

*Beyond discrimination,  
beyond special treatment*

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**TOWARDS A BETTER  
UNDERSTANDING OF  
STUDENTS WITH A  
TRAUMATIC BRAIN INJURY  
(TBI)**

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We would like to warmly thank neuropsychologist Pierre Brown of the adult traumatic brain injury program at the *Institut de réadaptation en déficience physique de Québec* (IRDPQ) for his active involvement in writing and updating this brochure. His support was greatly appreciated.

### **The cégep student with a traumatic brain injury (TBI)**

This brochure is intended primarily for teachers, but also for anyone likely to work directly or indirectly with students who have experienced a traumatic brain injury (TBI).

Our goal is to identify the challenges faced by these students and suggest the attitudes likely to be helpful to them. Staff members can refer to this document for suggestions on how to best support these students as well as advice on adapting teaching strategies to this clientele.

We hope that the information presented here will assist teachers in their work and facilitate support for learning, and the integration and reintegration of cégep students with a TBI into the college community.

In addition, students with a TBI are responsible for informing the cégep of their intention to study at the school and of their need for adapted services. The sooner the institution is notified, the better the chances of putting in place accommodations on time and in keeping with their doctor's evaluation and the student's needs.

The person in charge of the **Special Needs Services**<sup>1</sup> must always consider how the limitation will affect a student's learning process. For that reason, a one-on-one interview will be held with students in order to get to know them, understand their needs and clarify with them the services they will need to compensate for the effects of their functional limitation.

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## TRAUMATIC BRAIN INJURIES

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Any blow to the head strong enough to damage both the skull and the brain is referred to as a **traumatic brain injury (TBI)**.

A TBI necessarily entails damage to brain cells (neurons). TBIs often involve an alteration in the state of consciousness, ranging from minor confusion to a deep coma, in more serious cases. This altered state of consciousness can be short lived or last for days or months.

There are three types of TBIs: mild, moderate and severe. Mild TBIs generally cause little permanent cognitive damage, while moderate and severe cases are likely to result in permanent cognitive, emotional and behavioural impairment.

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<sup>1</sup> Translator's note: This generic term is being used throughout the text to designate the cégep's service catering to students with Special Needs. If necessary, please change throughout text to suit your cégep's reality.

The evolution and prognosis of a TBI depend on the severity of the brain damage and the ensuing complications. Three phases define the progression of a TBI. The first, the acute phase, takes place in hospital and varies in length according to the specific injury. The intermediate phase generally occurs at the rehabilitation centre. The last phase of social integration corresponds to a student's return to school.

Many aspects of human behaviour can be affected by a TBI. The brain being the driver of human behaviour means that injury to this area can lead to various types of disorders among those affected.

Students with a TBI can display the following:

- Motor problems (paralysis or weakness);
- Sensory disturbances (loss of sensation);
- Intellectual disorders (problems with memory, judgement and reasoning);
- Emotional problems (aggressiveness, mood swings);
- Behavioural problems in all areas of life, including at home, at school or in leisure activities.

While students with a TBI share certain common traits, they must all be considered unique, based on their personality and pre-accident background and lifestyle.

### **Types of impairment**

Students with a TBI can experience various types of impairment, which can be mild, moderate or severe.

There are four types of impairment:

- Cognitive impairments
- Physical impairments
- Sensory disorders
- Emotional disorders

#### ***Cognitive impairment***

Memory, concentration or attention problems are generally significant and, for the most part, constant. Issues with attention and concentration will often prevent students from focusing on a given task. They may jump from one thing to another, without being able to tune out the distractions and stimuli unrelated to the task at hand. A sustained attention deficit or the inability to concentrate for sufficiently long periods can hinder student learning.

Students with a TBI will often be easily distracted by ambient noises in a classroom.

In addition to attention and concentration problems, students with a TBI often present memory disturbances and learning difficulties. They will find it challenging to focus on information, process it and apply it. In many cases, their short- or long-term memory is

also affected. Difficulties with memory and learning can vary in their severity and continue over a relatively long period of time.

