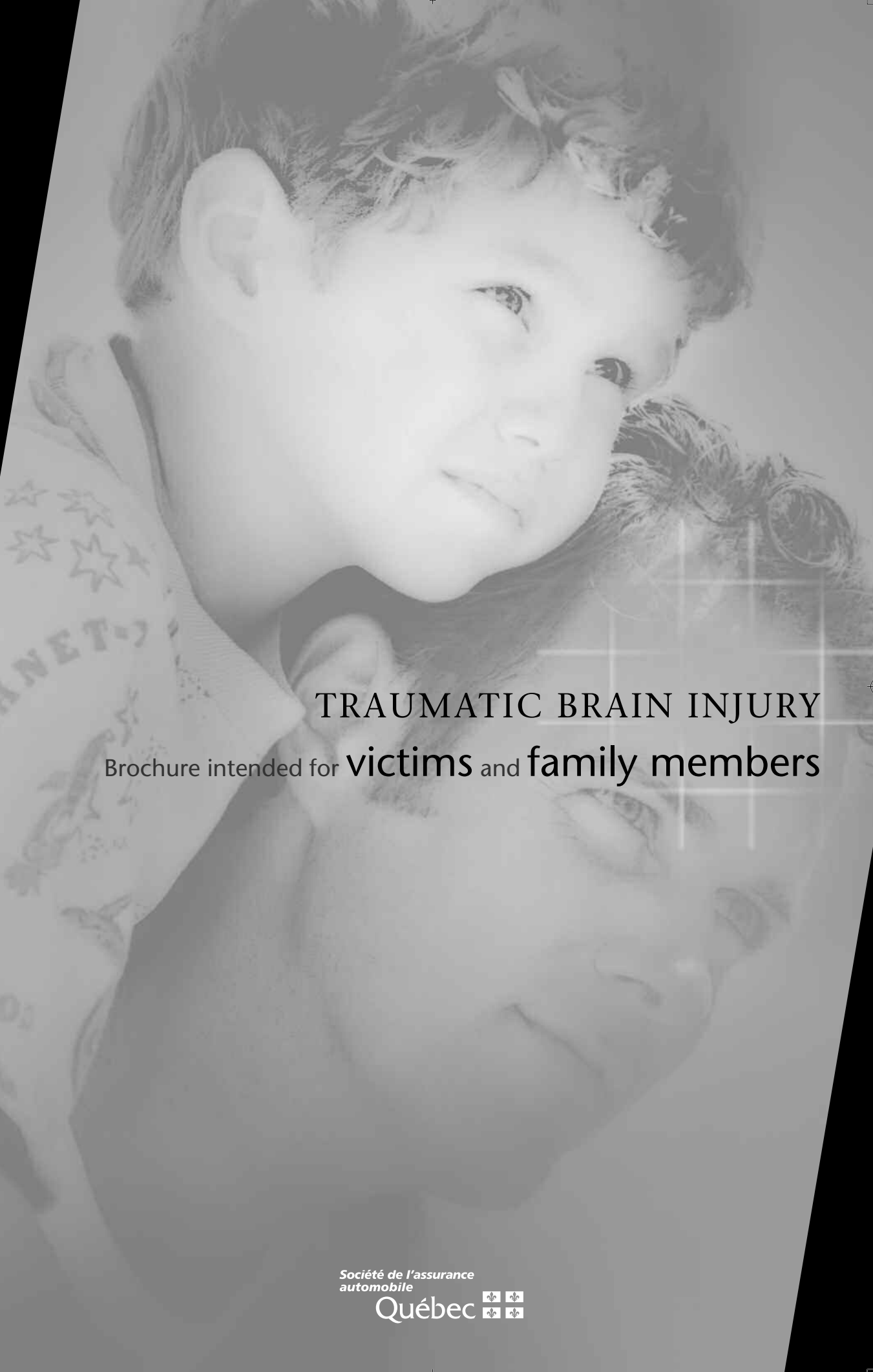


TRAUMATIC BRAIN INJURY

Brochure intended for **victims** and **family members**



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*Société de l'assurance
automobile*

Québec 

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FOREWORD

The Société de l'assurance automobile du Québec has been concerned with the rehabilitation of accident victims ever since its creation in 1978. Fully aware of the difficulties resulting from moderate and severe brain injury, the Société has re-edited this brochure with a view to helping people deal with the varied human problems caused by traumatic brain injury.

This publication seeks to explain an often complex reality as simply as possible. **It is designed as a complement to the assistance provided by a Société rehabilitation counsellor or resource person with experience in the field.**

Since each case is unique, the information contained herein will likely have to be adapted to a particular situation; consultation with a professional is the surest means of knowing exactly what to do.

For ease of reading, terms highlighted with the use of bold lettering refer you to the Glossary on page 56 for further clarification.

It doesn't just happen to others!

Traumatic brain injury (TBI) was a hospital term applied to someone else, outside your family and circle of loved ones. But suddenly, an automobile accident brought the reality too close to home for comfort. Has there been brain damage? You wonder how serious the injury is.

Even though many Quebecers are confronted with this type of situation each year, few are prepared to handle it.

Serious brain injury can have an effect on several different aspects of human behaviour. We instinctively fear the worst upon learning about someone who receives a blow to the head in a road accident. Since the brain controls our behaviour, a brain injury could entail a variety of disorders¹.

A **victim** who sustains **brain damage** may experience physical problems (paralysis, for instance), cognitive difficulties (such as failing memory or judgment) or emotional problems giving rise to behavioural changes (like aggressiveness) in different areas ranging from family life, at school or work, even in recreational activities.

Obviously, the impact of TBI varies with individuals. Happily, most cases are not serious. However, caregivers should be made aware that this type of trauma can lead to significant **aftereffects** (85% of all TBI cases are mild, and 15% are moderate or severe).

You can be helpful!

Research and clinical experience have shown that the people in regular contact with a victim, especially family members, can play an important role in his rehabilitation and significantly influence the results of efforts deployed. A family that is well-informed and organized, working in cooperation with the rehabilitation team, will likely achieve more results than a situation where a victim is left to fend for himself.

The work begun in a rehabilitation centre, for instance, could be continued after the victim's return home if the family knows how to go about it. For that reason, family involvement at each stage of the program is desirable.

Treatment of an accident victim who sustains brain damage as the result of a head injury may extend over a lengthy period, encompassing several phases, each of which may bring the family into contact with several professionals, perhaps working in different locations. A family link can be an element of stability, providing continuity.

¹ The Automobile Insurance Act views as an accident **victim** any person who has sustained bodily injury (i.e. physical, psychological or mental) in a road accident. In this text, the term "victim" designates a person who has suffered a TBI. The term is used objectively and should not be construed as being pejorative.

Family members usually do not have all the scientific knowledge required to suitably deal with the various problems that arise from having a TBI victim in their midst. This need for more in-depth information to help family members and close friends to more aptly care for their loved ones and be able to contribute to recovery are the reasons for this publication.

Information to guide you

This document provides you with information on how the brain functions, the impact of a traumatic brain injury and the various stages of treatment that may be dispensed to the victim. For people living with a person who has sustained such an injury, difficulties usually arise from everyday activities. What can the caregivers do in the face of so many problems?

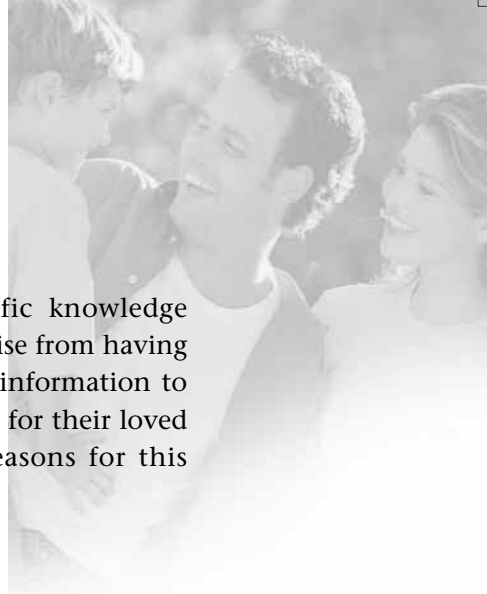
This text takes you through some of the problems that you might encounter in dealing with a victim of TBI. It also offers suggestions of ways to solve them or at least remedy the situation.

The information in this brochure applies to a composite victim, which of course may not correspond to a particular individual's condition. The reader should understand that the content will have to be adapted to the special needs of the person concerned.

While the suggestions in no way aim to supplant the treatment program set up by the attending health care team, you may find them quite useful in handling certain complex, delicate situations.

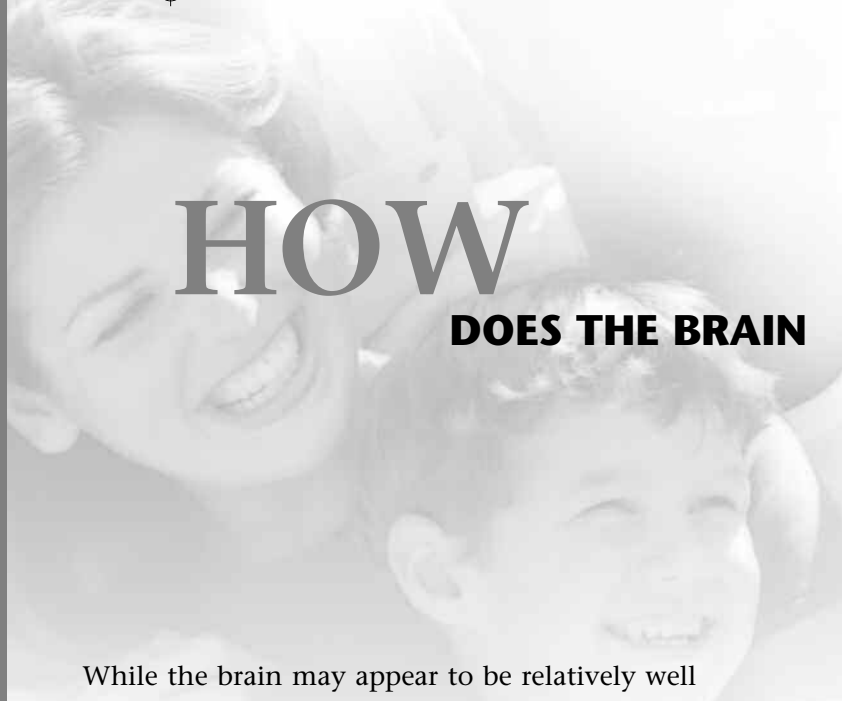
You will find a "Log" in the central insert that lists the associations involved in helping brain-injured victims in Québec, and the health care facilities with which the Société has entered into an agreement for implementing its rehabilitation program for brain-injured road accident victims. The log will also be useful to you in the space it provides to make notations (dates, the name of a specialist, etc.).

We hope that the content of these pages will enable you to become better acquainted with the complex reality of TBI, and that in it you find the information you need to orient and facilitate the assistance you aim to provide for the person who is so afflicted.





As soon as Paul arrives at the emergency room, the medical team detects a traumatic brain injury of moderate severity. They rush to stabilize his vital functions and attend to his head wound. The X-rays show a fractured skull and contusions in the frontal area of the brain.



HOW DOES THE BRAIN

While the brain may appear to be relatively well protected in the skull, in reality it is quite vulnerable. We are not readily aware of the brain's foremost role in every facet of our life until it has been damaged.

The next few paragraphs give an overview of how the brain works, especially its relation to human behaviour.

THE BRAIN AND BEHAVIOUR

The brain is in charge of the body's behaviour and many of the body's vital functions. As the communication network, it processes and dispatches information we gather from our senses that tells us about our environment, and analyzes and stores such data. It is also constantly aware of the internal conditions such as hunger, pain, emotions, etc. Thanks to the brain, we can retrieve information gathered within the body and from contact with the environment to adapt our performance or modify our behaviour in the very heat of action, depending on the messages received from internal or external stimuli. All our acts originate from that marvel, the brain, and it is busy day and night. Any damage to the central reactor can have disturbing consequences; even our heart function is subject to constant monitoring on the part of the brain.

WORK?

Although the brain accounts for only 2% of the human body's weight, it is the most important and complex of our organs. It operates in a particular fashion, not easily understood, even for specialists.

Diagram 1 (in the central insert) shows our two **cerebral hemispheres**, the left and the right. Because they appear symmetrical, one might expect each side to have equivalent functions. This holds true in part for simple operations but, for more complex tasks, each has its own area of specialization, as it were.

