



# Alcohol-related brain damage

## --Wernicke's encephalopathy and Korsakoff's psychosis

<b>Wernicke's encephalopathy</b> .....	<b>1</b>
<b>Korsakoff's psychosis</b> .....	<b>2</b>
Symptoms .....	2
Diagnosis .....	2
Who can develop Korsakoff's psychosis?.....	2
Treatment/Care .....	2
Diet .....	3
<b>Further information and support</b> .....	<b>4</b>
Penumbra .....	4
Alcohol Focus Scotland .....	4

The immediate effects of excessive alcohol consumption are familiar to most of us from watching television or films, if not from personal experience – slurred speech, lack of co-ordination, slowed reaction time, loss of self-control and even blackouts. However, over a long period of time, heavy drinkers may develop various types of brain damage, including the Wernicke-Korsakoff syndrome which consists of two separate, but related, stages: Wernicke's encephalopathy and Korsakoff's psychosis. Although this syndrome is not, strictly speaking, a dementia, sufferers experience a **loss of short-term memory** and this information sheet examines the causes, symptoms and treatment of the syndrome.

### Wernicke's encephalopathy

This is a neuropsychiatric disorder resulting from a lack of thiamine (Vitamin B1) which affects the brain and nervous system. Lack of thiamine is common in heavy drinkers because of their poor eating habits and/or frequent vomiting, both of which can lead to a shortfall

in essential vitamins. In addition, alcohol can cause inflammation to the stomach lining, which interferes with the body's ability to absorb vitamins from food intake.

Wernicke's is most commonly found in heavy drinkers but thiamine deficiency can also be caused by: forced or self-inflicted starvation (such as anorexia nervosa); malnutrition caused by inadequate diet or problems with absorbing nutrients; some kidney problems; and severe vomiting during pregnancy. The condition has also been found in some patients with AIDS.

Wernicke's can occur suddenly, in some cases within hours, and needs immediate hospital treatment which involves the injection of large amounts of thiamine into a vein or muscle. Unfortunately, the symptoms of Wernicke's can be easy to miss and the person can be assumed to be simply drunk. Symptoms include:

- confusion about the time or place
- drowsiness
- poor balance, a staggering walk or inability to walk
- numbness or tingling in the legs
- double vision
- abnormal, involuntary eye movements or paralysis of the eye muscles
- memory impairment.

If treatment is given in time, most of these symptoms could be reduced. But, if treatment is not given, or is not given in time, the person can suffer irreversible brain damage or may even die. This damage can lead to death

in around one in five cases. Of those who survive, around 85% will go on to develop Korsakoff's psychosis.

### Korsakoff's psychosis

While Wernicke's, with its sudden onset and rapid development of symptoms, might be described as the **acute** form of the Wernicke-Korsakoff syndrome, Korsakoff's psychosis is the **chronic** form in that it is not easily or quickly resolved, and can continue over a long period of time. Korsakoff's may result if Wernicke's is untreated or is not treated in time, but it may also develop gradually, and not every case of Korsakoff's is preceded by Wernicke's. It should be noted that people with Korsakoff's are still at risk of further episodes of Wernicke's if they carry on drinking. They may be even more susceptible because of reduced tolerance to alcohol.

In this condition, damage occurs to small but important areas in the middle part of the brain, causing severe short-term memory loss. This memory loss is the most significant feature of the condition and many other abilities remain unaffected. This is where Korsakoff's differs from most types of dementia where there is often damage to a large area of the outer part of the brain (the cortex) and where a much wider range of abilities is affected.

### Symptoms

The main symptom is short-term memory loss, particularly relating to things that happened after the condition appeared. However, some people have difficulty recalling information acquired months or even years before. Other symptoms include:

- difficulty with taking on board new information or developing new skills
- lack of insight into their memory loss, where even someone with significant gaps in his or her memory may believe that they are functioning normally
- apathy or repetitive behaviour

- 'confabulation', where someone fills out the gaps in their memory with elaborate fantasies

Confabulation is not confined to people with Korsakoff's; it can occur in anyone who loses their memory, though it may take on a more elaborate form in someone who has been used to making up tales to cover up his or her drinking for a number of years.

### Diagnosis

A person suspected of having Korsakoff's cannot be diagnosed until he/she has abstained from alcohol for four to five weeks, by which time the acute symptoms of alcohol withdrawal should have subsided. Physical examination, laboratory and other tests will be carried out to exclude other conditions. Psychological tests of the person's memory and other functions will be conducted, again to see whether another condition could be the cause. The person will also be observed to see if the condition improves without alcohol and with treatment with thiamine. If there is no change, some form of dementia may be diagnosed. It is possible to have a dual diagnosis of both Korsakoff's and a dementia.

