



# Extreme Sports: To Fly or Not to Fly



Eric E. Coris, M.D.  
USF Sports Medicine  
Associate Professor  
Team Physician  
The University of South Florida College of Medicine  
Department of Family Medicine  
Department of Orthopaedics and Sports Medicine



# Extreme Sports

- **Extreme sport** (also called **action sport**, **adventure sport**, and **adventurous sport**) is a media term for certain activities perceived as having a high level of inherent danger or difficulty and often involving speed, height, a high level of physical exertion, and highly specialized gear or spectacular stunts.[1]

Wikipedia, 2008







Extreme sports teaser



# Extreme Sports


- Are they really extreme?

Extreme sports montage



# Extreme Sports

- Coris Definition
- “Dude.....THAT is twisted!!!”



# Extreme Sports

- Often associated with various youth subcultures
- Almost always individual
- Often focus on performing tricks or stunts
- Rising trend?

## Extreme Sports

- Participation in baseball is down 28 percent since 1987, to 9.7 million players.
- Basketball declined by 5 percent in 2000 and 17 percent from its 1997 peak.
- Since 1987, involvement in softball has dropped by 37 percent.
- Volleyball has plunged by 36 percent.

## Extreme Sports

- Sir Ernest Shackleton's 1914-17 Trans-Antarctic expedition read:  
'Men wanted: For hazardous journey. Small wages, bitter cold, long months of complete darkness, constant danger, safe return doubtful. Honor and recognition in case of success.'

## Extreme Sports

- Individualized ways of uniquely challenging yourself.
- There is no winning and losing
- Little organization into teams or leagues.
- Each individual is truly competing against him/herself.

## Extreme Sports

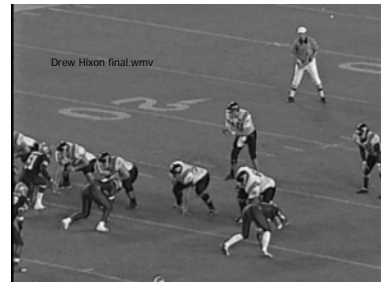
- Too extreme?



- Do we lose anything?

## Benefits of Team Sports

- Social relationships
- Physical challenges, enhancing their skills and athletic ability
- Health promotion
- Sportsmanship,
- Self-esteem and academic performance
- Likelihood of disease and drug use.
- More fun?





# Specific Sports



# Skateboarding



# Skateboarding

- Initial popularity in 1960's
- When introduced in the 1960's was described as a "new medical menace"
- Dramatic increase in the 1970's with the introduction of the polyurethane wheel and increased maneuverability
- Injuries have risen as popularity has increased



# Extreme Sports

- **Skateboarding** - Surged 49 percent
- Approximately 14 million participants

Skateboarding injuries video



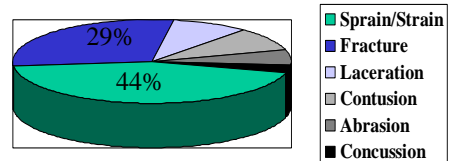
# Extreme Sports

- British Journal of Sports Medicine, volume 35, 325-328, 2001
  - Umea, Sweden - 139 injuries from 1995-1998
  - Mean age 16
  - 3 pedestrians
  - 29% fractures (ankle and wrist)
  - 3% concussions
  - Most injuries on ramps
  - 9% on roads
  - 37% "loss of balance"
  - 26% failed trick attempt



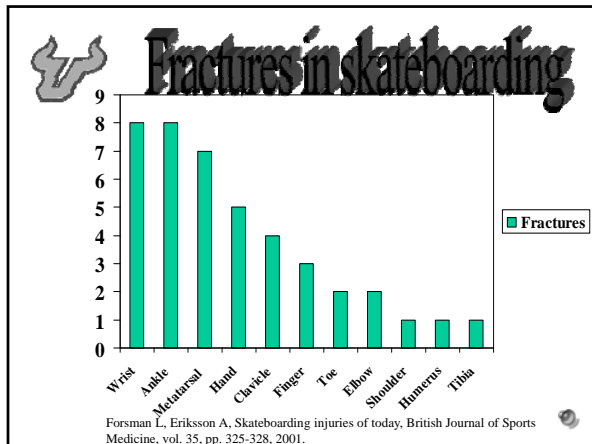
# Extreme Sports

- **Skateboarding** - Injury types



Forsman L, Eriksson A. Skateboarding injuries of today, British Journal of Sports Medicine, vol. 35, pp. 325-328, 2001.





