

# Cheerleaders' Stunts Raise Risk of Serious Injury

BY MELINDA TANZOLA  
Contributing Writer

MIAMI — Although the overall risk of injury in cheerleading is low, the activity accounts for more than half of all catastrophic sports injuries in females, Dr. Teri McCambridge said at a meeting on pediatric sports medicine sponsored by the American Academy of Pediatrics.

In the last 25 years, cheerleading has progressed from a spirit-raising sideline activity to an exacting athletic endeavor, and with that change, there has been an increase in the number of injuries among cheerleaders.

Partner stunts, particularly basket tosses and pyramids, account for the greatest number of cheerleading injuries. In a basket toss, three or four "bases" toss a "flier" into the air. The flier reaches heights of 6-20 feet before falling into the arms of the bases. Most basket toss injuries occur indoors, when cheerleaders perform them in a gymnasium during winter sports.

Performing stunts on an improper surface during a game or practice session is one common yet preventable cause of serious injury. According to surveys completed by 425 high school cheerleaders in the Midwest, 10% of cheerleading practices are held in the cafeteria or hallway, where the concrete floors offer minimal padding. Other contributors include performing stunts on wet floors, forming pyramids without mats or spotters, trying to perform stunts in a short time frame, and cheerleading too close to the field or court, said Dr. McCambridge, a pe-



Pyramids account for many cheerleading injuries.

diatrician at Johns Hopkins University, Baltimore.

The American Association of Cheerleading Coaches and Administrators (AACCA) has published safety guidelines, including pyramid restrictions of two levels in high school and 2.5 levels in college. Following these guidelines can prevent cheerleaders from attempting skills beyond their developmental abilities.

In a larger context, a primary issue with cheerleading is the lack of standardized rules and regulations. Various cheerleading associations have published guidelines, but universal guidelines do not exist. Moreover, cheerleading coaches are not required to obtain a universal safety certification; as of 2003, only 30% of coaches were certified.

Some states require coaches to be AACCA safety-certified before they can teach children stunts, however, and beginning this year, the National Collegiate Athletic Association (NCAA) will require all coaches to have AACCA safety certifications. Some insurance companies are also requiring coaches to be AACCA-certified before they can obtain liability insurance.

These issues of nonregulation likely stem from the fact that cheerleading in most cases is not considered a sport according to the NCAA definition, and it is thus not as well regulated as other sports. This exclusion makes cheerleading squads ineligible for funding that can help pay for coaches, equipment, and other expenses, but it also frees them from constraints of sports such as having a defined competitive season. The debate on whether to classify cheerleading as a sport is ongoing.

## Padding, Matting, and Lighting Spell Safety

Dr. McCambridge recommended that physicians discuss the following questions with families of cheerleaders:

- ▶ Is a separate practice area available?
- ▶ Is there sufficient space—floor space and ceiling height—for the type of stunts being performed?
- ▶ Are there enough spotters present for the stunt being performed?
- ▶ Are nearby objects properly padded?
- ▶ Is there adequate matting?
- ▶ Is there adequate lighting?
- ▶ Are the cheerleaders practicing and performing on an appropriate flooring surface?
- ▶ Are the cheerleaders in appropriate attire (tennis shoes, tight-fitting clothes, no dangly earrings or facial piercings)?

"It would help us as primary care providers to have it be a sport," Dr. McCambridge said, "because then the NCAA would track their injuries, and we could make more educated changes in their safety requirements." She predicted that the nonregulated state of cheerleading would likely end if cheerleading becomes an official sport.

Pediatricians can do their part to help ensure cheerleaders' safety by providing guidance to their own cheerleading patients. (See box.)

Dr. McCambridge encouraged those who provide sports coverage to high schools to advocate for safety certification requirements in their schools. ■

## Dancers Present With Unique Injuries

BY DAMIAN McNAMARA  
Miami Bureau

MIAMI — Snapping hip syndrome, labral tears, and tibial and metatarsal fractures are injuries unique to dancers, Dr. Craig C. Young said at the annual meeting of the American Medical Society for Sports Medicine.

Most research focuses on ballet, given its relatively high risk of injuries from dancing en pointe and from landing jumps in an external hip rotation. However, jazz dancing also is associated with injuries from internal hip rotations; modern dancing injuries are caused by knee flexion, dancing barefoot, and women doing lifts; and injuries associated with ballroom dancing are often associated with high heel throws.

