• 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

• Are they really extreme?

Extreme sports montage

• Coris Definition

“Dude.....THAT is twisted!!!”

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

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.'

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.

Too extreme?
Do we lose anything?

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?
• 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

Skateboarding – Injury types

• Skateboarding
  - Surged 49 percent
  - Approximately 14 million participants

Skateboarding injuries video

• British Journal of Sports Medicine, volume 35, 325-328, 2001
  – 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

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 - 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.

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

- Snow Parks - More extreme?
  - Snow park injuries were more likely to be severe in nature.
  - Rates of joint dislocations were higher than those 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.

Snowboarding – Injury rates

Boom!!!

Skate/bmx/snowboard wipeouts
- **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

- **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.**
  - 117 elite motocross riders
  - 36 road racers, 60 motocross racers, and 21 trial bike riders
  - 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
Base Jumping - How dangerous
Soreide K, Ellingson CL, Knutson, How Dangerous is Base
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

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

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

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

Climbing
• **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.

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

• **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)

  **Wakeboard wipeouts!**
**Whitewater**

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

**Extreme Sports**

  - 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

- 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

**Whitewater Kayaking Injuries**

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

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

• Too extreme?

• Do we lose anything?

<table>
<thead>
<tr>
<th>Sport</th>
<th>Injury Rate</th>
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<tbody>
<tr>
<td>W Cross country</td>
<td>61.4 %</td>
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<tr>
<td>Football</td>
<td>58.8 %</td>
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<tr>
<td>Wrestling</td>
<td>49.6 %</td>
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<tr>
<td>W Soccer</td>
<td>43.7 %</td>
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<tr>
<td>M Cross Country</td>
<td>43.7 %</td>
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<tr>
<td>W Gymnastics</td>
<td>38.9 %</td>
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<tr>
<td>M Soccer</td>
<td>36.4 %</td>
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<tr>
<td>W Basketball</td>
<td>34.5 %</td>
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<tr>
<td>W Track</td>
<td>24.8 %</td>
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<tr>
<td>M Basketball</td>
<td>20.2 %</td>
</tr>
<tr>
<td>Volleyball</td>
<td>18.9 %</td>
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</tbody>
</table>