

Neurosurgical Unit

Head injury - Patient and carer information

This booklet is intended to provide general information about head injuries. It has been written to answer some of the questions asked by people who have had a head injury, as well as for their families and carers.

Head injuries vary in severity and each person is affected differently. So it is important that you speak to your own consultant or to the doctor or nurse who is looking after you. They are able to offer advice and information to meet your own specific needs.

Common causes of severe head injuries are road traffic accidents, falls and assault. Severe head injuries kill more than one person in every ten thousand in the UK every year. They are the most common cause of death in young men.

What are the signs of a serious injury?

Features that would cause concern after a head injury are:

- A bad headache that gets worse or doesn't go away within four to six hours after the injury occurred.
- Drowsiness, if it lasts for more than two hours, or if the person is difficult to wake up.
- Confusion and disorientation.
- Feeling sick or actually vomiting is common following a head injury. But if it is persistent or appears to be getting worse, it could be serious.



What will the doctor do?

The doctor will need a clear description of the accident from the injured person, from family members or anyone else who saw it. This gives the doctor information that may help in deciding what to do next.

The injured person will then be examined to check whether the brain has been affected. This includes assessing:

- their level of consciousness
- checking their eyes
- their movements and the strength of their arms and legs
- their reflexes
- their responses

This can sometimes be difficult, particularly if the person has drunk a lot of alcohol.

What tests will be done?

This will depend on the severity of the injury. The doctor may order blood tests to see if there are any general medical problems. Or to check that the injured person's blood will clot properly.

X-rays may be needed to see if the skull has been fractured. Or to see if there is any glass or metal in the wound if the skin is broken.

In a number of cases, a CT brain scan will be performed. This is to see if there is any bleeding inside the head or swelling of the brain.

Will the tests hurt?

Blood for testing is taken through a needle in the arm. This should not be too painful. X-rays do not hurt, but they do mean lying still for a few minutes.

A CT scan is also painless. The person lies on a scanner couch, which slides them up to the machine. Their head goes inside the scanner, but

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they can easily see out. The scan takes between 3 and 20 minutes. It will immediately give the doctor the information about what treatment the person needs.

Will there be any delayed complications?

Occasionally, a mixture of blood and fluid may accumulate on the surface of the brain. This can happen several days or weeks after a relatively minor head injury. This is called a chronic subdural haematoma.

This can cause pressure on the brain and a progressive worsening of symptoms such as:

- headache
- drowsiness
- confusion
- problems with speech
- weakness down one side of the body

Chronic subdural haematomas can be seen on a CT brain scan. They are usually easy to treat by a simple drainage operation (via burr holes).

Should the family doctor be told?

Your GP should be informed about all health issues. If you have had a head injury, then your doctor will want to know. You will be given a letter from the doctor in charge of your care on discharge from hospital. A friend or relative can take this into the surgery.

What if the skull is fractured?

The skull is a very rigid structure. To damage it usually requires a lot of force, so a fracture is a sign that the head has received a significant injury. Someone with a skull fracture will always be admitted to hospital for observation.

Will it heal?

The skull almost always heals, but this may take many months. Any pain or tenderness from the fracture will go down as the bruising settles down. This is usually in 5 to 10 days.

Occasionally with a skull fracture, parts of the bone are pushed inwards (depressed). This may need an operation to repair it, especially if the skin over the fracture is cut.

What will happen if there is internal bleeding?

This is a very serious situation. Bleeding inside the head will put pressure on the brain. If this pressure gets too high the brain may be damaged. The neurosurgeon will decide what treatment is required.

Will they need an operation?

Surgery is only performed in the most serious situations. If there is bleeding within the head this must be stopped. The blood clot must be removed before the brain becomes compressed. If the brain becomes compressed, this can lead to brain damage or even death.

There may not be time for the doctor to fully discuss the surgery before it takes place as time is of the essence. The neurosurgeon will explain everything to you afterwards.

