# Active Bones

JULY 2011

**ORTHOPAEDIC SURGERY AND SPORTS MEDICINE TEACHING AND RESEARCH FOUNDATION**

**THIS ISSUE INCLUDES:**

**Heat Illness**

## Upcoming Topics:

Football Workout • Concussions
Shoulder Dislocations • Basketball - ACL

Dear Reader,

ACTIVE BONES is the official newsletter of the Orthopaedic Surgery and Sports Medicine Teaching and Research Foundation (OTRF). The newsletter is a brief, easy-to-read educational piece that provides continuing education about musculoskeletal injuries, health performance, and new research and development in the field of Orthopaedic Surgery and Sports Medicine.

Please contact us at www.otrfund.org or stevenchudikmd@hoasc.com with any questions, suggestions for any specific topics that may be of interest to you, or if you just wish to be added to the distribution list to receive this publication directly.

Sincerely,

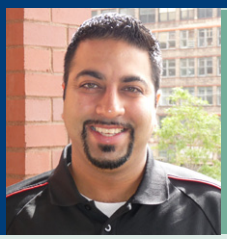
Steven C. Chudik MD.
Orthopaedic Surgeon
OTRF Founder and President

## OTRF Board of Directors



**PLEASE CALL**
**1-630-794-8668**
**OR EMAIL US AT**
**stevenchudikmd@hoasc.com**
**TO RECEIVE THIS NEWSLETTER DIRECTLY**

# Feeling The Heat



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Individuals participating in activities under hot and humid weather conditions need to be aware of the dangers of heat-related illness. Heat-related illnesses such as heat cramps, heat exhaustion, and heat stroke are very serious conditions that can be potentially life threatening (see chart on page 3).

The management of heat-related illness begins with awareness and recognition. Heat cramps are marked by muscle spasms that result from an excessive loss of electrolytes such as potassium and sodium through sweating. Heat exhaustion; characterized by headaches, confusion, irritability, decrease in performance, nausea/vomiting; is caused by a loss of circulatory volume through excessive sweating. Untreated, heat exhaustion can quickly progress to heat stroke, the most dangerous and life-threatening form of heat illness. Heat stroke involves a failure of the body's ability to regulate heat and is marked by mental status changes and an elevated core temperature above 104 degrees F (40 degrees C). Without emergent cooling, cells die and organs fail, causing permanent damage and possibly death.

Because adequate cooling means are not always readily available and heat-related illness can progress quickly, prevention is critical and all efforts should be made to minimize risk. The intensity and duration of workouts should be limited and progressed gradually, typically over 14 days, until the body has acclimated (adapted) to exercising under hot and humid conditions. Proper hydration and nutrition before, during and after activity is crucial to prevent excessive losses of electrolytes and water. Avoiding environmental extremes of the mid-day with early morning and late evening workouts when temperatures are at their lowest will reduce the risk. In extreme heat, workouts should be modified to eliminate the need for heavy equipment such as helmet-only practices for football. Regular rest periods to allow the body to cool and rehydrate can also prevent heat-related illness.

## Feeling the Heat continued

Risk factors for heat-related illness also include obesity, extremes of age (<15 or >65 years of age), poor cardiovascular fitness, dehydration, lack of sleep, intense activity, excessive clothing, history of heat illness, recent illness with fever, other medical conditions (heart, lung, blood) and the use of certain drugs and medications including alcohol, dietary supplements (ephedra), anti-anxiety medications (valium) and high blood pressure medications (beta blockers and diuretics).

If heat-related illness is suspected, immediate treatment is required. Individuals suffering from heat cramps should drink electrolyte-replacement fluids and rest in a cool environment to prevent the progression to more severe heat-related illness. Those with early signs of heat exhaustion including headache, nausea, or dizziness should do the same and closely monitor their core temperature (rectal thermometer is most reliable and the standard). Individuals demonstrating mental status changes, even without core temperatures greater than 104 degrees F (40 degrees C) should be treated as early heat stroke. They must be immediately cooled with water and fans; ice packs to the neck, axillae, and groin; and/or immersion in an ice water bath (if the individual can be properly monitored) and transported to an emergency medical facility where they can be more appropriately monitored and resuscitated.

## Signs and Symptoms of Heat-related Illnesses

### Heat Cramps
Possible Elevated Body Temps
Muscle Cramps
Thirst
Sweating

### Heat Exhaustion
Elevated Body Temps (98.6° - 104°)
Nausea/vomiting
Headache
Dizziness
Light Headedness
Excessive Sweating
Cold and Clammy Skin

### Heatstroke
Elevated Body Temps (>104°)
Confusion
Irritability
Incoordination
Hyperventilation
Heart Palpitation
Shock
Coma

When working out in hot and humid weather, it is important to be aware of the risks for heat-related illness, take preventive measures, recognize the early signs and be prepared to act quickly and appropriately when heat-related illness is suspected.

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## DONATION REQUEST

### We Need Your Help

OTRF can't do it without you. There is no question that healthcare is expensive and difficult for most to afford; however, to continue to make important advances in healthcare, we need everyone's help to fund research and education. To conduct its work, OTRF has been fortunate to receive large donations from larger, more affluent parties and organizations; but, it still thrives mostly on small donations from many different individuals. Most donations come from the many patients and families that Dr. Chudik directly touches in his practice. Often, it is no more than the price of a Starbuck's cup of coffee; but every donation, large or small, makes a difference. Thank you for your support.

**Thank you**
**for your support.**

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# Orthopaedic Surgery and Sports Medicine Teaching and Research Foundation is Committed to Research and Education

ORTHOPAEDIC SURGERY AND SPORTS MEDICINE
TEACHING AND RESEARCH FOUNDATION

OTRF was founded by Dr. Steven Chudik in 2007 and is a non-for profit organization dedicated to funding research and education for the purpose of keeping people active and healthy.

Injury to and degeneration (wear and tear with use and age) of our musculoskeletal system (our joints and cartilage, muscles and tendons, bones and ligaments) threaten our ability to stay active, work, and lead healthy lifestyles. Too many individuals are getting injured or developing arthritis at younger and younger ages. At alarming rates, little leaguers are injuring their elbows, young female athletes are rupturing their anterior cruciate ligaments (ACL), weekend warriors are tearing their meniscus, golfers are missing the season with rotator cuff tears, physical laborers are getting injured and are unable to work, and young adults are unable to stay active because of debilitating arthritis.

There is a great need to disseminate knowledge amongst our community so that we can better prevent these injuries and degeneration (wear and tear) and best preserve our ability to stay active and healthy. We also need to fund unbiased, quality, and cutting edge research to develop better and less invasive methods to prevent and manage these injuries and degeneration.

To meet these needs, OTRF produces the newsletter, "ACTIVE BONES," shares information regarding health performance related issues of nutrition and fitness, hosts Athletic Training educational programs, conducts local educational seminars for health care providers and the community, and most importantly funds research and development particularly in the areas of cartilage injury and repair; sports injury prevention; knee ligament injury prevention and reconstruction; and minimally invasive surgery for fracture, tendon, ligament, cartilage and joint repair.