the brain injury association

factsheet

# Coma and reduced awareness states

**Headway's publications are all available to freely download from the information library on the charity's website, while individuals and families can request hard copies of the booklets via the helpline.**

**Please help us to continue to provide free information to people affected by brain injury by making a donation at www.headway.org.uk/donate. Thank you.**

## Introduction

Whether it lasts for a few seconds or a few weeks, the usual immediate effect of brain injury is a loss of consciousness. Coma can be defined as a state of depressed consciousness where a person is unresponsive to the outside world. Consciousness relies on the cerebral hemispheres interacting with an area of the brain stem called the ascending reticular activating system. Injury to these areas causes decreased consciousness or coma.

## Levels of coma

There are different levels of coma, ranging from very deep, where the patient shows no response or awareness at all, to shallower levels, where the patient responds to stimulation by movement or opening eyes. Still shallower levels can occur, where the patient is able to make some response to speech. Level of coma is usually initially assessed by the Glasgow Coma Scale (GCS).

The GCS is a very simple, easy to administer technique which is used to rate the severity of coma. It assesses the patient's ability to open their eyes, move and speak. The total score is calculated by adding up the scores from the different categories, shown in the table below, and ranges from a minimum of 3 to a maximum of 15.

| Best motor response | |
|---|---|
| 6 | Obeying commands |
| 5 | Movement localised to stimulus |
| 4 | Withdraws |
| 3 | Abnormal muscle bending and flexing |
| 2 | Involuntary muscle straightening and extending |
| 1 | None |

| Verbal responses | |
|---|---|
| 5 | Orientated response |
| 4 | Confused conversation |
| 3 | Inappropriate words |
| 2 | Incomprehensible sounds |
| 1 | None |

| Eye opening | |
|---|---|
| 4 | Spontaneous |
| 3 | To speech |
| 2 | To pain |
| 1 | None |

## Recovery from coma

Recovery from coma is a gradual process, starting with the person's eyes opening, then responding to pain, and then responding to speech. People do not just wake up from a coma, and say, 'Where am I?' as is sometimes portrayed in films. The length of coma is one of the most accurate predictors of the severity of long-term symptoms. The longer the coma, the greater the likelihood of residual symptoms, particularly physical disabilities, although this is only a guide and some people can make good recoveries after an extended period in a coma.

## Post-traumatic amnesia

After a coma, during a period known as post-traumatic amnesia (PTA), the patient's behaviour may well be restless, disinhibited and agitated. Uncharacteristic behaviour such as swearing, shouting and inappropriate sexual behaviour are not unusual, but are these are best ignored, as seeing other people's distress may only increase the patient's agitation or distress. An individual cannot be held responsible for their behaviour during this period. This is a difficult time for relatives, but it is important to remember that the patient will come out of it.

Length of PTA, as with length of coma, is important. This is the best indicator of severity of brain injury. PTA is assessed by asking the patient a number of questions at regular intervals. The first group of questions is concerned with awareness of time, place and person, for example, 'What is your name?', 'What day of the week is it?' A second group of questions relates to the patient's awareness of the accident, e.g. 'What was your last memory before the accident?' A patient deep in PTA will not be able to answer these questions correctly. As the patient emerges from PTA, the answers will become more accurate and more sensible. For more information on PTA, see the Headway factsheet 'Post-traumatic amnesia'.

## Vegetative state

A small number of people sustain a brain injury so severe that, although they emerge from coma and have sleep-wake cycles, they have no conscious awareness of themselves or their surroundings. If this condition persists for more than four weeks they can be classified as being in a persistent vegetative state. If it continues for 12 months after traumatic brain injury or 6 months after non-traumatic brain injury, the person can be classed as being in a permanent vegetative state. If the person shows no signs of recovery at this point and staff and family members agree then it is possible to gain a court order to withdraw treatment.

## Minimally conscious state (MCS)

This is a condition distinct from coma and vegetative state as the person shows distinct but limited signs awareness and response to stimulation. However, they find it very difficult to remain aware or responsive for any length of time or in a predictable way. People often enter minimally conscious state after being in a vegetative state.

Some in MCS should be able to do at least one of the following:

- Follow simple commands
- Answer simple 'yes' or 'no' questions using either simple words or gestures
- Communicate in some intelligible way
- Show some purposeful actions, such as reaching for an object

## Locked-in syndrome

This is a rare condition in which a person is aware of themselves and their surroundings but is unable to move or speak. Often people can move their eyes or eyelids and may be able to communicate by blinking.

## Conclusion

Having a relative in a coma, or some other form of reduced awareness state, is a very distressing and confusing time. It is very important to communicate with the medical staff and to understand as much as possible about the person's level of awareness. However, the most important thing is to look after yourself and seek help and support.

Vegetative states, minimally conscious states and locked-in syndrome are thankfully relatively rare. These conditions are not fully understood and accurate diagnosis can sometimes be difficult. For example, some people who have been thought to be in a vegetative state have subsequently been shown to possess some awareness. However, that does not mean that everyone does. Although most families cling to the idea that there is some awareness, lack of awareness could be preferable for a time. There is often hope of improvement in the future.

If you would like to discuss the issues raised in this factsheet further, please contact the Headway helpline on **0808 800 2244** or helpline@headway.org.uk.

## Further support

**To discuss any issues raised in this factsheet, or to find details of our local groups and branches, please contact the Headway helpline free of charge on 0808 800 2244 (Monday - Friday, 9am-5pm) or by email at helpline@headway.org.uk.**

**You can also find more information and contact details of groups and branches on our website at www.headway.org.uk/supporting-you.**

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