It is also quite common for students with a TBI to experience thought disorders and impaired abstract thought, potentially compromising their ability to organize information. As a result, it is difficult for them to perform certain mental operations that involve two or more pieces of information, as is required when exercising judgment, performing mathematical operations, planning activities and using initiative and creativity. These thought disorders often make the return to cégep very difficult.

Some students with a TBI may have impaired expressive abilities and problems communicating information received and processed. These impairments to their expressive abilities will come into play when they speak, read, write, count, draw or make gestures and facial expressions. The meaning of words and symbols seem to have been altered or lost, making it difficult for students to use them appropriately. At times, they will search for the words to express their thoughts.

Knowing how to go about performing certain tasks can also be a problem for students with a TBI. This issue mainly presents itself in students whose brain injury involves trauma to the frontal lobe. In such cases, students may also display passive and repetitive behaviour and be rigid and slow to perform. They will have difficulty initiating a task, but once they have started, they seem to be unable to cease the activity on their own.

Decreased initiative and trial by error behaviour may also be noted. Action may not be adequately planned and organized. Students may only show concern for the situation at hand. It may be difficult to get them to “let go” of a given situation. Moreover, they tend to want answers now, without considering the overall context.

### ***Physical impairments***

Immediately after a brain injury, physical impairments will be the most obvious type of disability. This usually involves compromised motor skills, a problem that is most apparent immediately following the accident. Rehabilitation in this area is generally successful, with motor problems gradually disappearing. In more severe cases, however, some impairment will be permanent. Students will need to adapt to their disability and, if necessary, use technical aids (walker, prosthesis, wheelchair) to compensate for the lost or impaired ability.

When the part of the brain that controls movement is affected, paralysis or weakness in varying degrees of the limbs may be observed. If the left side of the brain was injured, the limbs on the right side will be affected and vice versa.

The consequences of these impairments can lead to problems getting around, climbing stairs, or handling equipment. Other motor difficulties can cause loss of balance, tremors, joint stiffness, impaired coordination, a lack of precision, or slow movements.

### ***Sensory disorders***

TBIs can lead to a decrease in the functioning of the senses of hearing, vision, smell or taste. Students may experience reduced hearing or ringing in the ears. The most common sensory disorder is lowered vision. While blindness is fortunately rare, there can be a debilitating loss of visual field. The loss of sensitivity to hot, cold and pain also develop at times. When students are not fully aware of this issue, it may increase their risk of burns and injury.

Headaches and dizziness are other frequent complaints among students with a TBI. Greater susceptibility to fatigue is also common and requires an adapted class schedule involving fewer courses per semester.

### ***Emotional disorders***

The brain controls more than motor and intellectual activities. It also allows us to feel emotions and manage these according to the situations we encounter. TBIs can lead to changes in this area. Lack of emotional control, at times expressed through inappropriate crying spells, will often be observed among students with a TBI. They can also rapidly go from one emotional state to another (mood swings).

In addition to mood swings, aggressive behaviour and angry outbursts can also be observed among some students. They do this spontaneously, without awareness of their actions. Their ability to self-monitor is also reduced, their actions are unpredictable and their behaviour impulsive.

Impaired emotional function can involve child-like behaviour. Students may appear egocentric and, at times, socially awkward. They display little empathy for others, and become impatient when facing any setback or frustrated when their needs are not met in a timely manner.

To summarize, two main sets of behaviour can occur. The first is characterized by apathetic, passive behaviour that lacks initiative and motivation, while the other involves a cheerful, euphoric disposition with a lack of inhibition.

TBIs can also alter self-perception. In fact, those with a TBI may not always recognize themselves, their family members and their friends. Their appearance and personality may have changed since the accident. Awareness of their physical disabilities (when present) combined with their intellectual impairment almost always lead to a degree of aggressiveness. How can they accept such a fundamental change in who they are? How can they not feel angry at the world, when they feel so lost, overwhelmed and disoriented? This anger is usually directed toward those closest to them—their family and friends, but in reality, it is simply a reflection of how they feel about themselves.

