

What is the recommended management of Osgood-Schlatter Disease (OSD)?

To answer this question, we performed a comprehensive search of the PubMed database (August 2012) for papers that addressed this specific research question.

At the time of the literature search, no clinical trials had been conducted evaluating conservative management of Osgood-Schlatter disease (OSD). Four reviews (1-3,5) and one cross sectional study (4) were included.

Sports injuries are the leading cause of childhood injury, and over 30 million children participate in sports in the U.S. each yr (3). Typically, injuries that occur before skeletal maturity are related to apophyses, secondary ossification centers located at attachment sites of major muscle tendons that are often weaker than tendons and ligaments (1,3). OSD is an apophysitis characterized by pain, swelling, and tenderness over tibial tuberosity (2). Although the exact cause of OSD is not certain, it may be due to overuse with quadriceps creating excessive strain through patellar tendon, or it may occur during peak growth phase when lengthening bone puts excessive strain on quadriceps (4). OSD is

more common in boys, with typical onset between 12-15 yrs in boys and 8-12 yrs in girls (2).

In 90% of patients, symptoms resolve with conservative treatment including ice, rest, and NSAIDs, physical therapy and use of protective knee padding during sports (2). Exercises should include strengthening and flexibility for quadriceps, hamstrings, iliotibial band, and calf muscles, while initially avoiding high stresses across tibial tuberosity (2). Symptoms that may persist include prominence over tuberosity and pain with activity or kneeling (2,3,5). Surgery is an option after skeletal maturity in cases where symptoms remain severe (2). In a cross sectional study, Ross et al found that among 50 males in U.S. Air Force Academy, prior diagnosis of OSD resulted in significantly lower scores on daily living and sports subscales of Knee Outcome Survey (4). However, average scores of OSD group were still greater than 90, and results may be limited to highly active populations.

Based on this review, exercise management with the exception of gentle stretching is typically not advised until pain has subsided. Once this has occurred, progressive strengthening may prove useful in preparing individual to return to full activity.

Check with the provider of this newsletter to learn more about exercises appropriate for this condition.

1. Maffulli N, Longo UG, Spiezia F, Denaro V. Aetiology and prevention of injuries in elite young athletes. *Med Sport Sci.* 2011;56:187-200. Epub 2010 Dec 21. Review. PubMed PMID: 21178374.
2. Gholve PA, Scher DM, Khakharia S, Widmann RF, Green DW. Osgood Schlatter syndrome. *Curr Opin Pediatr.* 2007 Feb;19(1):44-50. Review. PubMed PMID: 17224661.
3. Cassas KJ, Cassettari-Wayhs A. Childhood and adolescent sports-related overuse injuries. *Am Fam Physician.* 2006 Mar 15;73(6):1014-22. Review. PubMed PMID: 16570735.
4. Ross MD, Villard D. Disability levels of college-aged men with a history of Osgood-Schlatter disease. *J Strength Cond Res.* 2003 Nov;17(4):659-63. PubMed PMID: 14636095.
5. Duri ZA, Patel DV, Aichroth PM. The immature athlete. *Clin Sports Med.* 2002 Jul;21(3):461-82, ix. Review. PubMed PMID: 12365238.