Can STOP Sports Injuries Campaign Prevent Trauma and Overuse Injuries in Youth Athletes?

Sarah Eggerczyk
College of Nursing and Health Professions, Pre-Physical Therapy, Drexel University

Advisor: Masaru Teramoto, PhD, MPH

STOP: Sports Trauma and Overuse Prevention

The STOP Sports Injuries campaign was created in 2007 by Dr. James R. Andrews, MD, President of the American Orthopaedic Society for Sports Medicine (AOSSM), and the board members of AOSSM. The board members of AOSSM partnered with the American Academy of Orthopaedic Surgeons, the American Academy of Pediatrics, the National Athletic Trainers’ Association, the American Medical Society for Sports Medicine, Sports Physical Therapy Section, and SAFE Kids USA. The STOP Sports Injuries Campaign has a mission to actively engage youth sports parents, coaches, health care providers, and the athletes themselves in implementing evidence-based preventative guidelines for their desired sport in order to prevent injury. The campaign provides sport-specific injury prevention fact sheets, conversation starters and tip sheets, videos and podcasts, educational presentations, and useful links to educational journals on their website: www.stopsportsinjuries.org

Purpose of the Study

• To examine if the number of trauma and overuse injuries in youth athletes has decreased, and to analyze if the program has reached parents, coaches, and youth athletes in the United States since the STOP Sports Injuries campaign began in 2007.

Roles of the Health Professional

After an injury, the first thing that the youth athlete desires is to return to play (RTP) as soon as possible. The “OK” to RTP is determined by the clinician, so it is paramount that the clinician’s primary responsibility is to cause no harm to the youth athlete while allowing participation at the highest possible level. The clinician needs to understand that the athlete might be making his injury out to be less than it actually is, so he can continue playing the desired sport. RTP guidelines vary for each youth athlete because of gender, age, and injury level. Once the clinician sets the RTP guidelines and timeframe, the coach, parents, and the athlete’s other medical doctors all need to be informed so that everyone is aware of the diagnosis. Many times in youth level sports, there is no medical professional or athletic trainer at the game or practice, so the coach makes a quick RTP decision. It is important for everyone involved to remain ethical in making a decision for the youth athlete, even if the athlete is the star of the team.1

Need for Research

• The STOP Sports Injuries campaign has easy-to-follow guidelines, but since it is unknown how many youth athletes know of this program and/or utilize it in their practice, it is difficult to gauge if the number of injuries in youth athletes who use these guidelines is decreasing or rising each year.

• Further research needs to be conducted to identify if youth athletes participate in an injury prevention program, and if so, is there a decrease in injury?

• It would be ideal to live in a sports injury-free world, but pressure, year-round strain, and competition keeps an athlete constantly working, so further research is needed to ensure safety for all youth athletes to keep the youth athletes in the games for life.

Sports Injury Prevention

The STOP Sports Injuries campaign provides resources for multiple youth sports on the campaign’s website. The resources are specific for the youth’s sport of choice so that the coaches, parents, athletes, and health care professionals can take the necessary precautions to prevent youth sports-related injuries. The sport-specific guidelines include what type of injury is most common for the youth’s sport, how injuries can be prevented, how injuries are treated, extra references for the specific sport, and resources from experts. There are 26 different sports that the STOP Sports Injuries campaign provides tips for:

- Baseball
- Basketball
- Cheerleading
- Cycling
- Dance, Field Hockey
- Figure Skating, Football, Golf, Gymnastics, Hockey, Inline Skating, Lacrosse, Martial Arts, Rowing, Rugby, Running, Skiing and Snowboarding, Soccer, Softball, Swimming, Tennis, Volleyball, Water Polo, Wrestling

According to an article in The Physician and Sportsmedicine journal, it is impossible for a youth athlete to avoid all injuries, but many injuries can be prevented such as those that transpire because of overuse. The article affirms that there are factors that can stimulate a sports-related injury such as the pressure to compete and an imbalance in the growth and development. Since youth all have variability in the rate in which they grow and develop, their specific training programs may be a cause for their overuse injury. Training programs are regimented to encompass all athletes of a specific age, but since youths develop at different rates, some can be more susceptible to injury. Youth athletes are pushing themselves harder and harder, which is taking a toll on their bodies because their bodies are not ready to handle physical stress and unnecessary strain.3

References


Images and descriptions from reference

Medial Epicondyle Apophysitis (Little League Elbow)

This is an image of the elbow of a 12-year-old pitcher. When a youth does an overhead throwing motion, massive tensile load is put on the medial epicondyle apophysis by valgus forces. Repetitive throwing causes chronic traction stress on the apophysis, and as a result, there can be progressive widening and proliferation of the apophysis. Most Common: baseball pitchers, catchers, and other overhead-throwing athletes between ages 10-14 year.

Risk Factors: year round play, pitching for more than one team per year, multiple weeks, throwing through an arc, throwing breaking pitches before skeletal maturity, and failure to follow recommended pitch count limits and adequate amount of rest days.

