

WELLNESS UPDATE 2001, #1

THE PROPER TREATMENT OF ATHLETIC INJURIES

There are **three common errors coaches make in treating athletic injuries**: **1)** not referring the athlete to a physician or other health professional if help is needed in determining the extent and proper treatment of an injury; **2)** not beginning proper treatment as soon as possible following an injury; and, **3)** using heat too early in the treatment of an injury.

IMMEDIATE TREATMENT

Most coaches understand that return to participation, following a sprain or strain, can be expedited by proper treatment of the injury. The four basic principles of immediate treatment of injuries are **REST, ICE, COMPRESSION, AND ELEVATION (RICE)**. Rest, ice, compression, and elevation should begin as soon as possible after an injury to help prevent and/or reduce swelling, discomfort, and loss of movement. This will also result in faster healing time and quicker return to participation. RICE should begin before the end of the practice or contest.

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REST simply means to promptly stop using the injured area and allow adequate time for the injury to heal. Rest may require anything from avoiding unnecessary or excessive use, to the use of crutches, a cast, or a sling. The rest period may be as short as one day or as long as several months.

ICE means to apply ice to the injured area frequently for the first several days following the injury. Ice bags, ice buckets, or ice cups are all excellent ways to apply ice to an injury. **When using an *ice bag*, it is recommended that you place a thin, damp towel between the ice bag and the skin to reduce the possibility of frostbite.** Used in this manner, an ice bag can safely be used for up to 60 minutes and should be used for at least 20 - 30 minutes to obtain the maximum benefit.

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Buckets filled with half water and half ice (*ice buckets*) work well for icing feet, ankles and shins because immersing them in cold water will immediately slow the circulation to the entire foot, ankle and lower leg area. Buckets, coolers, trash cans, or anything that can be filled with water and ice in which to immerse the injured area is suitable. **The treatment duration for ice buckets is 15 - 20 minutes.**

Ice cups work well for icing shins, quads, shoulders or areas of the body that are more difficult to immerse in water and ice. An ice cup is simply water frozen in a paper or Styrofoam cup. **When using an ice cup, tip the cup upside down so the ice is in contact with the skin. The cup should be kept moving slowly at all times to reduce the risk of frostbite, be kept in constant contact with the skin, and be used for no more than 10 minutes. The use of ice cups on new injuries should be avoided as the movement of the ice may cause further tissue irritation.** Ice can be effective in treating athletic injuries for up to several weeks after the injury.

When using an ice cup it should be kept moving slowly at all times to reduce the risk of frostbite, be kept in constant contact with the skin, and be used for no more than 10 minutes.

COMPRESSION means to wrap an elastic wrap around the injured area to help prevent or reduce possible swelling. When swelling occurs it can cause pressure which is painful and limits movement. **Great care needs to be taken not to get the elastic wrap too tight. The wrap should be SNUG, not tight.** If the area below the wrap becomes numb or loses color, immediately remove the wrap and after all feeling and color have returned, reapply it more loosely. Care should also be taken to cover the entire injured area leaving no gaps in the wrap. Any uncovered area may encourage swelling to occur in that area.

Great care needs to be taken not to get the elastic wrap too tight. The wrap should be SNUG, not tight.

ELEVATION means to keep the injured area above the athlete's heart, if at all possible. If this is not possible, elevating the area to a comfortable position is suggested. Elevation will assist in preventing or reducing swelling. Towels, pillows, or blankets may be used to help position the athlete more comfortably.

HEAT THERAPY

The most common forms of heat therapy are heating pads, hydro collar packs, and whirlpool baths. **Moist heat is much more beneficial than dry heat, as it has the capability of penetrating more deeply into the muscle tissue.** The deeper the heat penetration into the muscle, the more effective it will be as a treatment. The recommended amount of time for moist heat treatment is 20 - 30 minutes. All heat treatments should be conducted at a temperature that is comfortable to the athlete. **Heat treatments should never be uncomfortable due to excessive heat!**

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While the use of heat can decrease pain, muscle spasm, and joint stiffness, it should not be used as a treatment for the first several days after an injury. The use of heat too quickly following an injury may very well result in increased swelling, increased discomfort, and a greater loss of movement. If swelling appears during or after the use of heat, a return to ice, compression, and elevation immediately should help control it.

Heat should not be used as a treatment for the first several days after injury.

When using a whirlpool bath the temperature should be maintained between 100 F and 104 F. **An athlete should not be allowed to use a whirlpool for more than 20 - 30 minutes and should never be left unattended.**

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Whirlpool baths should be cleaned or chemically treated at least once a day to help prevent the growth of bacteria.

