



# Liver disease

## What is liver disease?

The liver is the largest internal organ of the human body. It performs many important functions, such as the production of bile to break down fats, and acting as the body's 'detoxifier' to break down many toxins and chemicals that are ingested. It stores important vitamins, produces cholesterol and other essential fats and processes alcohol (Gastroenterological Society of Australia 2015).

Liver disease encompasses a wide range of diseases that vary in severity, from mild injury to severe liver fibrosis and scarring (cirrhosis). There are a number of pathways to liver injury, many of which lead to cirrhosis, which is late-stage liver disease. Cirrhosis most typically develops as a consequence of chronic liver inflammation (hepatitis). Causes of hepatitis include infections (viral hepatitis B or C), alcohol and fatty liver disease (steatohepatitis).

Cirrhosis of the liver is the greatest risk factor for primary liver cancer (hepatocellular carcinoma), which is the most rapidly rising cause of cancer death in Australia (Strasser 2013).

**Premature mortality** refers to deaths that occur at a younger age than a selected cut-off. For this analysis, deaths among people under the age of 75 are considered premature.

## Who dies prematurely from liver disease?

In 2012, there were 1,204 premature deaths due to liver disease in Australia. More than two-thirds (69%) of these deaths were among males (Figure 1). These deaths do not include those from liver cancer, which accounted for a further 889 premature deaths in 2012. Liver disease is a risk factor in the development of liver cancer.

Most deaths were among people aged 50 and over. For males, premature deaths were most common among those aged 55–59 (153 deaths). For females, premature deaths were most common among those aged 65–69 (68 deaths).

Aboriginal and Torres Strait Islander people are also at greater risk of liver disease, particularly hepatitis B. Indigenous male and female mortality rates were around 3 and 5 times the rates for non-Indigenous males and females, respectively, in 2008–2012 (AIHW 2014).

## Quick facts

Liver disease was the **11th** leading cause of premature death in Australia in 2010–2012.

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More than **2 in 3** premature deaths due to liver disease in 2012 were among males (69%).



The premature death rate due to liver disease decreased by **48%** over the 3 decades from 1982 to 2012.

48%

### Age group (years)

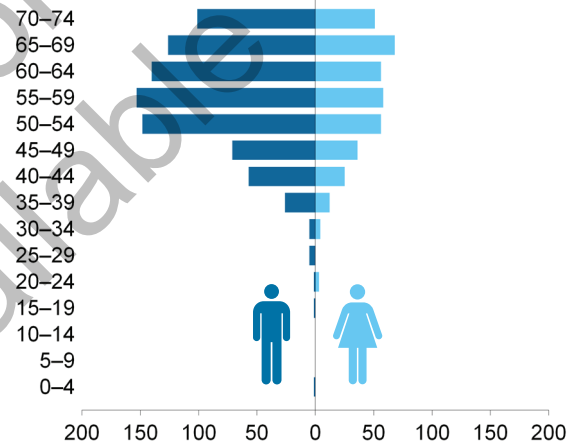


Figure 1: Premature deaths due to liver disease, by sex and age group, 2012

## What population-level approaches target premature deaths due to liver disease?

Many common forms of liver disease can often be prevented. Understanding the causes and risk factors and making healthy lifestyle choices are important (Canadian Liver Foundation 2015).

Preventing liver disease is important because there are very few symptoms in the early stages of liver disease. Often symptoms only develop in advanced cirrhosis (called 'decompensated' cirrhosis), when there are limited treatment options and quality and length of life may be reduced (Byass 2014).

**Preventing progression** to liver cirrhosis relies on targeting the cause—such as treatment of the hepatitis B and C viruses; stopping alcohol consumption; and reducing the metabolic



risks for fatty liver disease by addressing obesity and by controlling diabetes, hypertension and cholesterol problems.

The significant contribution of alcohol consumption to liver disease was first acknowledged more than 200 years ago (Smart & Mann 1992). At a population health level, it is reasonable to expect mortality from alcohol-related liver disease to decline with **strategies to reduce per capita alcohol consumption** (Duggan & Duggan 2011).

