

## 52. BRAIN INJURY

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### Related conditions considered in other chapters

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| <b>Mental Health Problems</b>              | <b>Chapter 19</b> |
| <b>Learning Disabilities</b>               | <b>Chapter 20</b> |
| <b>Dementia</b>                            | <b>Chapter 21</b> |
| <b>Children with Learning Disabilities</b> | <b>Chapter 35</b> |

### 52.2 Introduction

**52.2.1** Brain injury can lead to a variety of physical, cognitive and psychological impairments with significant resultant disabilities. The most common cause of brain injury is trauma to the head occurring as a result of falls, assaults, road traffic accidents etc. In order to aid clarity this section will concentrate on the effects of head injury. It is important however to remember that acquired brain injury can result from a number of other causes including non accidental injury, infections such as meningitis, inflammation of the brain (encephalitis), cerebral anoxia/ischaemia (when the brain is starved of oxygen - due to haemorrhage, circulatory collapse or stroke). A wide spectrum of disabilities may result and the reader may find it helpful to refer to some of the other chapters listed above for more detail on specific disabilities.

**52.2.2** The adverse effects of head injury can be due to the primary trauma e.g. skull fracture, or to secondary damage arising from complications such as cranial haemorrhage, bruising or swelling of the brain. There is considerable variation in the severity of head injuries and the effect on function. The severity of the head injury can be classified in a number of ways depending on the length of time for which the person is unconscious and the duration of post-traumatic amnesia (memory loss) caused by the injury. Post-traumatic amnesia is the period of time after the injury before continuous day to day memory returns.

## **52.3 Mild head injury**

**52.3.1** A mild head injury can be defined as an injury causing unconsciousness of fifteen minutes or less, or post traumatic amnesia for less than six hours. Most head injuries seen in primary care or accident and emergency departments are minor/mild, and require no treatment apart from an assessment and advice. Recovery usually occurs within days or weeks. Even amongst those admitted to hospital with a head injury (a quarter of the total) eighty-percent will still be classified as minor.

**52.3.2** Following minor head injuries some people may suffer from various symptoms. These may include headache, decreased concentration, disturbed sleep, memory impairment and dizziness. Symptoms of anxiety and depression may also develop. These effects of the injury are often short lived, lasting a few weeks or months, and tend to improve spontaneously. Treatment with antidepressant medication and/or counselling can also be very effective in aiding recovery.

## **52.4 Care Needs and Mobility Considerations**

There are unlikely to be any requirements for attention or supervision following a mild head injury. Ability to walk is not affected and the person would not be expected to have any difficulty in finding their way around out of doors.

## **52.5 Serious head injury**

**52.5.1** People with more serious head injuries, (unconsciousness lasting for many hours or days and post traumatic amnesia lasting for up to a week or more) are admitted to hospital. A small number of cases may require surgical treatment to alleviate the adverse effects of skull fracture or haemorrhage affecting the brain.

**52.5.2** Any part of the brain can be affected following a more severe head injury, and the pattern of damage may vary considerably from person to person. Serious neurological impairments that may result include deafness, visual loss, quadriplegia, hemiplegia, sensory loss in the limbs, difficulty in swallowing, epilepsy, hydrocephalus, defective balance and language disorders. Prolonged periods of unconsciousness, memory loss and confusion are more likely to be associated with severe and persistent disabilities. Whatever the extent of physical impairments some degree of cognitive impairment (see below) is common after moderate/severe head injuries.

**52.5.3** Treatment often includes courses of intensive physiotherapy and rehabilitation lasting over weeks or months. Serious head injuries are

a leading cause of disablement amongst young adult males. Rehabilitation aims to enable people to recover previous skills and to learn new skills or new ways of managing.

