

# Rocky Mountain Chapter American College of Sports Medicine Quarterly Newsletter

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For more information about RMACSM, please go to the website at [www.RMACSM.org](http://www.RMACSM.org)

## 2012 Winter Regional Meeting

Make plans now to attend RMACSM's 2012 Annual Meeting to be held March 30-31 at the Embassy Suites in Colorado Springs, Colorado. Embassy Suites is located at 7290 Commerce Center Drive. The meeting will start with registration at Noon on Friday, March 30th and conclude at 2:00 PM on Saturday, March 31st.

Room reservations can be made at any time—cost is \$95/room. Call 1-719-599-9100 for reservations - let them know you are with RMACSM to receive the room rate. Meeting registration information will be available



soon.

The theme of this year's program will include exercise training for clinical, general health-fitness, and athletic populations; and Exercise is Medicine (EIM).

Specific topics being planned are: High Intensity Exercise for Clinical Populations; Debunking Myths about

Popular Exercise Gadgets; Endurance Training for Olympic Athletes; Cardiac and Cancer Rehab; Nutrition topics.

Saturday will include a dual track schedule with one track focusing on clinical aspects of a topic and track two will cover basic science of the same topic.

In addition to the educational sessions the popular College Bowl, Poster Judging, and Student Presentations will again be part of the meeting.

**Save the date—March 30-31, 2012—registration information and full schedule coming soon.**

If you have extra time in Colorado Springs, there are many attractions to visit including: Garden of the Gods, Cheyenne Mountain Zoo, Air Force Academy, Pro Rodeo Hall of Fame, the Olympic Training Center and numerous microbreweries. The Olympic Training Center offers free tours Monday-Saturday from 9:00 AM—4:00 PM. The Air Force Academy visitor center is open daily from 9:00 AM—5:00 PM.

The following restaurants are in the Embassy Suites area:

Hooter's Restaurant, Elephant Bar, Macaroni Grill, TGI Friday's, Mission Jar, Zio's Italian Grill, Old Chicago's, On the Border, and Outback Steakhouse.

# A Guide to Concussions by Tod Sweeney, MD, FAAFP, FACSM

## Concussion Information

Concussions can be complicated injuries that can lead to life-long impairment if not treated properly. The healing process can be frustrating to athletes, parents and coaches, especially if there is a lack of knowledge about concussions and the necessary steps to recovery. Athletes have a greater chance for a safe, healthy, full return to sports when they adhere to a complete medical treatment protocol. This includes a medically supervised gradual/stepwise return to play program. The following information is intended to provide the athlete, parents and coaches with information on what to expect in the treatment of concussions.

## What is a concussion?

1. Concussion may be caused by a direct blow to the head, face, neck or elsewhere on the body from an impulsive force transmitted to the head.
2. Concussion typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously.
3. Concussion may result in neuropathological changes but the acute clinical symptoms largely reflect a functional disturbance rather than structural injury.
4. Concussion results in a graded set of clinical syndromes that may or may not involve loss of consciousness (LOC). Resolution of the clinical and cognitive symptoms typically follows a sequential course. Concussion is typically associated with grossly normal results on conventional neuroimaging studies.

## What are the most common signs and symptoms of concussion?

An athlete can display a wide range of symptoms consistent with alteration of mental status. The athlete often will not know that the symptoms represent a concussion.

Cognitive Features:	Typical Symptoms
<ul style="list-style-type: none"><li>• Unaware of period, opposition, score of game</li><li>• Confusion</li><li>• Amnesia</li><li>• Loss of consciousness</li><li>• Unaware of time, date, place</li></ul>	<ul style="list-style-type: none"><li>• Headache</li><li>• Nausea</li><li>• Unsteadiness/Loss of balance</li><li>• Feeling “dazed” or “dinged”</li><li>• Double vision</li><li>• Dizziness</li><li>• Ringing in ears</li></ul>

The range and potential vague nature often make diagnosis difficult.