How is the surgery performed?

The operation is called a craniotomy. It's done under a general anaesthetic, so that the patient is asleep and comfortable. The hair will need to be shaved.

The surgeon makes a cut, usually at the side of the head, to lift a flap of scalp off the skull. They then cut a window of bone out of the skull to allow access into the head. The bleeding can then usually be seen and stopped, and the blood clot removed.

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Once that has been done, the bone is usually put back into place and the wound stapled. If the brain is too swollen, the bone may be left out to make some extra room for the swelling. It will then be replaced later at a second operation.

What can go wrong?

The surgery itself is quite straightforward. But like any brain operation it does carry risks. These risks will be explained in more detail by the surgeon and in the craniotomy patient information leaflet.

However, without surgery the bleeding will continue and cause irreversible damage. If the bleeding is severe or the brain is very badly damaged, surgery may not help. This can sometimes be determined from the CT scan.

What will they be like after the operation?

People may need to be nursed on the intensive care unit after this sort of operation. They may need to be kept on a breathing machine (ventilator) for one or more days. This may appear alarming, but it has huge advantages. It helps the body to recover without it having to cope with anything else - even breathing. The ventilation also helps to control the brain swelling.

The person may have a bandage on their head. They will be connected to different machines that monitor all of their body functions. This allows the doctors and nurses to detect instantly any changes in their condition.

The intensive care unit

Even if an operation to remove a blood clot is not required, people who have suffered a severe head injury can develop brain swelling. They may need to be admitted to the Intensive Care Unit and spend some time on a ventilator.

Once in the intensive care unit, they will probably have a tube or wire placed inside their head. This is to measure the pressure inside the skull (intracranial pressure, or ICP).

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If the brain starts to swell, as it can do after an injury, this device will give an early warning to the neurosurgeon. They may then need to give treatment to relieve the pressure. Anaesthetic drugs are frequently given to keep people sedated while they are on the intensive care unit.

What are all the machines for?

The ventilator will do the work of breathing for the patient. It does this by pushing the right amount of air into the lungs to mimic their own breathing. A tube is passed down into the lungs to allow the air in and out.

This tube can stay there for many days without causing problems. Occasionally a tube is required for longer periods. In this case, it is placed directly into the windpipe in the neck (tracheostomy). This can usually be done in the intensive care unit, but it may need to be done in the operating theatre.

The other machines which you may see in the intensive care unit are used to monitor the person's:

- heart rate
- blood pressure
- temperature
- other bodily functions

These may be altered by the effects on the brain of a head injury. Appropriate treatment can then be given. This may include fluids and drugs being given into a vein.

Can I speak to them?

It is important that family and friends treat the person as normally as possible. This may be very difficult to do in these circumstances, especially when they cannot respond. Do your best to ignore all the machines. Talk to them about normal things, such as family matters or television, and hold their hand or touch them.

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Because of the injury, the anaesthetic drugs that they will have been given and the fact that their level of consciousness is likely to vary, it is impossible to tell how much will be getting through. But it may help them, and it could also help you and other family members or friends.

How long will they be given sedatives?

People are likely to be given sedative drugs as long as they are on a ventilator in the intensive care unit. Sedation can make it more difficult for doctors to assess the patient. But the drugs will only be stopped when they feel it is safe to do so.

Once stable measurements (normal pressure inside the head, blood pressure, lung function, reflex responses and so on) have been achieved, the drugs can be stopped. If a person has been on sedatives for several days, it may take some time for their effects to wear off.

If an operation has been done, will further surgery be required?

This is unlikely but may happen in some cases. Even if the pressure in the head starts to rise, surgery is not often required. If there is an increase in pressure, the neurosurgeon will most probably order another CT scan. This is to check that there has been no further bleeding or swelling. They will inform the family of the findings and any necessary treatment.

How can the pressure be treated?

