

## Alcohol related brain impairment

Alcohol is one of the many causes of acquired brain injury. The injury inflicted by alcohol misuse is called alcohol related brain impairment (ARBI). A person with ARBI might experience problems with memory, cognitive (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. These include individual differences, as well as the person's age, gender, nutrition and their overall pattern of alcohol consumption. A younger person has a better chance of recovery because of their greater powers of recuperation. However, the effects of ARBI can be permanent for many sufferers.

### 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 cause dehydration, which may lead to wastage of brain cells
- Can lead to falls and accidents that injure the brain.

### Alcohol consumption and ARBI

Alcohol is one of the most popular drugs in Australia, with around half of the population over 14 years of age drinking at least once a week. Alcohol consumption ranges from light (social drinkers) to heavy consumption. Decline in cognitive functioning is gradual and depends upon the amount of alcohol consumed and for how long.

Alcohol related brain impairment is more likely to occur if a person drinks heavily on a regular basis over many years. 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. New Australian recommendations released in 2009 talk about drinking too much 'on a single occasion of drinking' rather than 'binge drinking' but the harm that can be done to the drinker and their community is essentially the same.

Any drinking above recommended levels carries a higher risk than not drinking. 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.

### Alcohol intake guidelines

Levels of alcohol consumption recommended to avoid health risks include:

- **For men and women** – a maximum of two standard alcoholic drinks a day with at least two alcohol-free days every week.

- **Children and young people** – the safest choice for young people under 18 years of age is not to drink at all. Young people under 15 years of age are at the greatest risk of harm from drinking and are advised not to drink alcohol. If older teenagers (over 15 years) **do** drink, it should be under adult supervision and within the adult guideline for low-risk drinking (two standard drinks in any one day).
- **Pregnant and breastfeeding women** – the safest choice is not to drink alcohol while pregnant or breastfeeding or if you are planning to become pregnant.

## Disorders associated 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 difficulties.
- **Hepatic encephalopathy** – many people with alcohol-related liver disease develop particular psychiatric symptoms, such as mood changes, confusion and hallucinations.
- **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.
- **Wernicke's encephalopathy** – a disorder caused by a severe deficiency of vitamin B1. Some of the symptoms include ataxia, confusion and problems with vision.

## Treatment

A person with suspected ARBI needs to be assessed by a neuropsychologist. Treatment depends on the individual and the type of brain damage sustained.

## Helping people with ARBI

People with impaired brain function can be helped if the demands placed on them are reduced. A predictable routine, which covers all daily activities, can also be a great help.

Carers might like to consider the following points when communicating with people with ARBI:

- Break down information and present one idea at a time.
- Tackle one problem at a time.
- Allow the person time to work at their own pace.
- Minimise distractions.
- Avoid stress.
- Allow for frequent breaks and rest periods.

## Where to get help

- Your doctor
- Neuropsychologist
- **arbias** – specialist services for people with alcohol and substance related brain impairment Tel. (03) 8388 1222
- Family Drug Help Tel. 1300 660 068 – for information and support for people concerned about a relative or friend using drugs

## Things to remember

- 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 coordination, thinking, planning, organisation, memory and perception.

**This page has been produced in consultation with, and approved by:**

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