“Return-to-Learn”: Academic Reentry for Student Athletes Recovering from Sports-Related TBI

Return-to-Learn as a Public Health Problem

Sports-related concussion, a type of traumatic brain injury (TBI), has received much attention over the past few years. The potential impact on child and adolescent health is significant and nationwide, because so many young people participate in youth and school sports in the United States. For example, the National Federation of State High School Associations reported that participation in high school sports exceeded 7.7 million in 2012-2013, increasing for the 24th consecutive year.\(^1\) Participation in recreational sports is more difficult to ascertain, but estimates hover around 25 million Americans aged 6 to 17.\(^2\)

For people ages 15 to 24, sports are the second leading cause of traumatic brain injuries, behind motor vehicle crashes.\(^3\) Even a single concussion can result in confusion and a decline in memory processes and cause persistent physical symptoms such as dizziness, headaches, and nausea for the days following the injury.\(^4\) Neuropsychological testing to assess post-concussion recovery has mainly focused on college and professional athletes, and not younger ones, but early research has found pronounced memory decline lasting at least seven days in high school athletes who suffered one concussion without losing consciousness.\(^5\)

These effects seem to be more pronounced in younger athletes; concussed high school athletes have been shown to experience longer memory dysfunction and protracted recovery times as compared with college athletes.\(^6\) Recently concussed young athletes have also been found to perform more poorly on tests measuring attention, concentration, processing speed, and mental flexibility compared with young athletes with no history of concussion or a history of one concussion.\(^7\) The same study found that young athletes with two or more previous concussions that reported no physical or mental symptoms were indistinguishable from those who had experienced a concussion within the past week, supporting the proposition that the cognitive effects of concussion in otherwise healthy young athletes linger.\(^8\)

The effects of concussion not only impact the injured child’s ability to compete in athletics, but also their ability to perform academically and to participate in classroom activities. Symptoms following a concussion often include difficulty concentrating or remembering material, fatigue, depression, and increased sensitivity to light and noise, all of which make returning to school difficult for injured students.\(^9\) Recent research suggests that cognitive overexertion following a TBI can exacerbate symptoms, worsening kids’ headaches, wearing them out, and making them more irritable.\(^10\) Additionally, research has found an association between multiple concussions and the development of permanent learning disabilities.\(^11\)
Public health scholars have long argued that addressing poor school performance is a public health priority, because education (even independent of income and occupation) is a close predictor of health status. Areas with higher educational attainment have better health—not only at the individual level, but as a population. It has been suggested that formal schooling leads to improved cognitive decision making, which directly impacts the ability to make informed decisions about disease prevention and other health-related situations. The Centers for Disease Control and Prevention state that improving high school completion rates should be a goal of public health. Because concussed student athletes can suffer lasting physical and cognitive symptoms that make functioning in school difficult, concussion management should be a policy priority for educational and public health systems alike.

Because children and adolescents who have recently suffered a concussion may have cognitive difficulties, including the ability to learn new tasks and remember new material, decreased mental energy and cognitive stamina, fatigue, headaches, and blurred vision, formal and informal policy approaches to addressing the problem focus on ensuring adaptations to the student’s learning environment and processes and gradual reintroduction to normal classroom functions until the brain has had a chance to heal. Along with concerns associated with learning in the classroom, there are social and behavioral effects of concussion that can affect a student’s ability to function in school while recovering from concussion. Concussions can cause damage to both the frontal lobe and temporal lobe. Damage to these parts of the brain can cause emotional and social withdrawal, aggression, hyperirritability and sudden onsets of dysphonic moods. Policy approaches may be appropriate to ensure that students who have sustained concussion have thoroughly healed before fully re-engaging in athletic or academic activities.

**Current State Return-to-Learn Provisions**

All 50 states and the District of Columbia now have some form of youth sports-related TBI law. All of the state laws contain provisions about returning an athlete to the playing field, but very few state laws address returning to academics after concussion. Nebraska and Virginia amended their original youth sports concussion law to include return-to-learn provisions, and, just as the return-to-play laws spread quickly, other states are likely to consider and adopt return-to-learn legislation. Through both formal statutory or regulatory requirements and informal policies and programs, some states have already developed plans or protocols addressing returning to the classroom after concussion.

