

## Preseason Conditioning for Young Athletes

Over the past few decades the number of recreational and competitive sports programs for children and adolescents has increased dramatically. There are more opportunities for girls to participate in sports, and in some communities children as young as age six can join organized teams and leagues. With qualified coaching and age-appropriate instruction, sports programs can provide young athletes with an opportunity to enhance their physical fitness, improve self-esteem, acquire leadership skills and have fun. However, there is the potential for illness or injury if boys and girls are unfit and ill-prepared to handle the demands of their chosen sport.

Only about half of all young people between the ages of 12 and 21 participate in vigorous physical activity on a regular basis, and daily attendance in physical education classes is unfortunately declining. Further, sedentary pursuits such as television viewing and Internet surfing continue to occupy a significant amount of time during childhood and adolescence. In many cases the musculoskeletal system of children and adolescents who enter sports programs may not be prepared to handle the duration and magnitude of force that develops during practice and game situations. While improper footwear, hard playing surfaces, poor nutrition and muscle imbalances are recognized risk factors for sports-related injuries, the background level of physical activity should also be considered. In short, a youngster's participation in sports should not start with competition, but should evolve out of preparatory conditioning that includes strength, aerobic, and flexibility training.

Because aspiring young athletes are often forced to train harder and longer in order to excel in sports, it seems prudent for children and adolescents to participate in at least six to eight weeks of preseason conditioning prior to sports participation. The preparticipation examination may be an opportune time to identify correctable risk factors such as poor flexibility and poor physical condition. If needed, sports medicine physicians, athletic trainers and qualified youth coaches should prescribe a preseason conditioning program and provide young athletes with information on the type, frequency, intensity and duration of training. Sharing this information with parents can be helpful; they can reinforce the importance of preseason conditioning at home.

Although additional clinical trials are needed to determine the most effective preseason conditioning program for children and adolescents, a combination of strength, aerobic and flexibility exercises performed two to three times a week on nonconsecutive days seems reasonable.

When preparing young athletes for sports participation, it is important to include multi-joint exercises that require balance, stabilization and coordination. In addition, due to the potential for lower back injuries, strengthening exercises for the core musculature (lower back and abdominals) should be performed as part of preventive health measures. Over time, the conditioning program should be modified in order to optimize gains in fitness and prevent overtraining.

In addition to knowing the rules of a game, young athletes need to be in shape to play the game. Although some young athletes may want to play themselves into shape, parents and coaches should realize that it is difficult for children and adolescents to gain the specific benefits of physical conditioning (for example, to increase muscle strength) without actually current comment from the participating in a well-designed conditioning program. In some cases it may be necessary for children and adolescents to decrease the amount of time they spend practicing sport-specific skills in order to allow ample opportunity for preparatory conditioning exercises. That is, preseason conditioning exercises should not simply be added onto a child's exercise regimen, but rather incorporated into a well-rounded program.



In summary, while there may be many mechanisms for reducing sports injuries, the establishment of general physical fitness should be a prerequisite for youth sports participation. Preseason conditioning programs designed for the needs and abilities of young athletes could offer a protective effect by enhancing the strength and integrity of the musculoskeletal system and developing general fitness abilities. Focusing on sport-specific skills instead of general fitness skills may not only limit the ability of children and adolescents to succeed outside a narrow physical spectrum, but it may also lead to burnout and injury. As health professionals, coaches, teachers and parents, we all bear the shared responsibility of ensuring that aspiring young athletes are prepared for the demands of sports training and competition.

Written for the American College of Sports Medicine by Avery D. Faigenbaum, Ed.D. and Lyle J. Micheli, M.D., FACSM

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*Street Address: 401 W. Michigan St. • Indianapolis, IN 46202-3233 USA*  
*Mailing Address: P.O. Box 1440 • Indianapolis, IN 46206-1440 USA*  
*Telephone: (317) 637-9200 • FAX: (317) 634-7817*

