



Orthopedics & Spine Center

TIP OF THE MONTH

MUSCLE SORENESS

WHAT IS IT AND WHAT CAN YOU DO TO MINIMIZE IT?

MUSCLE SORENESS	
WHAT IS IT?	<p>Sometimes (or perhaps often) a day or so after practices or games, individuals may feel pain in their muscles. This pain occurs without recollection of a specific injury mechanism. No pain may have been felt the day before, but now the hamstrings or quadriceps muscles are sore with every movement. Muscle soreness can be produced by many types of muscular activities. Movements that may produce muscle soreness include:</p> <ul style="list-style-type: none"> • Movements that resist gravity or forward momentum, such as downhill running or lowering a weight. In soccer, stop-and-go movements as well as jumping and landing may cause muscle soreness. • Movements that resist forces exerted by stronger opponents, such as a hard tackle or repetitive shooting or kicking.
WHY DOES IT OCCUR?	<p>Current scientific thought points toward muscle damage as the culprit in muscle soreness, though the precise mechanisms are not fully understood and continue to be researched.</p>
TREATMENTS	<p>Typical recommendations for treatment of muscle soreness include stretching, ice or heat, and possibly topical applications of athletic balms or creams. Each of these treatments may provide temporary relief, but none is effective for long. The use of anti-inflammatory drugs may provide some relief, but scientific studies of these effects have been equivocal.</p>
MINIMIZING SORENESS	<p>Since no effective treatment has been identified, training programs should be designed to minimize or prevent soreness. New training programs should be gradually and progressively increased in intensity and duration over several weeks to prevent or minimize soreness, weakness, and injury. When muscle soreness is prevalent among teammates, such as following a tournament, coaches should allow ample time for muscles to recuperate because sore muscles are usually damaged muscles. As with any damaged tissue, damaged muscles must be given time to heal. This may require adding a few easy days of training following a training day that causes marked muscle soreness.</p>



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TIP OF THE MONTH

PREVENTING INJURIES

WHAT CAN YOU DO TO PREVENT INJURIES?

PREVENTING INJURIES	
1.	Participate in a warm-up. Use general and consistent movements involving the body parts you will use for your sport. You should become physically warm to increase blood flow to the muscles and joints.
2.	Take time to stretch. Prior to participation, perform dynamic (movement) stretches after a general warm-up. After activity, cool-down and stretch statically (not moving).
3.	Be aware of field hazards and conditions. Check for holes, sprinkler heads, goal post stability, etc.
4.	Wear protective equipment and appropriate footwear. Consider the weather and field conditions.
5.	Develop proper hydration habits. Drink regularly throughout the day in preparation for activity as opposed to all at once. During exercise, drink in 15 minute intervals to maintain proper hydration levels.
6.	Incorporate proper nutrition. A balanced diet will provide you with the right variety of nutrients your body needs. Athletes tend to need a little more carbohydrates for their bodies' needs. Protein is important after exercise in order to aid the muscles in recovery.
7.	Be prepared for extreme weather conditions. Wear light weight and light colored apparel in hot weather. Wear quick drying layers in cold or wet weather.
8.	Utilize correct techniques. Poor technique often results in placing the body in awkward positions.
9.	Play within the rules of the game. Rules are created to keep players safe.
10.	Do not ignore injuries. Pain is the body's warning system. Playing through pain often worsens the condition. Stop playing when you experience pain that worsens.



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TIP OF THE MONTH

OPTIMAL HYDRATION

FLUID INTAKE SUGGESTIONS TO BOOST PERFORMANCE AND AVOID ILLNESS AND INJURY:

OPTIMAL HYDRATION	
WHY	65% of body weight is water. Every thing you do uses water- every thought, every movement, every muscle. When you exercise your body becomes hot and you sweat to cool it down. You can become dehydrated due to fluid and electrolyte loss. Electrolytes help maintain body functions such as muscle contractions.
WHEN	You cannot fully re-hydrate 1-2 hours before an event. You need to drink water throughout the day vs. chugging a large quantity at one time. Drink water and/or Gatorade before, during, and after practices and games, even if it is not "hot" weather.
HOW	Use a sports drink such as Gatorade which is formulated to help replace fluids and electrolytes. Be aware of too much carbohydrate content in some sports drinks that may not process as quickly in the body for use. Limit caffeinated drinks of any kind (read the label) before and during competition. Caffeine can have a dehydrating effect. The most scientific way to know how much fluid to replace after exercise is to weigh yourself before and after practice. Be sure to drink 2.5 cups of water for every pound lost during practice
EFFECTS	Being dehydrated will quickly decrease your performance by at least 10-15%. Dehydration can also play a role in muscle strain. Drinking fluids during competition will help keep your body cool and your energy high to perform at your best.



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TIP OF THE MONTH

ICE VS. HEAT

MAKING THE RIGHT TREATMENT CHOICE

ICE	
WHY	Pain relief with numbing & decreased swelling and inflammation
WHEN	Use for all acute (recent) injuries: contusions (bruises), strains, sprains, broken bones. It is also useful after exercise to minimize pain (including pain from chronic injuries), swelling, and muscle soreness. May be used in injury recovery/rehabilitation phase prior to therapeutic exercise to reduce pain and spasm allow better movement.
HOW	Apply no longer than 20 minutes once every 1-4 hour(s) = 20 min. on and at least 40 minutes off. Be sure to use a thin towel or layer if using a chemical ice pack as you can receive a frostbite burn. The skin should appear pink or red when you are done icing.
TYPES	Ice cubes in bag, Gel ice pack, Chemical ice pack, Cold water submersion (such as ice water in a bucket), Bag of frozen peas, Homemade mixture for own ice slush pack- Fill plastic sealable (like Ziploc®) bag with mixture of 2-3 parts water to 1 part isopropyl alcohol 2:1 or 3:1 and put in freezer. It should be slushy. If it is solid, add more isopropyl alcohol and add water if it is too slushy.
EFFECTS	<ul style="list-style-type: none"> * Decreases feeling in area by decreasing the nerve's ability to conduct impulses * Decreases metabolism & blood flow * Increases stiffness * Stops bleeding by causing a temporary constriction of the blood vessels * Decreases spasms & swelling

HEAT	
WHY	Reduce spasm & stiffness, increase relaxation, and aid in healing of tissues
WHEN	Use for chronic injuries with stiffness and spasm: tendonitis, non-traumatic neck and back stiffness, muscle strains after 72 hours (assuming no re-injury episodes). Also may be used before exercise to increase tissue blood flow and elasticity.
HOW	Apply no longer than 20 minutes or long enough to for the skin to become pink or red. As with ice, be sure to allow the area to return to normal skin temperature before reapplying.
TYPES	Heating pad, Warm wet towel, Gel hot pack, Chemical hot pack, Warm water immersion (warm bath, hot tub, etc.), Homemade hot pack: fill a cloth bag with wheat kernels and microwave for 1-2 minutes. Microwave power varies so be sure that it is not too hot for use.
EFFECTS	<ul style="list-style-type: none"> * Increases elasticity of muscles * Increases cellular metabolism, which increases blood flow * Increased blood flow from heat helps in the healing process (once acute swelling has subsided) * Decreases spasms and stiffness



TIP OF THE MONTH

REST, ICE, COMPRESSION, ELEVATION

IMMEDIATE TREATMENT OF ACUTE (RAPID ONSET) INJURIES:

REST	Stop playing and decrease or eliminate activities that aggravate the injury. This allows healing to take place.
ICE	Apply ice for approximately 15-20 minutes to help reduce swelling. This can be done 1x/hour (20 minutes on, 40 minutes off) as needed. Ice decreases blood flow by contracting blood vessels to limit bleeding to the injury site. This helps reduce swelling and recovery time.
COMPRESSION	Use an elastic wrap comfortably around the injured area. This helps control swelling and may provide a small amount of support. Added swelling can prolong healing and recovery time.
ELEVATION	Elevate, or raise, the injured part as much as you can and still be comfortable while resting, above the heart ideally. This will help limit the swelling by reducing the amount of blood going to that area through gravity.