## How is a concussion treated?

### Initial injury:

- Athletes should immediately report any hit/trauma to the head or significant trauma to the body that results in ANY of the above symptoms.
- Any athlete with loss of consciousness, neck pain or deteriorating symptoms should be immediately evaluated by Emergency Medical Services.
- The athletic trainer or coach will complete an initial injury report to document the injury.
- The athlete should be removed from play and arrangements should be made for evaluation by a qualified physician.

### Recovery Period:

- Time frame is dependent on the severity of the concussion and signs/symptoms.
- A time of “**NO PHYSICAL ACTIVITY**”= no activity that will elevate heart rate and blood pressure. This would include, but not limited to, all sports (organized, recreational, “pick-up/backyard”), weight lifting or moving of heavy objects, running, bike riding, skiing/snowboarding, and conditioning.
- **BRAIN REST** is key during this stage. This means no video games or excessive computer use. Adequate sleep and proper nutrition and hydration are also very important.
- Attending school full time is important, in the context of, adequate breaks during the day and assignment modification as needed.
- This may be a frustrating time for athletes and parents. Despite “feeling fine” athletes must adhere to the **NO ACTIVITY** period to ensure a complete recovery and reduce chances of long term effects.
- Daily **honest** reporting of signs/symptoms by the athlete is imperative.

**Home Care:** After proper evaluation by a medical provider, the following should be considered...

1. Avoid taking any medication unless directed by physician.
2. Avoid alcohol, illicit drugs, or other substances that interfere with cognitive function and neurological recovery.
3. Rest, but resume normal activities of daily living as tolerated, while avoiding activities that potentially increase symptoms.
4. Eat a light, well-balanced diet that is nutritious in both quality and quantity. Hydrate adequately.
5. Awaken athlete during the night to check for deteriorating signs and symptoms only if he/she experienced loss of consciousness, had prolonged symptoms of amnesia, or was still experiencing significant symptoms at bedtime.

(article continued on page 3)

# A Guide to Concussions (continued from page 2)

## When can athletes return to their sport or activity?

Once asymptomatic and cleared by the treating physician, the athlete will be guided by the athletic trainer through a gradual/step-wise return to play protocol. This often takes several days depending on the severity of the concussion.

### GRADUAL/Step-wise return:

**A minimum of 3-7 days.** The athletic trainer or coach will provide a specific daily program. Each step should generally take a minimum of 24 hours, as it is widely recognized that symptoms may not worsen at the time of exertion, but rather later in the day or even the next day. If any symptoms occur, the athlete should cease activity, drop back to the previous asymptomatic level the next day. If symptoms reoccur the athlete should return to resting until asymptomatic.

The slow return may be frustrating as well. However, it provides the necessary feedback on the condition/status of the concussion.

A return to full activity without restrictions is not only dependent on the physical findings of the physician and athletic trainer, but the HONEST reporting of signs/symptoms by the athlete.

**CONCUSSIONS ARE SERIOUS INJURIES NOT TO BE TAKEN LIGHTLY. YOUR ATHLETE COULD SUFFER LIFE-LONG HEALTH ISSUES AND EVEN DEATH IF NOT TREATED PROPERLY.**

Please feel free to call our office or your school's certified athletic trainer with any questions regarding concussions!

Tod Sweeney, MD

FAAFP, FACSM

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[www.sportsccc.com](http://www.sportsccc.com)

## RMACSM Membership

The RMACSM Governing Board is encouraging new membership. The Rocky Mountain chapter of ACSM includes the states of Colorado and Wyoming. The following benefits of joining RMACSM have been identified:

- Opportunity to network with other clinicians, academics and fitness professionals
- Learn about career and educational opportunities in the Rocky Mountain region
- Student research grants (members only)
- Annual meeting with national speakers and opportunities to present research
- Registration discount at the regional meeting
- Poster session with financial awards at regional meeting
- Personal development through serving on the regional board or as a volunteer at the annual meeting
- Access to regional website and newsletter

Be a part of dynamic national and regional organizations that promote active lifestyles and who are committed to promoting safety and improved performance in all participants.

