

STUDENT TEST OF BACKPACK™

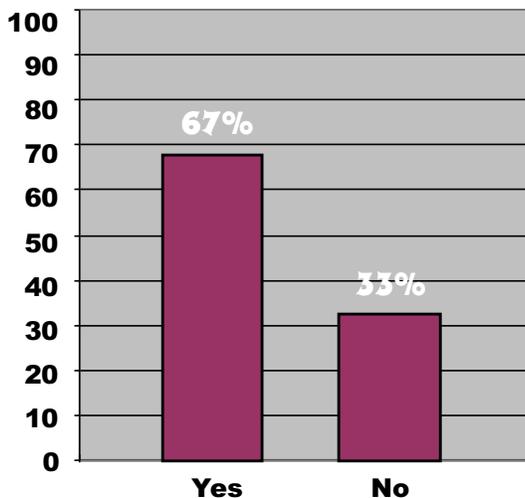
Spring 2004

The use of backpacks for school books creates problems of back health for kids. More than 40 million students in the United States carry school backpacks,¹ and more than 7,000 emergency room visits in 2001 were related to backpacks and book bags. Approximately half of those injuries occurred in children 5 to 14 years old.² An even greater concern is the postural distortion associated with backpack use³ and the correlation between back pain in childhood and adult back problems.⁴

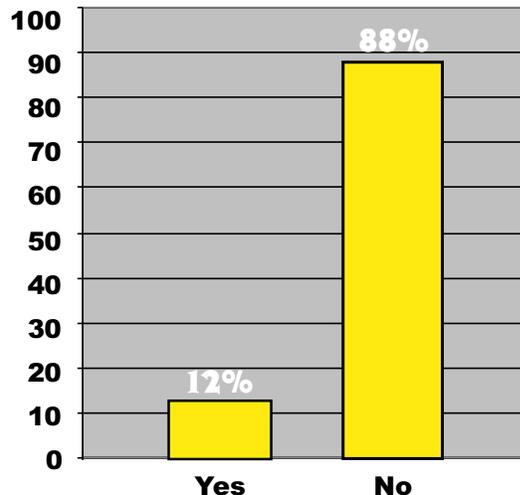
Back pain related to backpacks for school use has now come to the attention of legislators. In an attempt to limit backpack weight, California has recently passed legislation limiting the weight of schoolbooks. Limits range from 3 pounds per book for Kindergarten through 4th grade to 5 pounds per book for high schoolers. Thirty states are considering mandatory limits of some kind. Although it will be good to reduce the weight of the backpack load, this legislation may be ineffective in solving the health problem. The real issue, back health, is determined more by posture and how load is applied to the body, than by the load itself. Educators may also have difficulties assigning homework according to the weight of the books rather than the educational goals for the student.

A study involving a sampling of 40 students between the ages of 11 and 14 was conducted at Nestucca Valley Middle School, using the **BACKPACK™**. This school does not have lockers. Students volunteered to use the **BACKPACK™** for a two week period, carrying the same weight they had been carrying in their conventional backpacks. At the end of the two weeks, students completed a questionnaire, evaluating their experience with the alternative bag. On this sheet, you will find the results from the questionnaire given to these students.