The left hemisphere is dominant in most people. Its role is to regulate the entire sphere of activity having to do with speech, reading and writing as well as the forming of ideas through the processes of calculating, abstract thought, reasoning, judgment, etc. Those are the brain's **verbal functions**. The left hemisphere also directs motor and sensory operations for the body's right side (see the central insert and Diagrams 1, 3 and 4).

For its part, the right hemisphere exercises control over so-called **non-verbal activities**, those being of a visuospatial nature, such as the processing and storage of visual and tactile information. This includes everything having to do with the recognition of **shapes and spatial relationships**. Drawing a geometric form such as the Red Cross emblem, for instance, calls mainly on the right hemisphere.

The two cerebral hemispheres are connected by an arched mass of nerve fibres known as the *corpus callosum*, which allows them to communicate with each other and work in harmony and complementariness, when more complex operations require joint efforts.

Locating the precise seat of many of the brain's functions helps to understand how the aftereffects of cerebral damage may vary according to the area injured in an accident (see central insert, Diagram 4). It is as if the brain were a map where each country illustrated is assigned a special role to play in human behaviour.

Damage to the frontal lobe area of the brain, for example, can result in a loss of the person's spontaneity or initiative, provoking apathy and making it difficult to take action on objectives or goals. We would mistakenly think the victim had become "lazy".

Damage of this kind can also cause "rigid" patterns of behaviour and **perseveration** (obsessiveness). Furthermore, it can explain personality changes. The individual becomes, to various degrees, incapable of self-criticism and adopting behaviour judged to be socially unacceptable. He can also be sexually disinhibited, irritable or irascible. His conduct appears satisfactory to himself. He doesn't worry about what happens to him, whereas people around him can be taken aback by his actions and lack of appreciation of his difficulties. It's as if the individual who has sustained frontal brain damage were the last person concerned by what is happening to him.

This example illustrates a certain number of behavioural problems resulting from damage to only one of the areas of the brain, that is, the frontal part. It is therefore easy to understand that, following an automobile accident which causes injury to several locations in the brain, the situation is more complex and there are resulting changes that affect several aspects of human behaviour (cognition, personality, motor skills).





WHAT IS TBI?

When a blow to the head is sufficient to not only damage the skull but also the brain, we say the victim has suffered a traumatic brain injury.

Definition

Traumatic brain injury can be defined as follows:

An injury causing the destruction or dysfunction of the intracranial nervous system.

An examination of the essential characteristics of severe head injury will help round out the definition.

Main characteristics

Traumatic brain injury can most often be traced to a direct or indirect blow to the head.

For TBI to occur, the head must have been struck by a direct blow and the brain shaken and cells destroyed or the **neurons** and their extensions (**axons**) damaged (indirect or acceleration/deceleration injury). Such brain damage inevitably has consequences, which are considered below.

*TBI generally causes a sudden alteration of the victim's **state of consciousness**, which may vary in severity and duration.*

As we shall see, a brain injury is often accompanied by a disturbed state of consciousness that can range from slight confusion to a **coma**, in more serious cases. Contacts between the individual and his environment may then become more infrequent or eliminated altogether. This altered state may be a passing phenomenon or persist for several days, months or even years.

*TBI almost always brings about a change in the higher cerebral or **cognitive** powers. The change is usually sudden and may either be permanent or variable in duration.*



A brain injury can bring about changes to the higher mental functions such as intelligence, memory, judgment and reasoning. Any change is usually noticeable shortly after trauma has occurred. Changes may be short-lived where damage is not severe but could persist during months or even years in the case of serious injury.

The victim of a brain injury often experiences disturbances in the facets of daily living, be they in family life, on a personal level, socially, in studies or at work.

TBI can provoke emotional change, with far-reaching consequences on behaviour in everyday life. The victim may become more irritable, impatient or have difficulty controlling himself and have frequent mood swings. These behavioural or personality changes may arise, creating family or marital problems or interfering with leisure activities. They may have a detrimental effect on school performance or make a resumption of work problematic or uncertain. Behavioural disorders such as these often linger long after the accident, even after physical lesions have to a great extent diminished. There may be **neuropsychological** aftereffects to a brain injury, not always directly proportional to the degree of damage evident physically or neurologically.

While it is usually possible to ascertain the physical aftereffects of TBI that also causes damage to higher mental functions and the personality, a victim may escape serious physical disability but suffer profound mental or personality changes.

Even though people who have suffered severe brain damage have certain traits in common, each person and his aftereffects must be considered as being unique.

HOW DOES TBI OCCUR?

In traffic accidents, TBI results from the violent movement of the head, in any direction, following a collision. The victim's head may hit one or more objects in its path. On impact, the skull may be fractured (see central insert, Diagram 5). Depending on the force of the blow, the skull may crack, with bone

fragments being driven into brain tissue, causing damage. The head then comes to a sudden stop and the brain enters into contact – sometimes violently – with the inside of the skull. The result can be brain damage (acceleration/deceleration).

In addition to this rapid acceleration and deceleration, rotation of the head as the result of a blow may cause friction between brain tissue and the inside of the skull, increasing the severity of damage. Rotation might also cause injury to structures at the base of the brain (**subcortical structures**). These play a key role in controlling the body's vital functions, including awareness (lesions responsible for comas).

The brain may suffer multiple lesions, in other words, lesions in areas other than the point of impact on the skull, sometimes due to the effect of a "**contre-coup**" (see central insert, Diagram 5, part 1). The site and extent of brain damage is not directly linked to the location or even degree of injury to the skull itself.

The condition of TBI victims may be aggravated by complications that can arise after the accident (i.e. secondary injuries). This is the case of swelling of the brain, infections, and respiratory problems requiring a **tracheotomy** to help the person breathe. **Epilepsy** is another affliction that may occur later to a victim of brain injury.

Occasionally, the older terms "concussion" and "cerebral contusion" are more commonly heard instead of TBI.

Concussion

We refer to "concussion" when the brain is subjected to a violent jar within the skull. It is usually accompanied by a short loss of consciousness (approximately 15 minutes). There is usually no evident, precise site of brain damage. The victim may temporarily suffer from various symptoms such as headaches, dizziness, difficulty in concentrating, memory problems, irritability and depression. Concussion is followed by a brief recovery stage which, most often, leaves no disabling aftereffects.

Cerebral Contusion

We speak of cerebral contusion when there are focal signs, that is, when we can locate one or more specific areas where brain damage has occurred. The risk of epilepsy is usually greater in the case of cerebral contusion than with a concussion; it leads to a variety of disorders that can leave aftereffects. This type of injury is more serious than concussion, and requires a longer recovery time.





POSSIBLE AFTEREFFECTS OF SIGNIFICANT BRAIN INJURY

A victim of TBI may suffer any number of various and more or less severe **aftereffects** or disabilities having an impact on:

1. Nutrition
2. Physical condition
3. Personal care
4. Communication
5. Housing
6. Travel
7. Responsibilities
8. Interpersonal relationships
9. Community life
10. Education
11. Work
12. Recreation
13. Other life habits

The complex problems that beset the victim of TBI can be traced to brain damage, which can alter human behaviour in all its varied dimensions. Unlike what happens in many other types of bodily injury from traffic accidents (e.g. fractured legs), not only the physical aspect of a person is affected, but also the intellectual aspects and behaviour.

We must also recognize that all the facets of human behaviour are co-dependent and can therefore influence each other. For instance, failing memory can make someone impatient; physical or mental impairment can lower one's self-esteem, which will in turn erode motivation, and so forth. This explains in part why the integration of some TBI victims into family life, social or vocational pursuits, and academia may present real obstacles, especially if damage was severe.

The pages that follow will discuss each aspect, one by one, that can be affected following TBI, and what happens in a victim's everyday life and behaviour.



Physical Condition

Subsequent to TBI, the most apparent signs are physical impairment and disabilities. They are mainly obvious through damage to the motor functions and sensory or other loss.

Motor Damage

Motor damage is particularly evident immediately following the accident. It affects approximately 50% of cases where the trauma was moderate or severe. Thereafter, recovery is often satisfactory and the motor difficulties are gradually reduced. However, in very serious cases, some of the after-effects might be permanent. The victim must therefore adapt and if need be use technical equipment (such as a brace, walker, wheelchair) to compensate for the damaged or lost function.

When the part of the brain responsible for movement is injured, a more or less serious paralysis occurs to the limbs. If the left side of the brain has been damaged, the right limbs will be paralysed. The opposite is true if the right side of the brain is injured (see central insert, Diagrams 1 and 3). **Hemiplegia** is full paralysis on one side of the body. When the paralysis is less serious, we speak of **hemiparesis** (partial paralysis).

Obviously, this type of paralysis can cause difficulty such as limping when moving about, in climbing stairs, or when using one's upper limbs in everyday activities either at home or at work. One plausible scenario is for a right-handed person not to be able to use his dominant right hand in normal fashion following an accident.

Motor damage can also cause a loss of balance, making walking difficult and outings risky. Other subcortical motor problems can cause spasticity, involuntary movements, lack of coordination or a slowness of movement. The person affected will lack precision and will perform tasks which posed no problem before at a slower rate and with more difficulty (i.e. preparing a meal, taking a bath or shower, getting dressed, doing the housework or odd jobs).

Motor damage can also be responsible for language problems in persons suffering from brain damage that can crop up some time after the accident. They may have difficulty finding their words or speak in a voice that friends and family find different. In the most serious cases, the person may have trouble expressing himself (problems articulating), which only increases frustration and embarrasses acquaintances. The victim may also have difficult swallowing (dysphagia).

Sensory Loss

Brain injury can cause a diminished functioning of the senses: in sight, hearing, smell and taste. The victim can suffer from visual problems (e.g. seeing double, loss of visual field), a loss of hearing or ringing in the ears, or a loss or absence in his sense of smell. Some people are occasionally affected by **sensory hallucinations**; they think they perceive sounds or smell odours when there are none.

Furthermore, there can be a diminished sense of touch, most often on the same side as the paralysis. Reduced sensitivity to touch, heat, cold and pain increases the risk of burns and injury when the person is not fully aware of this loss of feeling.

Other Associated Problems

Very often, persons who have sustained a brain injury complain of headaches and dizziness that accentuate their fatigue and feeling of frustration. Unfortunately, it is sometimes difficult to control these problems, even with the appropriate medication.

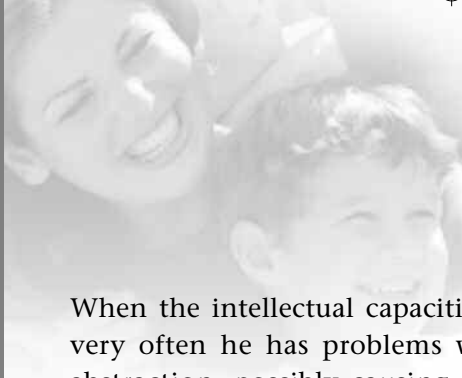
Other injuries or factors not directly linked to brain damage that can complicate the victim's predicament are multiple fractures, deformation and visible scars.

Intellectual Faculties

What most differentiates TBI from other types of injury caused by road accidents is that, aside from the physical condition of the victim, the emotional state and intellectual faculties are also affected. Quite often, people with brain damage have problems with their attention span and concentration or else difficulties with memory and solving problems of everyday living.

Problems with one's attention span and concentration often prevent a person from carrying out a specific task. The person moves from one activity to another, without being able to eliminate the distractions or stimuli not related to the work at hand. A lack of selective attention or the inability to concentrate long enough on a specific task can hinder one's studies or return to work. Under these conditions, it is difficult for the head injury victim to assimilate new knowledge.

In addition to reduced attention span and concentration, people having sustained severe brain damage often have problems with their memory and learning. They have difficulty gathering, storing and using stored information. Short or long-term memory often falters. These problems with learning or memory can vary in degree of severity and happen over a relatively long period of time.



When the intellectual capacities of a brain injury victim are affected, very often he has problems with thought processes or difficulty in abstraction, possibly causing problems in organizing information. It therefore becomes difficult for the victim to perform any mental operation wherein information from two or more sources are combined, as required in judgment, mathematics, activity planning, initiative and creativity. Difficulties such as these make a return to school or work very arduous indeed.

Sometimes, despite the maintenance of motor functions, the person is incapable of carrying out certain tasks; this is called **apraxia**. In this case, it is sometimes impossible for the person to get dressed or prepare a meal.

In addition to speech motor problems, some victims of brain damage have problems with **expressive functions** or difficulty communicating information received and processed. These problems manifest themselves when it comes to speech (**aphasia**), reading, writing, counting, drawing, or making gestures or visual expressions. It's as if the meaning of words and symbols were altered or lost and the person had difficulty using them properly.

We are becoming increasingly aware of the fact that a number of brain damage victims have difficulty knowing how to perform certain tasks. This happens mainly when the frontal lobes of the brain have been injured and the result is slowness of intellectual activity, passivity, rigidity or **perseveration**. The individual has problems beginning a particular task, and once begun, has difficulty stopping.