In certain cases, those who have suffered a traumatic brain injury may have had mental health issues or personality disorders prior to their accident. It is recognized that TBIs exacerbate pre-existing personality traits or problems. Changes in personality and behaviour problems also hinder a student's social integration.

It is quite common for students with a TBI to feel left out and struggle with fitting in and feeling a sense of belonging.

## **The three main categories of TBIs**

TBIs inevitably lead to a variety of changes in those affected. There can be many areas and degrees of impairment, both neurological and psychological. These vary according to the part of the brain involved, the severity of the TBI (mild, moderate or severe), and the person's age and background. The singular feature of TBIs is that they affect the brain, the command post of our personality and behaviour.

On the clinical front, there are three main categories of TBIs: mild (no loss of consciousness, no skull fracture), moderate (initial loss of consciousness exceeding a few minutes or with skull fractures) and severe (coma, with or without skull fractures).

While students with a TBI may share common traits, they must all be considered unique, with their specific characteristics.

### **MILD TBI**

People who have experienced a minor or mild TBI can display a complex set of needs. While not as challenging as in the past, diagnosis is still difficult to establish, given the subtle degree of disability and the combination of causal and interactive factors. In addition, 85 per cent of those who have suffered this type of TBI will recover, while 15 per cent will continue to experience impairment. In such cases, intervention must be timely in order to avoid complications and prevent degeneration of the post-trauma condition. When persons with a minor or mild TBI receive inadequate post-trauma treatment, they can develop complications, which may undermine their ability to perform many daily tasks. When impairments are enduring, the condition is referred to as chronic.

A chronic case of mild TBI occurs once a plateau has been reached in the rehabilitation process. At this point, students will need to learn to accept and live with their permanent disabilities. They will require ongoing help from their support network, including their therapist, as they continue their rehabilitation and learn to adapt to their new situations.

### **MODERATE AND SEVERE TBIs**

In addition to physical impairments, head injuries can result in potential cognitive, psychological, emotional and behavioural problems that can compromise family life and hinder the social and academic integration of those with a TBI.

A traumatic brain injury can impair higher mental functions (memory, reasoning and speech), result in behavioural problems (impatience, self-deprecation, withdrawal) and/or reduced cognitive functioning (difficulty with abstractive thinking, learning, organization or concentration). It is also common for students with a TBI to experience increased fatigue (mental and physical) and a decrease in the speed at which they process information, plan and solve problems. Frequently, students with a TBI tend to have difficulty tolerating frustration of any kind, which can make them impulsive, quick to overreact and show a persistent lack of judgment. Poor co-ordination, nausea, headaches, dizziness and loss of balance are other symptoms characteristic of this condition.



**Table 1: Deficits, impairments and behavioural problems resulting from TBIs**

<b>Systemic impairments</b>
Post-concussion triad (headache, dizziness, sensitivity to noise and light) Chronic pain Sleep disorders Epilepsy Urinary problems Sensory impairments (smell, taste, vision, hearing)
<b>Motor impairments and resulting disabilities</b>
Muscle weakness, spasticity Balance problems Psychomotor retardation Loss of dexterity Difficulty walking Susceptibility to fatigue, lack of productivity
<b>Cognitive impairments</b>
Memory problems and learning disabilities Language and communication problems Problems waking up from sleep Attention disorders, impaired attention and concentration Difficulty planning and organizing projects Lack of initiative, apathy, passivity, lack of motivation Difficulty with executive functions, problem solving and praxis Problems with visuospatial perception Orientation problems and difficulty with time and space Difficulty processing information Rigidity, loss of mental flexibility

## Behavioural problems

Irritability, impatience, anger

Aggressiveness, unjustified rage, loss of control and tantrums

Socially inappropriate behaviour, difficulty following rules

Diminished emotional control, emotional lability

Impulsiveness

Sexual disorders, disinhibition

Agitation, hyperactivity, excitability

Poor judgment and inadequate thoughts

Confusion, disorganization

Substance abuse

Running away or attempting to run away

Criminal behaviour

### Consequences of a TBI on learning

- Impaired concentration;
- Poor memory (memorization);
- Spatial orientation problems (understanding spatial orientation and structure);
- Problems with cross-temporal orientation and pace;
- Impaired hearing;
- Impaired vision;
- Difficulty with abstract thought (problem solving);
- Difficulty expressing ideas;
- Behavioural problems (mood swings, withdrawal, etc.).

