

Chronic traumatic encephalopathy (CTE)

Chronic traumatic encephalopathy (CTE) is a type of dementia. You can get it from repeated blows to the head and repeated concussion.

CTE is associated with contact sports such as boxing, rugby and American football.

Symptoms of CTE

The symptoms may be like other types of dementia, especially [Alzheimer's disease](#).

Symptoms of CTE can include:

- short term memory loss
- changes in mood
- increasing confusion and disorientation
- difficulty thinking

Short-term memory loss

Examples of short-term memory loss are:

- asking the same question many times
- difficulty remembering names
- difficulty remembering phone numbers

Changes in mood

These could be:

- frequent mood swings
- feeling increasingly anxious, frustrated or agitated
- depression

Increasing confusion and disorientation

For example:

- getting lost
- wandering
- not knowing what time of day it is

Difficulty thinking

For example, finding it hard to make decisions.

Other symptoms

As the condition progresses, further symptoms may include:

- slurred speech (dysarthria)
- significant problems with memory
- Parkinsonism – tremor, slow movement and muscle stiffness
- difficulty eating or swallowing (dysphagia) – although this is rare

Causes of CTE

Things that increase the risk of CTE include:

- receiving repeated blows to the head
- repeated concussion

CTE and concussion are separate conditions. Many people who are concussed do not go on to develop the condition. But repeated minor head injuries can increase your risk of CTE.

People at risk of CTE

Certain people may be more at risk of CTE.

Athletes

Athletes with a history of repetitive mild traumatic brain injury from certain sports, including:

- contact sports, such as boxing or martial arts
- American football
- football - related to repeatedly heading the ball
- rugby

Military veterans

Military veterans with a history of repeated head trauma, such as blast injuries.

People with a history of repeated head injuries

For example:

- blows to the head caused by [self-harm](#)
- being a victim of repeated assaults
- poorly controlled epilepsy that results in repeated knocks to the head

When to seek medical advice

If you're worried about your memory or think you may have dementia, talk to your GP.

If you're worried about someone else, encourage them to make an appointment. You could suggest that you go along with them.

Dementia is not the only cause of memory problems.

They can also be caused by:

- [depression](#)
- [stress](#)
- medicines
- other health problems

Your GP can carry out some simple checks to try to find out what the cause may be. They can refer you to a specialist memory clinic for more tests, if necessary.

[When to seek medical advice for symptoms of concussion or head injury](#)

Diagnosing CTE

A diagnosis is usually based on a history of:

- participating in contact sports
- symptoms

Your GP will talk to you about the problems you're having. They may ask you to perform some mental or physical tasks. For example, moving or walking around. You may be referred to a specialist memory assessment service.

The following tests may be used to scan your brain:

- magnetic resonance image (MRI) scan
- computerised tomography (CT) scan

Treating CTE

Treatment is based around supportive treatments.

Healthcare professionals will usually be involved in your long-term care plan. For example, your GP or specialist and social care services.

You may also need to see a speech and language therapist or an occupational therapist.

Contact an Alzheimer's or dementia support group for more information and advice.

For example:

- [Understand Together](#)
- [Alzheimer Society of Ireland](#)

Preventing CTE

The only known way to prevent CTE is to avoid repetitive head injuries. Although many head injuries are difficult to predict or avoid, there are ways to reduce your risk.

For example:

- Wear the recommended protective equipment during contact sports.
- Follow your doctor's recommendations about returning to play after a concussion.
- Make sure that contact sports you or your child take part in are supervised by a qualified person.
- Seek medical advice if any symptoms of a previous head injury return.

Content supplied by the [NHS](#) and adapted for Ireland by the HSE

Page last reviewed: 1 September 2022

Next review due: 1 September 2025

HSE Live - we're here to help

Monday to Friday: 8am to 8pm

Saturday: 9am to 5pm

Sunday: Closed

Bank holidays: Closed

Freephone: [1800 700 700](tel:1800700700)

From outside Ireland: [00 353 1 240 8787](tel:0035312408787)

[HSE Facebook](#)

[HSE Instagram](#)

[HSE TikTok](#)

[HSE YouTube](#)

[HSE LinkedIn](#)

[HSE X \(Twitter\)](#)

[Complaints and feedback](#)

[Emergencies](#)

[Cookie settings](#)

[Cookie statement](#)

[Accessibility](#)

[Privacy statement](#)

[Disclaimer](#)

© Health Service Executive