

Patient information from BMJ

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Concussion (mild traumatic brain injury)

Concussion is an injury to the brain, usually caused by a blow to the head.

Most people recover after a few days or weeks of rest. But some people need to be monitored in the hospital for a while, and there can be long-term effects.

What is concussion?

Concussion (doctors call it mild traumatic brain injury) is an injury to the brain, usually caused by a direct blow to the head.

Concussion can also be caused by violent shaking, or by a sudden jolt. This type of jolt is common in motor vehicle accidents.

A single episode of concussion usually gets better after a few weeks or days. But repeated concussions can lead to long-term problems, including problems with concentration and memory, and **dementia**.

For example, some **sports**, such as boxing, soccer, and football, involve repeated blows to the head, which can cause severe long-term problems.

But even single episodes of concussion can cause problems that can last for several months, including:

- headaches
- dizziness and vertigo
- problems with memory and concentration, and
- depression and anxiety.

What are the symptoms?

Bumping your head is common. But, while it can be extremely painful, it doesn't usually cause concussion. Signs that you might have concussion include:

- a headache that doesn't go away, even with pain relief medication

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- dizziness or a feeling of unsteadiness (doctors call this **vertigo**). For example, you might feel clumsy when you walk
- a sense of feeling separated from your body. For example, you might not feel "connected" to your arms and legs. Doctors call this **depersonalization**
- fatigue (feeling tired)
- memory problems
- nausea and vomiting. This is more common in children with concussion
- neck pain. This is more common in motor vehicle accidents than with a blow to the head
- problems thinking clearly. For example, you might struggle to remember some words, solve problems, make plans, or pay attention for long.

If you, or your child, have symptoms like these after a head injury of any kind, **get medical help** right away.

It's important to remember that you could have a brain injury even if you feel okay. For example, a brain injury is more likely if you:

- have fallen from a height or have any kind of "high-energy" injury
- have a history of bleeding problems, or
- are taking blood-thinning medication.

If you are concerned or in any doubt, seek medical help right away.

Diagnosing concussion

Diagnosing concussion can be complicated, as a head injury often happens at the same time as other injuries.

For example, if you were involved in a motor vehicle accident or a fall, you might have injuries on several parts of your body.

So medical staff will want to check on any other serious problems. For example, they will check you for possible **breathing problems** and **injuries to your spine**. They will also want to find out if you **lost consciousness** (blacked out) and, if so, for how long.

If you are conscious, the medical staff will then ask you questions about how you are feeling and what you remember. From your answers, and from the way you answer, they will usually be able to tell if you have concussion.

Your doctor might also want to do a **scan** of your head, such as an MRI (magnetic resonance imaging), CT (computerised tomography), or x-ray, to check for any dangerous bleeding or skull fractures.

What treatments are available?

Medications

For many people, the only treatment they will need is to rest and take things easy for a week or two, and to take pain relief medication as needed.

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You might find that **acetaminophen** helps. But your doctor might recommend **stronger pain medication**. It's important to treat your pain for your own comfort, and to help relieve the pressure in your head.

Your doctor might also suggest a drug to help with nausea and vomiting. These medications are called **antiemetics**. These can be especially useful in children with concussion, who are more likely to be affected by nausea.

If your doctor thinks that you might have dangerous **bleeding** around the brain, he or she might recommend medication to stop you from bleeding too easily. This is usually given as an intravenous infusion (an IV drip).

Monitoring in the hospital

Most people with concussion don't need to stay in the hospital for long. But your doctor might want to keep you in for a while if:

- you are having severe headaches or are vomiting
- your scans or tests suggest that you need to be monitored
- you have have other injuries, or
- you are intoxicated with alcohol or drugs.

Advice and information

If you (or your child) don't need to stay in the hospital, your doctor or nurse should advise you on what to do to help you recover at home, or if you feel you need to seek more medical help.

For example, you should return to the emergency room right away if you have:

- weakness in one or more of your limbs
- a feeling of weakness in your face
- headaches or vomiting that don't stop
- trouble staying awake
- bleeding from the nose or ears, or
- agitation or confusion.

Your doctor should advise you (or your child) to stay with a responsible adult for 24 hours after you go home.

What to expect in the future?

There is no set time for how long it takes to recover from concussion. But it's likely to be at least a week or two before you can **return to work** and other normal activities.

You should leave it even longer before you play any **sports**, especially contact sports that might involve a blow to the head, or being hit on the head by a ball. You should talk to your doctor about when and whether it's safe for you to return to these activities.

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Even after you are pretty well recovered, some of your symptoms might linger for a while. For example, you might have headaches more often than you used to for a while, or feel tired or "fuzzy" sometimes.

Some people are more likely than others to have long-term problems. For example, people with a history of **migraines** or of frequent headaches tend to take longer to recover from concussion.

To give yourself the best chance of a quick and full recovery:

- be on the lookout for symptoms that don't get better
- avoid stress
- rest as much as you need to, and
- use pain medication if you need to. Being in pain will slow your recovery. But you should never take more than the recommended dose of any pain medication. If your pain medication isn't helping, talk to your doctor.

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