Also indicative of this problem is loss of initiative and acting on a trial-and-error basis. Tasks stop being adequately planned and organized. Victims have what we call a "concrete attitude", in other words, they are only interested in the situation they are in at the moment. Their only interest is the activity they are engaged in or the need they are feeling. It becomes very difficult to distract them from the concrete situation or the needs felt at that moment; they are only interested in getting what they want regardless of the overall situation.

On a day-to-day basis, therefore, it can be said that those suffering from brain damage have difficulty adapting to new situations, have feeble judgment and behave in an infantile or inappropriate manner.

Emotional State

The control of our motor or intellectual activities is not the only function of the brain. The brain also enables us to feel emotions and control them according to the context in which we find ourselves. Injury to the brain, such as that caused by TBI, can lead to changes in one's emotional state. Very often, the person affected can have mood swings or a **lability** of the emotions. He might have a tendency to cry or laugh without reason or in an inappropriate manner, and will appear hypersensitive, changing rapidly from one emotional state to another (sadness or euphoria) without apparent reason.

In addition to the rapid mood changes in many people who have suffered brain damage, there is diminishing control of their emotions. They often react to what goes on in their environment through aggressive or angry behaviour. They do so impulsively, without necessarily taking the time to think about the consequences of their acts which are generally violent physical or verbal outbreaks. Also noticeable in such people is a diminishing capacity of self-criticism, unpredictable, impulsive behaviour, and sometimes even a lack of sexual control (lower sexual inhibition).

There may also be infantile behaviour. The victim may appear egocentric and antisocial. He shows little **empathy** and becomes intolerant of the least annoyance or frustrated with any delay in the satisfaction of needs.

With TBI comes an altered perception of self. The victim might suffer from self-deprecation and feel unable to carry out former roles, within their family or otherwise.

Certain rehabilitation professionals or family members complain that the person with brain damage has a depressive attitude or **apathy**. This may mean a loss of zest for life, passivity, lack of motivation or interest in taking on new projects. In serious cases, this dependence or depression can be accompanied by self-mutilation or suicidal ideas.

In certain cases, victims of TBI might have had difficulties or personality problems before the accident; however, it has been proven that severe brain damage can exacerbate or deepen personality traits or problems that existed prior to the accident.



Family Relations

The fact that an individual has sustained a brain injury may have substantial impact on those close to him, especially on the dynamics of the couple or the family. As early as the first days spent in the hospital, the victim's family life is no longer the same. There is worry for his very survival; the family must visit the victim at the hospital and make plans for the return home. The household must be reorganized in order to meet the various needs of supervision, special care, help in hygiene, meals, moving about the home and going outside, etc. Family members must plan on taking part in the rehabilitation process, for instance, supervising the exercises prescribed by the professionals involved.

Above and beyond the loss of physical autonomy, the victim's decreased intellectual and personal independence very often leads to problems with friends and family. Due to this loss of autonomy, those close to the victim must provide for adequate supervision because of his diminished capacity in judgment. This period of loss of autonomy varies according to the degree of severity of injury and, in the most severe cases, can be a permanent condition.

Within the family unit, roles must be redefined, tasks and responsibilities must be shared differently and everything must be organized to compensate for the victim's failing memory.

As we have seen, personality changes and behavioural problems are a common occurrence. A victim's friends and family even have difficulty "recognizing" him following the accident due to a new set of behaviour he may take on. They don't know how to approach him, control him or handle his aggressiveness. Repeated or exaggerated demands concerning food, sex, money, driving, smoking, and so on, catch them off guard. These personality changes and behavioural problems also take their toll on interpersonal relations such as those between children and parents, between spouses, with brothers, sisters, or even friends. Sometimes, the victim's loved ones find themselves cut off from their group of friends. In other cases, there may be an exacerbation of pre-existing problems in the couple or family (i.e., separation, divorce, education of children, budget).

Friends and family members must often spend much time and effort supporting the victim of TBI, without necessarily reaping the thanks or gratitude proportionate to their actions or devotion.

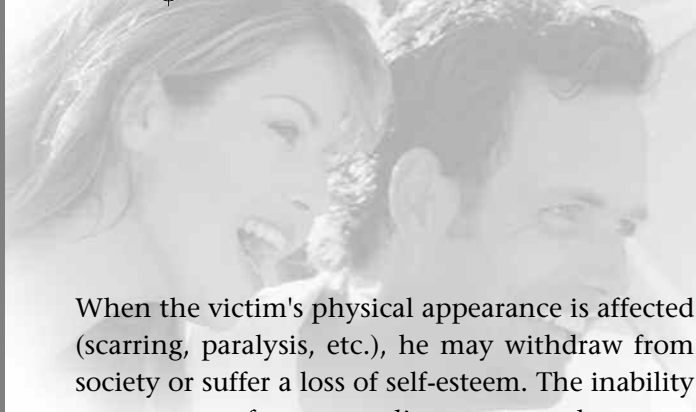
The person with severe brain damage is sometimes temporarily or permanently unable to return to academic or professional activities. Therefore, in the case of a child being taken out of school, there must be someone at home to look after him. One parent might have to quit work in order to look after the child and in so doing become less available for other members of the family. Likewise, if the injured individual is one of the parents, the other one must, in most cases, neglect his work and even quit to take charge of the victim's home care and household responsibilities. The result can be greater fatigue, stress and insecurity, as well as a deteriorating family environment.

The Social Sphere

Once the person with severe brain damage has been released from the hospital and returned home, effort must be spent on widening his circle of activities. This is a difficult and often crucial stage. In fact, all previous steps have been made with the aim to facilitate social integration.

First, the loss of physical autonomy can prevent the victim from easily moving about out-of-doors due to obstacles or **architectural barriers**. Decreased physical capacities can also hinder participation in leisure activities and sports that require strength, balance and coordination.

Leisure activities and sports are often a way for children to acquire a sense of self-worth. Deprived of these activities, they tend to withdraw from society and "vegetate" as some parents observe.



When the victim's physical appearance is affected (scarring, paralysis, etc.), he may withdraw from society or suffer a loss of self-esteem. The inability to return to former studies or to work are yet more reasons to feel useless and worthless.

When a person's intellectual capacities are diminished, it is hard to face responsibilities and show the same independence as before. For example, the fact that a young adult can no longer go out alone without supervision, and no longer drive a car, can be a substantial loss for that person.

Furthermore, it is not uncommon to hear parents say that soon after the accident, friends and neighbours called on their child but gradually spaced out their visits and then no longer came around because they found that he was different, had changed and become less interesting than before. In such circumstances, family members might tend to treat their adolescent as a baby by resorting to overprotection, isolation or guilt tactics.

Personality changes and behavioural problems also hinder a brain injury victim's social integration. Brain damage may cause social development to slow down or even stop, which cannot help but change the rapport between the victim and those around him. Friends may act surprised and react strongly to the individual's behavioural problems. They might tend to act in a punitive fashion or maintain certain relations with the person through pity.

The less people in the victim's surroundings understand his behavioural or personality problems, the more difficulty they have living with that person and maintaining a harmonious relationship. In that case, the victim suffers from incomprehension and even rejection.

After a few weeks, Paul regains consciousness. He begins to recognize his loved ones and the medical team around him. He gradually begins to speak again and can grasp time concepts better as well as spatial relationships. Unfortunately, he is afflicted with hemiparesis, a muscular weakness affecting the entire left side of his body.

Young victims of brain trauma often complain of their difficulty in establishing or maintaining love relationships with other young people. Some are conscious of the fact that, due to the aftereffects of injury, their future appears uncertain, especially when it comes to forming a couple or raising a family.

A victim's aftereffects also often provoke a withdrawal from his usual circle of activities that are responsible for social development. Due to a loss of contact with peers and colleagues, the victim of brain damage is obliged to reorganize his time differently. It is not uncommon for such persons to feel apart from others and have difficulty in finding a group with which they have a sense of belonging.

A young man suffering from TBI said: "At 18, I was proud to leave home to live on my own and have my own group of friends and activities. Now, because of my accident, I had to move back home with my parents like when I was 12 years old. I feel like I've lost everything: my freedom, my job and my hobbies. My friends have drifted away and I feel like I have to start everything over."

Studies and Work

Although the physical aftereffects of brain-damaged victims can interfere with a resumption of studies or work, it is the intellectual and personal aftereffects that make their integration into the academic or working world difficult.

Quite often, intellectual and emotional aftereffects offer no other alternative than rethinking a career or scholastic change, that is, taking courses again for a whole year or accepting a lower paying, less demanding job. All that effort, and then to find oneself less ahead than before!

A person who has undergone treatment for several months and, in some cases, more than a year, will obviously have problems going back to school or work after such a long absence. Further, we mustn't forget that most academic and business circles are often poorly prepared to receive someone who has sustained severe brain damage. For instance, one might have difficulty understanding a personality change in an old colleague. His slowness and lack of judgment could be poorly tolerated whereas his qualities commanded high respect before his accident.

For those who cannot resume their studies or work, a loss in self-esteem on the social level is substantial, due to the importance our society places on such activities. Our goal therefore is to increase the degree of autonomy and improve the quality of life of victims, while taking into account the abilities they have left.



Treatment

FOR PEOPLE WHO SUFFER

The intensive care team takes over. In the days following, the staff continues damage treatment Paul had been undergoing. Although his condition is encouraging, his wife is worried and regularly calls up members of the attending team for information.

Paul is then transferred from intensive care to a hospital room. The impact of his brain injury is now obvious. In addition to hemiparesis, he displays difficulties with concentration, his memory and behaviour. His personality has changed so much since the accident that his wife and loved ones can barely recognize him. The medical team steps up its efforts to promote his physical and mental rehabilitation.

The following paragraphs set forth the content of a treatment program for victims of TBI.

The general model proposed must, of course, be adapted to take into consideration the specific situation of each person affected by TBI. It is most important that each aspect of living affected by the trauma be given adequate attention in the course of treatment.

It is also important that emphasis be given to the particular nature of each case and that continuity is ensured throughout the treatment process. The treatment should be pursued with the goal of the victim's best possible **social integration** in mind, taking into consideration the aftereffects of brain injury and remaining capabilities.

At the end, you will find a list of the various health care professionals and their role in treating victims of brain injury. The list includes a cursory definition of such roles.

TRAUMATIC BRAIN INJURY

The treatment process or program for a person who has sustained a brain injury may seem complex to someone relatively unfamiliar with the Québec health care system.

TREATMENT PROGRAM CONTENT

The proposed model of services dispensed to brain injury victims can be divided into three main stages, each with its own objectives. They all have the overall aim of complementing each other so that care given to the person touches all human dimensions.

First Stage

Medical treatment and early rehabilitation

The first stage of treatment designed for those who have suffered brain injury is medical care. It is dispensed to the victim immediately after the accident, usually in a hospital setting, and may continue for several weeks or months. The aim of medical treatment is to provide first-aid, ensure that the accident victim survives, stabilize his physical and neurological condition and, where possible, begin a program of **early rehabilitation**.

The health professionals involved in this stage are mainly neurologists, neurosurgeons, nurses and, occasionally, occupational therapists, physiotherapists and psychologists. By this time, a rehabilitation counsellor from the Société may have already established contact with the accident victim and family.

Second Stage

Intensive functional rehabilitation and support for social integration

The second stage is devoted to functional rehabilitation and social integration. It begins as soon as a victim's medical condition is stable and may be spread over several months or years. It is usually rehabilitation centres that provide such services.

Functional rehabilitation aims to develop a victim's physical self-reliance as well as cognitive, emotional and behavioural abilities, thereby maximizing the potential for a full recovery of these capabilities.



Care provided through functional rehabilitation is aimed ideally at the recovery of former capabilities. Where recovery is impossible, effort is spent on compensating for the loss of a capability or adapting the patient to a new situation through the use of different techniques or the development of a new set of strategies.

Such strategies and techniques entail preparing the victim as best as possible to a return home, to resume activities and increase his chances of becoming a useful part of society again. Treatment in functional rehabilitation is usually dispensed by physiatrists, nurses, occupational therapists, physiotherapists, neuropsychologists, speech therapists and social workers. The rehabilitation counsellor generally plays a very active role during this stage and the next one.

Once a victim has completed the stage of functional rehabilitation, he is able to return home and, where possible, to the workplace. A resumption of work-related activities and social integration can sometimes take several years to achieve in the most serious of cases. Treatment at this stage can take place at a CLSC, an **outpatient care facility** or a socio-occupational integration facility. A patient's social integration is made complete when he returns to former academic or vocational pursuits.

