Non-alcoholic fatty liver disease (NAFLD) is a condition in which fat builds up in the liver. In some cases, this accumulation of fat can cause inflammation of the liver and eventually lead to permanent scarring (cirrhosis), which can seriously impair the liver’s ability to function.¹

Unlike alcoholic fatty liver disease (alcoholic steatohepatitis), NAFLD occurs in people who drink no alcohol or drink only in moderation.¹ NAFLD is, however, closely associated with obesity and diabetes.¹,² The consequences of the condition can be grave and NAFLD represents a major public health problem.²

**Diagnosing NAFLD**

A healthy liver contains very little or no fat. NAFLD occurs in people who do not drink a significant amount of alcohol (20 grams per day for men and 10 grams per day for women) and who do not have a viral infection or other specific cause of liver disease.² NAFLD is diagnosed when accumulation of fat in the organ exceeds 5% of hepatocytes (the cells that make up the majority of the liver).²

NAFLD is sometimes called a silent disease as even in its late stages it may cause no symptoms and may only be diagnosed after liver function tests have revealed an abnormality.

**The stages of NAFLD: From simple fatty liver to irreversible cirrhosis**

NAFLD can progress from steatosis, to non-alcoholic steatohepatitis (NASH) and then to cirrhosis, hepatocellular carcinoma (HCC) and end-stage liver disease (ESLD).² In its early stages, NAFLD can be treated through diet and lifestyle changes, such as losing weight.⁴

NAFLD-related HCC accounted for 35% of all HCC recorded cases in 2010.³

**Risk factors**

The major risk factors for NAFLD are central obesity, obesity, arterial hypertension and insulin resistance.⁵ Two large European studies reported NAFLD prevalence rates of approximately 43 to 70% in adults with type 2 diabetes.²

Obesity and diabetes are on the rise around the world.⁶ The World Health Organization estimates that in 2014 more than 1.9 billion adults (18 years and older) were overweight and, of these, over 600 million were obese.⁷ Furthermore, in 2014, 41 million children under the age of five were overweight or obese.⁷ Obesity has more than doubled since 1980 and is expected to continue to rise.⁷ Meanwhile, the total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030.⁶ This has led to a concern that countries such as the USA could be facing an epidemic of NAFLD.

Obesity triggers inflammatory pathways in the brain and adipose tissue, resulting in the disruption of insulin levels.⁸ Over time, fats accumulate in the liver (as well as muscles and blood vessels), which exacerbate systemic insulin resistance.⁸

Guidelines on NAFLD published in 2016 by European Association for the Study of the Liver (EASL), European Association for the Study of Diabetes (EASD) and European Association for the Study of Obesity (EASO), state that NAFLD is the most common liver disorder in Western countries.⁴

- The prevalence of NAFLD in Western countries is estimated to be between 17 and 46% of the general population.¹
- In Europe, prevalence of NASH is estimated to be up to 5%.⁹
The prevalence of NAFLD in the general population in the United States is as high as 46%.

The heavy toll of NAFLD

NAFLD increases the risk of overall mortality and of mortality related to cardiovascular disease and liver disease. Effective treatment options in NAFLD include; weight reduction, dietary changes and physical activity.

NAFLD may also place significant strain on healthcare services. A study carried out in Germany found that annual overall self-reported healthcare costs were significantly higher for individuals with evidence of NAFLD. For example, when controlling comorbid conditions, patients with NAFLD and liver damage (indicated by high levels of aminotransferase) had 26% higher overall healthcare costs at five year follow-up.

References