Seven states currently have statutes with provisions that reference a return-to-learn policy: Hawaii, Maryland, Massachusetts, Nebraska, New York, Vermont, and Virginia. With one exception, legislative approaches to return-to-learn fall into two categories: (1) general provisions that direct schools or state agencies to develop guidelines or protocols for students returning to the classroom following a concussion and (2) provisions that detail specific requirements for the creation of a state wide return to learn platform. The exception, Rhode Island, addresses return-to-learn concerns differently. In 2014, Rhode Island amended its School and Youth Programs Concussion Act to direct the state department of education to create guidelines for teachers and teacher aides to complete a training course in concussions and traumatic brain injuries. While this provision is not truly a “return-to-learn” provision in that it does not set forth requirements for concussed student athletes’ academic reentry, it is included here because it is one legislative approach to the problem—namely, making sure that educators are sensitive to the unique needs of student athletes recovering from concussion. Furthermore, many state youth sports-related concussion laws contain statutory language that is broad enough to authorize state entities to develop return-to-learn policies in the absence of specific return-to-learn language. For example, Virginia’s law requires each local school division to develop policies and procedures regarding “the effects of concussions on student athlete’s academic performance.”
## State Return-to-Learn Provisions (as of December 31, 2014)

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<td>Hawaii</td>
<td>Hawaii Laws Act 197 (2012)</td>
<td>High school concussion awareness programs are mandatory and must require that the injured student obtain written clearance from a licensed health care provider prior to returning to academics and athletics. The written clearance must state that the student is capable of resuming participation in a particular sport and may require the student to follow a plan designed to help the student recover and resume participation in school and athletic activities. Such a plan must include, as appropriate, periods of cognitive and physical rest while symptoms of a concussion persist and must reintroduce cognitive and physical demands on the student on a progressive basis to prevent the re-emergence or worsening of symptoms of a concussion.</td>
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<td>Maryland</td>
<td>MD Edu. Code Ann § 7-433 (West 2012)</td>
<td>The state department of education, in collaboration with other named state and county entities and subject matter experts, must develop policies and implement a program to provide awareness to coaches, school personnel, students, and the parents or guardians of students, on appropriate academic adjustments for students diagnosed as having sustained a concussion or head injury (among other things).</td>
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<td>Massachusetts</td>
<td>105 CMR 201.010</td>
<td>All school policies must include a procedure for the development and implementation of post-concussion graduated reentry plans to school and academic activities, if indicated. Each student who is removed from practice or competition and subsequently diagnosed with a concussion must have a written graduated reentry plan for return to full academic and extracurricular athletic activities. The plan must be developed by the student's teachers; guidance counselor; school nurse; certified athletic trainer, if on staff; neuropsychologist, if available; parent; members of the building-based student support and assistance team or individualized education program team, as appropriate; and in consultation with the student's primary care provider or the physician who made the diagnosis or who is managing the student's recovery. The written plan must include instructions for students, parents, and school personnel on: (1) physical and cognitive rest, as appropriate; (2) graduated return to extracurricular athletic activities and classroom studies, including adjustments or modifications, as needed; (3) estimated time intervals for resumption of activities; (4) frequency of assessments, as appropriate, by the school nurse, school physician, team physician, certified athletic trainer if on staff, or neuropsychologist, if available, until full return to classroom activities and extracurricular athletic activities are authorized; and (5) a plan for communication and coordination between and among school personnel and between the school, the parent, and the student's primary care provider or the physician who made the diagnosis or who is managing the student's recovery.</td>
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<td>Nebraska</td>
<td>Neb. Rev. St. § 71-9104 (Uncodified West 2014)</td>
<td>Each approved or accredited public, private, denominational, or parochial school must establish a return-to-learn protocol for students that have sustained a concussion. The protocol must recognize that students who have sustained a concussion and returned to school may need informal or formal adjustments, modifications of curriculum, and monitoring by medical or academic staff until the student is fully recovered.</td>
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Informal Return-to-Learn Approaches

Some states have addressed academic reentry outside the legislative or regulatory realm. One such example is Pennsylvania, which has established the BrainSTEPS program. The BrainSTEPS program is jointly funded by the Department of Health, the Department of Education and the Bureau of Special Education, and establishes a return-to-learn protocol utilizing school based academic Concussion Management Teams (CMTs). CMTs consist of one academic monitor and one symptom monitor who may increase or fade school adjustments depending on how the student is doing. While such programs do not carry the force of law, their implementation and cooperation among collaborative parties may be enhanced by the parties’ shared understanding of purpose and organizational capabilities and infrastructure. That is, because the joint partners themselves developed the program and protocol and understand their organizations’ capabilities and structure, they are unlikely to encounter difficulties with implementation.

