

## **Backpack Safety**

How to choose and wear the right backpack



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# It's back to school time!

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As you are stocking up on back to school items, take a moment to learn how to pick the best backpack for your child.



Our children often carry too much daily

A heavy, ill-fitting backpack can contribute to muscle fatigue, headaches and back pain. Every year thousands of visits are made to physicians and hospitals for strains, sprains and dislocations from backpacks.

We should also be concerned about long term consequences of improper backpacks. We are seeing children with poor posture at very young ages and heavy backpacks can contribute to worsening their posture. A recent MRI study showed that typical school backpack loads significantly compress lumbar discs and cause an asymmetry in the spine<sup>1</sup>. These findings certainly raise a red flag regarding long term damage from heavy, ill-fitting backpacks.

**There are so many styles and options it can be difficult to choose the correct backpack for your child. Here are a few tips to help guide you to the right decision.**

## Find an age and size appropriate backpack

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- Find a pack that fits the needs of each particular school year. What worked last year might not work this year.
- Often backpacks are made for age ranges, so take a moment to read the labeling.
- The top of the backpack should be no more than 3 inches below the shoulders and the bottom of the backpack should be at or slightly above the waist.
- A backpack should never be wider than your child's back, or hang more than a 4 inches below the waist.



Struggling to lift a backpack is a sign it's too heavy

## Features to look for when choosing a backpack

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A child leaning forward is a sign that a backpack is too heavy

- Wide, padded shoulder straps and padded backing
- Extra padding for lumbar support
- A waist belt and/or chest strap to help reduce pulling on shoulders
- Multiple compartments
- Side compartments to help keep heavy items close to the body
- Made from lightweight materials
- Reflective striping for safety
- Avoid oversized backpacks to prevent overloading

## How to load a backpack

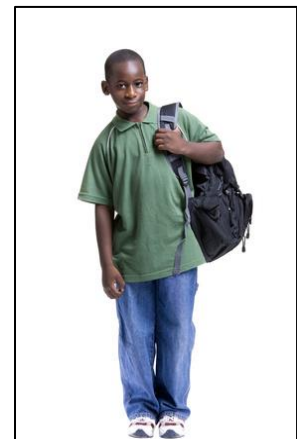
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- When filled, a backpack should weigh no more than 10-15% of your child's body weight
- Load heavier items closest to the back or in the side pockets
- Lighter items can be loaded further away from the body
- Only add what is necessary. This might mean you will need to change the contents daily depending on the classes to minimize overloading.

## How to wear a backpack

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- Wear both shoulder straps. Only wearing one shoulder strap can cause an awkward twist in the back and neck, as well as abnormal shoulder heights leading to muscle fatigue.
- Tighten the shoulder straps until the backpack is snug, but not so tight that it causes redness or cuts into the shoulders.
- Use the stabilizing waist and chest strap to help distribute weight.
- Take the backpack off when standing for a long time to give the back and shoulders a rest.



Only wearing one strap causes uneven posture

## Pay attention to warning signs

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- Struggling to carry or put on the backpack
- Upper or lower back pain
- Red marks on the shoulders indicating a backpack that is too heavy
- Numbness in hands or shoulders
- Headaches caused by neck tension
- Your child is leaning forward at the neck or waist. They should be able to stand up straight comfortably.

## A note about rolling backpacks

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Rolling backpacks are a great alternative to backpacks, however the rules of maximum weight still apply if your child has to lift and carry the rolling pack into cars and buses. Also make sure it is the correct height so they aren't leaning backwards or sideways to hold onto the handle to roll.

## Check the backpacks throughout the year.

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Often we start out the school year with the correct backpack weight, but as time goes by it's easy to keep adding books and items. Mark your calendars for the beginning of each month to check the weight of the backpack.

## Key points

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- A backpack should never weigh more than 10-15% of your child's body weight
- Wear both shoulder straps
- If your child complains of pain seek help from your physician or chiropractor
- Look for red marks on the shoulders indicating the shoulder straps are too tight or the backpack is too heavy



Example of a proper sized backpack

# About the Author

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Dr. Bradshaw is a 1998 Graduate of Palmer College of Chiropractic West. She is a Certified Posture Exercise Professional and has been featured in local print and television news educating the community of various health topics. Her office, Lone Star Chiropractic, was voted the Best Chiropractor in the 2016 “Best of Houston” edition by the readers of the Houston Press.

1 Timothy B. Neuschwander, MD; John Cutrone, MD; Brandon R. Macias, BA; Samantha Cutrone; Gita Murthy, PhD; Henry Chambers, MD; Alan R. Hargens, MD (2010). The Effect of Backpacks on the Lumbar Spine in Children: A Standing Magnetic Resonance Imaging Study. *Spine*. 2010, 35(1), 83-88.