

*Sports Specific Safety*

# *Track & Field*

*Sports **M**edicine & **A**thletic **R**elated **T**rauma  
**SMART** Institute*

# Objectives of Presentation

1. Identify the prevalence of injuries seen in track & field athletes.
2. Discuss commonly seen injuries.
3. Provide information regarding the management of these injuries.
4. Provide examples of venue and equipment safety measures.
5. Provide conditioning tips to reduce potential injuries.

# Injury Statistics

- From data reported in 1983 through 1997 – direct and indirect fatality and catastrophic injury rates were less than one per 100,000 participants in all spring high school sports.

## HOWEVER ...

- Of the 68 direct deaths and catastrophic injuries reported in spring high school sports – 39 (57%) were reported in track and field.
  - Sixteen of 23 direct fatalities (70%) occurred in track and field.
  - 19 (66%) of 29 indirect fatalities occurred in track and field.
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- Cantu R, et al. Fatalities and catastrophic injuries in high school and college sports. *Physician and Sportsmedicine* 1999; 27(8): 34-48

# Commonly Seen Injuries

By far the most common track & field injuries are overuse injuries due to improper training. But accidents do happen as well.

- Patella tendinitis
- Shin splints
- Hamstring strains
- Contusions
- Abrasions

# Patella Tendinitis

- Cause of Injury
  - Jumping and landing – places tremendous stress and strain on patella and quadriceps tendon
  - Sudden or repetitive knee extension can lead to tissue breakdown and inflammation
- Signs of Injury
  - Pain and tenderness at tip of knee cap and behind knee cap
  - Worse with going up/down stairs

# Patella Tendinitis

- Care
  - R.I.C.E.
  - Avoid aggravating activities
  - Exercise to strengthen
  - Patellar tendon strap

R.I.C.E. – Rest, Ice, Compression, Elevation

# Shin Splints

- Cause of Injury
  - Overuse/training errors
  - Weak muscles
  - Improper footwear
  - Flat feet
  - Tight heel cord
- Signs of Injury
  - Pain in front of shin
  - Gets worse with more activity

# Shin Splints

- Care
  - Activity modification
  - Ice massage to reduce pain and inflammation
  - Flexibility program for calf
  - Correction of abnormal biomechanics (flat feet)
  - Arch taping
  - Orthotics

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# Hamstring Strain

- Cause of Injury
  - Fatigue
  - Poor posture
  - Lack of flexibility
  - Strength imbalances
- Signs of Injury
  - Pain in muscle belly or point of attachment
  - Loss of function
  - Discoloration (bruising) due to bleeding in muscle
- Grade 1
  - Pain and soreness during movement
  - Point tenderness
- Grade 2
  - Partial tear
  - Identified by sharp snap or tear
  - severe pain and loss of function
- Grade 3
  - Complete rupture tendon or muscular
  - Usually will see severe bruising and palpable mass or gap

# Hamstring Strain

- Care
  - R.I.C.E.
  - Restrict activity until soreness has subsided
  - Ballistic stretching and explosive sprinting should be avoided initially
  - Gradual return to activities

# Contusions

- Cause of Injury
  - Sudden direct blow
  - Can be deep or superficial.
  - May be painful to the touch and with movement
  - Must be cautious and aware of more severe injuries associated with repeated blows
- Signs of Injury
  - Pain
  - Temporary loss of function
  - Immediate bleeding of affected muscles (bruising)
  - Early detection and avoidance of internal bleeding are vital – increases recovery rate and prevents muscle scarring.

# Contusions

- Care
  - R.I.C.E.
  - Restrict activity until soreness has subsided
  - Ballistic stretching and explosive sprinting should be avoided initially
  - Gradual return to activities

# Abrasions

- Cause of Injury
  - Falling or dragging body part against a rough surface
- Sign of Injury
  - Red, raw skin
  - Bleeding
  - Pain
  - Dirt – is your enemy!



# Abrasions

- Should be cared for **immediately**
- All wounds should be treated as though they have been contaminated
- To minimize infection, clean wound thoroughly with soap, water, and sterile solution if available
  - Avoid hydrogen peroxide and bacterial solutions initially
- Dressing
  - Sterile dressing should be applied to keep wound clean
  - Occlusive dressings are extremely effective in minimizing scarring
  - Antibacterial ointments are effective
  - Utilization of hydrogen peroxide can occur several times daily before reapplication of ointment

# Abrasions

- Signs of Infection
  - Same as those for inflammation
    - Pain
    - Heat
    - Redness
    - Swelling
    - Disordered function
  - Pus may form due to accumulation of WBC's
  - Fever may develop as immune system fights bacterial infection

# Field/Playing Area Safety

- Make sure all participants and spectators are aware that multiple events are occurring
- Know your environment
  - Be aware of changing weather conditions
- Acclimate to the surroundings
  - Stay well hydrated in the heat
  - Dress according to the weather
  - Always wear sunscreen



# Field/Playing Area Safety

- Lightning
  - Flash to Bang or 30-30 Rule
    - If there is 30 seconds or less between the time that you see lightning and hear thunder then seek shelter immediately.
    - Wait at least 30 minutes after the last thunder is heard before resuming play. If you see further thunderstorm clouds building, you should wait at least another 30 minutes.
  - Seek shelter in an enclosed vehicle, restroom, or other nearby building. Golf carts, trees, or other “shaded” locations are not safe.
- Sun
  - Don't forget sunscreen.

