Alcohol related brain impairment

Summary

- Alcohol has a toxic effect on the central nervous system and can cause significant brain impairment.
- ARBI is more likely in people who drink heavily over a long period of time, but excessive binge drinkers are also at risk.
- The symptoms depend on which part of the brain has been damaged, but can include problems with memory, thinking abilities and physical coordination.

Alcohol is one of the many causes of acquired brain injury. The problems caused by alcohol misuse are together called alcohol related brain impairment (ARBI). A person with ARBI might experience problems with memory, thinking-related abilities and physical coordination.

More than 2,500 Australians are treated for ARBI every year, with approximately 200,000 Australians currently undiagnosed. Around two million Australians are potentially at risk of developing ARBI due to their drinking habits.

Just how much damage is done depends on a number of factors, which can include your age, gender, nutrition and your overall alcohol consumption. A younger person has a better chance of improvement because of their greater powers of recovery. However, the effects of ARBI can be permanent for many people.

Alcohol and brain injury

Brain injury can be caused by alcohol because it:
- has a toxic effect on the central nervous system (CNS)
- results in changes to metabolism, heart functioning and blood supply
- interferes with the absorption of vitamin B1 (thiamine), which is an important brain nutrient
- may be associated with poor nutrition
- can lead to falls and accidents that injure the brain.

Alcohol consumption and ARBI

Alcohol is one of the most popular drugs in Australia. Around 40 per cent of Australian adults drink alcohol on a weekly basis and 10 per cent drink every day. Alcohol consumption ranges from light (social drinkers) to heavy consumption.

Alcohol related brain impairment is more likely to occur if a person drinks heavily on a regular basis over many years. A decline in thinking-related abilities is gradual and depends on how much alcohol is consumed and for how long. It is also possible to develop ARBI over a short period of time, if the drinking is excessive enough. This is known as 'binge drinking' or 'heavy episodic drinking' and is a short-term, high-risk way of drinking alcohol.

Men and women who consume more than four standard drinks on any single occasion are at risk. Mixing alcohol and other drugs – either illegal drugs or some prescription drugs – can cause serious health problems.

Guidelines to reduce health risks from alcohol

In 2009, the National Health and Medical Research Council (NHMRC) released guidelines to reduce the health
risks from alcohol consumption. To avoid these health risks, the guidelines recommend:

- for men and women – a maximum of two standard alcoholic drinks a day
- children and young people – for children and young people under the age of 18 not drinking alcohol is the safest option. Children under 15 are at greatest risk of harm from drinking and so not drinking alcohol is most important for this group. Delaying the age at which drinking begins is strongly recommended for young people between the age of 15 and 17.
- pregnant and breastfeeding women – the safest choice is not to drink alcohol while breastfeeding, pregnant or if you are planning a pregnancy.

Disorders linked with ARBI

ARBI is associated with changes in cognition (memory and thinking abilities), difficulties with balance and coordination, and a range of medical and neurological disorders. Some alcohol-related disorders include:

- Cerebellar atrophy – the cerebellum is the part of the brain responsible for muscle coordination. Damage results in difficulties with balance and walking, which is called ‘ataxia’.
- Frontal lobe dysfunction – the brain’s frontal lobes are involved in abstract thinking, planning, problem solving and emotion. Damage results in cognitive (thought) difficulties.
- Hepatic encephalopathy – many people with alcohol-related liver disease develop particular psychiatric symptoms, such as mood changes, confusion and hallucinations.
- Wernicke’s encephalopathy – this is a disorder caused by a severe deficiency of vitamin B1. Some of the symptoms include ataxia, confusion and problems with vision.
- Korsakoff’s amnesic syndrome – this includes a loss of short-term memory, an inability to acquire new information and ‘confabulation’ (the person fills in gaps in their memory with fabrications that they believe to be true).
- Peripheral neuropathy – the body’s extremities are affected by numbness, pain, and pins and needles.

Behaviours linked with ARBI

Those people close to someone with ARBI may face a range of behaviours that cause problems. There are a number of possible causes or reasons for these types of behaviour, including medical problems, memory and thinking problems, physical discomfort, the side effects of medication or fatigue from lack of sleep. Alternatively, behaviours of concern may be a reaction to stress, anxiety, or a change or upset to daily routine.

Some common behaviours include:

- aggressive and angry outbursts
- moodiness
- confusion
- withdrawal
- lack of motivation
- untidiness and poor hygiene habits
- sexually inappropriate behaviour
- poor control of emotions.

Dealing with behaviours of concern

Helpful strategies include:

- Be prepared to listen – people with ARBI need to feel listened to and understood.
- Reassure the person that you are there to help them.
- Speak in a calm, soothing tone.
- Give praise when the person regains their composure after an outburst.

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- Set clear and firm limits, and repeat them as often as possible.
- Reinforce and reward appropriate behaviour
- Ignore the behaviour if it is appropriate to do so and there is no risk of harm to the individual or others.

There are some responses you should try to avoid when dealing with behaviours of concern, including:
- Avoid arguing or reacting to any provocation.
- Avoid using a bossy tone or ordering the person around.
- Ignore negative, critical or aggressive comments.
- Do not take the behaviour personally.
- Avoid adopting defensive postures such as standing with your arms crossed.

**Treatment for ARBI**

A person with a suspected ARBI should have their health assessed by a doctor. They may benefit from referral for a more specialist assessment by a neuropsychologist or neurologist.

Treatment depends on the person and the type of brain damage sustained. Good nutrition is really important. Sometimes, doctors will prescribe multivitamins (especially thiamine) to reduce the risk of further severe brain injury. Alcohol and other drug (AOD) treatments may need to be modified for a person with an ARBI.

**Where to get help**

- Your doctor
- A neuropsychologist, neurologist or AOD treatment service
- **arbias** – specialist services for people with acquired brain injury including alcohol and substance related brain impairment Tel. (03) 8388 1222
- Family Drug Help – for information and support for people concerned about a relative or friend using drugs Tel. 1300 660 068

**Things to remember**

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- The symptoms depend on which part of the brain has been damaged, but can include problems with memory, thinking abilities and physical coordination.