The goal pursued is the person's complete rehabilitation, to facilitate a resumption of normal activities by increasing self-reliance in everyday living.

During this stage, the rehabilitation counsellor continues to play an active role, searching for ways to facilitate social integration and a resumption of work-related activities for the patient. Further, the counsellor is often called upon to coordinate the actions of other specialists and resource people. The other specialists involved at this level are occupational therapists, social workers, career consultants, psychoeducators, retraining specialists and other specialized educators.

In addition, in all regions of Québec, there are community organizations that offer such services as information, referral, mutual help, support and coaching to accident victims and their families.

Third Stage

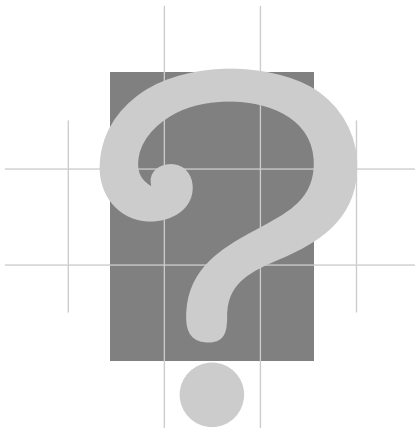
Building on the progress achieved

At this stage, intervention must enable the patient to build on, where possible, the progress achieved in the rehabilitation process.

If it is not possible for the brain injury victim to return home owing to the gravity of lingering aftereffects, the goal in spite of this is for that person to maintain a certain degree of autonomy and quality of life.

The effort to hold onto and build on the progress made in recovery can sometimes last a lifetime. This means that, after having completed the first two stages of rehabilitation, a victim of TBI has not necessarily recovered all his prior abilities. Aftereffects may prevent him from being entirely self-reliant in everyday activities. If this is the case, the family can turn to a resource person such as a psychologist, social worker or special educator. Sometimes it is possible to remain in contact with a team of professionals and call on them in time of need.

Obviously, the SAAQ helps the patient maintain his progress in recovery by reimbursing the costs for personal assistance, specialized and adaptive equipment and by the provision of support services to victims and their families.



RESOURCE PEOPLE AND SPECIALISTS TREATING VICTIMS OF BRAIN INJURY

Throughout the recovery process, a victim and his loved ones will be meeting a variety of resource people and specialists with different backgrounds who all work on a multidisciplinary team: the attending health care team.

Depending on the fields of interest and specialties, each professional aims to bring special skills to the team, which is responsible

for the treatment program. For the uninitiated, it is not always easy to grasp the contribution of each team member. The list below summarizes the role of the resource people and specialists you could come across in the team attending to a brain-injured person you know and hence get to know their respective roles.

Career Consultant

This is a specialist in academic and vocational integration who helps people make realistic and independent choices. A career consultant assists the patient in adapting, on a psychological level, to the consequences of the accident. The consultant may bring about better self-knowledge (interests, personality, aptitudes, etc.) and surroundings. He may also help the person fulfill projects by ensuring a follow-up on endeavours.



Special Educator

In cooperation with the other members of the attending team, a special educator ensures the follow-up of the treatment plan either at the rehabilitation centre or at the patient's home. The educator is often the professional who can help the patient reorganize his daily activities in the home.

Occupational Therapist

An occupational therapist helps the patient boost his functional independence in everyday activities and in all their dimensions, be they physical, intellectual, emotional, academic or vocational. To this end, this specialist develops exercise programs for the patient.

Nurse

In the period immediately following the accident, a nurse provides basic care to ensure a victim's survival, treat wounds, provide stimulation in moments of awareness and constant monitoring, in accordance with the attending physician. During the period of recovery, nurses look after the patient's physical well-being, provide moral support and supervise certain exercises prescribed to the victim. They also make contact with the family members of the person under their care.

Neurosurgeon

A neurosurgeon is a physician who specializes in disorders of the nervous system that may be treated surgically. In cases where there has been TBI, the neurosurgeon makes a diagnosis, initiates treatment and, where appropriate, decides on the surgery.

Neurologist

A neurologist is a physician who specializes in nervous disorders that can be treated medically. In the case of a TBI, this specialist makes a diagnosis and prescribes treatment, but is also responsible for medical complications such as epilepsy and meningitis.

Neuropsychologist

A neuropsychologist will assess the damage found in the higher mental functions, personality and social integration capabilities (regarding family, studies, work), make a prognosis and develop a treatment plan for those areas.

General Practitioner

Better known as "the family doctor", a general practitioner, because of his general training, can build a bridge between the various professionals. He is in the first line in terms of greeting and briefing the family, since he often will treat not only the victim of TBI but is also the physician of the entire family.

Speech Therapist

A speech therapist evaluates the patient's capabilities in oral expression and provides treatment to re-establish or improve his command of language (speech, reading and writing). This professional usually enlists the cooperation of the victim's family as well as the other members of the attending team.

Physiatrist

A physiatrist is a medical doctor who assesses a patient's physical condition and prescribes the physical rehabilitation treatment adapted to his needs.

Physiotherapist

Following the assessment of the victim's physical condition, a physiotherapist devises and implements a treatment program comprised of exercises, with a view to promoting the victim's physical independence or reducing the physical aftereffects of a brain injury (i.e. motor problems).

Psychiatrist

A psychiatrist is a medical doctor who assesses the mental or psychological problems a victim faces as a result of brain injury and dispenses the appropriate treatment.



Psychologist

Often called the specialist of human behaviour, a psychologist assesses and treats people with personal problems through proven scientific methods.

Psychoeducator and Retraining Specialist

These specialists evaluate and treat behavioural and learning problems that school-age victims of brain injury experience; the cooperation of teachers and the family is essential to success.

Social Worker

A social worker is adept at appraising the victim's personal situation from a family and socioeconomic standpoint. He helps the victim and his family and can also serve as a link between a victim's family and health care professionals in the hospital.

Other professionals involved

Obviously, there are other professionals and resource people who work with brain-injury victims, for instance, the rehabilitation counsellor working for the SAAQ. This specialist assesses the accident victim's needs and decides on the steps to take as part of his rehabilitation plan, in cooperation with the victim and in partnership with the other professionals of the health care system. He will help develop and follow up on a recovery plan and represents the victim with various outside human resources, particularly in the return to work process. Of note as well is the contribution of people working for local community associations who provide a variety of services to accident victims and families in maintaining the quality of life and promoting the victim's social integration.

Having become more autonomous, Paul is now admitted to a rehabilitation centre. He is following a personalized program aimed at allowing him to recover as much as possible.

For those people close to a victim, it is most important to understand the part that each professional plays in the treatment program. Relatives, family and friends should not hesitate to enquire about the nature of the treatment. In doing so, it becomes easier to relay the information to the patient and encourage his participation in the program. The attending team is entirely open to the idea of a family participating in the health care program of the victim of TBI.

MEDICATION

The issue of medication for victims of serious brain injuries is crucial. Medication must be taken strictly in accordance with the physician's prescription. It is just as bad consuming not enough as consuming too much.

Below is a short list of the most commonly prescribed medication for TBI and their corresponding functions.

MEDICATION

TREATMENT

• Antibiotics	For infections (e.g. penicillin)
• Tranquilizers (e.g. Valium)	To reduce agitation, anxiety and irritability
• Antidepressants (e.g. lithium)	To diminish symptoms of depression
• Anticonvulsant (e.g. Dilantin)	To prevent epileptic seizures or reduce their frequency
• Analgesics (e.g. codeine, Empracet)	For pain relief

People who are prescribed medication following a brain injury must not automatically stop the medication they were already taking for prior conditions. For example, a person who was diabetic before the accident should continue to take the medication to treat that illness while taking into account, where applicable, any adjustment recommended by the family doctor.



After a few months, Paul is discharged from the rehabilitation centre. His memory and concentration are still somewhat affected. Overall, his condition allows him to return home. His recovery program must continue, however.

After a matter of weeks, Paul attempts to resume working at the job he had before the car accident. In spite of all the understanding and help from his employer, he regretfully assigns Paul less demanding work. Paul finds this situation frustrating and his mood swings are difficult to control. However, thanks to the combined efforts of his therapists, his loved ones and his employer, he learns to accept his new situation and finds in it a satisfactory quality of life.

The Participati

OF FAMILY AND

The first visits to the hospital are particularly trying for family members. Thoughts, questions and emotions cause an upheaval. During the initial period, the most painful moments for a victim's loved ones are often those spent in ignorance. Until the victim's condition has stabilized, it may be difficult for the attending physician to make a prognosis as to the severity of injury and aftereffects. In some cases, it may be known that the person will pull through, but the aftereffects and recovery period will be far from certain.

During this sometimes lengthy period of hospitalization, the family can often do little more than wait and hope for the best that the victim recovers as quickly as possible.

During the hospitalization period, visiting the accident victim is recommended, even when the victim is in a **coma** or a state of confusion. Attending professionals can help the family decide how often to visit and how long to stay, in order to provide adequate support for the patient but not exceeding their limits.

In the stages that follow hospitalization, functional rehabilitation, social integration, and building on the progress achieved, friends and family will be asked to take on a more significant role. This is a time when it is important to ask for help or information when the need arises, or else fatigue and discouragement can quickly set in. In such a complex field, it is only normal to seek assistance from the team of specialists.

FRIENDS

Whether the person who sustains a brain injury is a son or daughter, spouse, relative or colleague, those close to the victim go through a difficult period: there is the fear of losing a loved one and a feeling of injustice. Why did it happen to him or her? And they wonder what can be done to help the victim now and help him overcome the situation he is in.

To obtain such assistance, family members may find the help of a rehabilitation counsellor from the SAAQ valuable in supporting their efforts. This person can either provide the answers to your questions or direct you to the professionals or community associations for the assistance that you and the victim require.

The following pages do not attempt to solve all the problems encountered by brain injury victims or those close to them. The difficulties that occur throughout the recovery period are far too complex to be summarized in a document such as this. But, if you are close to someone who has suffered brain damage, or if you personally have sustained such trauma, it may help you to better understand the situation and act more effectively. Understanding and knowing what action to take may not lead to a magical solution, but could well reduce stress, fatigue and make the situation more manageable.

While not attempting to be exhaustive, the next section offers some basic knowledge about brain injury victims and tries to debunk some myths. It discusses certain problems that victims frequently encounter and proposes methods for action on which family members can base themselves in handling the difficulties.

The following information and suggestions will not make a specialized educator or experienced therapist out of you. That is not our goal. Family members cannot replace a multidisciplinary team, even though their contribution is of the utmost importance.



SOME BASIC IDEAS

The problems experienced by a brain injury victim are generally of a complex nature; you should not hesitate to ask all the questions likely to uncover information on the best action to take. In certain situations, it's better to be informed to better direct your actions rather than proceeding by trial and error and risking to make unnecessary or even harmful gestures.

While it may be true that certain aspects are common to victims of brain injury, there is a wide range of differences which influence treatment results. The differences are related to the following factors:

- the victim's age and situation prior to the accident
- the site and severity of brain damage
- other injuries and complications
- the quality of first aid and the speed of medical intervention
- the victim's motivation and willingness to recover
- the quality and effectiveness of rehabilitation
- the participation and support of family and friends.

Recovery

Can brain damage be repaired? Judging from our current state of knowledge, it appears not. A surgeon may operate on a victim's brain not so much to repair it in the sense of setting a splint for a bone or performing a coronary by-pass, rather to offer relief, for example in removing a bone fragment or easing pressure caused by a haemorrhage. Although the way has not yet been found to give the brain back its lost or diminished control over certain functions, experience shows that strides may be made. In cases where damage has been moderate, a certain recovery of functional control has been observed. Recovery obviously depends on many factors, such as the severity of damage to the brain.

These facts shed some light on the phenomenon:

- There is a link between the brain and behaviour, which is most evident for our sensory and motor functions. Cerebral damage to the **motor area** of the left hemisphere can lead to a paralysis of the right hand, for instance. The connection we can establish between the brain and behaviour also applies to our higher mental powers and emotions.

- Brain cells do not regenerate after they have been destroyed, unlike the cells elsewhere in our body. Therein lies the reason that certain capabilities may be irretrievably lost as the result of cerebral damage.
- In spite of the destruction of brain cells, there is still a possibility that the functions affected may recover. What goes on inside the brain to bring about this improvement is not perfectly understood; the four hypotheses listed below may provide an explanation.

Hypothesis 1: The process of shock resorption following a brain injury

After a severe impact to the head, the brain goes into a state of physiological shock, temporarily interrupting the command of certain functions, without necessarily sustaining the destruction of nerve cells. Recovery of those functions will be subsequently noted as the shock is resorbed. However, some aftereffects may subsist and will be related to cerebral areas where there has been definitive damage.

