



## The Effects of Brain Injury



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As the brain is involved in just about everything we do, injury to the brain can have a very wide range of effects. These effects vary from one person to another depending on the exact nature of the brain injury and its severity. It is helpful to distinguish between the initial effects when the person first sustained their brain injury and the longer-term effects.

### **Initial effects**

In the vast majority of cases an initial brain injury leads to some change in the person's level of consciousness. There is often a period during which the person is completely unconscious (or in a coma).

The level of consciousness is measured by the Glasgow Coma Scale. Scores on this scale vary from 3 (the person does not respond at all) to 15 (the person is able to walk, talk and is fully aware of their circumstances).

The less the person is able to respond the deeper their level of unconsciousness. The length of unconsciousness varies from a few seconds to many months. The longer the period of unconsciousness the more severe the brain injury is likely to be.

As the person emerges from unconsciousness they often go through a phase where they may appear to be aware of what is going on but they are unable to retain new memories. They are often unable to say where they are and even more unlikely to know what the date is. During this phase the person often comes across as confused and may say strange things. For example, sometimes people will think they are 10, 20 or more years younger than they are.

This period of unconsciousness allows natural healing processes to occur. However as the person emerges from unconsciousness, gentle stimulation and exposure to familiar voices is important.

Feeling confused, not knowing where one is, not fully understanding the situation can often be very alarming for the person concerned. The family can therefore play an important role in reassuring the person and providing gentle stimulation. However the person is likely to tire easily at this stage and too much stimulation can be disheartening, as can attempting tasks which they fail. The person may react to this by being irritable.

### **Recovery and the longer term effects**

As the person emerges from this period of unconsciousness or altered awareness the longer term effects start to become obvious. That is not to say that these effects will not resolve or recover much further. Certainly further recovery will take place but it is often difficult to predict exactly how fast and how much recovery will occur. These longer term effects can be divided into physical effects (problems with movement and sensory abilities such as vision, touch or taste), cognitive problems (thinking processes such as memory, concentration, etc) and behaviour (self-control, motivation, etc).

## Physical Problems

The brain is responsible for instigating movement in all parts of the body. It is also responsible for co-ordinating movements to make them smooth and graceful and also integrating movements into skilled patterns.

The right hand side of the brain is responsible for movement in the left hand side of the body and vice versa. This means that often movement in one side of the body may be more affected than the other as one side of the brain may be more severely injured.

For some people the loss of control over movement can be so severe that they need to use a wheelchair. For others it may mean that they lack control in one limb or walk with a strange gait. Their movement can appear unco-ordinated and sometimes a person may appear as if they are drunk.

This lack of control over the muscles can also affect facial and throat muscles which may mean that the person has difficulty talking or swallowing. Some people have what is known as an intention tremor which means when they try to reach for something their hand shakes. For many these physical problems resolve quite quickly during the initial phase of recovery.

## Cognitive problems

Cognitive problems are those concerned with those functions we most commonly think of as associated with the brain, such as thinking, remembering, speaking, calculating, concentrating, etc.

The most common cognitive problems following brain injury are certain types of memory problems, concentration difficulties and finding it harder to process incoming information. However as the brain underpins all thinking processes any of these can be affected by a brain injury.

Typically a person will continue to have clear memories of events in the past but will have poor memory for events that have occurred since their brain injury.

Another common type of cognitive problem following brain injury is known as an executive problem. The term executive function is used as this function is similar to that of a chief executive in a company who plans and organises the activities of all parts of the company. So parts of the brain (mainly the frontal lobe) have the function of planning, integrating and organising the activities of other parts of the brain. These problems are not instantly recognised and are difficult to describe. However, they soon become obvious to those living with someone with a brain injury or to the person him or herself.

# *A European leader in traumatic brain injury rehabilitation*

**We offer Europe's leading rehabilitation programme to help people recover social independence following a brain injury.**

Our services are designed to meet the needs of people at different stages of rehabilitation - from assessment to comprehensive rehabilitation, long-term housing and care, and community-based support.

## **Behaviour**

Family members are often struck by the changes in the person's behaviour following brain injury. Initially this may be to do with confusion. Later however, difficulties such as initiating, monitoring and regulating behaviour may become apparent.

The person may become much more impulsive than usual and fail to think before they speak or act. They may become irritable and aggressive or they may become very placid. Sometimes the person becomes "disinhibited". This means that impulses they previously would have inhibited they no longer control. For example, they may say things which are rude or undiplomatic or they may make sexual remarks or display sexually disinhibited behaviour.

Sudden changes of mood are also common so that a person may swing from laughing to crying or from calm to angry very quickly. Some people have great difficulty experiencing and expressing emotions. Once again these problems may spontaneously resolve as recovery takes place. However where the brain injury is severe they may continue and a person may have to learn how to control and overcome these changes.

## **How does this appear to others?**

The above changes taken together may mean that from the point of view of the family it feels as if the person is now very different from the person they knew before. It is important to remember that this may not be the case for the individual with the brain injury. They are often unaware or only faintly aware of many of the difficulties outlined above, especially where the injury is very severe (typically those with milder injuries are extremely aware of their difficulties).

They may not see themselves as having changed at all or indeed as having any of the above problems. This can often lead to considerable difficulties between the person with the brain injury and their family as the injured individual cannot understand why they are being prevented from returning to their normal day to day life.

Sometimes a person can be seen as lazy because they have difficulties with motivation, with their "get up and go" as a direct result of the brain injury.

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