- 52.5.4** Serious head injury usually causes cognitive impairment with substantial disabling effects. In its broadest sense **cognitive impairment** means that the affected individual has difficulty in thinking, in understanding, in reasoning, in carrying through logical thought processes and in the perception of self and others. The difficulties include memory loss (in particular remembering new information), poor attention, diminished concentration, language problems (recognising and using appropriate words) and perceptual skills. Affected individuals may be unable to solve problems, find their way around and organise the usual tasks of day to day life. The ability to learn may be slow and ineffective. Substantial cognitive impairment can exist in the absence of any obvious physical disability, and affected individuals may have little or no insight into the extent of their disabilities.
- 52.5.5** Personality changes may also occur leading to irritability, impulsive actions, socially disinhibited or aggressive behaviour, loss of initiative, lethargy and poor motivation. Those with brain injury may show inappropriate emotions e.g. laughing when learning bad news, and exhibit rapid changes of mood for no apparent reason. Loss of initiative and poor motivation in combination with problems such as memory loss further hinder the person's ability to carry out activities of daily living. Functional limitations may also be exacerbated by the subsequent development of anxiety and depression.
- 52.5.6** It is apparent that the more serious head injury can lead to and be associated with a wide variety of disabilities. Each person will require to be assessed individually on the basis of the medical evidence to determine the extent of the cognitive problems, and the additive effects of any physical and mental impairments that may lead to greater functional restriction.

## **52.6 Care needs**

- 52.6.1** After more severe injuries some individuals may function well in a structured environment and manage their own bodily functions. Others may need much attention from their carers to wash, dress and prepare food. Planning a meal and cooking it safely may be a problem. Often there is a need to prompt people to initiate and complete such tasks; they may be easily distracted from the task in hand. Coexisting physical disabilities such as a hemiparesis (loss of power on one side of the body) or visual loss will increase care needs. Supervision may be necessary to avoid common dangers within the home.

**52.6.2** Epilepsy developing after a head injury is described as post-traumatic epilepsy. It may occur soon after the trauma, within the first week, or at a later stage, (50 - 60 percent) within the first year after injury. Late epilepsy is more common where there has been bleeding into the brain or surgical intervention has been required. Those with epilepsy may need to be reminded of the importance of taking medication regularly.

**52.6.3** Individuals with language problems (recognising and using appropriate words), unclear speech due to difficulties in articulation and slowness in processing information, whether verbal or written, may need help with communication. Deafness may also result in a requirement for help in this area.

## **52.7 Mobility**

**52.7.1** Head injury itself may not be associated with any particular difficulty in walking. Restricted mobility is likely to be due to coexisting neurological damage causing weakness or paralysis of the lower limbs. Sometimes a disturbance of balance may make walking more difficult.

**52.7.2** Cognitive impairment may lead to a requirement for guidance and supervision out of doors. An individual might be able to manage a short trip to a local shop alone, but would not be able to go elsewhere because of memory loss and spatial problems. Disruptive or uninhibited behaviour may mean that it is inadvisable for a person to be out of doors without supervision. Visual loss secondary to brain injury may exacerbate the inability to get around out of doors.

## **52.8 Duration**

Rehabilitation programmes for serious head injury can last from several months up to a year. The greatest amount of recovery occurs in the first six months after the injury. Improvement does however continue to a lesser extent over the next six to twelve months. After that the disabilities, whether physical, cognitive or behavioural, tend to be permanent.

## **52.9 Further evidence**

**52.9.1** If a person is under hospital care, factual reports can be obtained from neurologists, neurosurgeons, specialists in rehabilitation medicine and nurse specialists attached to these clinics. Occupational therapists, physiotherapists and speech therapists, often working in association with social workers, can also be a useful source of evidence. These health care professionals may be based in specialist units that deal with head injuries. These reports are often most useful in the first one or two years after a serious head injury. A (neuro) psychologist may

undertake specialised testing of a person's cognitive function in the recovery/rehabilitation phase. This type of report, if available, can be especially useful.

- 52.9.2** If the person whose condition is stable is no longer under hospital care other sources of evidence need to be sought. General practitioner factual reports may be the main source of information for those who no longer attend specialist services. Community paediatricians or schools may be able to provide factual reports for children.
- 52.9.3** Social workers may be involved with those who live in sheltered accommodation, or who need extra support to live in the community in their own homes. An assessment by an Examining Medical Practitioner is appropriate when disabilities are stable and/or long standing, and when other factual reports give insufficient detail to ascertain the overall level of disability.
- 52.9.4** Factual reports about the effects of minor head injuries are most likely to be obtained from general practitioners.