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“Return to Learning” (RTL) after Concussion

Important introductory NOTE for parents, teachers, and lecturers!

This article talks about ‘concussed’ players, which implies a confirmed diagnosis of concussion. However, it is equally important to include those players who are suspected of having a concussion into this grouping. In many cases of concussion, the development of signs and symptoms is delayed. Therefore, when concussion is suspected, but the players do not show any classic signs or symptoms of concussion to initially confirm diagnosis, they should be monitored and treated in exactly the same way as the confirmed cases of concussion.

For clarity and for more information on SARU’s position on concussion in rugby, and the **SARU Regulation on Concussion**, go to the following link: <https://www.springboks.rugby/general/boksmart-legislation/>. The SARU regulation also stipulates a mandatory graduated return-to-play process for players suspected of sustaining a concussion at school or amateur rugby. This process can also be sourced from the BokSmart website at the following page: www.BokSmart.com/concussion

What’s happening to the concussed brain?

There is microscopic damage to the cells and nerves of the concussed brain and brain function is disrupted following complex chemical changes. There appears to be a “mismatch” between the brain’s energy requirements and needs. This causes a variety of symptoms and affects the brain’s ability to think, to concentrate for sustained periods and to absorb and retain information.

Adding cognitive (“thinking”) activities to an energy-deprived brain worsens symptoms. These changes are not visible which makes it difficult for school or tertiary education officials to understand the need for resting the brain in a learning environment. Although guidelines for reducing cognitive stress exposure are not as well defined as the guidelines for reducing physical activity, they are equally important.

What does this mean for students?

As a result of these changes in the brain it is not unusual for performance in the classroom to be affected. Learning new tasks and recalling previously learnt material might become difficult. Moreover, stressing the brain by expecting it to cope with normal teaching loads, writing tests and exams, and completing long assignments may make students' symptoms either reoccur or worsen, and may slow recovery.

Just as a strained hamstring muscle requires time to readjust to running as it repairs, a "strained" brain requires time to readapt to learning. There is no one set of ideal guidelines that fit all concussed students, therefore doctors, lecturers and teachers should adapt protocols to suit individual needs and recovery.

While resting the brain is necessary, getting behind on studying and assignments may create additional emotional stress that is also undesirable for recovery. Therefore there is a fine balance between resuming normal function, without overexerting the brain, and worsening symptoms.

Cognitive recovery after concussion for scholars or students is variable but usually occurs within 3 weeks. Recovery lasting longer than this requires further medical evaluation. Full return to academic and physical activities requires the student to be cleared using a spectrum of assessments that evaluate performance under conditions of both cognitive (computer and paper-based "thinking" tests) and physical (gym or field based activity) stress. Students need to pass all of these parameters to be properly cleared to return to full learning and rugby participation.

How to help your cognitive recovery

At home:

- Keep stressful brain activities to the more essential ones such as homework and reading
- Avoid texting, non-academic computer work, video games and television
- Read and study in a quiet and dimly lit area
- Take regular breaks (every 20 minutes) when doing homework or assignments
- Organise your day by creating a list of tasks to be completed
- Report symptom patterns following learning exposure to your doctor

At school / tertiary education:

- Consider returning to school or tertiary education when you can tolerate 30-45 minutes of reading or studying without worsening symptoms
- Discuss your injury with your teachers, head teacher, lecturers, school or tertiary education nurse and/or psychologist
- Discuss attending fewer classes – prioritise the important ones
- Schedule academic “time outs” during the school or tertiary education day during which you can rest
- Avoid brightly lit and noisy areas
- Ask a fellow student to take notes for you
- Request more time for assignments and tests
- Ask your doctor to provide feedback to your teachers or lecturers and your coaches regarding your progress

Finally – A Team Approach Works Best

Many young rugby players suffering a suspected or confirmed concussion are in a learning environment that stresses the injured brain. Recognising this fact helps the recovery process. The most comprehensive evaluation and successful recovery from any concussion occurs when players, coaches, parents, teachers/lecturers and medical staff cooperate to completely evaluate and correctly manage the injured player. This process should involve a carefully monitored and safer progression to full academic activities and sports participation.

Document Compiled by Dr Jon Patricios

Additional References and Resources for Students, Parents and Educators

1. Halstead M et al. Returning to learning following concussion. *Pediatrics* 2013;132:948-957.
2. BokSmart YouTube links: www.Youtube.com/BokSmartSA or go to www.BokSmart.com
3. Dr.MikeEvans:
<http://www.evanshealthlab.com/concussion-management-and-return-to-learn/>
4. Rocky Mountain Youth Sports Medicine Institute, Center for Concussion. REAP Guidelines. Available at:
<http://rockymountainhospitalforchildren.com/service/concussion-management-reap-guidelines> .
5. Centers for Disease Control and Prevention: Fact Sheet for School Professionals on Returning to School after a Concussion:
http://www.cdc.gov/concussion/pdf/TBI_Returning_to_School-a.pdf
6. Centers for Disease Control and Prevention: Heads Up for Schools:
<http://www.cdc.gov/concussion/HeadsUp/schools.html>
7. Centers for Disease Control and Prevention: Online Coaches Training:
http://www.cdc.gov/concussion/HeadsUp/online_training.html
8. Frequently Asked Questions about 504 Plans:
<http://www2.ed.gov/about/offices/list/ocr/504faq.html>
9. Sample Return to Learning Note for Physicians: <http://www.aap.org/en-us/>
10. McAbee GN. Pediatric Concussion, Cognitive Rest and Position Statements, Practice Parameters, and Clinical Practice Guidelines. *J Child Neurol* published online 7 October 2014 DOI: 10.1177/0883073814551794