Osgood-Schlatter Disease

This is an image of the knee of a 12-year-old female basketball player. This disease occurs during the youth’s growth spurt from repetitive traction on the tibial tubercle. The quadriceps grow slower than the tibia, so when the traction forces are transmitted through the quadriceps to the tibial tubercle, the bone is injured. Inflexibility of the hamstrings and quadriceps muscles in combination with repetitive stress on weak muscles at the tibial tubercle.

Most Common: competitive gymnasts and baseball pitchers.

Risk Factors: repetitive stress on the quadriceps in the primary mechanism to be repetitive microtrauma.

Severs Disease (Calcaneal Apophysitis)

This is an image of the heel of an 11-year-old male. Calcaneal apophysitis occurs during preadolescence when the Achilles tendon creates traction on the calcaneal ossification center. This is considered the most common apophysitis in youth.

Most Common: Adolescents ages 9-11 years and occurs more in younger females than males. Common in sports that involve bending or squatting.

Role of the Hip

- Tight calf muscles
- Inflexibility of the hamstrings and quadriceps

Medial Tibia Stress Syndrome (Shin Splints)

This is an image of the tibia of a 12-year-old female basketball player. This injury occurs when there is traction on the peristosteum by calf muscles in combination with repetitive stress on weak muscles from the tibial tubercle. The main feature is a “painful band” at the tibial tubercle.

Most Common: Adolescents ages 9-11 years and occurs more in younger females than males. Common in sports that involve bending or squatting.

Risk Factors: Inappropriate intensity, volume, and frequency of training

Osteochondritis Dissecans of the Capitellum

This is an image of the elbow and arm of a 12-year-old competitive gymnast. When a youth participates in upper extremity weight-bearing and overhead throwing, the lateral elbow is exposed to high compressive load. When done repetitively, the subchondral bone can become injured along with the overlying cartilage. If the injury progresses, the integrity of the joint weakens.

Most Common: competitive gymnasts and baseball pitchers

Risk Factors: abnormal cortical widening of the capitellum, repetitive throwing in the throwing arm.

Common Youth Sports-Related Injuries

Osgood-Schlatter Disease

This is an image of the knee of a 12-year-old female basketball player. This disease occurs during the youth’s growth spurt from repetitive traction on the tibial tubercle. The quadriceps grow slower than the tibia, so when the traction forces are transmitted through the quadriceps to the tibial tubercle, the bone is injured. Inflexibility of the hamstrings and quadriceps muscles in combination with repetitive stress on weak muscles at the tibial tubercle.

Most Common: competitive gymnasts and baseball pitchers.

Risk Factors: repetitive stress on the quadriceps in the primary mechanism to be repetitive microtrauma.

Severs Disease (Calcaneal Apophysitis)

This is an image of the heel of an 11-year-old male. Calcaneal apophysitis occurs during preadolescence when the Achilles tendon creates traction on the calcaneal ossification center. This is considered the most common apophysitis in youth.

Most Common: Adolescents ages 9-11 years and occurs more in younger females than males. Common in sports that involve bending or squatting.

Risk Factors: Inappropriate intensity, volume, and frequency of training

Osteochondritis Dissecans of the Capitellum

This is an image of the elbow and arm of a 12-year-old competitive gymnast. When a youth participates in upper extremity weight-bearing and overhead throwing, the lateral elbow is exposed to high compressive load. When done repetitively, the subchondral bone can become injured along with the overlying cartilage. If the injury progresses, the integrity of the joint weakens.

Most Common: competitive gymnasts and baseball pitchers

Risk Factors: abnormal cortical widening of the capitellum, repetitive throwing in the throwing arm.

Common Youth Sports-Related Injuries

Osgood-Schlatter Disease

This is an image of the knee of a 12-year-old female basketball player. This disease occurs during the youth’s growth spurt from repetitive traction on the tibial tubercle. The quadriceps grow slower than the tibia, so when the traction forces are transmitted through the quadriceps to the tibial tubercle, the bone is injured. Inflexibility of the hamstrings and quadriceps muscles in combination with repetitive stress on weak muscles at the tibial tubercle.

Most Common: competitive gymnasts and baseball pitchers.

Risk Factors: repetitive stress on the quadriceps in the primary mechanism to be repetitive microtrauma.

Severs Disease (Calcaneal Apophysitis)

This is an image of the heel of an 11-year-old male. Calcaneal apophysitis occurs during preadolescence when the Achilles tendon creates traction on the calcaneal ossification center. This is considered the most common apophysitis in youth.

Most Common: Adolescents ages 9-11 years and occurs more in younger females than males. Common in sports that involve bending or squatting.

Risk Factors: Inappropriate intensity, volume, and frequency of training

Osteochondritis Dissecans of the Capitellum

This is an image of the elbow and arm of a 12-year-old competitive gymnast. When a youth participates in upper extremity weight-bearing and overhead throwing, the lateral elbow is exposed to high compressive load. When done repetitively, the subchondral bone can become injured along with the overlying cartilage. If the injury progresses, the integrity of the joint weakens.

Most Common: competitive gymnasts and baseball pitchers

Risk Factors: abnormal cortical widening of the capitellum, repetitive throwing in the throwing arm.