

**ICPESK 2017**  
**International Congress of Physical Education, Sport and**  
**Kinetotherapy**

**THE IMPORTANCE OF SAFETY RULES IN CHEERLEADING**

Silvia Alexandra Stroescu (a)\*

\*Corresponding author

(a) National University of Physical Education and Sports, 140 Constantin Noica Street, Bucharest, Romania,  
stroescusilvia@yahoo.com

***Abstract***

A long time ago, cheerleading meant shaking pom-poms at football games to involve the crowd in the game atmosphere. Today, it is a competitive and popular sport that requires complex abilities and intricate skills, as any other sport. Cheerleading also involves risks, but it can be also seen as a leisure sport and an excellent way to stay fit. Through the prism of performance sport, injuries are a threat, particularly for “flyers”. The young women who are tossed into the air are often exposed to extremely serious injuries in certain cheerleading maneuvers. The most important aspect for flyers is to stay thin, which can lead to pressure and body image problems that affect gymnasts. The purpose of this paper is to determine the causes of serious injuries and learn how to avoid them and keep things as safe as possible. Through the theoretical sources, we intend to highlight the following principles, as factors in avoiding injuries: the practice must be done in a safe place, the coach must be qualified to prepare a team in training and contests, the performers must be in good shape a few weeks before the cheerleading session begins, always warm up before any cheerleading practice or competition, have properly fitting, rubber-soled shoes with adequate cushioning and support, start the learning stunts with the perfect lower-level and less complicated skills, and only after they can move on to more difficult ones, always in the presence of a spotter and a coach supervising all practices and competitions.

© 2018 Published by Future Academy [www.FutureAcademy.org.UK](http://www.FutureAcademy.org.UK)

**Keywords:** Cheerleading, safety rules, injuries.

## **1. Introduction**

The term “cheerleading” is known worldwide and can be described as: beautiful girls with elegant dancing posture and movements imposed by choreography or improvised at an exhilarating pace, using a suitable soundtrack and appropriate clothing. Its magnitude reached over time has resulted in a competitive cheerleading activity organized and structured on different levels and categories (Stroescu, 2016, p. 59).

Cheerleaders recognize the prestige associated with sport and they claim that prestige for cheerleading by highlighting its recent transformation into a more athletic, competitive activity that is no longer “just for girls” (Grindstaff & West, 2006, p. 500).

### **1.1. Cheerleading as a sport**

In the 1960s, cheerleaders were shaking pompoms, and the only stunt they performed was a short jump off the ground. Their main purpose was to get the crowd to cheer for their team: thus the word “cheerleader”. In those years, cheerleading coaches may have been ex-cheerleaders, but they were not required to have a coaching background or certification, because safety was not a problem. In 2017, cheerleading is a gymnastic activity, and why it is still called “cheerleading” is not quite clear. It is a competitive contact sport that involves all types of gymnastic stunts, pyramids and partner stunts, as well as throwing flyers high in the air and catching them (we hope). Coaching has not kept up with the changes in cheerleading, but coaching certification programs have become available during the past 10 years. In many cases, safety issues have been associated with coaches who do not have the expertise to teach the skills that today’s cheerleaders need. The lesson learned in football injury data collection can also be applied to cheerleading: injuries may never be totally eliminated, but with reliable injury data collection systems, constant analysis of the data and the development, evaluation and dissemination of effective injury prevention strategies, these injuries can be dramatically reduced (Mueller & Cantu, 2008).

