

Backpack Considerations

Is a new backpack on your shopping list for "Back to School" time?

A recent study out of Simmons College in Boston found that one-third of the children reported back pain that had caused them to visit a doctor, miss school, or abstain from physical activities. Fifty-five percent carried backpack loads heavier than maximum safe weight for children recommended by most experts. A single back injury increases the risk for repeated problems in the future. Recent research studies correlate heavy backpack loads with postural changes that require greater energy expenditures. Injury can occur when a child, in trying to adapt to a heavy load, arches the back, bends excessively forward or leans to one side. These postural adaptations can cause improper spinal alignment and impair shock absorption. A backpack loaded with more than 10-15% of a child's body weight also causes muscles and soft tissues to work harder, leading to strain and fatigue. This makes the neck, shoulders and back more vulnerable to injury.

Shelley Goodgold, PT, associate professor of physical therapy and leader of the Simmons' study, recommends the following for safe backpack use:

- **Wear both straps.** Use of one strap causes one side of the body to bear the weight of the backpack. This is true even with one-strap backpacks that cross the body. By wearing two shoulder straps, the weight of the backpack is better distributed, and a well-aligned symmetrical posture is promoted.
- **Wear the backpack over the strongest mid-back muscles.** The size of the backpack should match the size of the child. It is also important to pay close attention to the way the backpack is positioned on the back. The backpack should rest evenly in the middle of the back. Shoulder straps should be adjusted to allow the child to put on and take off the backpack without difficulty and permit free movement of the arms. Make sure that the straps are not too loose and that the backpack does not extend below the low back.
- **Lighten the load.** Choose to carry only those items that are required for the day. Each night remove articles that can be left at home. When organizing the contents of the backpack, place the heaviest items closest to the back to reduce kinetic forces that cause postural alterations and overwork muscles.
- **Watch for warning signals.** Does your child's posture change when wearing the backpack? Does your child struggle when putting on or taking off the backpack? Are there any red marks on your child's skin after he/she removes the backpack? Does your child complain of pain, numbness, or tingling when wearing the backpack?

For more information on backpacks and the Simmons College study, visit the American Physical Therapy Association website at http://www.apta.org/news/feature_releases/backpack.