Backpack Safety

Backpacks are a popular and practical way for children and teenagers to carry schoolbooks and supplies. When used correctly, backpacks can be a good way to carry the necessities of the school day. They are designed to distribute the weight of the load among some of the body's strongest muscles.

However backpacks that are too heavy or are worn incorrectly can cause problems for children and teenagers. Improperly used backpacks may injure muscles and joints. This can lead to severe back, neck and shoulder pain, as well as posture problems. Although they are linked to posture problems, heavy backpacks do not cause scoliosis. Scoliosis is a sideways curve of the spine that often shows up in children during adolescence.

Backpacks come in all sizes, colors, fabrics, and shapes and help kids of all ages express their own personal sense of style. And when used properly, they're incredibly handy. Many packs feature multiple compartments that help students stay organized while they tote their books and papers from home to school and back again. Compared with shoulder bags, messenger bags, or purses, backpacks are better because the strongest muscles in the body — the back and the abdominal muscles — support the weight of the packs.

When worn correctly, the weight in a backpack is evenly distributed across the body, and shoulder and neck injuries are less common than if someone carried a briefcase or purse.

Choose the Right Backpack

The American Academy of Pediatrics (AAP) recommends that parents look for the following when choosing the right backpack:

- ✓ **A lightweight pack** that doesn't add a lot of weight to your child's load (for example, even though leather packs look cool, they weigh more than traditional canvas backpacks)
- ✓ **Wide, padded shoulder straps** — Narrow straps can dig into shoulders. This can cause pain and restrict circulation.
- ✓ **Two shoulder straps** — Backpacks with one shoulder strap that runs across the body cannot distribute weight evenly.
- ✓ **Padded back** — A padded back provides increased comfort, but also protects kids from being poked by sharp edges on objects (pencils, rulers, notebooks, etc.) inside the pack
- ✓ **Waist strap** — a waist strap can distribute the weight of a heavy load more evenly.
- ✓ **Lightweight backpack** — the backpack itself should not add much weight to the load.
- ✓ **Multiple compartments**, which can help distribute the weight more evenly
- ✓ **Rolling backpack** — this type of backpack may be a good choice for students who must tote a heavy load. Remember that rolling backpacks still must be carried up stairs.

To prevent injury when using a backpack, students should do the following:

- ✓ **Always use both shoulder straps.** Slinging a backpack over one shoulder can strain muscles. Wearing a backpack on one shoulder may increase curvature of the spine.
- ✓ **Tighten the straps** so that the pack is close to the body. The straps should hold the pack two inches above the waist.
- ✓ **Pack light.** The backpack should never weigh more than 10 to 20 percent of the student's total body weight.

- ✓ **Organize the backpack to use all of its compartments.** Pack heavier items closest to the center of the back.
- ✓ **Remove items** if possible. Do not carry anything that is not needed for the day.
- ✓ **Lift properly, bend using both knees**, when you bend down. Do not bend over at the waist when wearing or lifting a heavy backpack.
- ✓ **Learn back-strengthening exercises** to build up the muscles used to carry a backpack.
- ✓ **Tell parents about back pain/**discomfort, numbness or weakness in the arms or legs.

Problems Backpacks Can Pose

Although many factors can lead to back pain — increased participation in sports or exercise, poor posture while sitting, and long periods of inactivity — some kids have backaches because they're lugging around all of their books, school supplies, and assorted personal items all day long. But most doctors and physical therapists recommend that kids carry no more than 10% to 15% of their body weight in their packs.

To know how heavy backpacks can affect a kid's body, it helps to understand how the back works. The spine is made of 33 bones called vertebrae, and between the vertebrae are discs that act as natural shock absorbers.

When a heavy weight, such as a backpack filled with books, is incorrectly placed on the shoulders, the weight's force can pull a child backward. To compensate, a child may bend forward at the hips or arch the back, which can cause the spine to compress unnaturally. The heavy weight might cause some kids to develop shoulder, neck, and back pain.

Kids who wear their backpacks over just one shoulder — as many do, because they think it looks better or just feels easier — may end up leaning to one side to offset the extra weight. They might develop lower and upper back pain and strain their shoulders and neck.

Improper backpack use can also lead to poor posture. Girls and younger kids may be especially at risk for backpack-related injuries because they're smaller and may carry loads that are heavier in proportion to their body weight.

And bulky or heavy backpacks don't just cause back injuries. Other safety issues to consider:

- ✓ Kids who carry large packs often aren't aware of how much space the packs take up and can hit others with their packs when turning around or moving through tight spaces, such as the aisles of the school bus.
- ✓ Students are often injured when they trip over large packs or the packs fall on them.
- ✓ Carrying a heavy pack changes the way kids walk and increases the risk of falling, particularly on stairs or other places where the backpack puts the student off balance.

Adapted from:

http://www.healthychildren.org/English/safety-prevention/at-play/Pages/Backpack-Safety.aspx

http://orthoinfo.aaos.org/topic.cfm?topic=A00043

http://kidshealth.org/parent/positive/learning/backpack.html