A study published in the Journal of American College Health of young adults and adolescents found 30 percent experienced low back pain unrelated to injury, and more than half of those cases were suspected to be due to improperly wearing a backpack, Anloague said.

Children should be especially careful because back pain at a young age is a strong predictor of back pain as an adult, UD professor and DPT research coordinator Jayne Brahler said.

Brahler recently assessed the risk for developing low back pain in 41 Dayton children in kindergarten through third grade who all carried backpacks. All of the students measured significantly lower than the 85th percentile Presidential Fitness Challenge scores in tests of hamstring flexibility and lower back and abdominal strength, leading risk factors for low back pain.

"Educating children about these risk factors and helping them wear backpacks correctly will go a long way in avoiding back pain as an adult," Brahler said.

Anloague recommends students follow the ABC'S of backpack use:

Asymmetry ∩ Avoid asymmetry. The backpack should be worn in a way that keeps the body in alignment ∩ in other words, good posture. The head should not be forward and the student should be able to wear the pack with the shoulders over the hips without leaning or shifting to one side.

Body Weight ∩ The backpack load should be no more than 10 to 15 percent of the person's body weight. Carry only the items that are needed for that day or class. Place the heaviest items closest to the back.

Center the Weight ∩ Wear the backpack over the strongest muscles of the back. This is typically near the middle of the back. The backpack should not rest below the low back.

Straps ∩ Wear both straps. Using only one strap may cause one side of the body to bear the weight of the pack unevenly. The straps should be positioned to allow for easy ability to put the pack on and off, and should allow free arm movement. Straps should not be loose.

For more information, contact Cameron Fullam, assistant director of media relations, at 937-229-3256 or fullam@udayton.edu.