Applicable Federal Law

In addition to state laws, there are federal laws that could affect how schools respond to issues arising from a student athlete’s return to the classroom after concussion. Section 504 of the Rehabilitation Act of 1973 might provide the most relevant federal support for a child struggling to participate in academics post-concussion. A 504 plan may be useful for students who do not meet the criteria for support under IDEA, the federal special education law discussed below, and therefore do not need a full special education plan, but rather minor accommodations in the general educational setting. The law could provide for minor adjustments, such as allowing more time on tests or allowing a student to work in a room with dimmer lights. If accommodations are ongoing (i.e., last beyond a week), a 504 plan should be used to formalize any informal classroom accommodations. If the accommodations are to last for a shorter duration, a 504 plan probably is not necessary. Schools may therefore benefit from having an official return-to-learn policy to fill more common, temporary post-concussion symptom management student needs.

The Individuals with Disabilities Education Act (IDEA) provides access to special education programming and supports for students. To receive services under IDEA, students must fall into one of the categories of disability covered by the law. IDEA does cover disabilities resulting from TBI that impact a child’s education performance. IDEA requires that each qualified student receive an Individual Education Plan (IEP) that reflects his or her specific learning needs and goals and how educators will support them. IEPs are usually created for students who require significant assistance; many students who have suffered from a concussion might not qualify. The process of drafting, monitoring, and updating an IEP is very time consuming, so

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<td>New York</td>
<td>NY Edu Law § 305.42 (2011)</td>
<td>The commissioner of education, in conjunction with the commissioner of health, must promulgate and review as necessary rules and regulations relating to pupils who suffer mild traumatic brain injuries, also referred to as “concussion,” while receiving instruction or engaging in any school-sponsored or related activity. In developing such rules and regulations, the commissioner must consider comments from stakeholders and other interested parties, including but not limited to parents, teachers, students, school administrators, school athletic trainers, sport coaches, medical and health professionals. The regulations must include, among other provisions, guidelines for the return to school and to certain school activities after a pupil has suffered a mild traumatic injury regardless of whether such injury occurred outside of school.</td>
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<td>Vermont</td>
<td>Executive Summary, 68 V.S.A § 1431 (2012)</td>
<td>Each school must have an action plan with policies including, among other things, the steps required before a student athlete can return to athletic or learning activity.</td>
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<td>Virginia</td>
<td>VA Code Ann. § 22.1-271.5 (West 2014)</td>
<td>The state board of education must develop and distribute to each local division guidelines on policies to inform and educate coaches, student-athletes, and their parents or guardians of the nature and risk of concussions, as well as the effects of concussions on a student athlete’s academic performance.</td>
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specific policies designed for returning to the classroom after sports-related TBI would likely prove less cumbersome. However, if a student’s cognitive or emotional symptoms persist and become chronic, an IEP under IDEA might be appropriate.\textsuperscript{26}

Finally, the American with Disabilities Act (ADA) is a civil rights act that applies to schools, among many other covered entities, and prohibits discrimination against people with disabilities.\textsuperscript{27} Broadly, the Act requires that reasonable accommodations, aids, and practices be implemented to ensure that people with disabilities have access to public services. A student whose history of TBI has created a permanent learning or other disability may be covered under the Act. The Fourth Circuit ruled in 2014 that a temporary impairment caused by an injury may constitute a covered “disability” under the ADA Amendments Act if it is “sufficiently severe” to substantially limit a major life activity.\textsuperscript{28} For the majority of student athletes, however, post-concussive symptoms are temporary and therefore would not be covered under the ADA.

