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APTS Monthly



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Concussion: What Parents & Athletes Need to Know

Just because football season is months away doesn't mean that athletes in other sports can't suffer a head injury or concussion. While there are spring sports where contact is inevitable, direct contact is not a requirement to suffer a concussion. Because the brain floats inside the skull, a severe whiplash type motion that causes the brain to impact the inside of the skull can result in a concussion. When a concussion occurs without direct impact, it is often undiagnosed for a period of time following the initial onset of symptoms. Many of the guidelines and management strategies used in the past have been altered in recent years. Many organizations that train individuals to recognize and manage concussion have come out with consensus statements and have joined together to provide a set of guidelines on the diagnosis, management, and return to play for the concussed athletes.

Parents and coaches should understand that the onset of symptoms may be delayed for several hours and that direct contact is not necessary for an athlete to suffer a concussion. If an athlete in any sport displays symptoms of a concussion such as a headache, feeling like he or she is "in a fog", emotional symptoms, physical signs such as loss of consciousness or amnesia, behavioral changes such as irritability, cognitive impairment like slowed reaction times and/or sleep disturbances, he or she should be evaluated with a Sport Concussion Assessment Tool 3 (SCAT3) or a Child SCAT3 for children between 5 and 12 years of age. Also realize that, no matter how expensive of high tech a football helmet is, the helmet cannot prevent a concussion. A football helmet does a very good job of preventing a facial injury and skull fracture, but as long as the brain moves inside of the skull, the helmet won't prevent a concussion.

The most recent International Conference on Concussion in Sport was held in Zurich in November 2012, producing a Consensus Statement that was published in the Clinical Journal of Sports Medicine in March 2013. This cutting edge document changed how sports medicine professionals manage concussions, especially in the adolescent athlete. In April 2012, the American Chiropractic Board of Sports Physicians (ACBSP) released a concussion registry designed for any type of sports medicine professional to take an online course in current concussion protocol. The ACBSP recognized that just because

the providers may have had concussion training in school, the majority of their training is obsolete and recurrent training is imperative to stay up to date. This information can be accessed at www.acbsp.com. The Zurich Consensus Statement (including the SCAT3 and Child SCAT3) is available for free on our website www.activeptsolutions.com.

The Zurich statement defines concussion as "a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces." This definition omits the need for a direct blow to the head. Keep in mind that concussion is a subset of traumatic brain injury



(TBI). In an era where we have become dependent on technology for most medical diagnosis (such as MRI), the Zurich statement states that imaging techniques such as MRI or CT scan are not used to diagnose concussion as

much as they are used to diagnose intracerebral bleeding or injury. In other words, if the MRI of your son or daughter's brain is normal it does not mean he or she doesn't have a concussion. On the contrary, it means he or she may have a concussion but not a more severe intracerebral injury. The cornerstone of concussion diagnosis remains a detailed history and a physical examination performed by a professional knowledgeable in the current principles of sport-related traumatic brain injury.

Keep in mind that adolescents take longer to recover from a concussion than adults. The developing brain requires more energy to function and heal. After a concussion, the physiological mechanisms that take place reduce circulation to the brain and thus the energy supply cannot keep up with the energy demand. This results in slower recovery. Don't rush an adolescent athlete back to competition. It is also common for cognitive behavior to normalize before reaction time and balance. Additionally, if the athlete complains of dizziness at the time of concussion, experiences loss of consciousness greater than 30 seconds, or is hit in a way that produces rotational forces to the head, they have a greater chance of an extended recovery and prolonged symptoms.

Treatment and management of concussion should include both physical and cognitive rest until the athlete is symptom free. This means that the athlete should be restricted from physical activity and that sensory stimuli needs to be reduced as well. Examples of items and activities to remove from the athlete's daily routine are computers, television, cell phones, text messaging, iPods, iPads, etc. We are unfortunately in a technologically dominant society and many of these items and/or activities force the concussed brain to work too hard. This type of rest is imperative to allowing the brain to heal properly. Parents, providers, coaches and anyone else involved in the athlete's care need to educate the athlete on the healing benefit of reducing sensory stimuli or cognitive rest. Recovery times vary from athlete to athlete and trying to place all athletes into time frames of recovery is simply wishful thinking. Once the athlete is symptom free, a graded program of exertion is employed that starts with light aerobic exercise and ultimately ends with return to play (RTP).