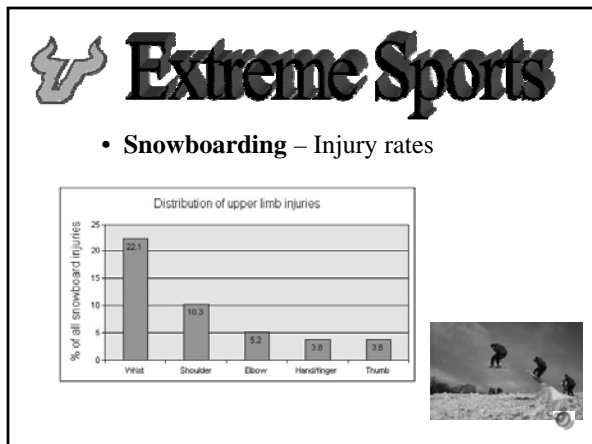
## Extreme Sports

- **Skatepark** popularity is growing
- The National Safety Council and Consumer Safety Commission has stated that
  - “Skateboarding is the safest of all recreational sports for teens.”
- With 14 million teenage skatepark users in the U.S., skate parks are a growing trend in community development
- Skatepark use is now the #1 rated recreational activity for teens in a Sport By Sport Comparison.

## Snowboarding

## Extreme Sports

- **Snowboarding** - Once the stepchild of the ski slopes - now claims 7.2 million participants, up 51 percent from 1999. A crowd favorite at the Winter Olympics.

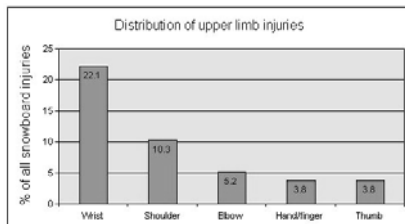
## Extreme Sports

- **Snowboarding** – Injury rates
- 3.55 injuries per 1000 boarder days



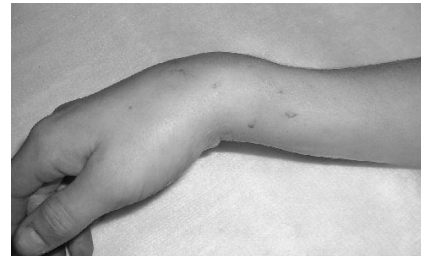
# Extreme Sports

- Snowboarding – Injury types



# Extreme Sports

- Snowboarding – Injury types



# Extreme Sports

- Snow Parks - More extreme?
  - Snow park injuries were more likely to be severe in nature
    - Rates of joint dislocations were higher as were rates of injury to the head, spine and chest
  - Snow park injuries were less likely to affect the wrist joint (normally the number one injury area amongst boarders)
  - ACL injuries (a relatively rare injury to snowboarders outside a park) were more frequent in snow parks
  - More boarders injured in snow parks required admission to hospital



# Extreme Sports

- Snowboarding – Injury rates



# BMX Racing

# Extreme Sports



- Boom!!!
- Skate/bmx/snowboard wipeouts

# Extreme Sports

- **Mountain Biking.** 2nd most popular extreme sport in the U.S. with 8.6 million participants at least once per year and 3.4% of Americans riding 20+ days a year
- Steadily increasing since 1970's
- Cross country and downhill attained Olympic status in 2000
- Riders in downhill reach speeds of 45mph
- Helmets are compulsory, body armor varied



# Extreme Sports

- **BMX Bicycling.** The average age of a BMX cyclist in 2004 was 24.7 years of age.
- *The impact of an extreme sports event on a district general hospital, Scottish Medical Journal, Vol. 50, issue 3, p. 106-108*
  - Fort William Mountain Bike Race
  - UCI World Cup Series
  - 173 Competitors, cross country, downhill, and 4x4 events
  - 52 Riders (30%), 61 injuries
  - 2 riders required admission, one with transport
  - Extreme sports can have a significant impact on small district hospitals



# Motocross



# Motocross

- Y Tomida<sup>1</sup>, H Hirata<sup>2</sup>, A Fukuda<sup>2</sup>, M Tsujii<sup>2</sup>, K Kato<sup>1</sup>, K Fujisawa<sup>1</sup>, A Uchida<sup>2</sup>, *Injuries in elite motorcycle racing in Japan, British Journal of Sports Medicine 2005;39:508-511*
- 117 elite motocross riders
- 36 road racers, 60 motocross racers, and 21 trial bike riders



# Extreme Sports

- Sixty major injuries (25 in road racing, 32 in motocross, and three in trial bike riding)
- Fractures (45), followed by ligament injuries (8), dislocations (5), and soft tissue injuries (2). The overall injury rate was 22.4 per 1000 hours, and the death rate was zero. There was no significant correlation between risk of injury and age, experience, or accumulated competition points.
- Injury rates high