### Who can develop Korsakoff's psychosis?

This condition tends to affect men aged 45 to 65, although it can affect older and younger people as well, with some doctors reporting patients in their 20's. Women can also be affected but they tend to develop the condition at a slightly younger age, on average ten years earlier than men, possibly because they are more vulnerable to the effects of alcohol.

### Treatment/Care

If the person carries on drinking, their condition will get progressively worse. But this progression can be stopped if the person stops drinking and starts to eat a healthy diet with vitamin supplements. See below for some tips on diet. Thiamine supplements may help prevent further damage to the brain but it is not yet clear if they can help people recover from damage that has already taken place.

The person with this condition may be very isolated. Years of problem drinking may have led to difficulties in holding down a job and maintaining social and family relationships, as well as the physical damage that may have been caused. Some or all of the person's family and social support network may have been driven away as a result. This, combined with the physical effects and, often, a lack of insight into the problem, can lead to people with this condition being very vulnerable and isolated. They may be unable, personally and financially, to take care of themselves yet do not have anyone else to call on for help. As a result, they may need the help of other agencies.

People with Korsakoff's may need considerable support on discharge from hospital to help them cope independently. They may be highly vulnerable due to their possible confused state, their severe short-term memory problem and possible physical difficulties such as liver damage or damage to the peripheral nerves in the legs or arms.

Because people with this condition are often unable to cope on their own after their stay in hospital, social services may become involved to try to help the person return to their own home. If this is not possible, then a care home may be seen as the best option but this can result in people being placed in an environment that was not designed to meet their needs. Because Korsakoff's tends to affect people under the age of 65, care homes which are generally designed for older people may be unable to offer people with this condition help with their memory impairment, advice and help with stopping drinking, so that they may return to a healthier, more productive life. In addition, people who develop this condition in their 40's can require care for decades.

There is evidence suggesting that significant recovery is possible in many people, given appropriate assessment and rehabilitation.

### **Diet**

If you have reason to worry that you or someone close to you may be suffering from a chronic shortage of Vitamin B1, it may help to take a commercial supplement. Look for a B-complex supplement pill and take in accordance with the recommendations on the package. Because caffeine, as well as alcohol, can affect the absorption of Vitamin B1, if you are taking a supplement avoid drinking coffee within two hours either side of taking the pill. Try to cut down on your caffeine consumption in general: remember that some soft drinks contain caffeine, and so does a cup of tea.

Rich sources of Vitamin B1 include brown rice, egg yolks, fish, lean pork or ham, beans, peas, and wheat germ. Marmite is also a rich source of B-complex vitamins. Brewer's yeast is a rich source of Vitamin B1, but it is a myth that drinking real ale will provide enough Vitamin B1 for a normal diet. While there is more Vitamin B1 in real ale than in other alcoholic drinks, the alcohol in real ale slows the absorption of Vitamin B1 to such an extent that there is a net loss of Vitamin B1 from the body.

Bear in mind that the best way to ensure you are eating enough vitamins is to eat a varied diet with at least five portions of fresh fruit and vegetables daily.

## Further information and support

### Penumbra

Penumbra is a leading Scottish voluntary organisation working in the field of mental health. They provide an extensive range of person-centred support services for adults and young people. Penumbra's Korsakoff's Project has a specific approach for working with people who have been diagnosed with Korsakoff syndrome. They work on the basis that many of those with this condition can experience significant recovery, especially during the early months after diagnosis, providing that they are involved in a creative and challenging environment aimed at maximizing their potential.

Over recent years Penumbra has developed skills and techniques for working with this client group which are aimed at identifying and developing the possibilities for living a more independent life-style. They have been able to provide alternatives to what are, often, inappropriate placements in nursing homes. Penumbra Supported Living Service has also provided opportunities for people to leave nursing care and to live independent lives in the community.

Penumbra, Norton Park, 57 Albion Road, Edinburgh, EH7 5QY. Tel: 0131 475 2380; website: [www.penumbra.org.uk/](http://www.penumbra.org.uk/)

### Alcohol Focus Scotland

Here you can find links to Local Alcohol Agencies which provide counselling services to all those affected by their own or another's drinking

Alcohol Focus Scotland, 2nd Floor, 166 Buchanan Street, Glasgow, G1 2LW. Tel : 0141 572 6700; website: [www.alcohol-focus-scotland.org.uk](http://www.alcohol-focus-scotland.org.uk)

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