According to Bill Moreau, DC, DACBSP, Managing Director of the United States Olympic Committee's Department of Sports Medicine, "The key point regarding concussion is that all concussions are significant. In the adolescent athlete, the proper care of the concussed athlete is especially important because the adolescent's brain is still developing. All segments of society have a responsibility to help decrease concussions in sport: athletes should play by the rules, healthcare providers should protect concussed athletes by not returning them to play, officials should enforce the rules of sport, and parents should support any health care provider that holds their child out of athletics because he or she sustained a head injury. Each and every sign, symptom, and modifying factor needs to be considered when managing concussion, especially in the adolescent population." Prevention and management of concussions is a team sport. Healthcare providers, athletes, parents, coaches, teachers, guidance counselors, and school administrators are all part of that team. Traumatic brain injury is not a game, and no game is worth a brain!

Article by Dale Buchberger, DC, PT, CSCS

Exercise of the Month: Prone Row



Prone row, start position (top), end position (bottom)

This exercise works the muscles of the upper back and the small rotator cuff muscles of the shoulder. It helps to strengthen the muscles that pull your shoulder blades together.

The prone row works many different muscles of the body. Drawing the weight toward you until your upper arm is along the side of your torso is the motion of shoulder extension. The muscles that perform this motion are the latissimus dorsi, posterior deltoid, teres major, and triceps. Squeezing your shoulder blades together (known as *shoulder retraction*) is performed by the rhomboids and the middle trapezius muscles. The muscles that stabilize the shoulder, or press your arm bone (*humerus*) into

the shoulder joint cavity as your arm moves, are the *rotator cuff muscles*. Three of these four cuff muscles that are engaged during the prone row are the supraspinatus, infraspinatus, and teres minor muscles.

To perform the exercise, position yourself face down ("prone") with your arm off the side of a table. If you do not tolerate the prone position, this exercise can be performed by leaning your upper body from the waist up over a table or piece of furniture. Keep your elbow straight, hand in neutral position with thumb facing forward, and hand clearing the floor. You can start with a light (1-3 lb) weight as tolerated. Bend your elbow and pull your arm up to the

height of your body, concentrating on squeezing your shoulder blade at the end (as if starting a lawn mower). Keep the inside of your arm close to your body, aiming your elbow towards your back pocket. Slowly lower back to starting position.

Start with 2 sets of 10 repetitions every day, and gradually work up to 2 sets of 30 repetitions. Once you can comfortably perform this, drop the repetitions back to 10 and increase the weight by 1 pound, gradually working your way back to 30 repetitions. You can continue this cycle until you get up to 8 or 10 pounds. As always, if you feel any kind of discomfort, seek the care of a health care professional.

Dr. Buchberger meets up with his good friend, Dr. Ed Scales, USC athletic department chiropractor to compare notes on treating and managing sports injuries at the collegiate Division I level.



What's Going on at APTS?

Since 1980, the American Chiropractic Board of Sports Physicians™ (ACBSP™) has led the development of sports medicine certification and has managed a world-class credentialing process that ensures certified sports chiropractors meet competency standards to effectively work with and treat athletes and those engaged in athletic activities. In addition, the ACBSP offers continuing education and research seminars to facilitate the dissemination of the latest scientific knowledge, treatment trends, and best practices for patient care. On April 20-23, 2017, the ACBSP held its Annual Sports Sciences Symposium in Colorado Springs, CO, home of the US Olympic

Training Center and Team USA. Lectures and workshops included running injuries, MRI of sports injuries, concussion updates, therapeutic cupping, and other manual therapy techniques, as well as CPR recertification. On April 20, 2017 Dr. Buchberger taught a 3-hour pre-conference course regarding sports injuries of the upper and lower extremity for CCSP and DACBSP candidates preparing to take their certification examinations. There were over 300 doctors of chiropractic in attendance.

Angela Di Francesco, physical therapy student from Ithaca College, joined our

team for an 8-week clinical internship in March and will be with us until Friday, May 12. Then on Monday, May 15, James Martin, PT Assistant student from Onondaga Community College, will be joining us for his 6-week clinical internship!

Jack Schattinger, Linda's son, graduated from his 7-month program at Modern Welding School in Schenectady, NY, on Thursday, April 6. He is now a licensed welder! He accepted a job with Patriot Towers, a company that builds cell/communication towers/turbines, and started working in the "real world" on Monday, April 24. Congratulations, Jack!

APTS Participates in United Way Mini Golf

On Wednesday, April 5, the Girls of APTS participated once again in the United Way of Cayuga County 24th Annual Tim Morrison Miniature Golf Tournament at the Holiday Inn in Auburn, this year as Team "Par-Tee of Fore". This tournament includes 19 holes of miniature golf sponsored by local businesses that are paired with United Way agencies, and

this is the fourth year in a row that Cara, Carolyn, Linda, and Maggie have played together. Maggie rolled two holes-in-one and Carolyn was rocking the deuces (zapping Cara in the electric chair at the ACF hole)! It's a fun night out and a great way to network and get APTS recognized. We look forward to it every year!