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## TEACHING STRATEGIES

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### Attitudes to adopt

We should always keep in mind that the goal of education is to promote student independence. Cégep is the place where students should be able to make use of this skill. Generally speaking, when students with a disability have access to **and use** the necessary resources, their performance will be similar to that of other students.

Other cégep students may be surprised and react strongly to the behavioural problems experienced by those with a TBI. The less they understand the problems and

personality traits of students with a TBI, the harder they will find it to interact with them in a harmonious manner. In such cases, students with a TBI will be misunderstood and, at times, rejected. Remember that talking openly about students' limitations (with their consent) and what these entail for them is a sensitive task that can open the door to constructive suggestions on ways of dealing with these differences.

While their physical impairments may hinder their return to cégep, it is mainly the intellectual and emotional issues that will make it difficult for students with a TBI to integrate into the college community. Cognitive and physical impairments will often require a reorientation, in other words, a need to resume their studies below their pre-accident academic level. For example, students may need to take a technical training program instead of pursuing their pre-university program.

Finally, students who were in rehabilitation for several months or even more than a year will obviously have difficulty reintegrating into college after such a lengthy absence.

## **Support**

### ***Role of teachers***

Teachers who have students with a TBI in their classroom can expect to invest more time and energy in adapting their courses, exams and supporting these students, as needed.

### ***Role of resource persons<sup>2</sup>***

#### **Academic support**

- Assist in reviewing material presented in class (brief overview);
- Help plan assignments and exams and manage study time;
- Provide assistance in understanding instructions;
- Follow up with teachers and make them aware of the student's issues;
- Promote the optimal development of students through personalized activities;
- Establish services for students and ensure that these are delivered appropriately;
- Perform any other intervention, as required.

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## **GENERAL ADVICE, ACTIVITY PLANNING AND ACCOMMODATION STRATEGIES**

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Accommodating students with a TBI can require some additional planning when it comes to activities.

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<sup>2</sup> Translator's note: This generic term is being used throughout the text to designate the person who provides academic guidance to students with disabilities (French *intervenant*). If necessary, please change throughout text to suit your cégep's reality.

The role of the Special Needs Services counsellor is to support teachers and advise them in this respect.

### **Evaluations: Exams and assignments**

Students with a TBI may experience significant difficulty with exams featuring multiple choice questions when these have long, complex and convoluted sentences.

Some students experience difficulty with syntax, grammar and vocabulary, which significantly hinders their performance on written exams. Strategies for such situations include:

- tape recording the exam questions;
- allowing students to use a computer;
- permitting students to use a dictionary for exams with essay questions;
- favouring short-answer exams, which may be more suitable than long essays. However, this type of exam must be offered to the rest of the class as well.

### **Time factor**

Given that students with a TBI sometimes require more time to complete exams, it has become standard practice to offer:

- **150 per cent more time** for essay writing in class or during an exam (lengthy text or lengthy reading beforehand). No additional time is required for written assignments with long deadlines.

In certain particular cases, the additional time given can be further extended. Teachers are **advised** to talk to students about exams and possible accommodations before the start of a course.

### **Where to hold exams**

In order to maximize the potential for success, promote better concentration and prevent fatigue, students with a TBI should have the opportunity to take their exams in a room reserved for this purpose, under supervision.

### **Internships and field trips**

Internships are excellent opportunities for students to experience their chosen careers. Teachers should consult the person responsible for the Special Needs Services and those responsible for the internship sites and field trips to obtain information about available resources and note any obstacles that students with a TBI may encounter.

### **Academic standards**

It is important that all academic evaluations be the same for all students, whether or not they have impairment. An “A” must have the same value regardless of the student who earned it.