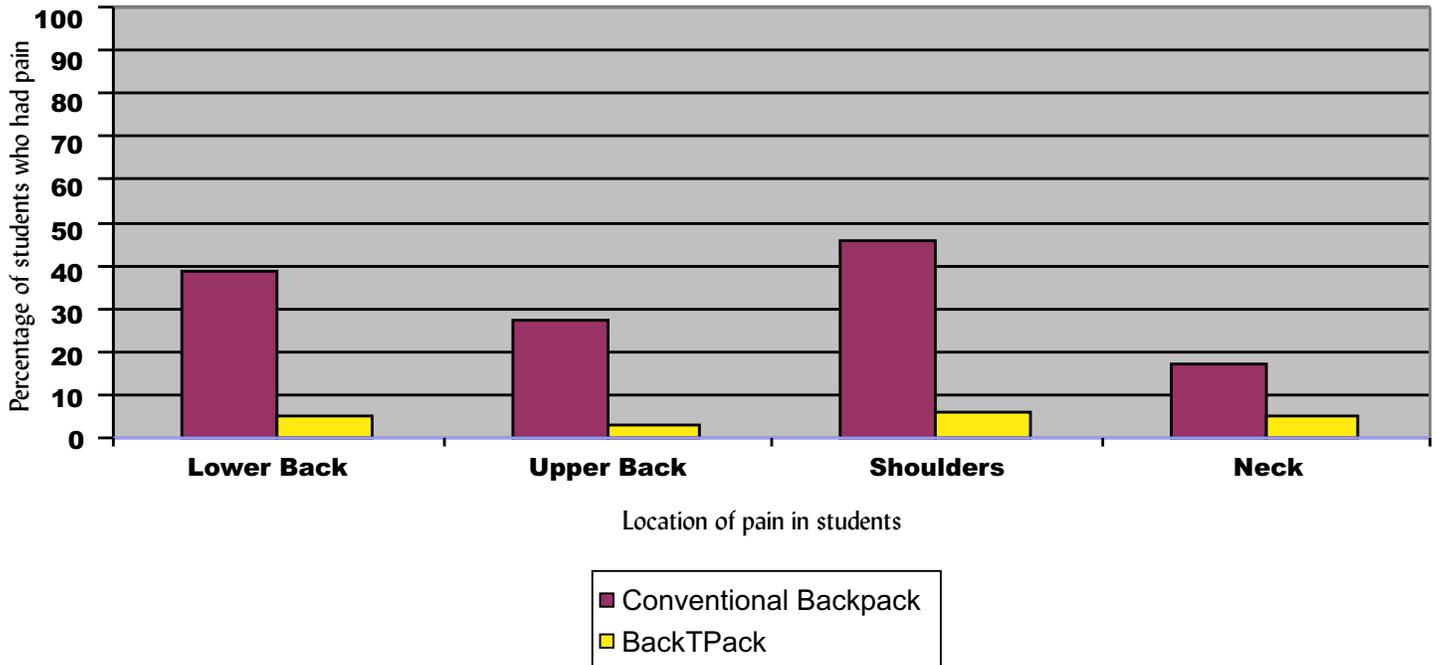
Do you have pain wearing a conventional backpack?



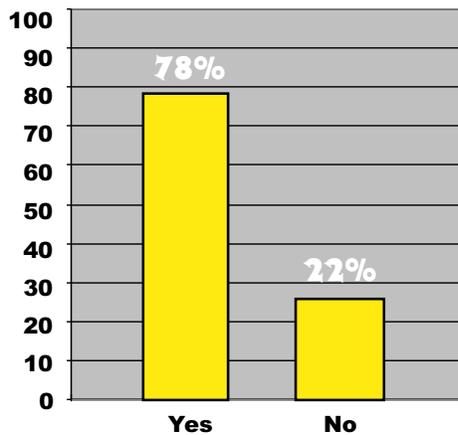
Do you have pain wearing the **BACKPACK™**?



If you have pain while wearing either pack, where is the pain located?

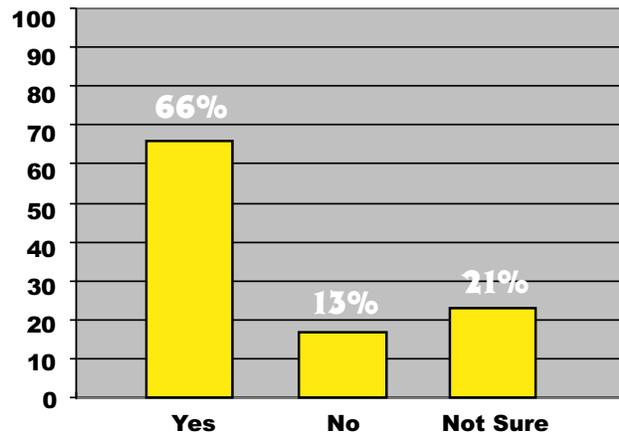


Do you feel that you stand or walk differently while wearing the **BACKTPACK™**? If so, how?



(All students who responded, "Yes," said, "I stand straighter.")

Do you plan on wearing the **BACKTPACK™** next year?



For more information on the **BACKTPACK™**, please contact Marilyn Miller von Foerster, P.T. at PO Box 731, Neskowin, OR 97149. You can also find out more information at backpack.com.

1 Pascoe, D.D. & Pascoe, D.E. (1999). Bookbags help to shoulder the burdens of school work. *Teaching Elementary Physical Health*, March, 18-22.

2 The U.S. Consumer Product Safety Commission National Electronic Injury Surveillance System (NEISS) database, 2001. Numbers quoted are the national estimated figures.

3 Harreby M., Neergaard K, Hesselsoe G, et al. Are radiographic changes in the thoracic and lumbar spine of adolescents risk factors for low back pain in adults? *Spine*. 1995; 20:2298-2302.

4 Chansirinukor W, Wilson D, Grimmer K, Dansie B. The effects of backpacks on students: Measurements of cervical and shoulder posture *Aust J Physiotherapy*. 2001;47:110-116