Strength & Conditioning for Children & Adolescents

I have been fielding an increased number of questions about the safety of “weight-lifting” for the preadolescent and adolescent age groups. Most of these questions are from concerned parents whose best recollection of weightlifting was from their high school football coach or what they may have picked up in the grocery line from the many unscientific periodicals prior to checkout. Fortunately, time has been our friend and science has provided us with sound and verifiable answers to questions regarding safety.

Two notable organizations, The American Academy of Pediatrics (AAP) and the National Strength and Conditioning Association (NSCA) have done a tremendous amount of research to answer the question, “Is strength training safe for children and adolescents?” On the surface the answer is yes, but with a list of “qualifiers”. This article will attempt to make sense of the qualifiers and provide guidance for athletes, parents, coaches, and sports administrators when making decisions involving strength training programs in the preadolescent and adolescent age groups.

Terminology is very important today when it comes to strength programs. Strength or resistance training programs encompass several different types of training. For instance, weight training is a type of strength training. Strength training programs may include all or some of the following: free weights, weight machines, suspension training, elastic resistance, or even the athlete’s own body weight. So when athletes, parents, and coaches communicate, they should be very specific as to the type of strength program that is being performed or questioned.

There are many benefits to strength training in the preadolescent and adolescent populations that have been well documented in the scientific literature. The most common benefits include improved cardio-

vascular fitness, body composition, bone density, blood lipid profiles, mental health, strength, and sports performance. Additionally, children involved in strength programs have displayed improved motor skills, reduction in sports-related injuries, and enhanced weight control. All of these factors make a compelling argument to increase the participation of children and adolescents in organized strength training programs. While strength training is beneficial, “lifting weights” is not always the appropriate strength format. The appropriate type of strength training is dictated by age, goals, sport, and body type.

The majority of weight/strength training injuries fall into the muscle strain category. The hands, lower back, and upper trunk are the most commonly injured areas of the body. Most of these injuries occur when the child is using a home exercise device, does not possess the ability to practice safe behavior, and the activity is unsupervised. When the activity is appropriately supervised and proper technique is utilized, injury rates are lower than other sports or general recess play during the school day.

The scientific research currently supports the safety and efficacy of strength training for children. However, it is not necessary or even appropriate for every preadolescent or adolescent athlete. Children should have achieved an above average level of skill proficiency in their sport and possess an age appropriate level of balance and posture control in order for a strength program to be of value. Skilled supervision and good technical performance of the strength training exercises has been shown to significantly reduce injury rates during strength training programs. Adequate supervision is defined as an instructor to student ratio of 1:10, and the supervising adult possesses a nationally recognized strength training certification and a level of knowledge that approximates a college degree in physical

education, exercise science, or a related field. To meet the instructor-to-student ratio, less experienced assistants can be utilized under the direct supervision of the certified supervisor.

Between the ages of 12-14, young athletes start to show characteristics of loose, normal, or stiff muscles, tendons, and joints. What athletes, parents, coaches, and strength coordinators need to know is that each of these individuals needs to be trained differently. Using standard weight-lifting methods with a loose-jointed individual will either create injuries or actually train the athlete to compete slower, defeating the purpose of the program. For example, a swimmer that displays tissue characteristics that are excessively loose should not use traditional weight-lifting methods. A program that emphasizes joint control and stability with very controlled movement patterns concentrating on strengthening the inherent weaknesses found in swimming would be more advantageous. What this illustrates is that programs need to be modified for specific individual characteristics and the supervisors need to possess the background to make these decisions.

Strength training is safe for children and adolescents when the program follows the previously outlined guidelines and is supervised by individuals possessing a national certification and corresponding experience. If your child is participating in a strength and conditioning program and is complaining of pain, a sports medicine practitioner should assess them. To see the AAP position statement on strength training, please go to <http://aappolicy.aappublications.org/cgi/reprint/pediatrics;107/6/1470.pdf>.

Article by Dale Buchberger, DC, PT, CSCS

While strength training is beneficial, “lifting weights” is not always the appropriate strength format for children and adolescents.



APTS Recipe Box: Fruity Sweet Potato Salad

This is a great salad to serve people who don’t like eating vegetables! It also makes a yummy post-workout breakfast for anyone who goes to the gym first thing in the morning. The fruitiness makes it feel like a good breakfast food, and if you make it the night before or even right before your workout, you can pull the container right out of the fridge and enjoy.