Hypothesis 2: Spontaneous recovery

Quite independently of treatment, the brain manages on its own to regain an equilibrium and recover some functions, up to a certain point. This "re-equilibrium", called spontaneous recovery, takes place most often during the first few months after the accident (0 - 3 months).

Hypothesis 3: Replacement strategies

In principle, damaged brain tissue does not regenerate to become operational again. Once cells have been destroyed, the same cerebral area cannot be reactivated to control a particular function. But to compensate for the loss, another, undamaged, part of the brain can be called upon. The victim of brain injury may thereby perform a task by calling upon a different mechanism. He could, for example, make greater use of visual memory to replace verbal memory that has been affected. Likewise, some people will write down important things that others tell them, not only to use so-called "paper" memory, but also to activate their visual memory, as they remember more of what they see than what they hear.

Retraining helps the victim to develop replacement strategies to improve certain functions, that is, teaching him to perform the same task by using a different approach.



Hypothesis 4: New learning paths

Inroads made in the course of treatment or retraining are not always due to a spontaneous recovery of prior knowledge or functions. After a certain length of time, a victim's "renewed learning" will lead to a greater degree of independence or an improvement in his general behaviour. In some cases, this learning process is far from easy, considering that the damaged brain has limited means to go about it. New learning paths are easier for young victims to accomplish, likely because the high degree of adaptability of a child's brain compared to an adult's.

Circumstances surrounding the accident

Circumstances surrounding the accident and the perception the victim and family have of them can have an effect on the patient's behaviour and retraining program. A victim who loses consciousness in an accident usually does not recall the moment of impact or the minutes or even days prior to it, and, of course, a period of time thereafter. Some people speak of a "black hole" when describing this memory loss of events prior to or following the accident. They may feel as if they have lost contact with part of their life.

Upon regaining consciousness, the victim tries to weave the threads of information about the event into a chronological pattern. The discovery of missing elements may in some cases generate anger toward the party at fault or feelings of guilt, if the victim is to blame for the accident. Victims may reproach themselves for causing worry to dear ones, even wishing they had died instead of others in the accident, or else experience very strong and often contradictory emotions.

Victims sometimes might have difficulty in believing what they are told, as if they had never lived through the experience. The lack of recall may bring about anxiety or even **denial**. Some people will feel they have to tell all listeners about the accident, with photographs to back them up, precisely as a way of reducing their anxiety, only too aware of their brush with death.

The brain injury victim's situation

Those who have not themselves sustained a brain injury cannot easily comprehend what being in the victim's shoes is really like.

For those in daily contact with a victim of TBI, the ensuing difficulties are likely to bring on fatigue, frustration or even anger. They simply have to imagine that the ordeal is most likely far worse for the victim.

Indeed, the victim of brain injury is probably going through one of the most disconcerting of human experiences. In addition to a loss of physical wholeness, the victim must often come to grips with his diminished mental capacities. The victim may be in a period of mental confusion when memory, judgment and even awareness may be adversely affected. He may feel distressed, lost, and depressed at the prospect of having to begin everything over again. With diminished powers, a victim may well wonder if death is not preferable.

Barely controlling their emotions, brain injury victims may see themselves as incapable or useless, finding themselves in situations to which they no longer know how to react. Angry, fearful and withdrawn, that person may no longer recognize himself, experiencing something like a loss of identity. In the more serious cases, a victim has to be "reborn", to learn the simplest living skills from square one.

Having to rely on everyone else to accomplish the most basic of tasks may not be easy, especially for a teenager or young adult who had already made great strides in becoming independent prior to the accident.

Hence, one should not be surprised when a victim of brain injury sometimes reacts with intolerance. It can be extremely frustrating to expend a stupendous effort to do things that were so easy to do before.

Even if the person's situation is difficult, this does not mean that you, as a loved one, should tolerate every whim. The victim needs a proper balance between an overly permissive and a constraining atmosphere without, however, losing sight of the actual limitations of the accident victim.



Family members and loved ones

Following the accident, a brain injury victim gets all the attention of the household. However, family members and people in close interaction with a victim of TBI should not forget their own needs.

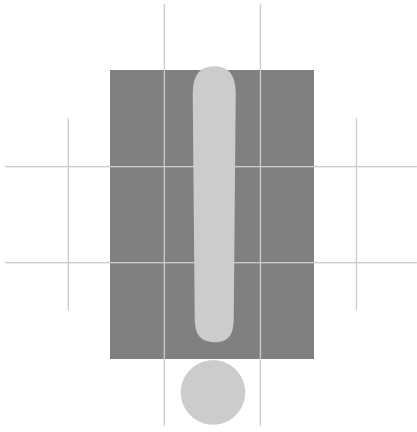
Taking care of a brain-injured victim is a task requiring a lot of time, know-how and a huge amount of energy. Love and self-denial are essential but not sufficient; knowledge is necessary as well, and you cannot become a "specialist" in this complex area solely by improvising. You have to become organized. Most likely you will experience an upheaval in your living habits. Some households are successful in setting up a network of mutual help, with members sharing tasks and responsibilities among them. You must be patient because the recovery process can be quite lengthy and results not as forthcoming as you would like nor in proportion to the efforts expended.

At the start, you might be tempted to do everything yourself, forgetting your limits, needs and other family members. That is a sure way to tire yourself out and become of less real help to the victim.

Family members may want to throw in the towel at times. They can get discouraged or angry at the seeming futility of their efforts or the little success they obtain. In such circumstances, it's perfectly normal to seek outside help. The role for those close to a brain injury victim is demanding; a respite may be in order from time to time for the mutual progression of all concerned.

Once the sombre period is over and the pain begins to subside, it is easier for some households to look after their family member who sustained a brain injury. It is now easier to take up the challenge of new responsibilities.

Once again, it is the combined efforts of the accident victim, his loved ones and the medical team that produce the best results in the shortest period of time.



DEBUNKING CERTAIN MYTHS

Victims or family members can often cling to myths or false notions to bolster their courage or avoid facing reality. Living with a victim of brain injury may not be easy but only by looking at the actual situation can it be changed more effectively. It is not by clinging to unrealistic expectations or by hiding one's head in the sand that the recovery process can be speeded up. This applies to both the victim and the people around him who sometimes harbour false notions about TBI. Here are some of them:

"He's probably not trying hard enough."

You've surely heard the expression "you can succeed at anything if you try hard enough". So if a person who has sustained a brain injury doesn't show progress, it must be due to lack of willpower! While achieving something worthwhile does require a person to be motivated and determined, a strong will alone cannot bring about the desired goal.

First of all, to achieve results, the goal has to be realistic. Second, the victim must have the wherewithal to accomplish it. Wanting something very badly, especially if there are few significant encouraging signs, can be frustrating, demoralizing and eventually detrimental to a person's self-confidence. However, even the best willpower in the world cannot restore a damaged brain.

"There are millions of brain cells that are not used anyway!"

A popular belief is that we use only a part (more or less 10%) of our brain's capacity. Unfortunately, this is only a myth. It can be reassuring to believe that a loved one can return to his former state, despite cerebral damage. While the human brain does possess vast resources, they are not boundless. Experience has shown that brain injury can have permanent aftereffects, regardless of the best efforts on the part of the victim, the people around him and the professionals responsible for retraining.

"I'll succeed, no matter what!"

Attachment to a victim often blinds loved ones to the aftereffects of serious injury. If the team of attending professionals has not been able to make progress, you might be tempted to say that love will conquer all.

Certainly, much love, patience, self-denial and courage is required of family members and the people close to a victim on the road to recovery. Although startling gains may result from the determination of a caring spouse, relative or friend, those efforts must be expended in conjunction with treatment by the professionals involved. Complementary action is the key, even if the fruit of the labour of all concerned does not always meet your expectations.

"The victim will be healed when a miraculous treatment or centre is found."

The slow pace of progress in a victim's treatment may appear to you to be due to the ineffective nature of the treatment program or the health professionals involved and that recovery is a matter of finding the right place with a "miraculous" cure. It goes without saying that a victim should have access to the best treatment possible, but the speed of recovery depends mostly on the extent of damage and the brain's own recuperative limits.





COMMON PROBLEMS AND SUGGESTIONS FOR ACTION

Although brain injury victims differ from each other, there are certain common elements that can help guide those in daily contact with such people. Obviously, judgment is required in their application and one should not hesitate to call on competent resources where the need is felt.

The suggestions that follow are examples and intended to be adapted to the particular aspects of each accident victim's situation. They are not to replace the directives or advice from professionals attending to the victim, but rather are offered as guidelines to behaviour, whenever the need arises.

There are no pat recipes in cases of brain injury. A dose of trial and error is often necessary, learning from mistakes as much as possible, while not losing sight of the fact that a victim's state may change from day to day and develop in the course of recovery.

A method proving effective immediately after a victim's release from hospital may be quite inadequate a few months later. A technique that does not meet with a positive response on the first couple of attempts should not be cast aside forever; it might be just what the victim's condition can put to best use at some later date or in another situation.

The problems or difficulties dealt with here concern the victim's physical, cognitive and emotional states with their ensuing behaviour. It is highly recommended that the family consult with professionals for guidance in the areas of a victim's work and studies (i.e. a career counsellor).

General problems

There are some general problems and particular difficulties related to human behaviour that may arise for a victim of brain injury. What follows is a brief outlook on those problems or difficulties and some practical suggestions which may serve people in contact with the victim, to render their actions more effective.



Social isolation

Without realizing it, families who find themselves in a new situation sometimes tend to become isolated and confront the victim's problems alone. They lose contact with the attending health care professionals. The difficulties they must face prod them into refusing to leave the victim unsupervised at home or to invite friends over, for fear of the victim's behaviour.

Suggestions:

- Maintain the lines of communication open with professionals and schedule regular meetings with them.
- Have a resource person you can contact in case of emergency.
- Keep up your social contacts and leisure activities (outings, holidays), as these are more vital than you might think.
- Avoid withdrawal and feeling guilty.
- Have other people close to the victim take charge of care from time to time.

Childish behaviour

Childish behaviour on the part of adults who have sustained brain injury or their regressive habits may lead their families to treat them as if they were children.

Suggestions:

- Grant the victim the full respect to which he is entitled and the degree of freedom, responsibility and initiative he is able to assume. Experience and counselling can help you set the proper amount.
- Develop attitudes toward the victim that reflect his cognitive and emotional reality on the basis of personal observations and information from professionals.
- Always take the victim's real age into account, along with personal limits and the aftereffects of injury. Treating the victim as a child becomes a further reason for his self-deprecation.
- Avoid overprotection, which prevents a victim from using his capacities to the fullest or the new skills learned. Some well-intentioned people want to help so badly that they practically "suffocate" the person they intend to help.

Wanting to do all at once, forcing recovery

In its desire to do good, and impatient to see the victim recover, a family might try different alternatives in an effort to solve all problems at once.

Suggestions:

- Respect a victim's rate of progress and ability to adapt to new situations.
- Set realistic objectives and short-term priorities.
- Avoid setting the victim up for repeated failure in striving for goals out of reach.
- Avoid overly stimulating the victim, which is likely to increase his confusion, fatigue and frustration.

Lack of a uniform approach

It may be difficult for family members and those persons in daily contact with a brain injury victim to adopt a common approach. However, this is precisely what the person with brain damage needs to regain a certain stability and continuity in coming to terms with the new reality of life.

Suggestions:

- In agreement with the other family members or close friends, hone an approach which guarantees stability for the person who has sustained brain injury.
- Try to continue with the approach developed during the victim's hospitalization or rehabilitation program.
- Seek constancy and uniformity in reactions toward the victim on the part of people around him or her. Each person should react in the same way under the same circumstances.



Deterioration of the victim's state

During rehabilitation, a victim's condition might appear to worsen for a time. Obviously, the proper response to a sudden deterioration should be immediate medical consultation.

A passing slump in a victim's psychological state may be the result of a greater awareness of his limits. Such perception could engender irritability, depression, discouragement, anger or anxiety.

Keener awareness signals an important step forward in the recovery process of a brain-injured victim.

Suggestions:

- Consult the professionals and ask for help to better comprehend the person's status.
- React to the victim with greater attention to his demands during this somber period.
- Give the victim encouragement and personal support to pursue the retraining program.
- Avoid chastising the victim or giving the impression he is being abandoned because of the setback.
- Do not become discouraged; the victim is going through a necessary phase before making further gains.
- Resist the temptation to end the program prematurely.

Over-reacting and loss of control by family members

Daily life with a victim of brain injury can be demanding and frustrating, even to the point of pushing family members close to their physical and psychological limits, at times making them react inappropriately to the victim.