### **1.2. About cheerleading injuries**

Cheerleading has become one of the most dangerous sports in the US (Mueller, 2009), and this is a very important reason why injuries are increasing and present a significant source of injury (Shields & Smith, 2006). According to a recent study made by Discovery Science, 16,000 cheerleaders suffer serious injuries every year, and it is not just about twisted knees or broken ankles, but about fractured necks, paralysis and even death. The US hospital emergency departments reported that the number of cheerleading-related injuries in children had more than doubled, from an estimated 10,900 injuries in 1990 to an estimated 22,900 injuries in 2002 (Giannone & Williamson, 2006). In the last four years, there have been more deaths from cheerleading injuries than in the previous 25 years. Why?? One of the factors may be the increase in the number of cheerleading participants. The other one, which can be associated with the increasing number of cheerleading injuries, is the change in the style of cheerleading routines, which incorporate gymnastic tumbling, partner stunts, human pyramids, lifts, catches and basket tosses, not anymore like 20 years ago, when the routines consisted of toe-touch jumps, splits and claps (Hutchinson, 1997).

## 2. Problem Statement

The 4 articles on cheerleading injuries published in an issue of the *Journal of Athletic Training*, which use epidemiologic data collection methods, are a great start to better cheerleading injury data. Of these articles, the most interesting one involves potential brain injuries and selected surfaces (Shields & Smith, 2009). When a cheerleader is thrown 25 to 30 ft in the air by athletes standing on a wood floor, an accident is waiting to happen. More research in this area is definitely needed.

In an article published in the *American Journal of Sports Medicine*, Boden, Tacchetti and Mueller (2003) found that, of the most common stunts performed at the time of injury, 9 were pyramids and 8 involved a basket toss. Among the 29 catastrophic injuries, 17 were severe head injuries, resulting in 13 skull fractures and 2 deaths, and 8 were cervical fractures. To reduce injuries in cheerleading, the authors suggested:

- better training of spotters,
- mandating floor mats for complex stunts,
- restricting complex stunts when the surface is wet,
- encouraging certification of coaches.

Participation in pyramids and basket tosses should be limited to experienced cheerleaders who have mastered all other skills and should be performed with spotters and landing mats.

### 2.1. Concussions

Repetitive traumatic brain injury occurs after an initial head injury. The second blow may be minor and results in brain swelling. This type of injury is most common in contact and collision sports in which head trauma is likely, such as football, ice hockey, boxing, rugby. Also, the cheerleaders are exposed to repetitive traumatic brain injury concussions (formally known as second-impact syndrome), usually a concussion when cheerleaders collide with other cheerleaders, or when an individual is not caught and the fall is directly on the mat. All those who are involved in training the team and also the parents of cheerleaders and health care providers should be alert to all the signs and symptoms that occur after a fall or concussion.

### 2.2. Serious injuries

Head impact injuries from a fall have the potential to be life threatening. About 75% of all fall-related deaths reported to the US Consumer Product Safety Commission since 1973 involved head injuries. Mueller and Cantu (2008) published a description of 59 catastrophic cheerleading injury cases, and 44 of them (75%) were fall related. Head injuries were sustained in 24 (54%) of these falls, 2 (4%) of which resulted in death. Also, concussions and closed head injuries were the most serious type of injury sustained by cheerleaders 5 to 18 years of age who were treated in US emergency departments from 1990 through 2002, accounting for 3.5% of cases.

### **3. Research Questions**

Why has there been a dramatic increase in the number of cheerleading injuries, including catastrophic injuries, during the last 25 years?

What are the main factors leading to serious injuries?

What is the importance of safety rules?

How to avoid serious injuries?

### **4. Purpose of the Study**

Some studies on cheerleading injuries exist in the literature, but compared to other sports, cheerleading injuries have not received the same amount of concern in their pursuit. A very important part of the existing studies describes the epidemiology of cheerleading injuries by type of cheerleading team (recreation league, elementary school, junior level, levels 1 to 4, levels 5 and 6 - Elite and Premier) and type of cheerleading event (training, shows or competitions). This theoretical study is a response to the need for more information regarding cheerleading participation and injuries and also a landmark for learning how to avoid all these serious injuries and keep things as safe as possible.

