

Alcohol-Related Liver Disease (ARLD)

Understanding how alcohol damages the liver and how to protect it

WHAT IS ALCOHOL-RELATED LIVER DISEASE?

Alcohol-related liver disease (ARLD) is a broad term describing the spectrum of liver damage caused by heavy and prolonged alcohol consumption. It ranges from fatty liver (mild and reversible) through to alcoholic hepatitis (potentially life-threatening inflammation) and cirrhosis (permanent, irreversible scarring). ARLD is one of the leading causes of liver-related illness and death in Australia.^[1,2]

The liver is the primary organ that metabolises alcohol. When alcohol is broken down, toxic by-products (particularly acetaldehyde) are produced. These damage liver cells, trigger inflammation, and, over time, promote the deposition of scar tissue (fibrosis).^[1]

HOW MUCH ALCOHOL IS SAFE?

The Australian National Health and Medical Research Council (NHMRC) 2020 alcohol guidelines state that:^[4]

- **To reduce the lifetime risk of harm from alcohol-related disease and injury, healthy adults should drink no more than 10 standard drinks per week and no more than 4 standard drinks on any one day.**

One Australian standard drink contains 10 grams of alcohol. Examples: a 375 ml can of mid-strength beer, a 100 ml glass of wine (12% alcohol), or a 30 ml nip of spirits.

THERE IS NO COMPLETELY "SAFE" LEVEL OF ALCOHOL CONSUMPTION

The risk of liver disease increases with the amount and duration of alcohol consumption. Women are more susceptible to alcohol-related liver injury than men at equivalent levels of drinking. Other factors that increase risk include co-existing hepatitis B or C infection, obesity, and genetic factors.

STAGES OF ALCOHOL-RELATED LIVER DISEASE

ARLD occurs on a spectrum:^[1,2]

- **Alcoholic fatty liver (hepatic steatosis):** the earliest and most common stage. Fat accumulates in liver cells after even a few days of heavy drinking. This stage is reversible with alcohol abstinence. Most people have no symptoms.
- **Alcoholic hepatitis:** acute inflammation of the liver triggered by heavy drinking, which can occur at any point in the disease spectrum. It ranges from mild to severe (acute-on-chronic liver failure). Severe alcoholic hepatitis carries a mortality rate of up to 50% at 1 month. Symptoms include jaundice, tender enlarged liver, fever, and ascites.
- **Alcoholic fibrosis:** chronic alcohol use causes progressive scarring. Unlike fatty liver, fibrosis does not fully reverse with abstinence, though abstinence significantly slows or halts progression.
- **Alcoholic cirrhosis:** end-stage alcohol-related liver disease. The liver is extensively scarred and cannot perform its normal functions. Cirrhosis from alcohol is associated with a high risk of liver cancer (hepatocellular carcinoma).

SYMPTOMS

Symptoms depend on the stage of liver disease:^[1]

Early disease (fatty liver and mild hepatitis):

- Often no symptoms
- Fatigue and generally feeling unwell
- Mild right upper abdominal discomfort

Alcoholic hepatitis:

- Jaundice (yellow skin and eyes), which can develop rapidly
- Right upper abdominal pain and tenderness
- Fever
- Nausea and vomiting
- Loss of appetite and weight loss

Cirrhosis:

- Fluid in the abdomen (ascites): causing abdominal swelling
- Confusion and memory problems (hepatic encephalopathy)
- Vomiting blood (from oesophageal varices)
- Easy bruising and bleeding
- Muscle wasting and weakness

DIAGNOSIS

Diagnosis involves a detailed alcohol history, physical examination, blood tests, and imaging:^[1,2]

- **Blood tests:** liver enzymes (ALT, AST, GGT); elevated GGT is particularly associated with alcohol use. Bilirubin, albumin, clotting (INR), and full blood count are also assessed. A raised mean corpuscular volume (MCV) and elevated GGT are classic markers of heavy alcohol use.
- **Abdominal ultrasound:** assesses liver size, echogenicity (brightness, reflecting fat content), surface texture (cirrhosis), and portal hypertension.
- **FibroScan (transient elastography):** measures liver stiffness to assess fibrosis. Note that recent heavy alcohol use can temporarily elevate FibroScan readings, so results should be interpreted in context.
- **CT scan or MRI:** used to assess for complications such as ascites, portal hypertension, or liver cancer.
- **Liver biopsy:** seldom required for diagnosis but may be used to assess disease severity or exclude co-existing liver conditions when the clinical picture is unclear.

TREATMENT

The most important treatment for all stages of ARLD is complete alcohol abstinence. This is the single most effective intervention and can reverse fatty liver completely, halt fibrosis progression, and significantly improve survival in cirrhosis.^[1,2]

Alcohol abstinence and withdrawal management

Alcohol dependence is common in people with ARLD. Alcohol withdrawal can be dangerous (including risk of seizures and delirium tremens) and should be medically supervised. Medications used to manage withdrawal include benzodiazepines (such as diazepam or chlordiazepoxide) and thiamine (vitamin B1) supplementation, which is essential to prevent Wernicke's encephalopathy.^[1]

Psychological support, counselling, and structured alcohol treatment programs are critical components of recovery. Contact your GP or one of the support organisations listed below.

Medications to support abstinence

- Naltrexone: reduces the pleasurable effects of alcohol and cravings
- Acamprosate: reduces alcohol cravings by restoring chemical balance in the brain
- Disulfiram (Antabuse): causes unpleasant physical reactions if alcohol is consumed; requires strong motivation and specialist supervision

Nutritional support

Malnutrition is almost universal in severe ARLD and worsens outcomes. High-calorie, high-protein nutrition support is recommended, including oral supplements. Thiamine, folate, and other B vitamins should be replaced. Zinc deficiency is common and should be corrected.^[1]

Treatment of severe alcoholic hepatitis

Severe alcoholic hepatitis (defined by a discriminant function score above 32 or a MELD score above 20) carries a high short-term mortality. Specialist management is required. Options include:^[1,5]

- Prednisolone (corticosteroid): improves short-term survival in carefully selected patients with severe alcoholic hepatitis
- Nutritional support as above
- Management of complications (ascites, encephalopathy, infection)

COMPLICATIONS

See the Cirrhosis fact sheet for detailed information on managing the complications of advanced liver disease, including ascites, varices, and hepatic encephalopathy.

CANCER RISK

People with alcohol-related cirrhosis have a significantly elevated risk of hepatocellular carcinoma (liver cancer), even after achieving abstinence. Six-monthly liver ultrasound and AFP blood test are recommended for all patients with cirrhosis.^[1]

RESOURCES AND SUPPORT

- **Australian Liver Association:** www.australianliver.com.au - Find a hepatologist for alcohol-related liver disease management
- **SMART Recovery Australia:** 1300 762 781 | www.smartrecoveryaustralia.com.au - Science-based alcohol and drug support program with online and in-person meetings
- **Alcoholics Anonymous Australia:** 1300 222 222 | www.aa.org.au - Peer support and 12-step program for alcohol recovery
- **DrinkWise Australia:** www.drinkwise.org.au - Resources on responsible alcohol consumption and reducing alcohol-related harm
- **FARE (Foundation for Alcohol Research and Education):** (02) 6122 8600 | www.fareaustralia.com.au - Alcohol health education and advocacy resources
- **Hepatitis Australia:** 1800 437 222 | www.hepatitisaustralia.com - Information if hepatitis B or C co-exists with alcohol-related liver disease
- **Beyond Blue:** 1300 22 4636 | www.beyondblue.org.au - Mental health support for depression and anxiety, which commonly coexist with alcohol use disorder

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