"One myth is that dancers aren't athletes. Some are in better shape than my ballplayers," said Dr. Young of the Medical College of Wisconsin in Milwaukee. Dancers also are extremely competitive and may not be forthcoming about their injuries because of this competitiveness.

Choreographers don't necessarily look at dance from a biomechanical perspective, so their pieces often include repetitive hyperextension and flexion, incor-

rect lifting techniques, and snapping motions, he said.

About 90% of the dancers treated in Dr. Young's practice do ballet. "We see a lot of external snapping hips." Internal snapping hip injuries are less common, but can occur when the dancer is in a non-weight bearing position. Hip labral tears occur quite often, too. Patients present with sharp pain in the groin. An MRI arthrogram can aid diagnosis.

Stress fractures of the tibia and metatarsal shaft are quite common. Spiral fracture of the fifth metatarsal shaft is unique to dance and, in fact, is commonly referred to as a "dancer fracture." This inversion injury occurs while en pointe. Patients do well after casting, he said.

Injuries in the upper extremities occur when dancers hold their arms in unusual positions for prolonged periods; they also frequently lift and carry weight away from the body. Adverse outcomes include rotator cuff tendinitis, thoracic outlet syndrome, and effort thrombosis.

Ankle impingement, bunions, hammertoes, and nail problems also occur. Dancers can present with subungual hematomas, paronychia, and ingrown nails. "They shouldn't clip their toe-

nails, but use an emery board every day or every other day to keep their nails the same length."

Unusual forms of tendinitis common in dancers include sartorius tendinitis from overuse of the hip external rotator. Dancers experience pain with external rotation, full flexion, and hip abduction. Rectus femoris tendinitis occurs from repetitive forward extensions of the leg. Groin pain occurs, especially when the knee is extended. Extensor hallucis longus tendinitis causes pain when a ballet dancer is in demi-pointe. Achilles tendinitis also occurs from overuse or ribbon friction. "Make sure they bring their pointe shoes. Have them show you how they tie their ribbons. Often, we can treat it without any other changes."

The sole of pointe shoes is a piece of cardboard with no protection at the toe, so the dancer's muscles and the floor act as shock absorbers. "Ask what kind of floor they are dancing on. A dancer at a small studio may be dancing on concrete."

Physicians who treat dancers must learn the French ballet terms because dancers often use them. Ask them to explain the move or have another dancer demonstrate it, he said. ■

## Ill-Fitted Helmets Leave Young Athletes at Risk for Concussion

For high school football players, the best defense against concussions is a good offense—and that means a well-fitted football helmet, according to Dr. Eugene Hong.

But many high school athletes don't receive a proper helmet fitting, which can put them at increased risk for concussion during play, said Dr. Hong of Drexel University, Philadelphia, in an interview.

Certified athletic trainers specially trained in gear fitting are most qualified to perform that task, Dr. Hong said. But his survey of 289 high schools in Pennsylvania and New Jersey showed that although 90% of schools have a certified athletic trainer available, only 44% of those schools use the trainer to fit helmets. Coaches or other individuals (including parents) do the fitting the rest of the time and make mistakes up to 25% of the time.

The overall concussion rate in Dr. Hong's survey was 3.5%, and it wasn't significantly different between players fit by trainers and those fit by coaches or others. However, Dr. Hong said, athletic trainers were

fitting helmets a little better than coaches were, with significant differences in 3 of 10 recommended fitting techniques.

The three most commonly missed fitting techniques among coaches were not having the facemask 2 inches from the nose (25.5%), not positioning the helmet 1 inch above the eyebrows (17.5%), and not having the chin straps equidistant from each other (17.5%).

Parents and student athletes should be reminded at the preparticipation physical examination of the importance of properly fit gear, Dr. Hong said.

Proper follow-up with conservative return-to-play decisions are vitally important for athletes recovering from a concussion, he added. Receiving a second blow to the head before a previous concussion has completely resolved can lead to second-impact syndrome, a usually fatal brain swelling.

Dr. Hong presented his data at the American College of Sports Medicine's annual meeting; the study will be published in the journal *Medicine and Science in Sports and Exercise*.

—Michele G. Sullivan