### **5. Research Methods**

As research methods, we used a large number of theoretical studies from which we tried to find out the most common problems leading to injuries and, at the same time, we used our personal experience as a cheerleading coach and a high level gymnast. Also, all the theoretical data used in this article present various studies conducted over several years and a thorough analysis of the major injury factors.

### **6. Findings**

There is no doubt that cheerleading injuries can be reduced if the organizations that control cheerleading take an active role in safety. That is why we think that making cheerleading to become an Olympic sport, it will be put under the control of an athletic department, which will in turn require that it follows the rules and regulations that other sports observe and provide the benefits that other sports have. Some of the benefits would include qualified coaches, availability of certified athletic trainers, better practice facilities, improved medical care and limits on the practice time. In other words, to avoid as much as possible the injuries that occur during training, you should consider the following steps:

#### **6.1. Find the perfect Coach**

If you want to take part in any cheerleading program, whether for entertainment or at a high level, make sure that the coach and the program are the right choices, taking into account the skill level.

All cheerleading coaches should be certified after attending courses and passing exams in the presence of specialised committees or the licensed organization. The main reason for using a qualified coach is that he/she will always be up to date with the latest safety measures and regulations governing the sport of cheerleading. In Romania, even if we are at the beginning of the road in this sport, we have

the opportunity to train instructors accredited by the Romanian Majorettes Association (AMR), which annually organizes training and refresher courses with the best specialists from all over Europe.

Even if the research shows that the experience of cheerleading coaches, the level of knowledge and the quality of training do not influence decisively the number of major injuries, we think that all coaches should have a certain number of hours of practice and training in cheerleading before they are allowed to lead a team. To have control over this, all cheerleaders should adopt and implement a set of safety rules appropriate to each type of cheerleader training.

## **6.2. Before starting the training for competition**

To be a cheerleader, you need a lot of motor and psychomotor skills, such as power, coordination, strength, spatial-temporal orientation, rhythm and the list can continue. All these qualities should be developed through regular exercise throughout the year, but also supported by the diet. It is very important for the body to be prepared for the type of effort to avoid injuries. Many specialists recommend off-season training courses as a solution to maintain physical tone.

Special training focused on artistic gymnastics can be considered. The cheerleading sport has many elements in common with gymnastics and therefore, at the highest levels, it is necessary for the cheerleader to have motor skills similar to the gymnast's. All these aspects give them trust, value and safety in execution. It is also an important factor in avoiding major injuries.

Always warm up before any cheerleading practice or competition. Make sure you have properly fitting rubber-soled shoes with adequate cushioning and support. Flyers also might want to consider wearing a lightweight cheer vest while practicing to protect themselves from bruising and injuries.

To achieve optimal results, training and competition always start with the warm up of the body, which lasts for at least 10 minutes. Also, the entire equipment must be suitable, especially the shoes that must have damping foot and be grip. In training, flyers and bases can wear bandages and equipment to protect themselves from bruises and wounds, as well as their muscles and joints.

## **6.3. While competing or practicing**

Almost all the difficult moves made by cheerleaders are featured in human stunts and pyramids. It may seem simple to accomplish, but if it is not executed correctly from a biomechanical point of view and there are no cheerleaders as the basis supporting the weight of the flyer, then there will certainly be major injuries. All these stunts must be consolidated and refined from the beginning and from the lower levels, because on this basis difficulties will arise. It may seem boring for the beginning, but it is absolutely essential to follow all steps of a learning program.

Every workout needs to be tackled with maximum seriousness and attention. Never perform a stunt or basket toss without bases being careful about the flyer they work with and without having a spotter. Also, the coach's instructions are crucial and extremely important. It is not allowed for any cheerleader in a group to be distracted by other team colleagues or other unimportant things. Visual contact with the flyer must be permanently maintained. All these aspects help maximize training.

Cheerleading means sport, performance but also good will, socialisation and show. If a stunt is not comfortable for a cheerleader, it should be changed or turned into something simpler until it is trusted. It

is far too risky to try difficult stunts in situations of insecurity, because this will probably result in injuries for both the flyer and the bases.