Ingredients: 4 sweet potatoes, peeled and cut into cubes; 1/2 cup red onion, diced; 1

apple, diced; 2/3 cup grapes, halved; 1/3 cup dried cranberries; 1/4 cup sliced almonds; 1/2 cup homemade mayo; 1 tbsp freshly squeezed lemon juice; paprika; sea salt and freshly ground black pepper.

Instructions: Add the sweet potatoes to a large pot of cold water. Bring to a boil over a medium-high heat and cook the potatoes until tender (about 15 minutes). Drain the sweet potatoes using a colander and let them cool. In a large bowl, combine the sweet potatoes, red

onion, apple, grapes, dried cranberries, sliced almonds, mayo, lemon juice, and season with salt and pepper to taste. Sprinkle some paprika on top and refrigerate at least 30 minutes before serving.

Source: <https://paleoleap.com/fruity-sweet-potato-salad/>

For those that prefer more of a “kick” and less sweetness, there is a chipotle version that you can find at <https://paleoleap.com/chipotle-sweet-potato-salad/>



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Get Well...Get Active...Be Active

Newsletter Edited by Carolyn B. Collier, PTA

**At Active Physical Therapy Solutions,
we utilize the most cutting edge
treatment and management
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deliver the best possible healthcare in
a friendly, caring, and well-organized
environment. Our staff is here to
provide active solutions to achieving
your personal goals!**

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Nutrition 101: Post-Workout Nutrition

Just like pre-workout nutrition that I wrote about last month, there is no “one size fits all” post-workout nutrition plan. Everyone has different goals and participates in various durations and intensities of activities. If you’re looking for a personalized nutrition plan, it’s always best to consult with a nutritionist for a one-on-one plan.

The common denominator no matter what type of workout you just completed is *optimum recovery*. We all need optimum recovery because intense workouts and training are extremely taxing on the body. High intensity activity leaves your glycogen stores empty, muscle and connective tissue damaged, and central nervous system fatigued. The goal of the post-workout meal is to get proper nutrients to your body so you can optimize and speed up the recovery process.

Ideally, you should eat your post-workout meal right after your workout—the sooner the better. Within 15 minutes is the ideal time to optimize the repair process. The window of time is limited to 30 minutes, when your muscles are primed to rapidly absorb the proper nutrition needed to nourish and repair damaged tissue.

Everyone should be consuming protein within

30 minutes of high intensity or long duration workouts or competition to repair your muscles. *Branched chain amino acids* are crucial for rapid recovery and decreased inflammation after training—these include chicken, beef, seafood, and other meats. You also want to consume foods that are easily digestible so your muscles can get the nutrients they need as quickly as possible. Always pick real food when you have the option, but a good, high quality protein shake can also do the trick. Do not consume fats right after a workout, as fats slow absorption. Fruits high in fructose are also not ideal to consume post-workout. The fructose from fruit goes to replenish the liver glycogen first, not the muscle glycogen, and the latter is what needs to be refilled right away after a workout. Better carbohydrate options to replenish muscle glycogen are starchy, nutrient-dense vegetables like sweet potato, pumpkin, carrots, or squash. Low fructose fruits include blueberries, raspberries, blackberries, and strawberries. Another nutrient-dense carbohydrate option is unsweetened applesauce.

If you are overweight, it is not in your best interest to consume carbs post-workout, as you have enough calories stored in your body already. If you want to gain weight or muscle, you definitely want to include a large portion of nutrient-dense carbs in your post-workout meal. If you want to

maintain weight, your glycogen stores are probably OK and don’t need refueling with carbohydrates, unless you did a super intense workout or a workout of very long duration. If the latter is the case, be sure to include a portion of nutrient-dense starchy carbohydrates as mentioned previously. If you are very fit, muscular, or undergoing athletic training, you will want to replenish your glycogen stores even after short duration exercise just to maintain performance levels and muscle mass. Make sure to consume high quality nutrient dense starchy carbs and low fructose fruits as mentioned above.

Quantities will vary depending on your size, but a general recommendation is 50-100 grams of carbs and 30-60 grams of protein (which is approximately 4-8 oz of lean meat).

It is also very important to stay well-hydrated! Water and coconut water are imperative pre-, during, and post-workout.

Remember: your post-workout meal should be considered an “extra” meal in addition to your 3 other meals a day!

Article by Carolyn Collier, PTA

Sources: <http://www.primallyinspired.com/tuesday-training-what-to-eat-after-a-workout-post-workout-nutrition-paleo/>, <http://>