



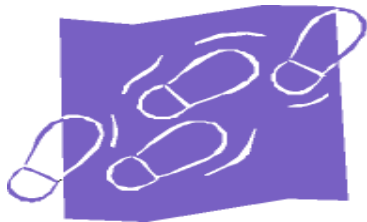
## STUDENTS AND SCHOOLS

### Students should properly load and wear their backpack:

- Always use both shoulder straps and wear the pack on the back rather than over one shoulder
- Pack the heaviest objects first so they are carried lower and closest to the body
- Fill compartments so that the load is evenly distributed throughout the pack and items do not shift during movement
- Pack sharp or bulky objects so they do not contact the back
- Use pockets for oddly shaped items
- Adjust the straps to fit the pack snugly to the child's body, holding the bottom of the pack two inches above the waist and keeping the top just below the base of the skull; do not carry the pack low near the buttocks.
- Lift the pack by using leg muscles and keeping it close to the body, not by bending over with arms extended
- Do not lean forward when walking; if this is necessary; there is too much weight in the pack

### The district, school and teachers can help to coach children to:

- Carry only the books they need
- Leave unnecessary items at home
- Make frequent trips to his/her locker during the day
- Clean out lockers at least once a week
- Utilize the Howell Schools websites and Homework Hotlines to include instructional materials and information that children need to complete assignments
- Incorporate instruction in the safe use of backpacks into the Howell Township Health curriculum



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## HOWELL TOWNSHIP PUBLIC SCHOOLS



## BACKPACK SAFETY



## THE STATE OF BACKPACKS

As a result of increasingly heavy backpacks, school districts throughout the country are faced with the same problem. How to lighten the load? The following outlines the results of the research into the reasons for the increased weight. In addition, there are some suggestions for students, parents, teachers in the Howell Township School District to effect change.

# HEALTH CONCERNS

There have been an increasing number of studies done indicating that heavier weights of backpacks are creating health problems among teens, primarily back and neck pains and strains. Whether these complaints will, in turn, cause other health problems as these teens become adults are not yet known; however, studies are being instituted that are addressing this very question.

“While there is no clinical research to suggest that large, overstuffed backpacks cause deformities such as scoliosis or long-term problems with kids’ backs, most studies show that 25 to 33 percent of adolescents have standard adult low back pain,” said Dr. David Skaggs, a pediatric orthopedist at Children’s Hospital in Los Angeles. “There is anecdotal evidence in our medical practice that suggests a strong connection between backpacks and back pain.”

Dr. Charlotte B. Alexander, presenting at the American Academy of Orthopedic Surgeons in New York City last fall, stated, “survey findings do not suggest a link between backpack use and conditions such as scoliosis and spondylolysis.” However, a backpack could cause a clinical problem when the contents weigh more than 20 percent of the child’s total body weight.

A 1996 Consumer Products Safety Commission study reported a 30 percent increase in non-traumatic back pain in children under the age of 18. In virtually all of the literature the same methods of prevention of back and neck strain and recommended weight limits are repeated over and over. In general, it was recommended that a backpack weigh no more than 5-20 percent of a student’s body weight, with the majority agreeing on 15-20 percent as a reasonable weight limitation.

First, textbook publishers are producing larger, hardcover texts for young students many in excess of 500 pages. According to Steven Driesler, school division executive director of the National Association of Textbook Manufacturers, in the past, many texts were smaller, but, looking to keep costs low, publishers now incorporate a variety of state standard syllabus requirements into one single edition, resulting in heavier texts. Durability of the texts has also become an increasingly important factor, with many states requiring heavier clay-based paper and thicker, coated covers.

Backpacks allow a person to carry more than would be possible by the arms and hands alone. The risks of backpack use center around both overload and improper use of backpacks. The back will compensate for any load applied to it for an extended period of time. The heavy weight on the back can:

- Cause a person to lean forward, reducing balance and making it easier to fall
- Distort the natural curves in the middle and lower backs, causing muscle strain and irritation to the spine joints and the rib cage
- Cause rounding of the shoulders
- Habitually carrying a load over one shoulder will alter the gait and posture to accommodate for the asymmetric load
- Make muscles strain to compensate for the uneven weight
- The spine leans to the opposite side stressing the middle back, ribs and lower back more on one side than the other
- The muscle imbalance can cause muscle strain, muscle spasm and back pain
- The weight can also pull on the neck muscles, contributing to headaches, neck pain and arm pain

There is no one perfect solution to the problem of reducing the weight of student backpacks. However, listed here are some recommendations that can be implemented immediately and at little or no cost to parents and the school district.

# RECOMMENDATIONS & SOLUTIONS

## Weight of Backpacks:

- If a child complains of discomfort, reduce the weight immediately. Apply a guideline weight limit as a percent of the child’s body weight
  - The American Physical Therapy Association recommends 15-20%
  - The American Chiropractic Association advises 5-10%
  - The American Academy of Pediatrics recommends that children carry no more than 10-20% of their body weight

## Parents should be aware of different backpack design features

- Lightweight material (canvas vs. leather)
- Two padded wide (2 inches) adjustable shoulder straps
- Padded back
- Individualized compartments
- Hip strap, waist belt or frame to redistribute weight from the shoulders and the back to the pelvis