Membership categories and costs are as follows:

Option 1	
Professional and Fellow	\$230.00
Professional in Training	155.00
Graduate Student (renewal rate is 20.00)	10.00
Undergraduate Student (renewal rate is 20.00)	10.00
Option 2	
Alliance of Health and Fitness Professional	99.00
Student Alliance (renewal rate is 20.00)	10.00
Regional Chapter Membership (available with paid Option 1 or 2)	
Student	15.00
Non-Student	35.00

**If you work or go to school with someone you feel could benefit from any of the above, please refer them to the ACSM ([acsm.org](http://acsm.org)) website and click on Join/Renew tab.**

# Hydration in School Athletes

By Margaret Harris, PhD, MS, HC

Reviewed by Nanna Meyer, PhD, RD, CSSD

Adequate hydration in athletes can mean the difference between winning and losing. More significantly, it can be a matter of life or death. With school sports being in full swing, this is a good time for a reminder to parents, coaches, and student athletes of all ages about the importance of staying hydrated. Though most people drink to quench their thirst, the guidelines for what constitutes “adequate hydration” are based on individual needs and therefore vary among sedentary, exercising individuals and athletes.

## Why is hydration important?

When a person exercises they lose fluid and sodium from sweating. Even 2% of weight loss from sweating can affect sports performance in temperate and hot environments. That can be as little as 2 lbs for a 100 pound athlete to 4 lbs for a 200 pound athlete. Hydrating regularly before, during and after exercise not only replaces lost fluids, it also regulates body temperature and reduces strain on the cardiovascular system. This prevents the athlete from overheating and protects their heart. It’s always a good year-round reminder to pay extra special care in hot weather and humid climates. Several heat-related and dehydration deaths in student athletes were reported in the last several years in the media. These deaths could have been avoided had these athletes been hydrated properly and signs of dehydration detected. All athletes, but especially endurance athletes or those who work out in hot and humid weather are at greatest risk for dehydration. Also, the longer the duration/intensity of the workout the higher the risk for dehydration.

Interestingly, altitude and cold weather can also be challenging for hydration. Water is lost faster at higher altitudes which means there is less water available for blood flow. Extra layers of clothing means sweating increases, reducing even more internal fluid. This puts the athlete at risk for dehydration. In addition, high altitude forces the body to work harder to moisten the dry air that the athlete breathes in and out. With every breath out, the body loses moisture, meaning respiration alone at high altitude puts the athlete at risk for dehydration. Further, cold and altitude increase urinary diuresis, further compounding the loss of body water. Hydrating adequately therefore becomes very important at higher altitudes, especially in colder weather, and especially when the athlete feels less of a need to drink.

Athletes that participate in weight class sports often limit hydration and increase sweat loss to make weight. It is important to note that such a practice will compromise muscle strength and endurance if performed to the extreme. In addition, it takes at least 24-36 hours to fully recover muscular strength and endurance after dehydration. This means there will not be enough time for the athlete to recover before competition begins.

## Tips for keeping hydrated during training/competition

- **Hydrating before, during and after a sporting event or competition is key.** You can train your athlete to hydrate regularly and help them to understand how to hydrate properly (see table below). The best time to do this is during training. Many athletes don’t hydrate enough to replace fluid losses because they simply don’t know the importance, or are afraid of gastrointestinal effects, extra calories, etc. However, working with them at proper hydration will produce almost immediate results.
- Hydration is a very individual matter and needs will vary by athlete, gender, sport, event within a sport, clothing, temperature, environment, genetics, metabolism, etc. Individuals who sweat more profusely will require more hydration than those who sweat less. Higher altitudes present greater hydration needs than sea level. Position and time played on the field on a team sport will vary hydration needs per athlete. Endurance athletes will require more fluid than sprinters. Athletes that require heavy uniforms (i.e., football players) will require more fluids than others wearing less clothing in similar climates. **Calculating the sweat rate\*** is very important and requires measuring mass before and after exercise. Losing 2 pounds in one hour is equivalent to losing 32 fluid ounces (1 lb water=16 oz). In this scenario the athlete would need to replace enough fluid to avoid a body weight loss of greater than ~2%.
- Depending on the type of sport, different opportunities can be used to hydrate. For example, for team sports, breaks, time-outs, pauses-in-play and/or substitutions (as applicable per sport) are great opportunities for players to rehydrate. For the endurance athlete, having water on hand, or at convenient places to rehydrate along the course are important.

