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BY MATT BRZYCKI



YOUTH CONCUS

Public awareness of sport-related concussions is on the rise, largely due to high-profile injuries. Often overlooked is the enormous potential children and adolescents have for sustaining a concussion.

HOW PREVALENT IS IT?

A systematic review and meta-analysis examined concussion incidences in 12 youth sports. Researchers found the sports with the highest frequency rates per 1,000 “athlete exposures” were football, ice hockey and rugby; the lowest were baseball, cheerleading and volleyball. (“Athlete exposure” is one practice session or competition.) And the occurrence of youth concussions may be rising.

According to the National High School Sports-Related Injury Surveillance Study, an estimated 1.5 million injuries occurred at the scholastic level in nine sports during the 2005–06 academic year, including about 133,000 concussions, representing 9% of all injuries. Compare this with the 2014–15 academic year in which about 1.2 million injuries were reported in those sports, including more than 292,000 concussions, representing 24.5% of all injuries. Even if greater recognition and better reporting contributed to the rising numbers, youth sports concussions are a major concern.

WHAT IS A CONCUSSION?

A concussion is a traumatic injury of the brain that temporarily disrupts its normal function. Concussions happen when the brain is moved violently inside the skull as a result of a direct blow or jolt to the head, face or neck, or to another part of the body where the impulsive force is transmitted to the head. The movement can stretch and damage brain cells. Because the brains of younger athletes are still developing, they are more susceptible to concussions than older athletes.

CONCUSSION SYMPTOMS

An athlete needn’t be “knocked out” to have been concussed. One study reported this was a symptom in only 4.6% of concussions. Nevertheless, loss of consciousness—however briefly—is considered a life-threatening condition that requires immediate medical attention.

Headache and dizziness are the most frequently reported concussion symptoms. Others include inability to focus, blurry or

double vision, sensitivity to light/noise, nausea/vomiting, drowsiness, insomnia, depression, and irritability. Additional signs include balance or coordination problems, trouble walking in a straight line, slurred or incoherent speech, a vacant stare, numbness or tingling in the extremities, tinnitus, neck pain, seizures, sluggishness or grogginess, as well as general fatigue and weakness.

It’s important to note concussion symptoms can be immediate or develop over time. A majority of sport-related concussions resolve within 7 to 10 days. However, symptoms can last several months or more. This is especially true for younger athletes whose brains may need longer to heal. The best concussion treatment is rest.

WHAT CAN YOU DO?

There are four areas in which fitness professionals can contribute: education, evaluation, preparation and rehabilitation.

EDUCATION

Fitness professionals can be an excellent resource for educating athletes, parents and coaches. Teachers and other school personnel should also be “in the know.” Concussed athletes may require academic accommodations including shortened school days, periodic rest breaks and excused assignments/exams.

At a minimum, educational programs should provide information on the signs and symptoms of a concussion, potential short- and long-term risks, and the latest research.

EVALUATION

Administer baseline testing so comparisons can be made between an athlete’s pre- and post-concussive health. Especially meaningful are balance, coordination and reaction time tests. Any history of concussions should also be documented, noting symptom details and duration.

PREPARATION

The best preventive measure to safeguard athletes against concussions is to encourage them to strengthen their necks. In the event of an impact involving another athlete or the ground, having added neck strength and stability can reduce impulsive forces transmitted to the head. This may decrease brain movement inside the skull.

CONCUSSIONS

IMPORTANT: While recovering from a concussion, the brain is vulnerable to repeat injury. Returning to play before the brain is fully healed can put an athlete at risk for another concussion from a second impact. Though rare, this “second impact syndrome” could have dire consequences, including death or disability. This is one reason that it is crucial that parents gain an understanding of concussions, possible signs and symptoms, and what to do if they suspect one has occurred.



In one study, athletic trainers at 51 high schools measured the head and neck circumference, neck length and neck strength of 6,704 athletes who played basketball, lacrosse and soccer during two different academic years. The study revealed that concussed athletes had a smaller neck circumference, a small neck coupled with a larger head (ratio), and less neck strength than uninjured athletes. In sum, neck strength was a significant predictor of concussion. And consider this: For every 1 pound increase in neck strength, there was a 5% decrease in the odds of sustaining a concussion.

This is compelling evidence for performing neck-strengthening exercises, including neck flexion and neck extension. Both can be performed with manual (partner) resistance. If a neck machine is available, neck lateral flexion should also be done for both sides.

REHABILITATION

Across the U.S. laws have been enacted addressing concussions. Most states require that before returning to action, an athlete must be examined and cleared by a licensed healthcare professional. Nonetheless, fitness professionals can also be involved in the rehabilitative process.

Getting an athlete ready to “return to play” should be a multistep protocol with activities gradually progressing to greater levels of intensity and exertion. Once an athlete is symptom-free, they should follow these five steps (adapted from the 2012 Consensus Statement on Concussion in Sport):

1. Do low-intensity aerobic training (walking, swimming or stationary bike).
2. Increase the intensity and duration of aerobic training. Do simple sport-specific, noncontact drills.
3. Progress to more complex, sport-specific, noncontact drills. Do low-intensity strength training (light weight, stopping short of muscular fatigue).
4. Participate in regular practices and activities.
5. Return to play.

Athletes can proceed to the next step as long as they continue to be without symptoms. Duration of the steps varies. In general, each step should take about 24 hours, but younger athletes may take more time to progress than older ones.

BOTTOM LINE

Nothing can be done to prevent all youth concussions. But fitness professionals can be an integral part of reducing the risk through education, evaluation, preparation and rehabilitation. AF



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