

Don't Let Your Backpack Become a Pain in the Back

Backpacks come in all sizes, colors, and fabrics and offer kids a fun way to express their own sense of style while helping to organize books and papers. But even though backpacks are practical, they can strain muscles and joints and cause back pain if they're too heavy or used incorrectly.

To help understand how heavy backpacks can injure kids, it helps to understand how the back functions. The spine consists of 33 bones called vertebrae, and between the vertebrae are discs that act as natural shock absorbers. The spine is balanced in natural curves, which reduces the muscular effort and forces required to maintain an erect posture.

When a heavy weight like a backpack filled with books is incorrectly placed on the shoulders, the weight's force can pull kids backwards. To compensate, kids often bend forward at the hips or arch the back, which can cause the spine to compress unnaturally.

And if your kids sling their backpacks over just one shoulder- they may lean to one side to offset the extra weight.

All this bending, leaning and arching can lead to upper and lower back pain, shoulder and neck strain, and bad posture.

Even backpack straps can pose problems. Tight, narrow straps can dig into shoulders and cut off circulation, causing tingling, numbness and weakness in arms and hands.

Bulky, heavy backpacks can also turn kids into walking hazards. Unwieldy backpacks can throw kids off balance, increasing the risk of falls, and kids wearing large packs can hit others with their packs when they move through tight spaces.

Backpack Features to Look For:

1. **Remember the 3 C's – canvas, cushioning, compartments.** Invest in a pack that is made of sturdy, lightweight material like canvas so that the weight of the pack won't add to your child's load. Feel the pack for comfortable cushioning. Make sure it has two wide, padded, adjustable shoulder straps so that they won't dig into your child's shoulders; a padded back, which provides extra comfort and keeps sharp edges on objects from poking your child; and a waist belt to distribute the weight of the load more evenly. And choose a model with multiple compartments, which also helps distribute weight across your child's body.
2. **Choose the Right Size.** Bigger is not necessarily better. A backpack should not be larger than the child carrying it, so choose the right size pack for your child's size. The bottom of the pack should rest in the curve of the lower back and shouldn't sit more than 4 inches below your child's waistline.

3. **Wear the Backpack Properly.** The backpack is designed to be worn on the back with both arms through the shoulder straps. Not slung over one shoulder, dangling from an arm or hanging from the neck. Make sure your children wear their backpacks correctly to prevent strains and pains. Adjust the straps to fit the backpack snugly to the child's body, holding the bottom of the backpack 2 inches above the waist and keeping the top just below the big knob on your neck (vertebral prominence). Use waist belts or hip straps to distribute some of the load to the pelvis. The waist belt sends the weight of your pack down through the legs which are equipped to carry increased weight. Show your child the proper way to pick up a backpack – bend at the knees and grab the pack with both hands. If your child is leaning forward or to one side with the backpack on, it is likely too heavy.
4. **Keep the Backpack Light.** Recommendation of the Canadian Physiotherapy Association is that the back pack should weigh no more than 15% of a child's weight. The American Chiropractic Association recommends an upper limit of 10%. If your child weighs 120 pounds, the backpack should weigh no more than 12 to 18 pounds.

Keep the pack light by investing in lightweight pocket folders and single-subject notebooks instead of heavier 3-ring binders and thick notebooks. Have your kids pack only what is necessary for the day's activities and encourage them to make frequent trips to the locker to drop off books. Teach your child to clean out the backpack at least once a week.

Help your child with homework planning to keep backpacks and brains from getting overloaded. Try to spread out assignments over the course of the week so that your child won't have to bring home every book every night. Or get duplicate texts so that your child can keep a set at school and one at home. Another strategy is to use loose leaf carried home in a lightweight pocket folder rather than a 3 ring binder and just bring home the pages required for each subject rather than the whole book.

5. **Pack It Tight.** Show your child the proper way to load a backpack. Pack by weight, not size. Placing the heavier items like textbooks closest to the center of the back. Arrange objects so that they won't slide around and use those built in compartments. Use the compression straps of the backpack to compress the contents of the backpack and stabilize the articles inside. If kids have super-heavy loads, give them a small tote to hand carry extra items. Or try a pack with built in wheels that can be rolled on the floor.
6. **Talk to the teacher about Book Load.** Books weigh a lot. If you can minimize the books that need to be taken back and forth to school, it will help lighten the backpack weight. If you can't meet the 10 – 15% limit, talk to the teacher. As if the heavier books can be left at school, or if a set of books can be left at home. Ask about photocopies of assignments or homework chapters rather than heavy

books. Paperback books, books on CD-ROM, posting class curriculum on a website that students can access from home or a library computer are all ways to minimize the weight of material frequently carried in the backpack. Ask the teacher about reading time provided at school and whether your child is taking full advantage of it.

If you or your child is experiencing pain, consult a physiotherapist. Physiotherapists are primary health care professionals who help people of all ages and lifestyles gain and maintain their physical mobility. Physiotherapists can work with you to: address lifestyle and ergonomic factors, increase your mobility, relieve pain, build strength, improve balance and increase cardiovascular function. Physiotherapists can also help prevent the onset of pain or injury