

RETURNING TO LEARNING (RTL) AFTER 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 which affect the transmission of signals along and between nerves. 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 concentrate for sustained periods and to absorb and retain information. Adding cognitive (“thinking”) activities to an energy-deprived and inefficient brain worsens symptoms. These changes are not visible which makes it difficult for school or tertiary education educators 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. There is a fine balance between resuming normal function, without overexerting the brain, and worsening symptoms. Experiencing some symptoms when returning to school, university or work can be expected and is a normal part of readapting. 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 and possible interventions from a neuropsychologist, physiotherapist or optometrist.

References:

- Patricios JS, Schneider KJ, Dvorak J, et al. Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport—Amsterdam, October 2022. *Br J Sports Med* 2023;57:695–711.
- Echemendia RJ, Burma JS, Bruce JM, et al. Acute evaluation of sport-related concussion and implications for the Sport Concussion Assessment Tool (SCAT6) for adults, adolescents and children: a systematic review. *Br J Sports Med* 2023;57:722–735.
- World Rugby Player Welfare <https://playerwelfare.worldrugby.org/>
- NCAA Concussion Fact Sheet for Students http://fs.ncaa.org/Docs/health_safety/ConFactSheetsa.pdf

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HOW TO HELP YOUR COGNITIVE RECOVERY AT HOME:

- For the first 48 hours avoid excessive texting, non-academic computer work, video games and television (some is OK)
- Keep stressful brain activities to the more essential ones such as homework and reading
- 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 / UNIVERSITY:

- If you have symptoms such as headache, sensitive eyes, nausea or dizziness, take the first 48 hours after a concussion off school or university
- 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 active people suffering a 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.



References:

- Patricios JS, Schneider KJ, Dvorak J, et al. Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport—Amsterdam, October 2022. *Br J Sports Med* 2023;57:695–711.
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