

Sports Shorts

GUIDELINES FOR PHYSICIANS

Authors: Ingrid Kraus, MD, FAAP & Mary Solomon, DO

Cheerleading

OVERVIEW:

Cheerleading began in the 1800s to lead spectators in cheering during sporting events. Over the years, cheerleading has evolved from hand clapping, splits, and pompoms, into a very competitive activity that may occur year round. The sport now involves more complex maneuvers including gymnastic-like tumbling passes, pyramid building, and tossing athletes in the air. It has increased in popularity over the years. Estimates in 2009 determined that 400,000 athletes participated in cheerleading in high school and 123,000 athletes participated on competitive cheer teams. The increasing number of participants and growing difficulty of routines has caused a proportionate escalation in office visits to the pediatrician for cheer-related injury management and prevention.

DEFINITIONS:

- **Cheer:** Leading the audience with synchronized vocals, choreography and gestures to encourage the team from a relatively stationary position on the ground
- **Tumbling:** Term used to describe maneuvers performed in contact with the ground such as flip-flops, round-offs, handsprings, etc.
- **Stunting:** Movement performed where one or more bases lifts one or more flyers in the air, including maneuvers such as basket tosses and pyramids
- **Base:** Athlete with at least one foot on the floor who is in direct contact with another athlete (flyer)
- **Flyer:** Athlete who is elevated or tossed in the air to perform stunts such as twisting or flips and is lifted and caught by a base

COMMON INJURIES:

Lower extremity injuries are overall the most common, accounting for 30-37% of all injuries in cheerleading. Younger cheerleaders tend to have more upper extremity injuries, while older, more experienced athletes often injure the lower extremities. Common lower extremity injuries are patellofemoral syndrome, patellar tendonitis, Osgood Schlatter syndrome, shin splints, achilles tendonitis, ankle sprains, and stress fractures. Other injuries include shoulder problems (impingement or rotator cuff injury), lumbar injuries (sprains, disk injuries, spondylolysis), concussions, and disordered eating. The overall injury rate is quite low when compared to other high school sports such as soccer, basketball, etc, however, there is a significantly higher risk of catastrophic injury. For example, female high school soccer players have a catastrophic injury rate of 0.03 per 100,000 exposures while the rate for cheerleading is 0.50-1.62 per 100,000 exposures. These types of injuries usually occur during a fall from a pyramid, dropping a flyer from a stunt, and failing to complete flips in a stunt. Approximately 66% of catastrophic head and neck injuries in female high school athletes occur in cheerleading.

Concussion rates among cheerleaders remain relatively low in comparison to other girls high school sports but continue to increase annually.

RISK FACTORS FOR INJURIES:

- Previous injury
- Higher BMI
- Cheering on harder surfaces
- Performing stunts
- Less trained or experienced supervising coach

INJURY PREVENTION:

The American Academy of Pediatrics recommends the following to decrease injuries in cheer athletes:

- Experienced, certified and educated coaches who promote safety and proper technique should supervise cheerleaders.
- Athletes must follow restrictions from the National Federation of High Schools on skills & maneuvers.
- Proper spotting techniques and mechanics must be enforced while lifting and advancing stunts gradually and based on the athlete's skill.
- Mats and spotters will soften and decrease fall risks.
- Coaches, parents and athletes should practice basic first-aid and have an emergency action plan.
- Athletes should complete a pre-participation physical exam prior to participation.
- Adequate medical coverage/athletic trainer availability at practice and competitions will improve access to care and provide initial care for injured cheerleaders.
- Any cheerleader who presents signs of a head or neck injury should be removed from practice and evaluated by a physician or health care provider before written clearance is granted to return to participation.

References:

1. Care of the Young Athlete p106-107, p 491.
2. AAP Position Stance on Cheerleading 2012.

Sports Shorts

GUIDELINES FOR PARENTS

Authors: Ingrid Kraus, MD, FAAP & Mary Solomon, DO

Cheerleading

OVERVIEW:

Cheerleading began in the 1800s to lead spectators in cheering during sporting events. Over the years, cheerleading has evolved from hand clapping, splits, and pompoms, into a very competitive activity. The sport now involves more complex maneuvers including gymnastic-like tumbling passes, pyramid building, and tossing athletes in the air. It has increased in popularity over the years. Estimates in 2009 determined that 400,000 athletes participated in cheerleading in high school and 123,000 athletes participated on competitive cheer teams. With the increased participation and difficulty in stunts performed, more athletes seek medical attention for advice and prevention of injuries related to cheering.

DEFINITIONS:

- **Cheer:** Leading the audience with synchronized vocals, choreography and gestures
- **Tumbling:** Term used to describe maneuvers performed in contact with the ground such as flip-flops, round-offs, handsprings, etc.
- **Stunting:** Movement performed where one or more bases lifts one or more flyers in the air, including maneuvers such as basket tosses and pyramids
- **Base:** Athlete with at least one foot on the floor who is in direct contact with another athlete (flyer)
- **Flyer:** Athlete who is elevated or tossed in the air to perform stunts such as twisting or flips and is lifted and caught by a base or multiple bases

COMMON INJURIES:

Lower extremity injuries are overall the most common, accounting for 30-37% of all injuries in cheerleading. Younger cheerleaders tend to have more upper extremity injuries, while older, more experienced athletes more commonly injure the lower extremities. Most common lower extremity injuries include knee pain, shin splints, inflammation of the tendons around the knee or ankle, ankle sprains, and stress fractures. Other common injuries include shoulder strains and low back pain, concussions, and eating disorders. Other high school sports typically have higher injury rates than cheerleading, however there is a greater risk of deadly and permanently debilitating injuries to the head and neck in cheer.

These types of injuries usually occur during a fall from a pyramid, dropping a flyer from a stunt, or failing to complete flips in a stunt. Approximately 66% of catastrophic head and neck injuries in female high school athletes occur in cheerleaders.

RISK FACTORS FOR INJURIES:

- Previous injury
- Higher BMI
- Cheering on harder surfaces
- Performing stunts
- Less trained or experienced supervising coach

INJURY PREVENTION:

The American Academy of Pediatrics recommends the following to increase safety for cheering athletes:

- Experienced, certified, and educated coaches who promote safety and proper technique should supervise cheerleaders.
- Athletes must follow restrictions from the National Federation of High Schools on skills & maneuvers.
- Proper spotting techniques and mechanics must be enforced while lifting. Stunts should be advanced gradually and based on skill.
- Use mats and spotters to decrease the risk from falling and to soften landing.
- Coaches, parents and athletes should practice basic first-aid and have an emergency action plan.
- Athletes must complete a pre-participation physical exam prior to participation.
- An athletic trainer who is present at practice and competitions may provide initial care for injured cheerleaders.
- Any cheerleader who suffers a head or neck injury should be removed from practice and evaluated by a physician or health care provider before written clearance is granted to return to participation.

References:

1. Care of the Young Athlete p106-107, p 491.
2. AAP Position Stance on Cheerleading 2012.