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# Hydration in School Athletes (continued from page 4)

•For team sports, hydrating after a competition is especially important if another competition/game is played within a short time span. Starting out a new game or athletic event dehydrated from a previous event puts the athlete at immediate risk for heat illness, reduced muscle strength, reduced endurance and therefore, decreased sport performance.

•Once warmer weather arrives, stop and reschedule if the heat index surpasses 105. Another option is to practice/play at night.

Refer to the table below for some guidelines on hydration by various types of sports when exercising for more than 60 minutes. If exercising for less than 60 minutes, water is adequate.

	Endurance	Power Sports	Stop and Go Sports
<b>2-4 Hours before exercise</b>	Drink fluids to maintain or regain normal urine output. Four hours prior to the event, 5-7/ml/kg is recommended. If urine is dark 2 hours prior, an additional 3-5 ml/kg is warranted. Salty snacks or sports drinks may be needed to stimulate thirst and retain internal fluids.		
<b>During exercise</b>	Take small sips of a sports drink during breaks, time-outs, regular intervals, etc. Actual amount needs to be based on sweat rate* (see above in article)		
<b>After exercise</b>	The sweat rate calculation can also be applied to rehydration. However, more of the lost fluid (1.5 times as much) needs to be replaced for optimal hydration. In the example above, this would amount to 48 oz over the course of several hours		
<b>Throughout the day</b>	<ul style="list-style-type: none"> <li>• Monitor urine for pale yellow color (note that some supplements can temporarily change the color of urine)</li> <li>• Carry around a water bottle, sipping from it throughout the day</li> <li>• Have water with all meals</li> <li>• Eat water-dense fruits and vegetables</li> <li>• Replace electrolytes lost by snacking on salty snacks or drinking sports drinks</li> </ul>		

*Table was adapted from Linda Houtkooper's Winning Edge: For Fitness and Sport Workshop Handout (2004), University of Arizona and ACSM's Exercise and Position Stand on Exercise and Fluid Replacement (2007)*

## Final note

There is a fine line between adequate hydration and overhydration. With more emphasis being placed on better hydration, sometimes athletes go too far. Hyponatremia (low blood sodium concentration) or water intoxication can occur from drinking excess amounts of water and can also result in death. Women have smaller body sizes and lower sweat rates than men and in general are at greater risk for hyponatremia. Within the context of recommendations of fluid intake, athletes should also use thirst as a guide rather than forcing drinks when they're not thirsty.

*Margaret Harris and Nanna Meyer are assistant professors in Health Sciences at the University of Colorado in Colorado Springs.*

# Board Member Openings

The following Board positions will be up for election this year: Front Range Representative, Wyoming Representative, President-Elect, Treasurer and Regional Representative to National ACSM. An election will be held in early March 2012 and the change in membership will be effective April 1, 2012. The Board meets via a one-hour phone conference monthly (currently 2nd Thursday) at 7:00 PM. This may be subject to change if enough members have a conflict with the Thursday meeting time. Board members are responsible for organizing and managing the Annual Meeting. Please consider serving the Rocky Mountain chapter as a member of the Board. If you are interested, contact the current president, Ray Browning—ray.browning@colostate.edu for more information.

# 2012 Rocky Mountain ACSM Research Grant Proposal Competition

In an effort to support student research relevant to the mission of ACSM, the RMACSM board is pleased to announce that we will award four (4) \$500 grants to support student research projects. You must be a student member of RMACSM to apply. Grant recipients are expected to present their findings at the 2013 RMACSM annual meeting. Please follow the guidelines below and submit your proposal by February 1<sup>st</sup>, 2012. Grant recipients will be announced at the 2012 annual meeting.

## **Proposal Guidelines:**

**Title Page and Abstract:** Include the title of the study, date, and name, address and phone number of the principal and co-investigators. Abstract should include a clear purpose, methods, results and conclusion of the study (250 word maximum).

