Cheerleading Injuries

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Goals

- The audience will understand the epidemiology of cheerleading injuries
- The audience will learn ways to deal with and prevent injuries common in cheer
Objectives

- The audience will be able to list the 3 most common types of injuries in Cheer
- The audience will be able to list 3 steps to take to prevent cheerleading injuries
Video

- http://www.youtube.com/watch?v=7FdnuEtDsDgA
Cheerleading

- It *is* a sport
  - But only 29 states recognize it as such for HS
- Ages 3-33?
- Most schools
- Sideline vs Half-time
- Entertainment vs Competitive
Popularity

- 2012/2013- USA 124,187 (HS, competitive)
  - MO- 9,981
  - KS- 4,500
- 4th (all 450,000) or 9th (competitive 125,000) most popular sport for girls in USA HS
- Male participation anywhere from 2-6%
- >20% increase since 1990
Unique

- No defined “season”
- Competitive cheer usually not under supervision of state high school athletics associations
- It has evolved over time (HS, College, All-Star)
Injuries (HS Females)

- Rate per 1,000 Athlete Exposures
  - Cheer 0.9
  - Gymnastics 8.5
  - Soccer 5.3
  - Basketball 4.4
  - Field Hockey 3.7
  - Softball 3.5
  - Volleyball 1.7
Video

- http://www.youtube.com/watch?v=Ch_qHjUtOpE
Types of Injuries

- Sprains/strains - 53%
- Abrasions/Contusions - 13-18%
- Fractures/dislocations - 10-16%
- Lacerations - 4%
- Concussion - 3.5%
Concussion Rates

- Per 1,000 athletes exposures
  - Cheer 0.06 (but has increased at a greater rate than others)
  - Soccer 0.36
  - Basketball 0.16-0.21
  - Lacrosse 0.2
  - Softball 0.07-0.11
  - Field hockey 0.1
Injuries - Body parts

- Lower extremity - 30-37%
  - More likely in 12-18 y/o
- Upper extremity - 21-31%
  - More likely in 6-11 y/o
- Head/neck - 16-26%
- Trunk - 7-17%
Injury Mechanisms

- Base - 23%
- Tumbling - 14-26%
- Fall - 14-25%
- Collision between 2 athletes - 29%

- Overall Stunting – 42-60% of injuries and 96% head/neck injuries
Catastrophic Injuries (HS Females)

- Rate per 100,000 Athlete Exposures
  - Cheer 0.5 (all) - 1.62 (competitive)
  - Gymnastics 0.44
  - Soccer 0.03
  - Basketball 0.03
  - Field Hockey 0.00
  - Softball 0.02
  - Volleyball 0.00
Injuries- Catastrophic

- Direct trauma due to sport/activity and their sequellae
  - Closed head injury
  - Skull fracture
  - Cervical spine injury
- Fatal- death
- Non fatal- Result in permanent brain injury, paralysis, loss of function
- Serious- severe but no permanent injury
Catastrophic injuries 1982-2002

- 42 (39) total injuries reported to Catastrophic Injury Database
- Fatal - 2
- Non-fatal - 19
- Serious - 17
- Unknown - 1
- Included HS (18), College (16) and Middle school (5)
- 4 were male
- 1.95 per year
Catastrophic Injuries

- From 1982-2009 cheer accounted for 65% of girls high school and 70% of girls college catastrophic injuries
- Low rate of overall injury compared to other girls sports
- Still much lower catastrophic rate than football
Risk Factors - Stunts

- High off the floor = higher degree of injury

- More twisting, flipping = higher degree of injury

- Fewer spotters/bases = higher degree of injury
Risk factors - Floor

- Type of flooring and critical height
  - Concrete/asphalt is less than 0.5ft for injury
  - Artificial grass or real grass 4-5 ft
  - Foam or spring floor 10-12 ft
Risk Factors - Type of the athletes

- Harder stunts at earlier ages tend to result in more injury
- Higher BMI athletes had higher rates of injury
Risk Factors-Experience of the coaches

- 3 factors used
  - Years of cheer coaching experience
  - College graduate
  - Course on coaching cheerleading

- 3 of 3 = over 50% reduction in rate of injury
  (2 of 3 then 33% reduction in injury rate)
Risk Factors - Previous injury

- Twofold increase in injury if athlete reported a previous injury
  - Poor rehab or no rehab?
  - At risk due to strength, coordination, type of activities being performed?
**Recommendations**

- **Coaches**
  - Certification and training (yearly)

- **Event space**
  - No hard, wet or uneven surfaces
  - Limited or no wood, concrete, asphalt

- **Strength and conditioning requirements**
  - Vague (7 days of “conditioning” in MO)
Recommendations- technical skills

- Pyramid height 2 people high max
- Base: flyer must be 1:1, 2:1 or greater
- Base must always be in contact with floor and stationary
- Basket toss limited to 4 throwers
- At least 1 spotter for each flyer
- No inverted or twisting dismounts
Reduce injury

- Designate Cheer as an official sport
  - Full regulation and rules
  - ATC and other medical availability
  - Coaching certification
  - Injury surveillance data
  - Sports physicals
Reduce injury

- Appropriate strength and conditioning program
  - Core, lower and upper extremity strengthening
- Proper lifting, catching, throwing and spotting techniques taught early and often
- Stepwise skill progression before the next “level”
Reduce injury

- Landing mats or spring boards for practice and events
- Emergency plans discussed with ATC or team physician
- Reporting of all cheer injuries to ATC or team physician
Prevention is the Key

- AACCA (American Association of Cheerleading Coaches and Administrators) and NFHS (National Federation of State High School Associations) have created guidelines and recommendations
  - http://www.cheersafe.org/
Courses for Coaches

- https://www.aacca.org/coursefinder.aspx

Conclusions

- As always prevention is the key
- If there are injuries, please hold the athletes out of competition until further eval (ATC, physician, NP, PA)
- While catastrophic injuries do occur, cheer is still a safe sport when done properly
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