Suggestions:

- Avoid losing your self-control in the victim's presence, if at all possible.
- Seek out an understanding ear for the need to express your tumultuous emotions, which will help you while not further disrupting a victim's already troubled life by suddenly exploding in front of him.

- Try to be reassuring while keeping your poise and calm, especially in times of anguish or disarray for the victim. Persons suffering from severe brain injury are usually very sensitive to the psychological climate created by one's gestures, facial expressions or intonations of the voice.
- Do not, however, rule out firmness or the possibility of reaction to inappropriate behaviour. It is normal not to tolerate unacceptable behaviour. The important thing is to take his general condition into consideration before reacting. In certain cases, firmness and consistency are in order, especially when dealing with items over which you cannot yield (i.e. refusing to hand over the car keys to someone who is in no condition to drive).
- Obviously, you must strive for the proper response without being too punitive, strict or overprotective.

Physical problems

Diminished physical independence

A victim's reduced physical independence as compared to what it was before the accident will become most evident to you at home, either after discharge from the hospital or while on leave from his retraining program. The fact that the victim might not be fully aware of those limits increases the risks of further injury when moving about the house or outside and using objects that have become potentially dangerous due to failing skills.

Suggestions:

- Check with the team of health care professionals to find out for what length of time the victim can be left alone.
- Keep a sharper surveillance on the victim's use of the stairs, bathroom and kitchen appliances to prevent the risk of injury, fire, etc. In case the victim wants to do handiwork, check to make sure he can safely use tools.
- Confiscate, if necessary, the car keys or tools if there is danger in allowing the victim their use.
- Give the victim the widest scope for independent physical activity (without undue risk) and supervise where required. In addition to bolstering one's self-image, physical activity also allows a person to increase his resistance to fatigue as well as reducing stress and anxiety.



Cognitive problems

Decreased awareness and attention span

At the beginning of the recovery process, a victim may seem to be less than fully aware and react in muted fashion to the surroundings. His degree of awareness often fluctuates and may not be sufficient to concentrate on a specific task for any time. During this period, the victim's **attention span** is short. Ability to concentrate one's interest is a prerequisite to carrying out an intellectual task.

Some types of brain damage seriously impair a person's capability of shutting out stimuli that would distract him from carrying out the task under way. Maybe a victim's attention can only be focussed for a few minutes or seconds at a time. Engaging in a conversation with that victim can be taxing.

Suggestions:

- Allow the victim frequent periods of rest from activity.
- Have a flexible schedule that takes the victim's ability to function into account and times of the day when he is more aware or motivated.
- Reassess the victim's ability to function, when appropriate.
- Use visual, oral and tactile stimuli in alternation or simultaneously.
- Plan activities that the victim enjoyed prior to the accident (music, photography, hobbies); this will spark a victim's interest and motivation.
- Give the victim time to respond while gradually reducing reaction time. Brain injury victims often need more time to formulate a response to our questions.
- Make sure you have the victim's attention before directing him to do something. Use a gesture to accompany the verbal request if need be.
- Go from the simpler to more complicated tasks and, if possible, make only one request at a time.
- Make sure that successes outnumber instances of failure.
- Do not allow the victim in places that are apt to be overly stimulating.
- Avoid fatigue or saturation.

Perseveration

Some victims of TBI show evidence of **perseveration**, which is the inability to stop an activity once undertaken. They constantly repeat the same gestures, without stopping.

They may also find it extremely difficult to begin an activity, remaining immobile or passive. For a certain period of time, they may need nudging to begin an activity.

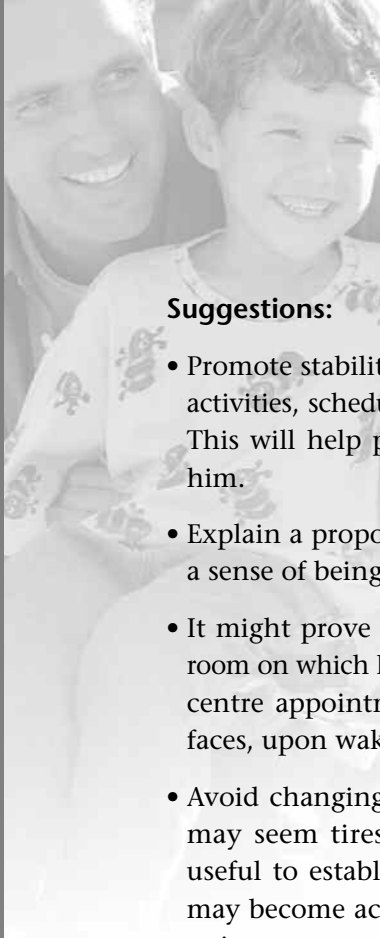
Certain victims may adopt rigid attitudes or behaviour that is poorly adapted to a given situation. Sometimes they have fixations or specific worries about certain matters.

Suggestions:

- Draw the victim's attention to another source of stimulation; this should not be hard since he is easily distracted.
- Focus the victim's interest on something more attractive, such as activities he enjoyed before injury or on another subject particularly appreciated.

Confusion

During the first weeks or months after severe brain injury, victims are often confused and disoriented in time and space. They may wonder where they are, who you are and, in the most serious cases, not be aware of their own identity, as if awaking in an unknown world where they have to start over.



Suggestions:

- Promote stability by ensuring there is a continuity in locations, activities, schedules and persons with whom the victim interacts. This will help provide a climate of familiarity and security for him.
- Explain a proposed activity before beginning, giving the victim a sense of being used to it and avoiding surprises.
- It might prove helpful to have a bulletin board in the victim's room on which he could see the date, any hospital or rehabilitation centre appointment coming up as well as pictures of familiar faces, upon waking in the morning.
- Avoid changing the victim's living habits needlessly, even if it may seem tiresome to repeat the same activities. It may be useful to establish a routine and keep to it so that the victim may become accustomed to it over time. It is possible, though, to insert events into the routine that act as stimulants (outings, parties, etc.).

A plan for action

A victim who has come out of any period of confusion and can concentrate for some time is ready to carry out an action plan. This, of course, means that he is able to set goals and determine the means of achieving them, adjusting efforts along the way.

The process is more complex than it appears at first glance. A brain injury victim is often incapable of predicting the result of a particular action. Defeat must be suffered before realizing an error was made.

Normally, we can plan an activity in our heads and anticipate an outcome before doing it. However, a person suffering from brain injury cannot mentally calculate the outcome of a particular action as we can. He has trouble anticipating his actions and may appear clumsy. People around a brain-injured victim may therefore find that he lacks judgment.

Suggestions:

- Select activities which can be carried out in a single stage and increase their complexity gradually.
- Repeat instructions until you are sure the victim understands.
- Help the victim visualize the impact of an action by asking him what would happen if this or that were done and getting the victim to explain the choice.
- Avoid being too harsh in pointing out errors or failure to the victim.
- Do not be overprotective.

Memory problems

Memory problems are likely the most common difficulty affecting brain injury victims. With short-term recall often wanting, daily living can be frustrating for a victim and the entire household.

Suggestions:

- Try to tie new concepts to what the victim knew before the injury.
- Make associations that will help memorization. A victim might more easily recall the name of a visitor if you reminded him about the gift that the person brought the day before.
- Help the victim recall information by providing a context, such as a name in a list, enabling him to more easily recognize the information sought.
- Have the victim keep a "memory jogger" in a notebook or pad, showing him how to use it. This helps the person, even with failing memory, to put a certain order in daily living tasks.



Communication difficulties

A brain injury can give lead to difficulties receiving and expressing ideas. It may prove helpful for the family of a victim to meet with a speech therapist who can explain the particular problems and set out effective measures that can be taken.

Suggestions:

- When trying to communicate with a victim who has trouble understanding, first get his attention and then speak slowly and clearly. Use short sentences to convey one notion at a time.
- Check to see that the victim has understood before continuing to speak.
- Encourage the victim to express himself by speaking or through other means. Allow him time to finish without interruption. Do not pretend to have understood if this is not the case; the victim may become frustrated, tend to withdraw and refuse to speak. While encouraging the victim to speak, you might also suggest communicating through other means such as writing out a message on chalkboard or note paper or using a computer keyboard.
- The most important thing is to enable the person who has trouble communicating to express himself and make himself understood as best as possible.

Lack of judgment and difficulty in abstraction

Brain injury victims often find it difficult to consider more than one concept at a time, particularly abstract ideas. They tend toward the concrete, dealing with one element from a given situation separately from others without taking into account the whole context. This tends to lead to errors in judgment or embarrassing, if not dangerous, situations.

Suggestions:

- Have the victim take part in simple activities, drawing from previous knowledge and using games that require the players to look ahead and take a certain number of factors into account in deciding moves. Some computer programs can prove very useful for this.

Learning difficulties

Victims of brain damage caused by an accident often have difficulty learning. This becomes particularly painful for those who must resume studies or begin a new job. Memory failure, poor abstraction and difficulty in meshing new information to knowledge already acquired are stumbling blocks to learning.

Suggestions:

- Try to relate new concepts to information the victim has already learned or assimilated.
- Provide occasions for the victim to succeed in something familiar so as to build confidence and spur motivation.
- Explain the use of the new task to be learned.
- Have the victim graduate from the simple to the complex, from concrete to abstract, from a single to several elements.
- Enhance the victim's ability to generalize by setting the learning of a given concept in different contexts and on separate occasions.
- Take nothing for granted. Some brain injury victims must begin learning almost from scratch.

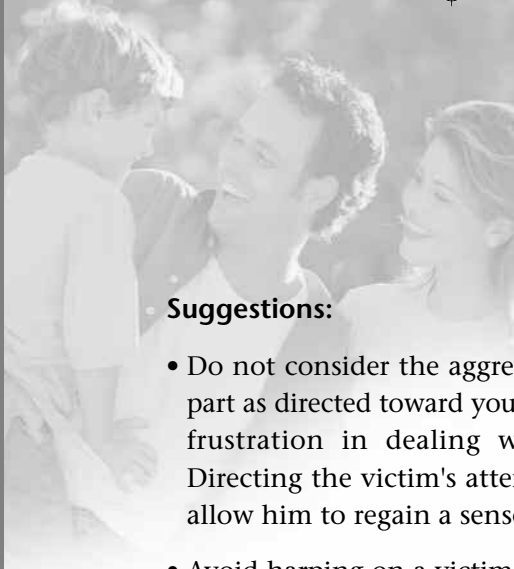
Emotional problems

Irritability and agitation

Phases of irritability and agitation are to be expected in the recovery process. A victim may often become impatient. Sometimes identifying the source of frustration is possible, such as failure on attempting something that was easy to do before injury. In other instances, people around the victim do not understand that because **inhibition** is often diminished in a victim, his reactions are not as well controlled and may seem exaggerated.

These "tempests in a teapot" are usually short-lived. Due to memory problems, the victim often quickly forgets the reason for his bad humour.

Persons who help the victim most are usually the ones he criticizes. It should not be surprising that constant interaction increases the risk of friction.

**Suggestions:**

- Do not consider the aggressiveness or irritation on the victim's part as directed toward you. It is often the product of the victim's frustration in dealing with the problems of daily living. Directing the victim's attention or interest elsewhere will often allow him to regain a sense of equilibrium.
- Avoid harping on a victim's mistake he is likely to forget sooner or later in any case.
- Let the victim immediately know of your disapproval or the unacceptable nature of a particular act or behaviour and let the matter end there.
- Do not leave an overexcited or disorganized victim alone or without supervision. The presence of a person who remains in control and can speak calmly will reassure a victim who loses control or feels afraid.
- Determine which person around the victim is best capable of bringing peace and call on him when in need.
- Allow the victim to move about or expend energy through physical exercise. This is a good method for him to calm down. Obviously, there must be no danger for either the victim or the people around him in so doing. It serves no purpose to unduly constrain a victim.

Negativism

The victim's opposition to suggestions or refusal to go along with anything may be a means of self-affirmation. This may be the only way for the victim to maintain a certain control over his environment. Remember that head injury victims are quite sensitive to criticism and failure. They tend to view situations in absolute terms. A slight setback could wipe out the desire to pursue what has been undertaken. But success in achieving a certain task for the first time can encourage them and stimulate their motivation.

Suggestions:

- Offer the victim a variety of activities to choose from, rather than simply asking what he would like to do. This gives the victim a better self-image because he has exercised a choice and will manifest a greater desire to participate. For example, in physiotherapy, rather than asking the patient if he wants to walk between the parallel bars, the question should be which exercise he would like to do first. Or, the patient could be given the choice of two activities.

- Allow the victim a certain degree of control over what will take place.
- Avoid reinforcing a systematic "no". If need be, return to the matter or activity at a later time.
- Praise good results, but without exaggeration.