# Equipment Safety

- Evaluate/inspect all equipment and facilities BEFORE the start of every event
- All equipment must be in good usable condition.
- Be aware of older equipment that may be fatigued or damaged.

# Conditioning Tips to Avoid Injury

- Start slow and gradually
- Never increase training by more than 10% per workout AND 10% per week
- Good warm up and cool down
- Maintain good strength – hit the gym
- Stay well hydrated and don't diet while training – you need to eat for workouts



# Heat Illness

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# Prevention of Heat Illnesses (NCAA)

- Allow for 7-10 days to acclimatize
  - 80% acclimatization
- 2 months for full acclimatization

# General Information

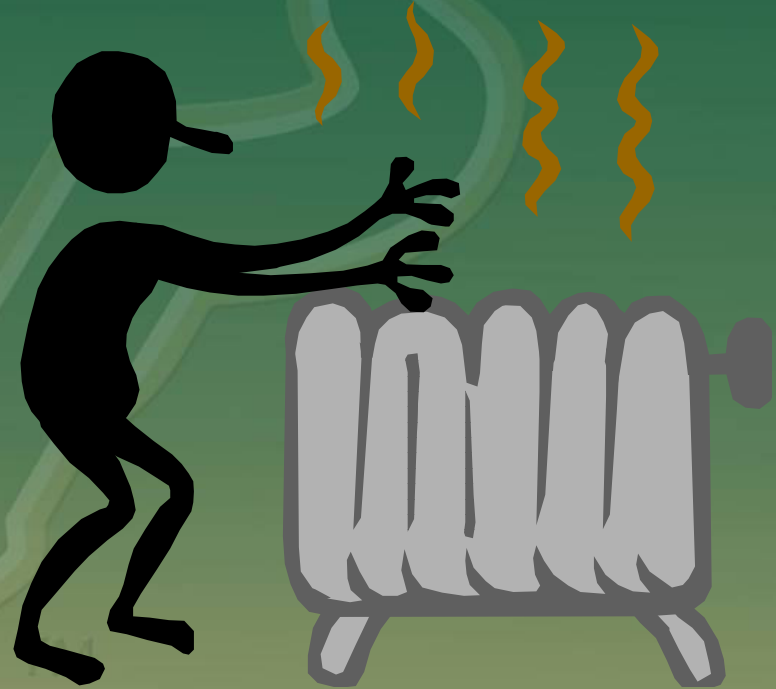
- White → Reflects 30% of the heat
- Dark → Reflects 18% of the heat  
(skin or clothing)
- Male: Lower % body fat
- Female: Higher % body fat
  - Core temperature must get higher before sweating occurs
- Core temperature: for every one degree of increased core temperature – there is an increase in heart rate (about 10 beats/1 degree)

# Heat Illnesses - Causes

- Dehydration
  - 60+ % of total body water
  - Sugar in the stomach prevents rehydration
  - Observe until urination occurs (key)
- Electrolyte Imbalance
  - Depletion occurs over a period of 2-5 days
  - Ion-chemical charge

# Types of Heat Illnesses

- Heat rash
- Heat syncope
- Heat cramps
- Heat exhaustion
- Heatstroke





# Fluid Replacement

- **Before exercise:** drink 17-20 oz. 2-3 hrs prior.
- 17-20 oz 10-20 min. prior to exercise.
- **During exercise:** 7-10 oz. every 10-20 min.
- **After exercise:** within 2 hrs, drink enough to replace weight loss from exercise.

<http://usfortho.com>

## **MRSA**

Methicillin-resistant Staphylococcus aureus

*The Silent Killer*

### **Ways to combat MRSA:**

- Keep hands clean
- Shower immediately after exercise
- Keep cuts and scrapes covered
- Wear clean exercise clothes
- Don't share razors or other personal items
- Notify the athletic trainer of any unusual sores

# If you remember nothing else....

- Always be aware that multiple events create unique situations for injury
- Never use equipment that is substandard, old or broken
- R.I.C.E.
- Treat all wounds as if they are dirty

# Summary

- Always increase training gradually
- Remember it is always better to be 10% undertrained than 1% overtrained!
- Stay hydrated – acclimate to your surroundings
- Be physically prepared for competition – don't enter a competition you are not ready for!

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