# Basejumping



# Extreme Sports

- Base Jumping - How dangerous
- Soreide K, Ellingson CL, Knutson. How Dangerous is Base Jumping? Journal of Trauma, vol. 62, issue 5, page 1113-1117
- Building, Antenna, Span, Earth – Base
- Rapidly increasing in popularity
- 20,850 Base jumps
- 1995-2005 at Kerag massif in Norway
- 9 fatal jumps (0.04%)
- 82 non-fatal accidents (0.4%)
- Basejumping compared to skydiving
  - 5-8X increased risk
  - Skydiving 30 fatalities/yr (USPA), non-fatal - one injury per 2500 jumps.
  - Number of accidents and helicopter activation increased with annual number of jumps



# Extreme Sports

- Non-fatal accidents
  - Sprained ankle
  - Fractured ankle
  - Minor head injury
    - Concussion
  - Contusion
  - Knee sprain/strain



# In Line Skating

# Extreme Sports

- **Inline Skating.** There are more inline skaters than the combined number of H.S. baseball players (9.7 million) and football players (5.4 million).
- Inline skate wipeout

# Extreme Sports

- Injury patterns very similar to skateboarding
- Higher incidence of lower extremity fractures
  - Knee
  - Ankle



# Climbing



## Extreme Sports

- **Rock Climbing.** i.e. Zero Gravity 9-18 years olds of which six of the nine climbers earned a spot on their respective national squads this year.



## Extreme Sports

- **Artificial Wall Climbing.** Around 7.7 million participants.



## Wakeboarding



## Extreme Sports

- **Wakeboarding** - An increase of 32 percent to 3.5 million participants.
- The subgenre of "board" sports thus gets a clean sweep of the **top three growth** positions among all alternative sports. (American Sports Data, 2004)



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## Extreme Sports

- **Wakeboarding** - An increase of 32 percent to 3.5 million participants.
- Wakeboard wipeouts!





**Extreme Sports**

- **Kayaking.** 130% growth to 10 million between 1998-2004. 48% of participants were 16-24.
- Whitewater Carnage

**Extreme Sports**

- Fiore DC, Houston JD, *Injuries in Whitewater Kayaking*, British Journal of Sports Medicine, Vol. 35, no 4, pp 235-241, Aug 2001.
  - 392 Kayakers
  - 219 suffered 282 injuries (56%)
  - Majority of injuries while still in boat (87%)
  - Directly related to exposure
  - Striking an object most common mechanism (44%)
  - Overuse also common (25%) mechanism

**Extreme Sports**

- Primarily upper extremity, esp shoulder
  - One half sought medical care
  - One third missed more than a month of Kayaking due to the injury
  - 96% reported a complete or good recovery
- Fiore DC, Houston JD, *Injuries in Whitewater Kayaking*, British Journal of Sports Medicine, Vol. 35, no 4, pp 235-241, Aug 2001.

**Extreme Sports**

Whitewater Kayaking Injuries

Injury Type	Percentage
Abrasion	44%
Tendinitis	25%
Contusion	15%
Dislocation	16%

•Fiore DC, Houston JD, *Injuries in Whitewater Kayaking*, British Journal of Sports Medicine, Vol. 35, no 4, pp 235-241, Aug 2001.

**Extreme Sports**

- **Adventure Tourism.** Estimated at 25%, or 55.5 million Americans took a vacation where the primary purpose was outdoor adventure.

## Extreme Olympics

- Climbing and Surfing have been recognized by the International Olympic Committee.
- BMX slated to debut as a medal sport in 2008.



## Backjumping?

## Extreme Sports

- Too extreme?



- Do we lose anything?



W Cross country	61.4 %
Football	58.8 %
Wrestling	49.6 %
W Soccer	43.7 %
M Cross Country	43.7 %
W Gymnastics	38.9 %
M Soccer	36.4 %
W Basketball	34.5 %
W Track	24.8 %
M Basketball	29.2 %
Volleyball	19.9 %

Rice SG, Risks of Injury During Sports Participation. In: Sullivan JA, Anderson SJ, editors. Care of the Young Athlete. American Academy of Orthopedic Surgeons and American Academy of Pediatrics: 2000.



## Summary



## Extreme Sports

- Are extreme sports overtaking team sports in youth participation?
- Are extreme sports globally more dangerous (i.e. higher injury rates)?
- Are certain extreme sports more dangerous than others?
- Are there significant health benefits/risks to extreme sports compared to team sports?
- Are there significant psychological health benefits/risks to extreme sports compared to team sports?