

# Weighing in on Backpack Safety

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**H**ave you ever wondered how your child's backpack may be affecting their health? Recent studies have indicated that improper usage of backpacks is having a detrimental effect on the spines of many of our young people. Wearing a backpack improperly, carrying too heavy a load, and constant lifting can do irreparable damage. However, the problem is not the backpack itself. When children learn to use backpacks correctly, they can be effective and safe.

The back is a good place for children to carry their books. The vast majority of students in elementary school, high school, and on college campuses opt for backpacks, as opposed to hand-held book bags, and it is a logical choice for a way to carry a heavy load.

Children's backs are both strong and flexible. Remember that the spine is not a single bone but rather a stack of bony doughnuts, with the spinal cord running up and down through the central spinal canal. The bones of the spine – or vertebrae – fit neatly together, like a loose-fitting three-dimensional puzzle, allowing us to bend forward, backward, or to either side. Additionally, there are soft, "spongy" discs between each of the vertebrae; these serve as shock absorbers, adding to the

spine's strength and flexibility.

The vertebrae remain neatly stacked when we walk, run, jump, swim, do gymnastics – and when we carry a backpack – because strong ligaments and supporting muscles hold everything in place. These bones, ligaments, muscles, and "shock absorbers" are usually strong enough and large enough to carry heavy books. But they can't carry everything!

Make sure your child's backpack weighs no more than five to 10 percent of his or her body weight; otherwise the backpack will cause your child to begin bending forward in an attempt to support the weight on his or her back rather than on the shoulders by the straps. In general, the body is pretty good at telling you when you are asking it to do too much. The results of carrying too much weight for too long are muscle soreness and strained ligaments, causing back discomfort anywhere from the shoulders to the lower back.

While carrying too much weight probably won't cause serious problems, improper use of a backpack can cause muscle strain; and though muscle strain hurts, it heals, particularly in children, where almost everything heals more rapidly than in adults.

When looking for a backpack for your child, selecting the correct size is the most

important step to safe backpack use. Backpacks come in lots of styles with lots of features, some functional and some cosmetic. For comfort, look for a backpack with wide, heavily padded shoulder straps that are easy to adjust. Built-in back supports, "lumbar pillows," and waist and side straps may be useful in keeping the backpack correctly close up against the back and keeping the weight evenly distributed. Backpacks with separate compartments also allow the load to distribute evenly.

Backpacks should be worn over both shoulders; otherwise, a single shoulder is being asked to carry the weight that should be shared by both shoulders and the back. The shoulder straps should be adjusted so that the pack is close against the back. For heavier loads, a "hip strap" can distribute some of the weight from the shoulders to the hips. Keep the heaviest items closest to your back (put them in the pack first), and evenly distribute the load on the right and left.

Backpacks should contain no loose or dangling cords, strings, key chains, or pieces of clothing. Catching a cord in a closing door could make you trip and fall. Catching a cord in a school bus door could be tragic.

Keep in mind that backpacks are for walkers and hikers. When children are on wheels – bikes, skates, or boards – filled backpacks can be hazardous. Packs make kids top-heavy, less stable, less able to maneuver, and more likely to fall. In automobiles, heavy backpacks can become flying missiles in a crash; keeping on the floor or throwing them in the trunk makes sense. Kids should relinquish their backpacks before using swings, slides, or other playground equipment.

If your child experiences any pain or discomfort resulting from backpack use, a doctor should be called. Chiropractic doctors are licensed and trained to diagnose and treat patients of all ages and can prescribe exercises designed to help children develop strong muscles, along with instructions in good nutrition, posture, and sleeping habits.



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