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Traumatic brain injury

There is much more I can tell you about traumatic brain injury. There's quite a lot of information so please just read what you would like to know.

This section will tell you about:

- **What a traumatic brain injury is.**
- **How do you get a traumatic brain injury?**
- **How can I tell if someone has hurt their brain?**
- **What are the different types of traumatic brain injury?**
- **Damage to the brain.**

What is a traumatic brain injury?

A traumatic brain injury means a knock or blow that causes the brain to get bruised, bleed or spin around inside the skull. Sometimes the skull might break too which is known as a skull fracture.

Let's have a look at what causes a traumatic brain injury and then have a look at the different types.

How do you get a traumatic brain injury?

There are a few reasons as to why someone might end up with a traumatic brain injury:

Accidents: There are many different reasons why people have accidents but accidents are a simple fact of life. We all have an accident at some point of our life. Sometimes we may drop something, other days we might trip up, break our arm, or if we get really unlucky, hurt our head.

It's important to remember accidents do not happen on purpose. We are all human and everyone makes mistakes.

Walk into any Accident and Emergency Department and it will be full of people who have had all sorts of accidents! The sad part is that most accidents are preventable.

Common accidents that cause traumatic brain injury include:





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Motor vehicle accidents: Either being involved in a car accident or being hit by a car. You may hear hospital staff talk about an 'RTA' which means 'Road Traffic Accident.'

Bicycle accidents: Over 100,000 young people under 16 are involved in bicycle accidents each year. Tragically, many are killed or receive a serious head injury. This can be easily avoided by simply wearing a cycle helmet.

Horse riding accidents: People fall off horses too. Much like riding a bike, you can look after your head and brain when riding a horse by wearing a riding helmet!

Sporting accidents: Contact sports, like rugby, can be fun to play but every so often someone might get hurt. Mostly this is just a few bruises and the odd broken bone. However, some accidents are more serious.

Slips and falls: Falling down the stairs or tripping on the pavement can happen to us all. Usually it is not serious but occasionally people do get unlucky and end up in hospital with a brain injury. A big cause of slips and falls ...alcohol (detailed below).

Alcohol: As a teenager it is likely you will experiment with alcohol at some point. It can feel new and exciting to begin with and 'getting drunk' can sometimes be seen as a fun thing to do with your friends. Alcohol affects the cerebellum (the part of the brain that controls your balance) and can make you feel dizzy, over-confident, lose your balance and subsequently get hurt. You can also get yourself into some awkward situations and make some errors of judgement that you wouldn't make when you were sober! Use alcohol sensibly and avoid putting yourself at risk - look after yourself.

Assault and gun crime: Accidents are one thing, assault is very different. It differs strongly from an accident because it was intended. There are many reasons why someone would intentionally hurt another. Sometimes our emotions can get the better of us and people can do and say some awful things out of anger, jealousy or fear.

Unfortunately, assault is also a fact of life. Violent crime leads to people being very sick in hospital and can also lead to a long-term prison sentence for anyone who intentionally hurts another.





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How can I tell if someone has hurt their brain?

What distinguishes a normal knock and bump to the head from a brain injury is usually how alert the person is afterwards. For example, when you bang your head on a cupboard door you are still able to talk to people.

When someone is involved in a nasty road accident and hurt their brain there is a high chance that they will 'lose consciousness'. This means that the person who has had the accident is no longer aware of their surroundings. It usually means that they appear to be asleep and you can't wake them up. This is very serious and an ambulance should be called straight away.

That said, not all brain injuries make you lose consciousness straight away. It is possible you will fall unconscious later. This can be very serious too so it is always best to tell someone if you have hurt your head.

You may hear doctors and nurses refer to someone who has a 'concussion'. This means that the person has hurt their brain but not so significantly that they are really unwell. They may, for example, lose their memory for a few hours or be a little bit disorientated. A short stay in hospital is sometimes required whilst the doctors and nurses figure out if the person is okay to go home. Usually a concussion isn't serious.

Sometimes it is really obvious that someone has hurt their brain because of the accident and you can see how bad they are. The next section will tell you more about that.

What are the different types of traumatic brain injury?

Traumatic brain injury is divided into different types. It all depends on how someone hurt their head:

- Closed
- Crushing
- Penetrating

Let's have a look at each one in a little more detail.





Closed traumatic brain injuries are the most common. This occurs when the brain moves around in the skull too much and gets damaged. You may hear doctors and nurses refer to the 'mechanism of injury'. All that means was how the brain moved inside the skull.

Crushing traumatic brain injury is when a large part of the skull gets broken. There are many different types of skull fracture. All it means is which part of the skull was broken in the accident. A crushing injury can be caused by being run over.

Penetrating traumatic brain injury is very rare but does happen. This is when the skull is pierced with something such as a bullet. The brain gets exposed and then damaged as a result.

Damage to the brain

Damage to the brain can be very complicated. The brain is very delicate and lots can go wrong with it!

When admitted to hospital with a brain injury, you sometimes hear doctors and nurses refer to 'primary and secondary damage to the brain'.

Primary damage: this means what happened to the brain when the accident first happened. Sometimes more than one thing can go wrong at this time but you will still hear the doctors and nurses refer to this as 'primary damage.'

Brain injury can effect a small part of the brain (called 'focal') or the whole brain (called 'diffuse').

Examples of primary brain damage include:

- Contusion – bruising to part of the brain
- Laceration – little or deep cut into the brain
- Haemorrhage – or bleeding in part of the brain
- Haematoma – a large blood clot that squashes the brain.

Secondary damage: this means all the other things that start to go wrong with the brain over a period of time after you first had the accident. This gets slightly more complicated because there are secondary problems that are considered an emergency and those that are considered long-term or 'chronic'.





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Emergency secondary problems are those that have to be dealt with right away by trained doctors and nurses. They can be life threatening. This includes things such as: prolonged fits or seizures, raised pressure in the skull from brain swelling or bleeding, or poor oxygen delivery to the brain. There are many more but you only really need to know about those if you are a doctor or nurse!

Secondary chronic problems are the long-term problems that someone who has hurt their brain may have to live with for the rest of their life. This includes things like epilepsy, hydrocephalus, or movement difficulties. Some part of the brain might be so badly damaged they develop a 'palsy' which means that part of the brain does not work so well anymore.

