

# What is alcohol-related brain damage (ARBD)?



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Alcohol-related brain damage (ARBD) is a brain disorder. It is caused by a person regularly drinking alcohol heavily for several years.

Severe ARBD is not strictly a type of dementia even though its symptoms can be similar. This is because it doesn't continue to get worse if a person stops drinking and receives treatment. It's more like a brain injury, and is sometimes called alcohol-related brain injury (ARBI).

This factsheet explains what ARBD is, including the causes, symptoms, diagnosis and treatment. It also includes practical tips about how to support someone who has ARBD.

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# 1 Alcohol-related brain damage (ARBD)

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If a person regularly drinks much more than the recommended limit of alcohol, it can damage their brain. It will cause their memory and thinking abilities to get worse over time, especially if they drink heavily for many years. This is known as alcohol-related brain damage (ARBD).

Some people with ARBD have mild problems with memory and thinking. They may still be able to do most essential daily tasks. However, they are at risk of more serious brain damage if they continue to drink alcohol.

## What are the symptoms of ARBD?

ARBD can cause severe problems with memory and thinking. This can make it hard for a person to look after themselves and, as a result, they become very unwell.

Severe ARBD can have symptoms that look like dementia. However, because dementia is a progressive condition, it will always get worse. In comparison, a person with ARBD can get better if they are supported to stop drinking. This will involve treatment and rehabilitation.

The following are common symptoms of ARBD.

### Thinking:

- being unable to stay focused on a task without becoming distracted
- having problems with reasoning, planning and organising
- making poor judgments or decisions, or showing unusually risky behaviour
- being unaware of how serious the condition is
- not understanding the consequences of continuing to drink alcohol.

### Memory:

- forgetting the details of a recent conversation or struggling to recall past events
- having problems with long-term memory
- mixing up memories to create a false impression of what really happened – often without realising.

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### Mood, behaviour and personality:

- apathy – when a person does not have the energy or motivation to take care of themselves
- depression – feeling sad, hopeless, angry or frustrated
- impulsive or risky behaviour
- a lack of social awareness – struggling to interact normally with other people.

### Movement and coordination (even when sober):

- being more likely to stumble or fall over
- walking with feet wide apart
- having slurred speech.

A person who has ARBD will usually be addicted to alcohol. This means that they have become physically and psychologically dependent on it. They will start to feel very ill if they suddenly stop drinking. Anyone who may have ARBD should not try to stop drinking by themselves without proper medical support.

## Who gets ARBD?

ARBD affects people who have been drinking too much alcohol for a long time. Many of them will not be aware of it.

It's estimated that around 1 in 3 people with alcohol dependence have some level of ARBD.

People who are diagnosed with ARBD are usually aged between about 40 and 60. This is much younger than most people who develop the most common types of dementia, such as Alzheimer's disease and vascular dementia. It is not clear why some people who drink too much alcohol develop ARBD while others do not.

ARBD affects more men than women. This is because men are more likely to drink heavily.

## Types of ARBD

Usually a person is diagnosed with a specific type of ARBD. This will be based on their symptoms, indicating they may have one of several conditions. These may include a traumatic brain injury or an alcohol-related stroke.

Wernicke-Korsakoff's syndrome is a very severe form of ARBD. It is caused by a lack of an essential vitamin, known as 'thiamine'. It happens when someone drinks so much alcohol that their gut can no longer absorb enough thiamine from their food. For more information, see 'Wernicke-Korsakoff syndrome' on pages 8–9.

## 2 What is alcohol-related 'dementia'?

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Heavy drinking definitely contributes to a person's long-term risk of dementia. The damage it causes to the brain leads to a higher risk of Alzheimer's disease and vascular dementia as a person gets older. But it is just one of several risk factors. Others include:

- age
- genes
- smoking
- traumatic brain injury.

### How much is too much alcohol?

A unit is a measure of alcohol. The NHS recommends not drinking more than 14 units of alcohol each week. You can usually see how many units are in an alcoholic drink by reading the label. You can also find out more about alcohol units at [nhs.uk/live-well/alcohol-advice](https://www.nhs.uk/live-well/alcohol-advice)

When someone drinks around 25 units or more per week on a regular basis, it may affect their ability to think clearly and function. Most people with a diagnosis of ARBD drink considerably more than this for several years or more.

Drinking a large amount of alcohol in a single session is known as 'binge drinking'. For men, this is the equivalent to drinking eight units or more. For women, it's six units or more.

Binge drinking is particularly harmful. The brain gets exposed to very high, toxic levels of alcohol. Spreading out the units over the course of a week exposes the brain to much lower levels.