In summary, when choosing the proper treatment for injuries, several factors need to be considered. First, if several days have not passed since the injury, use ice therapy. Second, even after several days, if the swelling, pain, and loss of movement have not been controlled or are not improving, use ice therapy. Only when swelling, pain, and loss of movement have been controlled or are improving, should heat therapy be used.

Questions and comments about the proper treatment of athletic injuries, or other areas dealing with students' wellness, are welcome and encouraged. They should be addressed to Alan Beste, LAT, Administrative Assistant, Iowa High School Athletic Association, PO Box 10, Boone, IA 50036. (515) 432-2011 <abeste@iahsaa.org>

SOURCES: Anderegg, Marty, M.S.E., A.T., C. Iowa Methodist Sports Medicine Centre, Des Moines, IA; Arnheim, Daniel, D. Modern Principles of Athletic Training, St. Louis:Times Mirror/Mosby College Publishing, 1989; Athletic Training and Sports Medicine, American Academy of Orthopaedic Surgeons, 1984; Cushman, Deborah, Des Moines Register Staff Writer. "Think RICE when you're hurt", The Des Moines Register, March 16, 1990; Gerry, Brian, T., A.T., C. "Returning with the RICE Method", Drug-Free Athlete, August, 1991; Halvorson, Glen, MD. "Therapeutic Heat and Cold for Athletic Injuries", The Physician and Sports Medicine, Volume 18, Number 5, May, 1990; Sports Medicine: Health Care for Young Athletes, American Academy of Pediatrics, 1991; Stamford, Bryant. "Use Heat, Cold Wisely for Injuries", Spotlight on Youth Sports, Volume 13, Number 3 & 4, Fall 1990-Winter 1991.

ATHLETIC INJURY TREATMENT GUIDELINES

I. Immediate Treatment - Stage One

- A. If in doubt as to the severity of the injury, refer to a physician or other health professional.
- B. Rest - removal from participation.
- C. Compression - snugly, not tightly, wrap the injured area.
- D. Ice - apply ice to the injured area for 20 - 30 minutes.
- E. Elevation - raise the injured area above the heart, if possible.
- F. Apply an elastic wrap and ice five times, 20 - 30 minutes each time, during the next 24-hour period.
- G. If unable to walk without pain or a limp, use crutches.

II. 24 - 72 hours after the injury - Stage Two

- A. If swelling, discoloration, pain, or losses of movement are present continue with stage one treatment.
- B. If no swelling, discoloration, pain, or loss of movement is present:
 - 1. Ice treatment for 20 - 30 minutes before and after any activity.
 - 2. Support area with wrap, tape, or brace.
 - 3. Have the athlete perform functional tests.
 - 4. Determine athlete's ability to perform, and adjust activity as necessary.

III. 72 hours or more after the injury - Stage Three

- A. If swelling, discoloration, pain, or loss of movement is present continue with stage one treatment.
- B. Symptoms controlled, but limited range of motion exists:
 - 1. Heat treatment for 20 - 30 minutes before activity.
 - 2. Range of motion exercises to promote use of the area.
 - 3. Support area with wrap, tape, or brace.
 - 4. Allow limited activity using pain as the guide. Although there may be some discomfort during activity, there should be NO pain. ANY activity causing pain should be discontinued.
 - 5. Ice treatment for 20 - 30 minutes after any activity.
 - 6. Continue the use of an elastic wrap during the day.

IV. Stage Four

- A. If symptoms are controlled, but limited range of motion exists, continue with Stage Three, part B.
- B. Symptoms controlled, full range-of-motion, less than 90% of full strength as compared to the uninjured side:
 - 1. Work on strengthening exercises through the full range of motion.
 - 2. Support area with wrap, tape, or brace.
 - 3. Have the athlete perform functional tests.
 - 4. Determine athlete's ability to perform and adjust activity as necessary.
 - 5. Ice treatment for 20 minutes following activity.

V. Stage Five

A. If symptoms are controlled, there is full range of motion, but still less than 100% strength as compared to the uninjured side:

1. continue with Stage Four, Part B until 100% strength is reached.
2. Continue performing functional tests on a weekly basis to determine the athlete's ability to perform.
3. Continue activity as tolerated, building gradually to full participation.

Adapted from guidelines established by Marty Andereg, Iowa Methodist Sports Medicine Centre, Des Moines, IA.