Low back pain in school-aged children a common occurrence

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Low back pain in school-aged children is a common occurrence, and the prevalence of low back pain increases once children reach school age - one percent at age seven years; six percent at age 10 years; and 18 percent at ages 14-16 years. Yet only seven percent of adolescents with lower back pain will seek medical care. Diagnosis, pathophysiological findings, evaluation, treatment and prevention are outlined in a recent review of the literature published online today by the *JAMA Pediatrics*.

According to the literature review led by Nationwide Children's Hospital Sports Medicine, most causes of low back pain in this population are benign; however the effect of low back pain can be significant, affecting daily activities such as school attendance and participation in gym class or other athletic activities. Development of low back pain in adolescents is a substantial risk factor for the possibility of low back pain as an adult.

The literature review demonstrates that there is no single risk factor or factors for lower back pain as previously thought. For school-aged children, most cases are because of musculoskeletal overuse or trauma. One possible cause for the prevalence in adolescents is participation in athletic activities. Studies have shown there is a correlation between the level of competition and low back pain, as well as there being an increased risk of low back pain with both high and low levels of physical activity. Other possible risk factors include a quickening of growth, adverse psychosocial factors, increase in age, a previous back injury and family history of low back pain. Females are also at a greater risk for low back pain.

"Historically, pediatric training has emphasized that a specific factor or factors cause low back pain in children and adolescents, but recent studies have informed us that is not necessarily the case," said James P. MacDonald, MD, MPH, lead author of the review and sports medicine physician at Nationwide Children's. "It is important for physicians to have a firm understanding of the relevant spinal anatomy and the etiological factors of low back pain in children and adolescents."

While some lower back pain needs to be treated by a specialist, most pediatricians who have a good understanding of the principles outlined in our article can help children and adolescents prevent and manage lower back pain," said Dr. MacDonald, who is also an associate professor in the Department of Pediatrics and Family Medicine at The Ohio State University College of Medicine. "Most pain with no specific cause responds to rest, rehabilitation and identification of predisposing risk factors."

Although the causes of lower back pain in school-aged children are most often benign, according to the literature, a thorough evaluation performed by the primary care physician can help rule out a more serious condition. For example, obtaining a full clinical history, asking certain questions associated with an inflammatory cause of lower back pain, examining the back for signs of deformities, performing neurologic workups and potentially ordering imaging tests if deemed necessary as a result of the overall evaluation.

Based on the review, because children and adolescents' musculoskeletal systems are still developing they are at an increased risk to trauma and explosive muscle contractions, especially during periods of rapid growth. For this reason, evidence suggests the importance of pre-season sports conditioning programs and neuromuscular training that will allow the athlete to gradually increase his or her training intensity and help reduce injuries. Additionally, rest should be incorporated into the training

regimen, especially for athletes who perform repetitive motions, such as tumbling in gymnastics. Young athletes should not participate in more hours of sports in a week than their number of age in years.

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Provided by Nationwide Children's Hospital

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