The NHS-recommended drinking limits are the same for all adults, regardless of age. However, as people get older, their brains become more vulnerable to the damaging effects of alcohol. Excessive drinking in older age can also make other problems with memory and thinking much worse.

WithYou ([wearewithyou.org.uk](https://www.wearewithyou.org.uk)) is a drug and alcohol treatment charity. It provides a broad range of drug and alcohol support services across England and Scotland. This support is free and confidential.

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## How does alcohol damage the brain?

ARBD is caused by a person regularly drinking much more alcohol than the recommended limit. Alcohol damages the brain in several common ways.

- **Damage to brain cells:** Regularly drinking too much alcohol is toxic to cells in the brain. Over time, it destroys so many of these cells that the person's brain starts to shrink. This means there are fewer cells to do all the complex tasks that the brain needs to do to work properly.
- **Damage to blood vessels:** Alcohol may also damage the blood vessels that supply the brain. It causes them to stiffen, narrow, clot or bleed. This can lead to strokes, which can damage the brain and cause problems with memory and thinking. Strokes are also a common cause of death for people with ARBD.
- **Low levels of vitamins:** Drinking a lot of alcohol stops the body from getting enough vitamins – particularly thiamine (vitamin B1). Without thiamine, parts of the brain become starved of energy and are damaged – sometimes permanently.

People who drink heavily lose a lot of vitamins in their urine and often eat a poor diet. This means that over time they can become increasingly malnourished.

- **Developing other health conditions:** People who are dependent on alcohol are much more likely to develop epilepsy and severe liver disease.

There are other aspects of behaviour that can also contribute to damage to the brain.

- **Repeated withdrawals from drinking alcohol (without medical help):** People who drink very heavily for a long time and then stop suddenly may be more likely to have brain damage – particularly if they do this many times. This is because stopping suddenly can be dangerous when the brain is used to high levels of alcohol. It can cause severe withdrawal symptoms, such as seizures and delirium.

If someone is dependent on alcohol, they need medical help to keep their brain safe if they stop drinking suddenly.

- **Falls and incidents:** Drinking heavily can lead to head injuries from falls or violent incidents. This can damage the brain and cause problems with memory, thinking and behaviour.

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## Assessment and diagnosis

The assessment of ARBD varies. In general, it is easier to diagnose and treat ARBD if someone is admitted to hospital. But someone can also be assessed in the community by a GP or community mental health nurse.

A person can be diagnosed with ARBD if they have long-term problems with memory, thinking or reasoning that affect their daily life and which have been caused by drinking too much alcohol.

A doctor making a diagnosis of ARBD will look for three main signs:

### 1 Long-term problems with memory and thinking

This can be very difficult to assess. It can only be done accurately when a person has stopped drinking alcohol for several weeks. Until then, it's not clear if their problems with memory and thinking are being caused by being intoxicated, or by the effects of recent withdrawal.

However, a person with possible ARBD can still get medical attention and support even if they've not given up drinking by themselves. In fact, it's very important that they don't suddenly stop drinking without medical help, as this can make their symptoms worse.

A doctor can still assess a person's memory and thinking while they are still drinking. This is as long as they have not yet had an alcoholic drink on the day of testing. This assessment can help to provide a rough guide to whether they might have ARBD. This makes access to support easier. However, a diagnosis can't be confirmed until they have remained sober for several weeks.

### 2 A history of long-term dependency on alcohol

When someone gets ARBD, they have normally been drinking heavily for around three years or more. They are generally dependent on alcohol. This is when a person has a strong desire to drink and feels that they are not able to cope without it.

It can be difficult for doctors to know how much someone is drinking and how long they've been doing it for. They would normally rely on being told by the person, a family member or friend. Getting accurate information is sometimes very difficult. It's very common for people who are addicted to alcohol to think that they are drinking a lot less than they actually do.

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### 3 Other possible causes ruled out

There are lots of other reasons why a heavy drinker might have long-term problems with memory and thinking. A doctor needs to exclude these other causes first before they make a diagnosis of ARBD.

In general, if a person's symptoms get worse even after they've stopped drinking for several months, then it's unlikely that they have ARBD.

#### ARBD Network

People with ARBD need support for their brain injury and their alcohol addiction. A lot of support is needed to help them get back to living independently. The ARBD Network has been developed by clinical experts who know how to diagnose and treat the condition. They can also signpost to support and rehabilitation services, where these are available. For more information, visit [arbd.net](http://arbd.net)

## Getting a diagnosis of ARBD in the community

Clinical assessments in the community are normally done by a GP or community mental health nurse. This will involve:

- taking a detailed history of a person's symptoms and how these symptoms affect their life
- asking about problems with mood, such as anxiety or depression
- doing a physical examination.

