Back Pain in School Children

By Peter Fysh, DC

According to the recently released U.S. guidelines (AHCPR) for patients with recent onset low back pain, chiropractic treatment is most effective. The guidelines however, specifically did not apply to back pain in childhood, principally because of the lack of published studies in this area.

Back pain in children has been the topic of several epidemiological studies during the past decade and the results of those studies are reviewed and discussed in this column.

The most apparent fact, from these studies of the pediatric population, is that many children experience back pain. A 1994 Scandinavian study, by Troussler, identified the prevalence of back pain in a group of 1,174 school children at 51 percent. This study also found significance in the following risk factors:

Age

A significant increase in back pain incidence occurred at the age of 12 years and over. In all age groups above 11 years, more than 50 percent of the subjects had experienced back pain at some time in their life.

Gender

Females were more likely to experience back pain than males. A significant increase in back pain incidence in females was noted at 58.1 percent, compared with 43.2 percent for males.

TV

Children who watched television for extended periods were more likely to have back pain. Of those children who watched TV between 1-2 hours each day, 59.3 percent had experienced back pain. When the viewing time was increased to more than two hours each day, the incidence of back pain increased to 68.8 percent.

Sports

The prevalence of back pain associated with sports was calculated and found to exceed 60 percent for participants of the following sports: volleyball (78.2 percent); climbing (68.7 percent); golf (64.8 percent); basketball (62.6 percent); and handball (61.7 percent).
Previous Back Injury

For children who had previously experienced back pain, there was a significant risk identified for future occurrence.

Trouslers study also identified that 41.6 percent of the participants experienced back pain while sitting in class; 30 percent within one hour, and 70 percent after sitting for longer than one hour. On the issue of satchel carrying position, 68.6 percent of children had back pain when they carried their satchels by hand, compared with 53.7 percent who carried their satchels on the shoulder, and 45 percent when carried on their back. The specific incidence of location of back pain was identified as being lumbar 41 percent, thoracic 34 percent and cervical 26.5 percent.

Other studies have examined body size and flexibility as possible precursors to back pain in children.

Nissinen studied anthropometric measurements and the incidence of low back pain in a group of 1,060 children, and concluded that sitting height and trunk asymmetry appeared to contribute to low back pain.

Ebrall, in a study of adolescent males, concluded that upper body size significantly influenced the prevalence of back pain, as did pelvic height.

In a controlled study of 1,503 children, all 15 years of age, Salminen concluded that:

- males who had recurrent or continual low back pain were over 4 cm taller than controls,

- in both sexes of those who had back pain, lumbar extension and straight leg raising was decreased, while lumbar flexion was increased, and

- endurance strength in abdominal and back muscles, in those who experienced back pain, was decreased relative to the control group.

Kujala studied 100 athletes and 38 non-athletes and concluded that prevalence of low back pain in the athletes could be correlated only with tightness of the hip flexor muscles. The study suggested that high training duration predisposes young athletes to low back pain.
Olsen, studying the epidemiology of low back pain in an adolescent population of 1,242 subjects identified that one third of the subjects had restricted activities due to low back pain and that 7.3 percent required medical attention.

Salminen, in a study of 1,503 school children, aged 14 years, found that low back pain was the third most common form of pain interfering with school work and leisure activities. Of the children who experienced back pain, 65 percent recovered within one month and 35 percent reported disabling low back pain and were aware of recurrent or continual pain.

Miereau and Cassidy studied 402 subjects 6-18 years old and identified a significant direct relationship between history of low back pain and decreased straight leg raising in adolescent males.

In studying female gymnasts, Olsen identified that subjects with low back pain had significantly larger lumbar lordosis (41 degrees) than in those with no history of low back pain (35 degrees).

Balague, studying 1,715 school children of both sexes, identified significant positive correlation between low back pain and age, female sex, time spent watching TV, smoking and competitive sports.

Back pain is a major problem which afflicts about 80 percent of the population. Prevalence studies in children have reported incidence rates varying between 7 and 51 percent. Although the methodology, age range and criteria for back pain has varied widely in these studies, there appears one strong theme: that back pain in children is a major public health issue. Further studies must be conducted to evaluate not only epidemiology, but also to evaluate treatment protocols and preventive measures for children with back pain.

References


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