



Co-management Guide

Pediatric Orthopedics

Back pain

Guidelines Referenced	<ul style="list-style-type: none"> • www.uptodate.com/contents/evaluation-of-the-child-with-back-pain • Williams et al. The prevalence, risk factors, prognosis and treatment of back pain in children. Best Practice and Research Clinical Rheumatology. 2017, 1-16 • Thometz, J (2017). Nelson Pediatric Symptom-Based Diagnosis, Chapter 35. Back pain in Children and Adolescents, pp. 633-646
Background	<p>Back pain makes up a major disability burden in the adult population, and recent data suggests an increasing prevalence in the pediatric population, leading to more days missed from school or time away from sports and physical activities. Estimated annual cost of chronic pain (most of which is musculoskeletal) in kids age 10-17 was \$19.5 billion in 2015. Back and neck pain ranked 9th in years lived with disability in 10-14 year old children, and 4th in 15-19 year old children in 2015. Historically, back pain in children was considered a serious complaint often caused by significant pathology, but more recent data suggests that in most cases a patho-anatomic cause for the pain cannot be found, in spite of thorough work-up. Point prevalence of back pain in children is around 12%, monthly prevalence around 20%, and lifetime prevalence around 40%. Risk factors for developing back pain include psychological distress, psychosocial factors, female gender, and smoking. There is no good evidence linking back pain in children with obesity, heavy book bags, increased screen time, being tall, involvement in sports or physical activities, or muscle strength. No prognostic factors for outcome have been identified. Studies on treatment of back pain in children have found that interventions involving education and exercise are more likely to be effective in reducing pain when compared with home based treatment.</p>
Initial Evaluation	<p>History and physical exam are central in the evaluation of back pain.</p> <p>In the history-taking the main goal is to identify factors that warrant further investigation, remembering that the vast majority of patients will have no identifiable cause for their back pain. Red flags include:</p> <ul style="list-style-type: none"> - Young age (less than age 4 is concerning for infection, malignancy) - Fevers and weight loss (infection, malignancy) - Severe pain (night time) that interferes with daily activities - Morning stiffness (inflammatory back pain, ankylosing spondylitis) - Pain radiating below buttocks but especially below knee (nerve compression) - History of repetitive extension or trauma in athlete (spondylolysis) - History of malignancy - Exposure to tuberculosis - History of neurologic dysfunction such as loss of continence



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	<p>A detailed physical exam is just as valuable as thorough history-taking, again keeping in mind that most patients will have no clear exam findings. Components of the exam to remember include:</p> <ul style="list-style-type: none"> - Inspection: look for overall alignment, scoliosis, increasing lumbar lordosis, hairy patches or dimples over the spine suggestive of intraspinal pathology, café-au-lait spots suggestive of neurofibromatosis, cavus feet suggestive of tethered cord - Palpation: look for tenderness over spine or SI joints suggestive of inflammation - Range of motion: flexion and extension as well as lateral rotation of spine and neck (pain with extension suggestive of spondylolysis) - Neurological exam: evaluate deep tendon reflexes of Achilles and patellar tendons, check strength in all major motor groups of lower extremities, check for straight leg raise sign, check sensation in lower extremities, motor exam as follows: <ul style="list-style-type: none"> ■ Ankle plantarflexion S1 ■ Ankle dorsiflexion L4,5 ■ Great toe extension L5 ■ Knee extension L3,4 ■ Knee flexion L5, S1 ■ Hip flexion L2,3
<p>Initial management</p>	<p>If there are red flags on history or exam, workup should include AP and lateral view of lumbar or thoracic spine and basic laboratory studies for inflammatory arthropathy, infection, and malignancy (CBC, ESR, CRP, ANA, rheumatoid factor)</p> <p>Include oblique views of lumbar spine if concerned for spondylolysis in athlete.</p> <p>If no concerns for underlying pathology, then initial management should consist of NSAIDS and home exercise program vs. referral to physical therapy for 6-8 weeks for core strength, hamstring stretching, and use of modalities for the diagnosis of mechanical back pain.</p> <p>Follow up at 2 months for reevaluation. If there are ongoing symptoms or concerns despite compliance with 6-8 week exercise or PT program then order MRI of affected area of the spine without contrast.</p>
<p>When to Refer</p>	<p>Back pain in young children (less than 8 years) that lasts more than 5-7 days</p> <p>Presence of red flags after initial x-rays and laboratory studies have been obtained, even if results of these tests are negative</p> <p>Presence of spondylolysis on x-rays</p> <p>Presence of scoliosis on x-rays (see scoliosis co-management guidelines for criteria)</p> <p>Ongoing pain after therapy has been completed and MRI scan has been obtained</p>
<p>Pre-Visit Work Up</p>	<p>X-rays (AP and lateral view of lumbar or thoracic spine, with oblique views of lumbar spine if concerned about spondylolysis)</p> <p>Laboratory studies if indicated</p>



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Co-management Strategy (as appropriate)	Specialist scope of care Evaluate patients with any red flags for patho-anatomic cause or after failed treatment and completed work up.	Primary care scope of care Initial work up. Initial management if no red flags, to include referral to physical therapy and ordering MRI scan if indicated.
Return to Primary Care Endpoint	After orthopedic evaluation has been completed and no patho-anatomic cause for the pain has been identified, the patient will be referred back to primary care for further long-term management of back pain. Best long-term management should be multimodal and can include referral to counselors, psychologists, pain management, ongoing physical therapy.	