The GP or nurse may also ask the person to do a paper-based test that checks for problems with memory and thinking. For more information on the sort of tests used for this, see booklet 78DD **Diagnosing dementia: A practical guide to assessment**.

It can be very helpful to have an account from a family member or friend. This can help fill in any gaps and provide another point of view.

It is likely that a person will need a brain scan to rule out other causes, such as stroke or head injury. There may be a wait of several weeks for this to happen unless it is an emergency.

## Getting a diagnosis in hospital

Most people get a diagnosis of ARBD in hospital. This is because they get very ill and need urgent care. Common reasons include:

- a condition called Wernicke's encephalopathy that needs urgent medical treatment (for more information, see page 8)
- needing to be supported to stop drinking safely to avoid the harm caused by a sudden withdrawal
- another health problem related to heavy drinking, such as a fall, head injury or liver disease.

A person being treated in hospital can be helped safely through their withdrawal and treated for other medical conditions. This process normally takes at least 1–2 weeks. Once they have come through this, they will be fully sober. This means they can get a more reliable diagnosis of ARBD, which will allow them to be referred for support and rehabilitation, if available.

A diagnosis of ARBD in hospital is most likely to be made by a liaison psychiatrist. This type of psychiatrist works with patients in general hospital wards, rather than in a mental health unit. The assessments are like those used in the community. They involve tests of memory and thinking, a detailed medical history, and a brain scan. However, the process is likely to be faster because everything that's needed is already nearby and available.

In hospital, the psychiatrist will have access to specialists, blood tests and brain scans. But it's still important for family or friends to provide information. This should include the person's level of drinking, how long they've been drinking for, and anything else that might help to make a more accurate diagnosis. The person themselves may not remember or understand these details.

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## 3 Wernicke–Korsakoff syndrome

Wernicke–Korsakoff syndrome is a serious condition that happens when the brain doesn't get enough thiamine. This is normally caused by drinking too much alcohol. It can make alcohol-related brain damage (ARBD) more severe and long-lasting because it causes permanent damage to the brain and nervous system.

Some of the symptoms may be similar to dementia. However, it is not a type of dementia.

Wernicke–Korsakoff syndrome has two separate stages:

### 1 Wernicke's encephalopathy

First, there is a brief time when a person has intense inflammation (swelling) of their brain. This is known as 'Wernicke's encephalopathy'. At this stage, most people experience symptoms that include being disorientated and confused.

### 2 Korsakoff's syndrome

If a person with Wernicke's encephalopathy isn't treated quickly, they may develop a more long-term condition called 'Korsakoff's syndrome'. This has many of the same symptoms of dementia, including memory loss and difficulties forming new memories.

Earlier signs of Wernicke's encephalopathy include a poor appetite, feeling sick, vomiting or recent weight loss. A person may feel faint or dizzy, get pins and needles in their hands and feet, have blurred vision or see two of everything (double vision).

If a person who drinks heavily gets any of the following symptoms, they should seek urgent medical attention from their GP or call NHS 111:

- being confused, disorientated, drowsy or less responsive
- seeing things that aren't there (hallucinations)
- having difficulty controlling eye movements
- having poor balance, being unsteady and walking with legs wide apart
- being undernourished – for example, being thin or having lost a lot of weight recently.

Some people with Wernicke's encephalopathy may only have one or two of these symptoms. This can make an emergency difficult to spot. If a person is still intoxicated or experiencing withdrawal symptoms, it can be even harder to recognise. However, most people will be disorientated and confused. This is called 'delirium' and is a medical emergency.

### Treating Wernicke–Korsakoff syndrome

Wernicke–Korsakoff syndrome should be treated in hospital. This is so a person can receive regular thiamine injections and medications to control withdrawal symptoms.

About a quarter of the people affected by Wernicke–Korsakoff's syndrome who get treatment make a good recovery. About half make at least some recovery but still need support to manage their lives. For some people, the damage is mostly permanent so they need long-term care in a specialist residential care home.

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# 4 Treatment and support

With the right treatment and support, ARBD can get better. Some people recover quickly within a few months, whereas others may take several years to get back to a level where they are fully independent. Some people with Korsakoff's syndrome may have permanent brain damage and never fully recover. If so, they will need specialist long-term residential care.

## Medical treatment

Alcohol addiction can be hard to break, but it is even harder when a person has ARBD. They may not want to give up alcohol. If they do, they may lack the memory and thinking skills to follow it through. As a result, it can be very challenging to treat unless a person goes into hospital.