The neurosurgeon will know what sort of pressure rise is significant and when to start treatment. Sometimes the pressure will simply come down again on its own without any need for treatment. If a pressure rise is considered significant, there are fluids and drugs that can be given via a drip in the vein. These reduce the swelling of the brain, which will in turn reduce the pressure.

What if the pressure continues to rise?

This is a very serious situation, but fortunately an uncommon one. If the pressure on the brain continues to rise there may be nothing more the neurosurgeon can do, and the person may not recover.

Coma and level of consciousness

A person's consciousness can vary from being normal (i.e., fully alert, talking and making sense) to being deeply unconscious and not responding in any way - even to pain. There are many stages in between.

Being in a coma means being unconscious. A person in a coma is unable to communicate with the outside world. They have reduced awareness of stimuli, such as sound or touch. People are said to be in a coma if:

- they are unable to obey simple commands
- if they do not utter comprehensible words and
- if they do not open their eyes - even in response to pain.

There are many levels of consciousness between deep coma and normal consciousness. The state of consciousness of a person following a head injury can fall into a number of different categories between these two extremes.

Assessment of a person's level of consciousness following a head injury is important. But is often difficult or impossible if they have had sedative drugs (including alcohol). You may hear the doctors refer to the use of the Glasgow Coma Scale or GCS, which gives a measure of the level of consciousness.

Recovery from a severe head injury

Once the medical team is satisfied that the person's measurements are stable, they will be allowed to start breathing for themselves and slowly come to rely less on the ventilator. This process may take several days.

The doctors in the intensive care unit will eventually remove the tube from the lungs. The person should then soon be in a position to leave the intensive care unit and go to the neurosurgical Step Down Unit. They may stay in the neurosurgical Unit for some time. Or they may be transferred back to their local hospital or to a rehabilitation centre once their condition is stable. This will make it easier for family and friends to visit - an important part of the rehabilitation process after a severe head injury.

How long will they take to recover?

This is impossible to predict and it depends on the severity of the injury. The neurosurgeon should be able to give you an idea of timescale. But everyone is different, so it is impossible to be exact.

As a general rule, recovery after a severe head injury takes many months. The degree of recovery will ultimately depend on the injury itself. Some degree of recovery may continue for several years, especially in younger patients.

What will they be like during recovery?

Again, it is difficult to predict. But often, recovery from a severe head injury follows a similar pattern to the development of a child. Initially the person is uncommunicative, acts inappropriately and behaves in a baby-like manner. Thereafter there may be temper tantrums, swearing or shouting and child-like behaviour. Eventually the behavioural patterns may become more normal. Although, there may initially be some degree of loss of self-control.

Progress during the recovery phase is rarely smooth. It may become slow or even stop completely at any stage. This is again very difficult to predict and is a cause of great concern for family and friends.

Can anything be done to help recovery?

If the brain can recover, it will. Measures aimed at improving recovery generally speed it up, but do not necessarily affect the final outcome. People are generally best looked after at home if they can. This helps bring them back to reality and surrounds them with familiar objects and voices. However, looking after someone in this condition is no easy task. Help from the GP and support services may be essential.

Specific problems may be improved by therapy, such as speech therapy where there are problems with impaired speech. Physical problems, such as weakness, stiffness or poor co-ordination may be helped by regular physiotherapy. This is done at the hospital at first but can then be continued in the community if required.

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Some people may need to be looked after in a specialist rehabilitation unit, and a few will require to be cared for in a long-term care placement.

What is the risk of having fits after a head injury?

The terms “fit”, “seizure” and “convulsion” mean the same thing. Epilepsy is when a person continues to have seizures (i.e., has more than one). The risk of developing epilepsy following a head injury depends on factors such as:

- the severity of the head injury,
- whether the skull is fractured (in particular if the fracture causes a tear in the covering of the brain) and
- whether there is any bruising to the brain (a brain contusion).