Lack of control

Victims of TBI may have difficulty in containing their impulsiveness. They have a tendency to forge ahead unrestrained, without self-criticism or without being aware of the impact of their behaviour on the people around them.

Suggestions:

- Get the notion across to the victim that control is possible and that you will help by proposing, for instance, a key word or gesture that will make him think before acting.
- Help the victim structure his time and exercise control over impulses by extending the time limit between desire and satisfaction. To a victim who asks each person around for a cigarette every two minutes, you could provide a watch and teach him to ask once every fifteen minutes. You would then only have to point to the watch to make the victim understand it's not yet time for a cigarette. Obviously, you shouldn't insist on this method in order to avoid a "training" reflex. Rather, use your imagination and creativity to increase the victim's level of autonomy.
- Discourage the use of alcohol and drugs, which greatly diminish the self-control of brain injury victims. A drink or two may be enough to completely disorganize a victim and cause him to lose all control. If a victim has a drinking or drug abuse problem, solving it will be critical before even beginning a structured **rehabilitation program**.



Throughout the recovery period, from the time of the accident to his return to work, Paul was entitled to receive assistance from the Société de l'assurance automobile du Québec. It paid out income replacement indemnities to compensate for the loss of wages attributable to his inability to work. A rehabilitation counsellor from the SAAQ supported him throughout the various stages of his recovery, and the same organization reimbursed him for the cost of hiring people and securing specialized equipment needed on his recovery to independence. In the future, should Paul experience further difficulties as a result of his car accident, the SAAQ will reassess the situation and give him the support he requires.

Depression and withdrawal from society

Some victims who become overly conscious of their limits and the difficulties they will have to overcome get discouraged, stop retraining efforts and may even contemplate suicide. They may feel rejected by the people around them. It is not always easy to persevere with a brain injury victim because he may be aggressive or self-centred. In the long run, one might tend to abandon an apathetic or passive victim. Sometimes, it is the victim who brings about a sort of **social withdrawal** by seeking isolation from others.

Suggestions:

- Do not abandon the victim at the time of greatest need for emotional support, when living has become most difficult for him. Professional help or appropriate medication may be required in some cases.
- Give the proper attention to the suicidal ideas expressed by a victim. These are warning signs that professionals dealing with this problem can best interpret. Do not hesitate to consult a psychologist or psychiatrist.
- Encourage the victim to become active, especially if he tends to remain in bed or seated, doing nothing. The people around a victim can help shake off this torpor or passive behaviour
- Break his isolation by placing him in a group home, attending an **outpatient care facility** or participating in group activities with other brain-injured persons may help the victim rise out of his depression. The mere fact of being with other victims could foster a better understanding and acceptance of his condition. In addition, there are groups and agencies that provide assistance in this area; you will find these listed in the "Log" in the central insert of this publication.



CONCLUSION

A victim of TBI may find himself different in many ways, somewhat as if he had become a new person. The former, pre-accident identity must be put aside so that a new identity of what the victim is now can emerge.

Depending on the extent of brain damage, some permanent aftereffects will remain, despite the progress achieved during the recovery process. The victim and those around him will have to deal with this new reality and gradually gain a new perspective on things. To do so, what was lost in the accident must now be forgotten and new life values and priorities must be developed.

Family members and friends accompanying the victim down the long road to recovery will sometimes have to give up the expectations they had of the person prior to the accident and redefine their perception of the real possibilities of this "new person", taking into consideration the aftereffects and the abilities he has left.

GLOSSARY

GLOSSARY

Acceleration, deceleration, rotation: movement of the brain when the skull sustains an impact. Acceleration is a sudden increase in movement inside the skull; deceleration is the sudden slowing and stopping of movement; and rotating refers to the turning of the brain on its axis or stem (see Diagram 5).

Aftereffects: the problems, difficulties or limitations which persist after a severe head injury or illness.

Agnosia: the inability to recognize an auditory, visual, tactile or other bodily stimulus.

Apathy: an absence of emotional reaction in a person, insensitivity, nonchalance, lethargy, lack of initiative, disinterestedness or lack of curiosity in matters affecting him/her.

Aphasia: a loss or decrease in ability to use written or spoken language, either in terms of understanding or expression, following brain damage.

Apraxia: in its general sense, the inability to perform a voluntary movement or set of movements, although muscles function normally. For example, a person is unable to use a tool, dress him/herself or light a cigarette.

Architectural barriers: physical objects (steps, doors, turnstiles, etc.) which make access to places or activities difficult or impossible for persons with a physical handicap.

Attention span: the ability to voluntarily centre one's attention on a given stimulus (a sound, sight, sentence, etc.) to the exclusion of other stimuli.

Axon: An elongated projection of a nerve cell or neuron that carries an electrical impulse to the tissue.

Brain damage: a lesion to the brain affecting its ability to function.

Bulbar lesion: said of a lesion located in the lower part of the brain stem (see Diagram 3).

Central nervous system: the set of nervous structures comprising the brain and the spinal cord.

Cerebral hemispheres: the two halves of the brain.

Childish behaviour: an adult's behaviour which more resembles that of a child.

Cognitive powers: the brain's functions relating to knowledge such as abstraction, reasoning, judgment, analysis and synthesis.

Coma: a loss of consciousness brought on by a shock to the brain. Only survival functions such as blood circulation and breathing remain in operation in a deep coma. The severity and duration may vary according to the extent and nature of brain damage.

Contre-coup: a blow to the skull during which part of the brain comes into violent contact with the inside of the skull and causes damage to the corresponding area on the opposite side of the brain (see Diagram 5).

Corpus callosum: a fibrous white band linking the brain's hemispheres and providing a means of communication between the two.

Denial: the refusal to recognize a difficulty, impairment or limitation having its origin in a neurological or psychological condition.

Difficulty in abstraction: a cognitive impairment characterized by the emergence of a concrete thought and the loss in ability to form concepts, use categories or apply general principles.

Diffuse lesion: damage to the brain not located in one specific area, rather extending to several parts or structures.

Disability: decrease, as the result of impairment, in the physical or mental abilities of a person from what is considered normal for a human being. The degree of disability varies according to an individual's biological features.

Early rehabilitation: the series of recovery activities conducted shortly after injury that aim at limiting the impact of impairment on capabilities.

Empathy: the ability to put oneself in the place of another and understand how he or she feels.

Epilepsy: following brain damage, a disturbance in the electric activity of the brain, occasionally leading to a change in the state of consciousness and convulsions.

Expressive functions: the operations enabling a person to understand information received through visual, auditory and tactile channels, integrate the data gathered and use the means available to express ideas and communicate (speech, writing, drawing, gestures, facial expressions, etc.).

Functional rehabilitation: the stage in a victim's rehabilitation program aimed at reaching optimal independence in daily living tasks, work and leisure activities.

Hemiparesis, hemiplegia: a weakness of the limbs or paralysis in one half of the body due to damage in the opposite side of the brain. For instance, a victim of brain damage to the right hemisphere might suffer paralysis (hemiplegia) or a weakness (hemiparesis) of the left side of the body (see Diagram 2).

Impairment: deformity or physiological, anatomic or structural damage caused to an organ.

Inhibition: a psychological mechanism that allows us to control or suppress socially unacceptable behaviour.

Lability: rapid emotional changes. A person afflicted with this condition may show alternating states of gaiety and somberness, break into laughter or tears for no apparent reason, and tend to get excited or be very impulsive.

Lifestyle: daily living habits that ensure the individual's role in a social and cultural context according to age, gender, cultural identification, etc., allowing for personal survival and lifelong development within society.

Limitation: the result of physical impairment on daily living activities.

Lower sexual inhibition: following brain damage, a disturbance in control mechanisms over sexual behaviour, resulting in unrestrained action or loss of control (contacts or overt advances, etc.) which violate social norms.

Mental confusion: a state of disorientation that may arise following a serious head injury and which may last anywhere from several days or weeks to much longer.

Motor area: the region of the brain in front of Rolando's fissure (central fissure) that commands voluntary body movements (walking, seizing an object, etc.) (see Diagram 3).

Multidisciplinary team: the team of health care professionals from various specialties responsible for treatment or care dispensed to a victim. Family members are urged to work in close co-operation with the team.

Neurons: the nerve cells of the brain and the spinal cord which do not divide and multiply or regenerate following their destruction.

Neuropsychological aftereffects: the problems and difficulties that ensue from brain damage, affecting a victim in the cognitive (intellectual), emotional, social and behavioural facets of living.

Nonverbal functions: the operations commanded by the brain's non-dominant hemisphere (usually the right one) which encompass perception, the integration and handling of visuo-spatial information, auditory and tactile stimuli (sounds, music, etc).

Outpatient care facility: a place to which a person goes during the day for treatment, care or services. It may be located within a hospital, CLSC, etc. A certain number of these facilities provide specialized services to persons suffering from brain damage.

Overprotection: the effect of an attitude whereby the family and friends or other persons interacting with a victim exercise undue protection or dispense excessive care.

Perseveration: the difficulty stemming from brain damage in stopping an activity once begun or changing a response to suit a new situation which originally may have been appropriate but which has not been adapted to new data.

Personalized interdisciplinary intervention: plan that includes a summary description of the accident victim's situation in terms of goals set by the multidisciplinary team and a quarterly prognosis of the expected level of resumption of daily living habits.

Rehabilitation program: the comprehensive health care program aimed at reducing the scope of limitations due to brain damage.

Sensory hallucination: the perception of sensations such as sights, sounds and smells in the absence of real stimuli. An example of this would be hearing a phone ring where there is none.

Social integration: the fact of taking one's place in society, of becoming part of the whole.

Social withdrawal: the tendency to cut oneself off from contact with others.

Spasticity: the condition characterized by an exaggeration of muscular tonus resulting in spasms.

Spontaneous recovery: in the first few months following brain damage, the improvement in brain functions regardless of treatment. Spontaneous recovery does not necessarily lead to a complete recovery. The extent of recovery depends on many factors such as the severity of damage, its location, the victim's age and general health, motivation and type of treatment.

State of consciousness: the level of perception and reaction of a person to his or her environment.

Subcortical structures: the set of structures located in the lower, central part of the brain, of which the most important are the thalamus and hypothalamus.

Tracheotomy: the surgical procedure whereby an opening is made in the trachea to allow a person to breathe adequately

Verbal functions: the operations commanded by the brain's dominant hemisphere for this function (usually the left one) which encompass language expression and comprehension mechanisms.

Victim: the Automobile Insurance Act considers any person who sustains injury (physical, psychological or mental) in a road accident to be a victim. In this text, the term applies to someone who has suffered craniocerebral trauma and is not intended to be pejorative.

Visuo-spatial functions: the operations commanded by the brain's dominant hemisphere for this function (usually the right one) which deal mainly with the handling of visual information, the recognition of shapes, depth perception, direction, and spatial organization.