**Background and introduction:** Provide a brief literature review demonstrating justification for the research. The introduction should familiarize readers with the general problem being studied. This section should be written so that it can be easily understood by scientists outside the investigator's area of expertise.

**Specific Aims/Objectives/Hypotheses:** Clearly define the purpose of the study and any hypotheses developed in relation to the research.

**Participant Selection:** Specify sample size and any inclusion or exclusion criteria for participants, such as age, gender or diagnosis. A brief justification of the sample size should be provided. In addition, please indicate whether the project has been approved by your institutional IRB/IACUC panel or is pending approval.

**Research Design:** Include type of research design (i.e., true experimental, quasi-experimental, non-experimental). Identify independent and dependent variables, control groups, and number of repeated observations. Discuss any steps taken to control for internal or external validity.

**Measures:** Describe measurement procedures, instruments used, and data collection techniques. Include citations for previously used instruments.

**Intervention Procedures:** Provide a clear, detailed description of the intervention process (if applicable). This section should include all steps the participants must undergo, along with any necessary treatment/safety evaluation procedures.

**Data Collection and Data Safety:** Clearly define data collection procedures and discuss methods for participant recruitment with an explanation of efforts made to maintain the rights and privacy of human subjects.

**Data Analysis:** Discuss methods used for data entry, statistical analysis, treatment of missing data, and data interpretation. Include reasoning for the type of analysis used.

**References:** Include a complete list of references.

**Appendices:** Attach supporting information, tables, or figures that improve the understanding of the project.

## **Submission Procedures:**

All submissions should be:

Maximum 5 pages of text (title page, abstract, references and appendices not included)

Single-spaced

Times New Roman, no less than 11-12pt font

1 inch margins on all sides

Please submit all proposals via email by midnight **February 1<sup>st</sup>, 2010** to:

Rose Steen, RMACSM Executive Director, [rjsteen2009@gmail.com](mailto:rjsteen2009@gmail.com)



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**Please contact me if you have ideas for  
articles in future Newsletters.**

## Upcoming Events

Location	Event	Day/Date
Various	Thanksgiving Day runs in several communities	Thurs, Nov 24
Ft Collins	Jingle Bell Run/Walk 5K	Sat, Dec 3
Denver	Jingle Bell Run/Walk 5K	Sun, Dec 11
Brighton	Turkey Trot	Sat, Nov 19
Denver	Rudolph Ramble 5K	Sat, Dec 4
Ft Collins	KRFC's Resolution Run	Sat, Dec 31
2012 Events		
Denver	3rd Annual Moving Toward a Cure 5K	Sat, April 14
Arvada	Ralston Creek Half Marathon	Sun, Feb 12
Estes Park	2012 Estes Park Marathon	Sun, June 12
Ft Collins	Colorado Marathon	Sun, May 6

This is just a small sample of events listed on [active.com](http://active.com). For more information on any of the above or to register, go to [active.com](http://active.com)

## Media Review

### Active.com

You may be familiar with [active.com](http://active.com) through registering for races or other athletic events. In addition to registration capabilities there are articles and information about improving your performance or starting a new activity.

There are free training logs, training reports and other training tools. Weight loss and personal training programs are also available—some of which have associated costs.

At the top of the opening page, enter your city and state or zip code to find activities specific to your area. If you are traveling and interested in activities in a different area, just change to that location.

Some new additions to [active.com](http://active.com) are camping and hiking guides with suggestions for equipment, nutrition and hydration.



### What's on Your iPod?

When I see people out running or walking with an iPod, I wonder what they are listening to. Are they listening to old rock and roll, contemporary music or maybe not music at all – per-

haps an audio book or podcast? Maybe learning a 2nd language?

The iPod is such an improvement over previous options for entertainment while out exercising. To have hundreds or even thousands of songs, books or podcasts to listen to is wonderful.

Some of my favorite songs from the 80's are: "She Works Hard for the Money" by Donna Summer, Michael Jackson's "Beat It" and EmmyLou Harris' "Born to Run" as well as many Abba songs. In an effort to be a bit more up to date, I did just add Lady Gaga's "The Edge of Glory".

What's on your iPod?

*Rose Steen—Executive Director RMACSM*