Through a recently proposed but not yet enacted bill, Congress has the opportunity to address this issue on a larger scale. The Supporting Athletes, Families, and Educators to Protect the Lives of Athletic Youth (SAFE PLAY) Act of 2015 would establish minimum state requirements not only for TBI, but also for other sports-related issues like heat acclimatization, cardiac conditions, energy drink use, and development of emergency action plans. Among the TBI-related provisions is a requirement that school districts have concussion management plans that include assistance in the safe return of student athletes to athletic and academic performance. Section 9511, paragraph (5) would require a concussion management team to consult with and make recommendations to school personnel and the student to ensure appropriate “academic supports,” including (1) periods of cognitive rest during the school day, (2) modified academic assignments, (3) gradual reintroduction of cognitive demands, and (4) other appropriate academic adjustments.\textsuperscript{29} Whether or not the bill is ultimately enacted, it demonstrates that at least some members of Congress deem return to academics after TBI to be important enough to address at the federal level.

**Important Considerations in Developing a Return-to-Learn Policy**

As with many laws and policies, successful implementation is critical to realizing intended health and safety outcomes. In order to ease implementation, all affected and knowledgeable stakeholders should be involved in developing return-to-learn laws and policies, and consideration should be given to factors that could impede implementation. For example, Hawaii’s return-to-learn provision requires a student to receive medical clearance from a doctor to return to school post-concussion and to receive formal accommodations, if needed.\textsuperscript{30} States with rural expanses in which residents have limited access to primary care providers may have difficulty implementing such a provision. A viable alternative would be to include school nurses or other trained school personnel in the decision-making process. Indeed, gradual and monitored reentry to the classroom for concussed students is another issue that highlights the importance of ensuring that each public school student has access to a school nurse.\textsuperscript{31}

As described above, return-to-learn policies can be accomplished on the state or local level with formal statutory direction and authority, or informally by governmental or quasi-governmental entities. While statutes give a policy the force of law and can help to ensure uniform implementation and enforcement, the best approach depends on a jurisdiction’s political and social environment, as well as its current relevant procedures and delegation of authority and responsibility. Informal policies can be robust and well implemented, particularly if there is “buy in” from involved stakeholders. Whether a formal or informal approach is taken, return-to-learn policies should be developed considering existing resources, processes, and infrastructure. Laws and policies should also be flexible enough to allow reaction and adaptation to changes based on the evolution of scientific and medical knowledge, best practices, and implementation experience.

Other important considerations for return-to-learn policies that are supported by research evidence include:\textsuperscript{32}

- **Cognitive rest with gradual reentry to full academic participation and workload.** In its extreme form, cognitive rest initially includes no school attendance, no homework or school work, no reading, no video games or computer usage, no texting, and no television. Specific parameters, however, should be set on an individual basis by the student’s health care provider, with the overriding goal of keeping cognitive activity below the level that triggers symptoms (i.e., “subsymptom threshold cognitive activity”).\textsuperscript{33} Because students often suffer from depression following TBI, policy approaches to addressing academic reentry should also include provisions for social and behavioral support.

- **School adjustments upon reentry.** When a student is ready to return to the classroom setting, adjustments will likely be necessary to continue the gradual, step-wise to full academic participation. Academic adjustments might include: a
modified schedule (e.g., to avoid hallways during crowded transition times), shorter classes, quieter/dimmer classrooms and lunch settings, alternative testing methods, and/or periodic breaks.

- **Medical providers are key partners.** Medical providers are critical to ensuring that students recover fully from TBI, and they must be trained in assessment and management of concussion with a particular understanding of school demands and proper academic reentry.\(^\text{34}\)

**Conclusion**

Much attention has been paid in recent years to return-to-play guidelines and policies for students following a sports-related TBI, but return-to-learn strategies are arguably as important for ensuring a student athlete’s full recovery. Although the science is evolving, evidence-based strategies to academic reentry do exist and can form the basis of law and policy. These best practices can be implemented through a formal (i.e., statutory or regulatory) or informal (e.g., guidance documents, programs) approach, depending on the political and social environment of the state or locality. Because of the public health concerns associated with students returning to academics following a concussion, return-to-learn policies are important to ensure that students who have suffered a sports-related TBI do not suffer exacerbation of their symptoms or a decrease in academic performance.

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**SUPPORTERS**

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5. Id.
8. Id.


Freudenberg, et al.


42 U.S. Code § 12101, et seq.


Hawaii Laws Act 197 (2012)


Master et al.