

Backpack Safety

It's school time and the halls are full of children with backpacks making their way to class. Did you know that improper backpack use can cause injury, especially to children with young growing muscles and joints? We all agree that backpacks are one of the most convenient ways to carry books and school supplies but an overloaded backpack or an improperly worn backpack can cause grief for our children.

Injury can occur when a child uses harmful postures such as arching the back, leaning forward, or leaning to one side if only one strap is used. These postures can cause spinal compression and improper alignment and may even hamper the proper functioning of the disks between the vertebrae that provide shock absorption. When the nerves are compressed, your child may experience tingling or numbness in the arms. A too-heavy backpack load also causes muscles and soft tissues to work harder, leading to strain and fatigue. This leaves the neck, shoulders and back more vulnerable to injury.

So, what's too-heavy a load? Experts agree that children should not carry loads heavier than 15% of their body weight. Also, be sure to distribute the weight whenever possible by using all available compartments and keep the heaviest items closest to your child's back. If there are red marks on your child's shoulders, if their arms are tingling or numb, if they struggle to put it on, if their posture changes or if they feel pain when wearing the backpack, something is wrong.

American Physical Therapy Association (APTA) recommends following these tips 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 mal alignment and overwork muscles.

According to the APTA, the Land's End Collegiate™ and Collegiate Junior™ are desirable backpacks because of their padded and contoured shoulder straps, padded backs, multiple compartments, and appropriate size for children. If you are looking for a new backpack, choose ergonomically designed features that enhance safety and comfort:

- **A padded back** to reduce pressure on the back, shoulders and under arm regions, and enhance comfort;
- **Hip and chest belts** to transfer some of the backpack weight from the back and shoulders to the hips and torso;
- **Multiple compartments** to better distribute the weight in the backpack, keep items secure, and ease access to the contents;
- **Compression straps** on the sides or bottom of the backpack to stabilize the articles and compress the contents so that the items are as close to the back as possible and;
- **Reflective material** to enhance visibility of the child to drivers at night.