In hospital, doctors can care for a person with ARBD while they safely 'detox'. This is likely to involve regular high-dose vitamin injections. Medicines can also prevent dangerous withdrawal symptoms and reduce cravings for alcohol.

Once the person is sober and no longer has withdrawal symptoms, the doctors can look for evidence of ARBD. They may carry out more tests, including a brain scan. If they make a diagnosis of ARBD, the hospital will normally try to find a local rehabilitation service.

This provides a safe and secure place for the person to be supported while they get better. They can then be discharged into the care of this service. Sometimes there may be an available place in a specialist residential care home.

In some cases, the person may be discharged back to their own home. This could be because of no available places in rehabilitation services, or they're not thought to need continued care. If so, they may be at high risk of relapsing and drinking again.

The following pages provide suggestions for support and tips on helping the person adjust to living without alcohol.

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## Support and rehabilitation

Once a person has been through withdrawal from alcohol, it's very important that they get continued support to not start drinking again. This could involve medications to reduce their craving for alcohol. They will also need to take high-dose vitamin tablets and eat a healthy, balanced diet.

Most local alcohol services are designed to help people reduce harmful drinking before they have ARBD. It can be hard to find services that provide more intensive support. Ideally, a person with ARBD needs specialist care and rehabilitation. This will help them regain the skills they need to live independently and recover from their addiction.

Rehabilitation services may be provided by:

- a local dementia service
- a community mental health team
- a clinical unit for people with a brain injury (for example, following an accident or stroke).

The availability of these local services can vary greatly across the country.

Staying alcohol-free can be especially difficult for the person if they are homeless or isolated from their family. They may have poor physical or mental health. Dealing with all these issues is important for helping the person to stay alcohol-free and recover as fully as possible.

## Long-term support for Korsakoff's syndrome

Some people with Korsakoff's syndrome do not fully recover. This may be because there has been too much damage to the brain. It may also be because the person continues to drink alcohol. In either case, they will need specialist long-term residential care if they are unable to live independently.

It can be difficult to find a care home that specialises in caring for people with Korsakoff's syndrome. There may not be one available locally. It might sometimes be necessary to place a person temporarily in a non-specialist care home. However, this can cause problems if the home is not set up to meet their specific needs. If they are younger, they may find it difficult living with older people. These homes also tend not to provide rehabilitation support.

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### Tips for supporting a person with alcohol-related brain damage

Supporting a person to stop drinking alcohol will give them the best chance of recovery. If they have been dependent on alcohol for a long time, they will need medical support.

Encourage and support the person to go to a self-help group for addiction. Carers, friends and family can also join one – see ‘Other useful organisations’ on pages 13–14.

In addition, the following suggestions may be useful to help the person readjust to living without alcohol.

- Look for ways to do things that will help the person keep and improve their skills. For example, if they are struggling with shopping, aim to do it with them, not for them.
- A regular routine can help to provide structure to daily activities.
- Encourage the person to eat a balanced diet. It’s important that they eat healthy meals every day to get enough vitamins to help their brain to function. A good start might be to help them with food shopping.
- If the person is struggling with tasks, start simple and work up. Break down activities, such as cooking a meal, into smaller steps to make them easier to follow.
- When talking, be patient and use short sentences. Summarise what you have said to help them remember. Give them time to respond, and encourage them when they are speaking. For more information, see factsheet 500 **Communicating with a person with dementia**.
- Put labels on cupboards and arrange rooms so that essential and everyday items are easy to find. For information on helping the person to live independently, see booklet 819 **Making your home dementia-friendly**.
- People with ARBD can have problems getting a good night’s sleep. Putting a healthy night-time routine into place may help.
- Ask professionals who are involved in the person’s care for more ideas on how you can best help them.

Supporting a person who has ARBD can be a very difficult thing to do. There may be many emotional and practical difficulties, especially if you are the person’s only support. For a further list of organisations that can provide support, see pages 13–14.

## Other useful organisations

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### **Adfam**

07442 137421

admin@adfam.org.uk

www.adfam.org.uk/home

Adfam is a national charity that works with families who are affected by someone's use of drugs and alcohol. It has an online message board and a database of local support groups.

### **Alcohol Change UK**

020 3907 8480

contact@alcoholchange.org.uk

www.alcoholchange.org.uk

Alcohol Change UK is a national charity. It works on alcohol issues in England and Wales, campaigning for effective alcohol policy and better services for people whose lives are affected by alcohol-related problems.