Sometimes a person may have a fit soon after suffering a head injury and this puts them at greater risk of developing epilepsy. If the doctor feels there is a high risk of a person developing epilepsy, they may prescribe drugs (anticonvulsants) to try to prevent this from happening. These drugs should not be stopped unless advised to do so by your doctor. They must not be stopped suddenly but gradually over a period of time.

What are the restrictions on driving after a head injury?

In many cases, people are able to return to driving as soon as they have made a full recovery. However, it is essential that they contact the medical officer at the DVLA (see the address at the back of this booklet), who will tell them when they can drive again if:

- there has been a severe head injury
- a person has had surgery or
- they have had one or more fits

If a person has a fit, they will have to remain free of further fits for at least a year before they can drive again. After an operation on the brain, they will usually be unable to drive for a minimum of six months.

The restrictions on PSV and HGV drivers are much more rigorous. If in any doubt, consult your doctor before driving. This is very important as you

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have a legal requirement to inform the DVLA of any medical condition that may interfere with your ability to drive. Failure to do so carries a maximum penalty of £1,000 and will invalidate your insurance.

Sport

Contact sports (rugby, football, boxing, etc.) should be avoided for a period of time after:

- a head injury causing significant concussion
- a skull fracture
- surgery to the head

Your doctor will advise you when it is safe to resume these activities.

Summary

Most people who have had a head injury will make a good recovery and continue to lead a normal life afterwards. Only a few will have problems, but for these few and their families life can become very difficult.

There are services available to help affected people. Either through their GP and community services or through charitable organisations. These are often set up by families who have been in a similar position and who therefore appreciate the problems. A list of organisations is included at the end of this booklet.

For more information or clarification, please contact the Neurosciences Unit. Ward 43 Tel. 024 7696 7802 or 024 7696 5330

National contact details

Shine Charity

Shine – Registered charity to help those affected by Spina Bifida and Hydrocephalus

Tel: 01733 555988 (Provides support, advocacy and information)

Brain and Spine Helpline

British Brain and Spine Foundation, LG01 Lincoln House, Kennington Park, 1-3 Brixton Road, London, SW9 6DE.

Telephone: 0808 808 1000 www.brainandspine.org.uk

(Information and support on neurological disorders for patients, carers and health professionals 9am – 1pm Monday to Friday)

Epilepsy Action

Anstey House, Gate Way Drive, Yeadon, Leeds LS19 7XY

Telephone: 0113 210 8800 Helpline No: Freephone 0808 800 5050

Website address: <http://www.epilepsy.org.uk>

(Information, support, counselling and advice)

DVLA Drivers Medical Group

Longview Road, Swansea, SA99 1TU.

Telephone: 0300 790 6806

Website: www.gov.uk/driving-medical-conditions/telling-dvla-about-a-medical-condition-or-disability

The National Institute of Conductive Education

Cannon Hill House, Russell Road, Moseley, Birmingham, B13 8RD.

Tel: 0121 449 1569

(Conductive education services for adults and children with head, and other brain injuries)

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Headway

Bradbury House, 190 Bagnall Road, Old Basford, Nottingham,
Nottinghamshire, NG6 8SF

Tel: 0115 924 0800 Freephone: 0808 800 2244 (Monday to Friday 9am
to 5pm)

(Information, support and services to people with brain injuries)

Epilepsy Society

Chesham Lane, Chalfont St Peter, Gerrards Cross, Bucks, SL9 0RJ.

Helpline: 01494 601 400 Telephone: 01494 601 300

www.epilepsysociety.org.uk

(Medical support, counselling and information)

NHS 111

You should use the NHS 111 service if you urgently need medical help or
advice but it's not a life-threatening situation

Local contact details:

Ward 43 - Neurosurgical Unit

UHCW NHS Trust

Fourth Floor Central Tower

TEL: 024 7696 8240 or 024 7696 5330

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Bleep 1334 via Switchboard on 024 7696 4000

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