Pain training should be avoided. Any health problem should be announced to the coach. If minor injuries occur but cause pain and the activity does not take place in optimal conditions, it would be desirable to focus more on recovering the problem area and, in parallel, to use physical exercises wherever possible.

“Playing through” an injury is especially dangerous when it is a head injury. The brain needs time to heal after a concussion. So, it is absolutely essential to follow a doctor’s advice and wait until all symptoms are gone before returning to normal activities.

## 7. Conclusion

The following results from all cheerleading injury studies show us that: lower extremity injuries were most common, followed by upper extremity injuries; the ankle was injured most often; strains and sprains were the most common types of injury and most cheerleading injuries occurred during gymnastic elements, partner stunts and pyramids (Table 01). We noted that the most common mechanism of injury was basing or spotting 1 (or more) cheerleader(s). However, Schulz et al. (2004) found that falls from heights and contact with another cheerleader resulted in the greatest percentage of injuries.

**Table 01.** Type of injuries, Part of the injured body and Mechanisms of injury

Type of injuries	Percentage	Part of the injured body	Percentage	Mechanisms of injury	Percentage
strain or sprain	53%	lower extremity	30%	basing or spotting	24%
abrasion, contusion or haematoma	13%	upper extremity	21%	failure to complete an exercise	15%
Fracture	10%	ankle	16%	tumbling	15%
laceration or puncture	4%	knee	9%	falls	14%
concussion or closed head injury	4%	neck	9%		
		lower back and head	7%		

Catastrophic injuries and death resulted from cheerleading-related falls, and many of them involved brain injuries. Falls onto an impact-absorbing surface are less likely to cause a serious injury than are falls onto a hard surface, and the potential for life-threatening head impact injuries can be minimised by increasing the shock-absorbing capacity of the surface, decreasing the height from which the person falls, or both.

## References

- Boden, B. P., Tacchetti, R., & Mueller, F. O. (2003). Catastrophic cheerleading injuries. *The American Journal of Sports Medicine*, 31(6), 881-888.
- Giannone, L., & Williamson, T. L. (2006). A philosophy of safety awareness. In: G. S. George (Ed.), *American Association of Cheerleading Coaches and Administrators Cheerleading Safety Manual* (pp. 1-4). Memphis, TN: UCA Publications Department.

- Grindstaff, L., & West, E. (2006). Cheerleading and the gendered politics of sport. *Social Problems*, 53(4), 500-518.
- Hutchinson, M. R. (1997). Cheerleading injuries: Patterns, prevention, case reports. *Physician Sportsmed.*, 25(9), 83-96.
- Mueller, F. O. (2009). Cheerleading injuries and safety. *J Athl Train.*, 44(6), 565-566.
- Mueller, F. O., & Cantu, R. C. (2008). *Twenty-sixth Annual Report for Catastrophic Sports Injury Research* (Fall 1982 - Spring 2008). Chapel Hill, NC: National Centre for Catastrophic Sports Injury Research.
- Schulz, M. R., Marshall, S. W., Yang, J., Mueller, F. O., Weaver, N. L., & Bowling J. M. (2004). A prospective cohort study of injury incidence and risk factors in North Carolina high school competitive cheerleaders. *Am J Sports Med.*, 32(2), 396-405.
- Shields, B. J., & Smith, G. A. (2006). Cheerleading-related injuries to children 5 to 18 years of age: United States, 1990–2002. *Pediatrics*, 117(1), 122-129.
- Shields, B. J., & Smith, G. A. (2009). The potential for brain injury on selected surfaces used by cheerleaders. *Journal of Athletic Training*, 44(6), 595-602.
- Stroescu, S. (2016). Characteristics of cheerleading as a sport. *Discobolul*, XII(1), 59-62.