### **Alcoholics Anonymous Great Britain**

0800 917 7650 (helpline)

help@aamail.org

www.alcoholics-anonymous.org.uk

Alcoholics Anonymous provides support for people to recover from alcoholism. You can use the website to find a meeting in your area.

### **Al-Anon**

0800 008 6811 (helpline, 10am–10pm Monday–Sunday)

enquiries@al-anonuk.org.uk

www.al-anonuk.org.uk

Al-Anon provides support for family members and friends of people who are addicted to alcohol. At regular Al-Anon Family Groups people can share their experiences of living with alcoholism.

### **ARBD Network**

admin@arbd.net

www.arbd.net

The ARBD Network provides information and support about alcohol-related brain damage. It's been developed by some of the best clinical experts in the UK who know how best to diagnose and treat the condition. They can also signpost to support services, where these are available.

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### **Drinkline**

0300 123 1110 (9am–8pm Monday–Friday, 11am–4pm  
Saturday and Sunday)

Drinkline is the national alcohol helpline. Calls to the helpline are free and confidential.

### **National Association for Children of Alcoholics (Nacoa)**

0800 358 3456 (helpline)  
helpline@nacoa.org.uk  
www.nacoa.org.uk

Nacoa has a free and confidential telephone and email helpline for children of parents who are addicted to alcohol.

### **SMART Recovery**

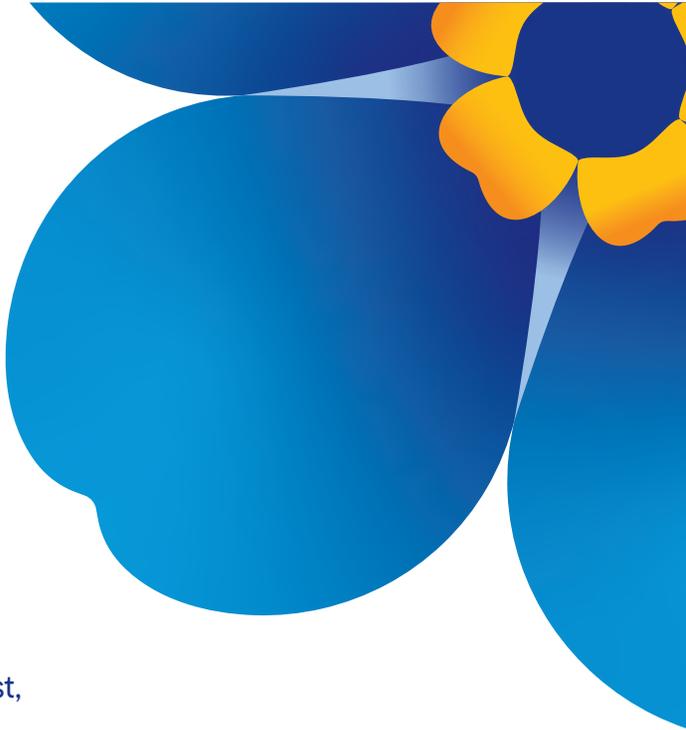
0330 053 6022  
www.smartrecovery.org.uk

At SMART Recovery meetings, people can get help to decide whether they have a problem, build up their motivation to change, and learn about proven tools and techniques to support their recovery.

### **WithYou**

www.wearewithyou.org.uk/find-support/talk-to-a-trained-recovery-worker (online chat service, 9am–9pm  
Monday–Friday; 10am–4pm Saturday–Sunday)  
www.wearewithyou.org.uk

WithYou offers free, confidential support to people in England and Scotland who have challenges with drugs, alcohol or mental health.



Factsheet 438

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Reviewed by: Dr Kaanthan Jawahar, Consultant Psychiatrist,  
Derbyshire Healthcare NHS Foundation Trust

This factsheet has been reviewed by people affected  
by dementia.

To give feedback on this factsheet, or for a list of sources,  
please email [publications@alzheimers.org.uk](mailto:publications@alzheimers.org.uk)

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At Alzheimer's Society we're working towards a world where dementia no longer devastates lives. We do this by giving help to everyone who needs it today, and hope for everyone in the future.

We have more information  
**About dementia.**

For advice and support on this, or any other aspect of dementia, call us on **0333 150 3456** or visit **alzheimers.org.uk**

Thanks to your donations, we're able to be a vital source of support and a powerful force for change for everyone living with dementia. Help us do even more, call **0330 333 0804** or visit **alzheimers.org.uk/donate**



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Alzheimer's Society  
43-44 Crutched Friars  
London EC3N 2AE

**0330 333 0804**  
**enquiries@alzheimers.org.uk**  
**alzheimers.org.uk**

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