We found one 10-year old female student with a backpack weighing 47 pounds!
-- Dr. Charlotte B. Alexander

Children with back pain are reaching almost epidemic proportions. The culprit, experts say, is overloading our children's backpacks. Often slung over one shoulder and filled with everything from their lunch to athletic equipment and every book they own, backpacks are weighing in at alarming rates, and this has physicians concerned. Recent studies reveal that up to 75% of school aged children may be experiencing not only back pain, but also neck and shoulder pain too. In fact, studies show that more than 13,260 injuries related to backpacks were treated at hospital emergency rooms, doctor's offices and clinics in the year 2000, according to estimates and projections of the U.S. Consumer Product Safety Commission.

The results of these types of studies are especially important as more and more school districts - many of them in urban areas - remove lockers from the premises, forcing students to carry their books with them all day long.

"Carrying overloaded backpacks causes muscle fatigue and strain", says Dr. Charlotte B. Alexander. "If you have a 90-pound female carrying a 20-pound backpack, then the backpack weight becomes a medical issue. Most of the students surveyed are carrying backpacks weighing much more than the recommended limit of 10 percent of their body weight. In fact, we found one 10-year old girl with a backpack weighing 47 pounds."

Young children are suffering from back pain much earlier than previous generations, and the use of overweight backpacks is a contributing factor, according to the American Chiropractic Association (ACA).

"In my own practice, I have noticed a marked increase in the number of young children who are complaining about back, neck and shoulder pain," said Dr. Scott Bautch, past president of the ACA's Council on Occupational Health. "The first question I ask these patients is, 'Do you carry a backpack to school?' Almost always, the answer is yes."

The percentage of children carrying heavy backpacks is on the rise. A disturbing fact reported in a landmark backpack study reported in the medical journal Lancet found that almost 35% of schoolchildren carry more than 30% of their bodyweight at least once a week, exceeding limits proposed for adults!

This would explain why 67.2% of the subjects suffered muscle soreness, 50.8% suffered back pain, 24.5% suffered numbness, and 14.7% suffered shoulder pain. The researchers went on to conclude that the daily physical stresses associated with carrying a backpack on one shoulder significantly alters the posture and gait (how a child walks) of the youth.
What are the negative effects of when a child carries a heavy backpack?

- Wearing the backpack on one shoulder can worsen the curvature of the spine possibly contributing to scoliosis.

- A heavier backpack will cause your child to bend forward in an attempt to support the weight on his or her back, rather than on the shoulders, by the straps. This causes an increase in the natural curve of the mid back (called kyphosis) and in the stress placed on the neck, back and shoulders. Another negative effect of increasing this mid-back curve is a decrease in the student’s breathing mechanics and lung capacity.

- Students who carried packs weighing 25% of their body weight exhibited balance problems while performing normal activities such as climbing stairs or opening doors, increasing their risk of falls.

Safeguarding your children with backpack loading guidelines:

Many studies recommend that the weight of a child’s backpack be no more than 10% of their body weight. In the January 2003 issue of Archives of Disease in Childhood, study author Bryan Lane, MD, of the Northside Family Practice Clinic in Temple, Texas, and colleagues reported, “It is easy to underestimate the large demands required of children in our modern education system. Carrying a day's worth of books, supplies, gym clothes, and the myriad of items treasured by children for many hours is a difficult task.”

The study went on to say, “Despite recent warnings from health organizations and the media, few parents have any idea how much heavy lifting their child is doing by toting their backpack around on a daily basis. In fact only about 4% of the parents of elementary school children who were carrying the heaviest loads had ever checked the weight of their child's backpack. Most (96%) of the parents of these heavy haulers had never checked the weight of their child's backpack, and a third had never checked the contents at all. Researchers also found that children whose parents never checked their backpacks tended to carry the heaviest loads and more textbooks than other children.”

10 Backpack Safety Tips

The American Chiropractic Association offers the following tips to help prevent the needless pain that backpack misuse could cause the students in your household.

1) Make sure your child's backpack weighs no more than 5 to 10 percent of the body weight. A heavier backpack will cause your child to bend forward in an attempt to support the weight on his or her back, rather than on the shoulders, by the straps.

2) The backpack should never hang more than four inches below the waistline. A backpack that hangs too low increases the weight on the shoulders, causing your child to lean forward when walking.

3) A backpack with individualized compartments helps in positioning the contents most effectively. Make sure that pointy or bulky objects are packed away from the area that will rest on your child's back.

4) Bigger is not necessarily better. The more room there is in a backpack, the more your child will carry, and the heavier the backpack will be.
5) Urge your child to wear both shoulder straps. Lugging the backpack around by one strap can cause the disproportionate shift of weight to one side, leading to neck and muscle spasms, as well as low-back pain.

6) Wide, padded straps are very important. Non-padded straps are uncomfortable, and can dig into your child’s shoulders.

7) The shoulder straps should be adjustable so the backpack can be fitted to your child’s body. Straps that are too loose can cause the backpack to dangle uncomfortably and cause spinal misalignment and pain.

8) If the backpack is still too heavy, talk to your child’s teacher. Ask if your child could leave the heaviest books at school, and bring home only lighter handout materials or workbooks.

9) Although the use of rollerpacks - or backpacks on wheels - has become popular in recent years, the ACA is now recommending that they be used cautiously and on a limited basis by only those students who are not physically able to carry a backpack. Some school districts have begun banning the use of rollerpacks because they clutter hallways, resulting in dangerous trips and falls.

10) Consider the ACA-endorsed Samsonite Chiropak, a school bag designed to ease much of the stress that carrying books can place on one's body. Among other features, the Chiropak offers comfortable body contact surfaces and an adjustable hip/waist belt. For more information on the Chiropak, visit www.chiropak.com or www.samsonite.com.

Chiropractic Care Can Help...

It is important to remember that children and adolescent youths need backpack limitations that are appropriate for their age, weight, stage of spinal development, growth pattern and fitness level. It is our responsibility as parents and health care practitioners to educate our children on the importance of proper backpack safety. If you or your child experience any pain or discomfort resulting from backpack use, call your doctor of chiropractic. Doctors of chiropractic are licensed and trained to diagnose and treat patients of all ages and will use a gentle type of treatment for children. In addition, doctors of chiropractic can also prescribe exercises designed to help children develop strong muscles, along with instruction in good nutrition, posture and sleeping habits.

References:
Center.