

# Chronic traumatic encephalopathy (CTE) dementia

This help sheet is about chronic traumatic encephalopathy (CTE) dementia, a condition affecting brain function due to repeated head injuries over time. It describes symptoms, treatment and management options, and tips to support someone with the condition.

Dementia describes a collection of symptoms caused by disorders affecting the brain.

Chronic traumatic encephalopathy (CTE) dementia is a type of dementia where many repeated head injuries can affect someone's brain function over time, enough to interfere with the person's normal or working life. Repeated head injuries can take the form of concussion, or even smaller head knocks without symptoms, which are called subconcussion.

- CTE dementia has a wide range of symptoms that can affect thinking, mood and behaviour.
- CTE dementia can be caused by head knocks in sport and also in non-sporting situations.
- If you have concerns, it's a good idea to seek help early.

## Signs and symptoms of CTE dementia

A wide range of symptoms can affect thinking, mood and behaviour

Thinking-related symptoms:

- memory loss
- learning difficulties
- concentration difficulties
- confusion
- difficulties making decisions
- loss of sense of direction
- driving difficulties
- brain fog with headache or head pressure
- sleep pattern disturbance
- loss of awareness of having difficulties.

Also, when someone has had a head injury, their sleep may be affected. Poor sleep may worsen thinking difficulties.

Mood-related symptoms:

- irritability
- depression or suicidal thinking
- anxiety
- panic
- impulsiveness
- loss of empathy.

Behaviour-related symptoms:

- rage episodes including road rage
- agitation
- loss of motivation
- reduced social activity
- wandering
- slowness, or Parkinson's disease-like changes.

In many instances a person may not be aware of these symptoms, and instead those around them report difficulties.

## **Diagnosing CTE dementia**

There is no single test for CTE dementia, however a doctor and medical team qualified in assessing brain injury can identify the likelihood of having CTE dementia. This team may include neurologists, geriatricians, sports physicians and rehabilitation specialists.

If you have concerns about CTE dementia, it is a good idea to seek help early. A memory check with your doctor is a simple way to start. Other conditions resulting from head injury – such as post-concussion syndrome and migraine – may be detected.

From there, referral to a specialist in assessing cognitive disorders such as CTE dementia can be made and tests arranged, such as magnetic resonance imaging (MRI) brain scans, neuropsychology testing and cognitive screening. Sometimes two or more causes of dementia may be identified in an individual.

It is possible to be diagnosed with CTE only and not CTE dementia.

When thinking, mood or behaviour changes are not related to CTE dementia, speak with your doctor about other factors that may be causing these symptoms, such as alcohol, smoking or poor sleep quality.

## **Who gets CTE dementia**

CTE dementia has been identified in boxing, football and competitive cycling, as well as equestrian and other sports involving contact or collisions.

In non-sporting situations, it can be due to violent assault, family and domestic violence, frequent falls leading to head impacts, explosions or blast trauma.

Head knocks that are seemingly minor (called sub-concussions) as well as head knocks with symptoms (called concussions) are thought to increase the risk of developing CTE dementia. However, a single or low number of head knocks is unlikely to cause a problem.

## **Treatment and management options**

Having a general practitioner who can coordinate care is part of good CTE dementia management. A specialist may choose to watch a patient's progress over time to assess the stability of their symptoms and provide reassurance.

Avoid things that may worsen thinking, including alcohol and smoking. If sleep is affected, consider getting a laboratory sleep assessment and treating conditions such as obstructive sleep apnoea. It is important that family also receive information and support so that they can assist in the best possible way.

## **Risk reduction**

Although there is no cure, prevention and care for those at risk of CTE dementia is vital for good quality of life.

CTE dementia is a preventable condition through the avoidance or minimisation of head injury. Good concussion management is an important aspect of preventative care. You may contact your sporting club or workplace administration to discuss ways to minimise head injury.

Prevention and care for those at risk of CTE dementia is vital for good quality of life.

If you participate in a sport where head injury is a risk:

- Follow guidelines, protocols and expert opinion.
- Contact your club to discuss ways to minimise head injury.

## **Helping someone with CTE dementia**

You may have concerns about someone you know showing changes in thinking, mood and behaviour. Gently encouraging a memory check with their doctor can be a great place to start.

As a family member or friend of someone living with CTE dementia, it's important to show compassion for yourself as well as others and to look after your own wellbeing.

How you communicate or interact with someone living with CTE dementia can improve the person's responses. It can be helpful to seek role-play assistance from a psychologist or occupational therapist trained in head injury.

Support is available from Dementia Australia.

### **Further reading**

Dementia Australia library resources:

<https://dementia-org.libguides.com/CTE>

Macquarie University Health - Concussion Connect:

[mqhealth.org.au/services/wellness-services/concussion-connect](http://mqhealth.org.au/services/wellness-services/concussion-connect)

### **Further information**

Dementia Australia offers support, information, education and counselling. Contact the National Dementia Helpline on **1800 100 500**, or visit our website at [\*\*www.dementia.org.au\*\*](http://www.dementia.org.au)



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