The *Australian Guidelines to Reduce Health Risks from Drinking Alcohol* inform the community about reducing alcohol-related harm (NHMRC 2009). A National Alcohol Strategy for 2016–2021 (in development) will aim to minimise the harmful effects of alcohol consumption on Australian society (Department of Health 2015a).

Government initiatives also target alcohol consumption through more indirect measures, such as encouraging responsible advertising of alcohol and responsible sponsorship of sporting and cultural events. This is achieved through a combination of legislation and industry self-regulation.

**Hepatitis C virus (HCV) is targeted** in the *Fourth National Hepatitis C Strategy 2014–2017*, as one of the most common notifiable infectious diseases in Australia (Department of Health 2015b). At least half of all people infected with HCV will develop liver disease (O'Brien et al. 2007). HCV is transmitted by blood, most commonly by injecting drug use (for example, by contaminated needles).

Prisoners are one of several priority populations in the HCV strategy. Unsafe injecting and tattooing practices have led to high rates of infection and transmission among prisoners, with 22% of prison entrants testing positive to the hepatitis C antibody in 2012 (AIHW 2013).

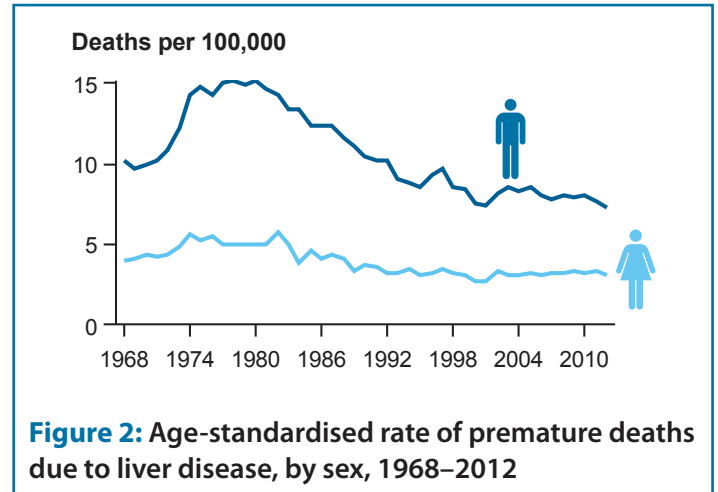
Prevention of liver disease may also target a cause, such as intentional or unintentional consumption or inhalation of certain chemicals/drugs/toxins (for example, paracetamol overdose). However, rarer causes of liver disease, which include auto-immune hepatitis or inherited conditions such as haemochromatosis and Wilson Disease, are not amenable to primary prevention.

## How have premature death rates due to liver disease changed over time?

Overall, the age-standardised rate of premature deaths due to liver disease peaked in 1980 (at 10 deaths per 100,000 population) and nearly halved to 5.1 per 100,000 in 2012.

Most of the decreasing trend was due to improvements in male death rates during the 1980s and 1990s (Figure 2).

In the last decade, the age-standardised rate decreased slightly for males (from 8.6 deaths per 100,000 population in 2003 to 7.2 per 100,000 in 2012) and remained steady for females (at about 3.1 deaths per 100,000).



**Figure 2: Age-standardised rate of premature deaths due to liver disease, by sex, 1968–2012**

## What has influenced trends in premature deaths due to liver disease?

It is possible that advances in disease management have contributed to the trend of declining premature mortality due to liver disease. The decrease in the premature mortality rate from 1983 to 2005 corresponded with an increase in hospitalisation for alcoholic liver failure. While this would increase the incidence rate for liver disease, it may also indicate that more people with liver disease were undergoing treatment. It has been suggested that increased hospitalisations may reflect an increase in screening of alcohol-related harms in primary care settings and in referral for treatment (Liang et al. 2011).

## Where can I find out more?

**Premature mortality in Australia (including references):**  
<<http://www.aihw.gov.au/deaths/premature-mortality/>>.

**AIHW GRIM books:**  
<<http://www.aihw.gov.au/deaths/grim-books/>>.

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