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Michelle Gadoury, *neuropsychologist*
Société de l'assurance automobile du Québec

Original writing team:

Author: Pierre-Yves Létourneau, *neuropsychologist*

Glossary: Marie-Josée Pétel, *neuropsychologist*

Diagrams: Jean Chatelois, *neuropsychologist*

Collaborators with the Société de l'assurance automobile du Québec:

Jean-Luc Bérubé, *rehabilitation service chief*

Pierre Forcier, *neurosurgeon*

Shirley Gélinas, *rehabilitation counsellor*

Marc Giroux, *director*

Direction de la vigie, de l'expertise-médicale et du partenariat

Jean-Marc Roussel, *director*

Direction régionale Montréal–Montérégie

Jean Verville, *rehabilitation service chief*

MONTÉRÉGIE

- **Association des Traumatés crâniocérébraux de la Montérégie (ATCCM)**
545, boul. Wilfrid-Laurier, bureau 309
BELOEIL (Québec) J3G 4H8
Phone: (450) 446-1111
Fax: (450) 446-6405
E-mail: atcc@atccmonteregie.qc.ca
- Centre montréalais de réadaptation
5300, de Chambly
SAINT-HUBERT (Québec) J3Y 3N7
Phone: (450) 676-7447
- Hôpital Charles-Lemoyne
3120, boul. Taschereau
GREENFIELD PARK (Québec) J4V 2H1
Phone: (514) 466-5000
- Réseau Santé Richelieu-Yamaska
2750, boul. Laframboise
SAINT-HYACINTHE (Québec) J2S 4Y8
Phone: (450) 771-3333

MONTRÉAL-CENTRE

- **Association québécoise des traumatisés crâniens (AQTC)**
911, rue Jean-Talon, Est
Bureau 106
MONTRÉAL (Québec) H2R 1V5
Phone: (514) 274-7447
Fax: (514) 274-1717
E-mail: aqtc@aqtc.ca
Web site: www.aqtc.ca
- Constance-Lethbridge
Rehabilitation Centre
7005, boul. De Maisonneuve
Ouest
MONTRÉAL (Québec) H4B 1T3
Phone: (514) 487-1770
- Centre de réadaptation
Lucie-Bruneau
2275, avenue Laurier Est
MONTRÉAL (Québec) H2H 2N8
Phone: (514) 527-4521
- Montreal General Hospital
1650, avenue Cédar,
bureau E6.122
MONTRÉAL (Québec) H3G 1A5
Phone: (514) 937-6011
- Centre de réadaptation
Marie-Enfant de
l'Hôpital Sainte-Justine
5200, rue Bélanger Est
MONTRÉAL (Québec) H1T 1C9
Phone: (514) 374-1710

- Montreal Children's Hospital
2300, rue Tupper
MONTRÉAL (Québec) H3H 1P3
Phone: (514) 934-4400
- Hôpital du Sacré-Cœur
de Montréal
5400, boul. Gouin Ouest
MONTRÉAL (Québec) H4J 1C5
Phone: (514) 338-2222
- Hôpital Sainte-Justine
3175, Chemin de
la Côte-Sainte-Catherine
Floor A, Block 5
MONTRÉAL (Québec) H3T 1C5
Phone: (514) 345-4931
- Montreal Rehabilitation Institute
6300, avenue Darlington
MONTRÉAL (Québec) H3S 2J4
Phone: (514) 340-2085

OUTAOUAIS/OTTAWA VALLEY

- **Association des neurotraumatisés – Région de l'Outaouais (ANO)**
115, boul. Sacré-Cœur,
Suite 113
HULL (Québec) J8X 1C5
Tél.: (819) 770-8804
Fax: (819) 770-5863
E-mail: ano@qc.aira.com
- Centre hospitalier des vallées
de l'Outaouais
116, boul. Lionel-Émond
HULL (Québec) J8Y 1W7
Phone: (819) 595-6000
- Centre de réadaptation
La RessourSe
325, rue Laramée
HULL (Québec) J8Y 3A4
Phone: (819) 777-6261

QUÉBEC CITY

- **Association des TCC des deux rives Québec-Chaudière-Appalaches**
14, rue Saint-Amand
LORETTEVILLE (Québec) G2A 2K9
Phone: (418) 842-8421
Fax: (418) 842-7488
E-mail: tcc2rives@oricom.ca
Web site: www.tcc2rives.qc.ca

- Centre hospitalier affilié
universitaire de Québec
Pavillon Enfant-Jésus
1401, 18^e rue
QUÉBEC (Québec) G1J 1Z4
Phone: (418) 649-0252
- Institut de réadaptation en
déficience physique de Québec
525, boul. Wilfrid-Hamel
QUÉBEC (Québec) G1M 2S8
Phone: (418) 529-9141

SAGUENAY-LAC-SAINT-JEAN

- **Association Renaissance des personnes traumatisées crâniennes (ARPTC)**
2223, boulevard Saguenay
JONQUIÈRE (Québec) G7S 4H5
Phone: (418) 548-9366
Fax: (418) 548-9369
E-mail: traumatismecranien@qc.aira.com
Web site: www.chez.com/arptc
- Complexe hospitalier
de la Sagamie
305, rue Saint-Vallier
CHICOUTIMI (Québec) G7H 5H6
Phone: (418) 541-1000
- Carrefour de santé de Jonquière
2230, rue de l'Hôpital, C.P. 1200
JONQUIÈRE (Québec) G7X 7X2
Phone: (418) 695-7700

OTHER ASSOCIATIONS

- Association des paraplégiques
du Québec
2555, rue Holt
MONTRÉAL (Québec) H1Y 1N5
Phone: (514) 341-7272
- Fondation Marie-Robert pour
la Recherche sur les traumatismes
crâniens
6450, rue Notre-Dame Ouest,
Suite 200
MONTRÉAL (Québec) H4C 1V4
Phone: (514) 932-2662
- Regroupement des associations
de personnes traumatisées
crâniocérébrales du Québec
14, rue Saint-Amand
LORETTEVILLE (Québec) G2A 2K9
Phone: (418) 842-8430
- Think First Foundation of Canada
755 Muir Street, Suite 601
VILLE SAINT-LAURENT (Québec)
H4L 5G9
Phone: (514) 844-3481

* For more information on a rehabilitation program, please contact the Société's claimant information service at:

(514) 873-7620 in Montréal (local call);

(418) 643-7620 in Québec (city and vicinity); or 1-800-361-7620, toll free, from elsewhere in the province.

French-language document available on traumatic brain injury:

La maman de Simon a eu un accident.
Institut de réadaptation en déficience physique
de Québec – Unité TCC
525, boul. Wilfrid-Hamel
QUÉBEC (Québec) G1M 2S8
Phone: (418) 529-9141

LOG

The chart below is a practical means for the family and close acquaintances of the accident victim, or the victim, to record certain information, either to remember events better or find facts quickly. Some of the information is likely to be useful frequently, for instance, the names of the health care specialists you will be contacting throughout the rehabilitation program.

Extra space is provided for any additional information you might care to note.

At the end, you will find the list of associations involved in helping brain injury victims in Québec, and the health care facilities with which the Société has entered into agreements for implementing its rehabilitation program.

Chronological facts

- Date of accident: _____
- Time of accident: _____
- Place and circumstances of accident:

Hospital to which the victim was first taken

- Name of hospital: _____
- Date of admission: _____
- Date of release: _____

Attending physician(s) and specialist(s) :

Length of coma: _____

Time and date when victim recognized you:

Hospital(s) / Rehabilitation Centre(s) to which the victim was transferred:

- 1 • Name of hospital/centre:

 - Date of admission: _____
 - Date of release: _____
 - Attending physician(s) and specialist(s):

- 2 • Name of hospital/centre:

- Date of admission: _____
- Date of release: _____
- Attending physician(s) and specialist(s):

- 3 • Name of hospital/centre:

- Date of admission: _____
- Date of release: _____
- Attending physician(s) and specialist(s):

List of disabilities and conditions observed

- Physical condition:
(i.e. paralysis, fractures)

- Intellectual condition:
(i.e. attention span, concentration, memory and learning, judgment and abstract thought, problem-solving, ability to organize thought)

- Emotional condition:
(i.e., lability or mood swings, diminished control, childish behaviour, withdrawal or depression)

- Family relations:
(i.e. sharing of responsibilities)

- Social life, studies and work:
(i.e., courses, leisure time, visits)

Daily activities

- Personal preferences
(i.e., food, hobbies, music):

Rehabilitation plan

- Goals and priorities for the victim:

- Responsibilities and duties for the family:

- Progress observed:

- Particular difficulties and steps taken:

Questions to ask of specialists

Resource persons

Société de l'assurance automobile
du Québec:

- Rehabilitation counsellor:

- Compensation officer:

Hospital:

Rehabilitation centre, extended-care facility,
socio-occupational integration facility:

Specialists: neurologists, neurosurgeons,
neuropsychologists, psychologists,
occupational therapists, physiotherapists,
educators, etc.:

Other brain injury victims, community
associations or mutual-help groups:

Further information

The rehabilitation centres and facilities with which the Société has concluded agreements for neurotraumatology rehabilitation programs are listed below, by region:

ABITIBI-TÉMISCAMINGUE

- **Association des traumatisés crâniens de l'Abitibi-Témiscamingue (Le Pilier)**
100, chemin Docteur-Lemay
C.P. 1055, ROUYN-NORANDA (Québec) J9X 5C8
Phone: (819) 762-7478
Extension 47425
Fax: (819) 797-8313
E-mail: pilieratcat@hotmail.com
- Centre de réadaptation La Maison
100, chemin Docteur-Lemay
ROUYN-NORANDA (Québec) J9X 5C8
Phone: (819) 762-6592

LOWER ST. LAWRENCE

- **Association des Personnes ACVA-TCC du BSL**
484-A, rue Tessier
RIMOUSKI (Québec) G5L 4L7
Phone: (418) 723-2345
Fax: (418) 723-2220
E-mail: acvatcc@globetrotter.net
Web site: www.polaristo.com/_acva-tccdubs/
- Centre mitissien de santé et services communautaires
800, avenue du Sanatorium
MONT-JOLI (Québec) G5H 3L6
Phone: (418) 775-7261

CHAUDIÈRE-APPALACHES

- **Association des TCC des deux rives Québec-Chaudière-Appalaches**
14, rue Saint-Amand
LORETTEVILLE (Québec) G2A 2K9
Phone: (418) 842-8421
Fax: (418) 842-7488
E-mail: tcc2rives@oricom.ca
Web site: www.tcc2rives.qc.ca
- Centre de réadaptation en déficience physique
Chaudière-Appalaches
9330, boul. du Centre-hospitalier
CHARNY (Québec) G6X 1L6
Phone: (418) 380-2062

NORTH SHORE

- **Association des handicapés adultes de la Côte-Nord (Comité nord-côtier des accidentés de la route)**
1250, rue Lestrat
BAIE-COMEAU (Québec) G5C 1T8
Phone: (418) 589-2393
Fax: (418) 589-2953
E-mail: ahacni@virtuel.net

- Centre de protection et de réadaptation de la Côte-Nord
1250, rue Lestrat
BAIE-COMEAU (Québec) G5C 1T8
Phone: (418) 589-2038

EASTERN TOWNSHIPS

- **Association des accidentés cérébro-vasculaires et traumatisés crâniens de l'Estrie (ACTE)**
300, rue King Est
SHERBROOKE (Québec) J1G 1B1
Phone: (819) 821-2799
Fax: (819) 821-4599
E-mail: acte@aide-internet.org

- Centre de réadaptation Estrie inc.
1930, rue King Ouest
SHERBROOKE (Québec) J1J 2E2
Phone: (819) 346-8411
- Centre hospitalier universitaire de Sherbrooke
3001, 12^e avenue Nord
FLEURIMONT (Québec) J1H 5N4
Phone: (819) 346-1110

GASPÉ-ÎLES-DE-LA-MADELEINE

- **Association des TCC et ACV de la Gaspésie et des Îles-de-la-Madeleine (ATAGÎM)**
20, rue des Fauvettes, C.P.308
MARIA (Québec) G0C 1Y0
Phone: (418) 759-5120
Fax: (418) 759-8188
E-mail: tccacv@globetrotter.net
Web site: www.globetrotter.net/traumcer/
- Centre de réadaptation de la Gaspésie
230, route du Parc
C.P. 370
SAINTE-ANNE-DES-MONTS (Québec) G4V 2C4
Phone: (418) 763-3325

LAURENTIDES-LANAUDIÈRE

- **Association des personnes handicapées physiques et sensorielles –secteur Joliette (APHPSSJ)**
200, rue De Salaberry
JOLIETTE (Québec) J6E 4G1
Phone: (450) 759-3322
Fax: (450) 759-8749
E-mail: aphpssj@qc.aira.com

- **Centre d'aide aux personnes handicapées physiques Laurentides (CAHPL)**
580, rue Saint-Georges, C.P.11, bureau 3
SAINT-JÉRÔME (Québec) J7Z 5T7
Phone: (450) 431-3437
Fax: (450) 431-7955
E-mail: lecaphpl@sympatico.ca
- Centre de réadaptation
Le Bouclier
260, rue Lavaltrie Sud
JOLIETTE (Québec) J6E 5X7
Phone: (450) 755-2741

LAVAL

- **Association québécoise des traumatisés crâniens (AQTC)**
220, avenue du Parc
LAVAL (Québec) H7N 3X4
Phone: (450) 629-9911
Fax: (450) 629-8807
E-mail: aqtc@aqtc.ca
Web site: www.aqtc.ca
- Jewish Rehabilitation Hospital
3205, place Alton-Goldbloom
LAVAL (Québec) H7V 1R2
Phone: (450) 688-9550

MAURICIE-BOIS-FRANCS

- **Association des traumatisés cranio-cérébraux Mauricie-Centre-du-Québec**
Pavillon Marc Quessy
1775, rue Nicolas Perrot
TROIS-RIVIÈRES (Québec) G9A 1C5
Phone: (819) 372-4993
Fax: (819) 376-6536
E-mail: atcc@tr.cgocable.ca
- Centre hospitalier régional de Trois-Rivières
Pavillon Sainte-Marie
1991, boul. du Carmel
TROIS-RIVIÈRES (Québec) G8Z 3R9
Phone: (819) 697-3333
- Centre de réadaptation InterVal
620, rue Sainte-Geneviève
TROIS-RIVIÈRES (Québec) G9A 3W7
Phone: (819) 693-0041