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## FACTS ABOUT CARRYING BACKPACKS AND BACKPACK INJURY

### The Facts

40 million teenagers carry a backpack to school each day. While carrying a backpack to school every morning may seem harmless enough, it can cause painful back and neck problems and injuries for students who don't pack or carry their backpacks properly. It can also lead to long-term medical problems. In fact, more and more doctors are seeing children for back pain and injuries.

It is advised that individuals carry no more than 15% of their body weight on their backs.

Medical professionals advise that individuals carry no more than 10-15% of their body weight on their backs.

Example: A child weighing:

- 50 lbs. should carry no more than 7.5 lbs.
- 80 lbs. should carry no more than 12 lbs.
- 100 lbs. should carry no more than 15 lbs.
- 130 lbs. should carry no more than 19.5 lbs.
- 150 lbs. should carry no more than 22.5 lbs.

Many children are carrying up to 40 lbs. and are hurting themselves.

Today's heavy loads are causing injuries that last a lifetime.

### Recent Studies

- A study by Northeastern University (June, 01) reported that the average student has a VAS (visual analog scale) pain level of 4.3 with a high percent reporting pain in the range of 8-9. The students who wore an AirPacks backpack for six weeks had a VAS pain level of 1.8, a 50% reduction in pain.
- A study by Simmons College (February, 2001) found that 55% of students carry more than the recommended guidelines of 10 – 15%
- In November '99 the American Physical Therapy Association issued a statement concerning backpack injury.
- When 200 New England school nurses were surveyed, 66% reported seeing students with pain or injury that could be attributed to carrying backpacks that were too heavy.
- *"It typically puts them off balance and gives them a posture that promotes low back pain,"* said Dr. Wayne Yankus of the American Academy of Pediatrics' Committee on

School Health. "A lot of kids don't suffer it immediately, but over the long run they might."

- In October, '99 the American Academy of Orthopedics stated that "of the more than 100 physicians surveyed":
  - 71% felt that backpacks are a clinical problem for children
  - 58% have seen patients complaining of back or shoulder pain related to backpacks
  - 65% have recommended that a patient modify the use of a backpack to improve or correct a back problem
  - 52% feel that backpack injury is a significant problem
  - Survey was conducted amongst physicians from Children's Memorial Hospital, Chicago, IL and Alfred I. DuPont Hospital for Children, Wilmington, DE
- In November '98 the Consumer Product Safety Commission issued a warning concerning injuries related to backpacks. The commission estimated that "3,300 children aged 5 to 14 were treated in emergency rooms last year for injuries related to bookbags".
- An Auburn University study reported that heavy backpacks might be a threat to spinal development. In their survey sample, the average pack was 17% of the child's weight. 67.2% of the children studied suffered muscle soreness, 50.8% back pain, 24.5% numbness and 14.7% shoulder pain.
- Studies at Johns Hopkins Children Center show overloaded backpacks as the cause of shoulder or lower-back pain and poor posture.
- University of Michigan researchers estimate that up to 60% of children will experience back pain by the time they reach 18.
- *National Public Radio* reported that 65% of adolescents' visits to the doctor are for backpack related injuries (October, '98).
- Over the past four years, local television and print have extensively covered this topic. This has included coverage by the *New York Times*, *NBC Today Show*, *Good Morning America*, *CBS Morning Show*, *National Public Radio*, *Time Magazine*, *Parents Magazine*, *Consumers Report* and *Good Housekeeping*.
- The current student backpacks do not provide the ergonomic support necessary to prevent back injury for students carrying the average 30 lbs. of books.
- Older students (12-18 years) magnify this back injury problem by carrying their backpacks with one strap (on one shoulder) instead of two, directing the weight to one side of the body. There is evidence that this encourages scoliosis and other permanent physical problems.
- Currently the industry is fashion focused and has ignored the many consumer and professional concerns regarding the ergonomics of packs. The backpack manufacturers are sidestepping the issue and blaming this problem on schools and the increased academics that require students to lug around more than 10% (as much as 40%) of their body weight. The market leaders, Jansport and LL Bean are concerned with the liability associated with addressing this problem.

## Tips On Wearing Your Backpack Safely and Properly

- **Distribute the weight evenly.** Put the heavier items on the bottom to keep the weight off of your shoulders and maintain better posture.
- **Wear both shoulder straps unless your pack is designed for use on one shoulder.** Carrying a heavy backpack using one strap can shift the weight to one side, which can lead to neck and muscles spasms, low back pain and walking improperly
- **Choose backpacks that have heavily padded shoulder straps and a lumbar support.** Non-padded straps dig into the shoulders causing pain due to compressional loading of the acromio-clavicular joints and stress on the trapezius muscles.
- **Choose a backpack that has a lumbar cushion.** The lumbar cushion will redistribute weight to the lower extremities, creating a fulcrum that facilitates an upright standing position.
- **Lift it right.** Bend your knees when picking up a heavy backpack.
- **Carry only what is needed.** Every extra item adds weight!

## How Can you Help As A Healthcare Provider

- Hang AirPacks *Stop Hurting Your Back* posters in your office.
- Ask students in grades 5 and above to bring their backpacks, fully loaded, when they visit. Observe the student with a without the backpack on.
- Alert your patients to the risks of carrying a backpack that is too heavy.
- Volunteer to conduct Backpack Safety Awareness programs at the schools in your area. (If you need help in setting up these clinics, call AirPacks at 800-310-7383.)
- Set out product literature pads at your receptionist counter.
- Recommend AirPacks backpacks, brief cases and computer bags.