If a student with a TBI fails an exam, despite the implementation of reasonable accommodations, it stands to reason that this student did not sufficiently master the material to pass.

### **Teamwork**

Certain disciplines often require teamwork. In this respect, teachers can play a fundamental role:

- They can gradually encourage students to participate and find a suitable role or responsibility for them.

They can also serve as a link between students and a team of open-minded classmates, who agree to work with them. However, students with a disability will be required to work and abide by the same rules as the other students, without being carried by the team. They must not be overprotected.

### **Laboratory work**

In most cases, students work in the lab with another student or in small groups. It is therefore important to try to choose a lab partner or group open to the student with a TBI, rather than using a random selection process. A match with an empathic person will help the student with a TBI both academically and socially.

### **Accommodation and services**

To serve this clientele, we require a medical certificate. An evaluation report by neuropsychologist with recommendations would also be preferable.

Various accommodations and services will allow students to compensate for the effects of their limitations.

We can offer:

- a letter of explanation to teachers;
- a note-taking service;
- additional time for exams;
- access to an adapted classroom;
- an adapted schedule (depending on medication being taken, level of fatigue);
- use of a computer and correction software (**Translator's note: please add example of English correction software**);
- preparation workshops for the Ministerial Examination of College English;
- access to a resource person to point out errors (when recommended by a physician or neuropsychologist);
- adapted teaching aids (homework help service, supervision of assignments, etc.);
- academic support (work methods, organizational skills, time management with an agenda, etc.);

- adapted evaluations;
- use of an electronic dictionary;
- use of a digital recorder;
- use of an electronic agenda (i.e. Palm Pilot);
- mentoring;
- regular meetings with the teachers.

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## SOME COURSES OF ACTION

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### **Attitudes to adopt**

- Clearly set out the expectations of each party at the beginning of the semester and repeat them as needed (time allocated for meetings, content of meetings, respect, attitude in class, etc.).
- Be vigilant and do not give in to the manipulation of students trying to obtain preferential treatment or to use their functional limitation as an excuse for their performance.
- Openly discuss their challenges to foster exchanges that will lead to constructive suggestions on way to deal with the differences.
- Do not take personally their bursts of anger or irritability. Clearly express that this type of behaviour is unacceptable.
- Always keep in mind that the goal is to promote their social integration and support their learning. It is important to guide students toward overcoming their difficulties.
- Respect students' rate of progress and their ability to adapt slowly to new situations.
- Avoid overstimulation, as this can lead to increased fatigue and frustration.
- Finally, stimulate and motivate students by considering their strengths and challenges.

### **Technical support**

- Favour multi-sensory activities.
- Be sure to have attracted and caught their attention before giving instructions. When needed, follow a verbal request with a demonstration using gestures or a written message.
- Help students make connections and associations to make memorization easier.
- Try to link new learning to previously acquired knowledge. Explain how the new knowledge will be useful.
- Progress from the most basic to the more complex, from concrete to abstract, and from one element to many.

- Ask students to use an agenda or a journal. The resource person at the Special Needs Services will show them how to use it.
- Encourage students to express themselves through words or another means. Do not interrupt them and give them time to finish what they want to communicate. Do not pretend to understand if you did not. This will lead to frustration and a tendency to withdraw.
- Give important information in a clear manner. For example, cancellation of a class, details of an assignment, etc. should be communicated in writing or written on the board.
- Repeat and emphasize important information and instructions.
- Allow students to use various appropriate technical devices, such as a variable speed recorder, laptop computer, etc.

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## CONCLUSION

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Understanding students with a TBI means, first and foremost, grasping the complex nature of the relationship between them and their environment.

We hope this brochure has provided the basic elements to help you better understand students with a TBI, and that the measures described will allow you to resolve some of the challenges that may arise. We are convinced that the most important factor in the successful integration of these students is the compassion shown by their teachers.

If your job entails contact with students with a TBI and you have identified certain needs as a result of this interaction, whether they relate to a student or your own role, please do not hesitate to use our services.

Thank you. We look forward to hearing from you.

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