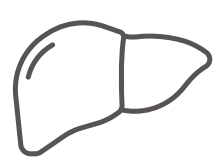


Nonalcoholic Steatohepatitis (NASH)

What is nonalcoholic steatohepatitis (NASH)?



NASH is a liver disease characterized by fat deposits, inflammation and tissue damage.¹

Who is affected by NASH and how prevalent is it?

NASH resembles alcoholic liver disease, but occurs in people who drink little to no alcohol and even in children.¹

The prevalence of NASH is increasing rapidly in parallel with that of Type 2 diabetes and obesity.^{2,3}

Risk Factors for NASH^{2,3}



Obesity



Insulin resistance



Hypertension (high blood pressure)



Type 2 diabetes



Abnormal levels of lipids and fat in the blood



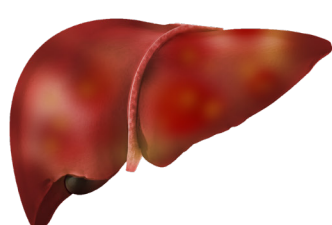
Age

How does NASH progress?

- Disease progression of NASH can take years and some patients may not progress at all.¹
- NASH progression leads to the accumulation of scarring, or fibrosis, in the liver.^{4,5} As fibrosis worsens, cirrhosis develops and the liver becomes permanently damaged and is no longer able to work properly.⁶
- Beyond fibrosis and cirrhosis, NASH may progress to hepatocellular carcinoma and liver failure.³



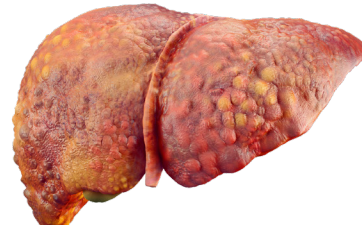
healthy liver



fat accumulation



NASH



cirrhosis

How many NASH patients experience disease progression?

10 to 15 percent of patients with NASH progress to cirrhosis in a 7 year period and **3 percent** may progress to liver failure, and these numbers are expected to grow.⁷

Up to 16 percent of liver transplants in the U.S. are due to NASH.⁴

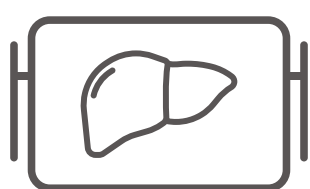
NASH is expected to soon become the **leading indication for liver transplant**.⁸

Symptoms

- NASH generally has few or no symptoms.¹
- Patients generally feel well in the early stages and only begin to have symptoms— such as fatigue, weight loss and weakness—once the disease is more advanced or cirrhosis develops.¹
- A person with cirrhosis experiences fluid retention, muscle wasting, bleeding from the intestines and liver failure.¹

Diagnosis & Treatment

- NASH is usually first suspected after elevations of liver enzymes in routine blood tests are found. A liver biopsy is needed to distinguish NASH from simple fatty liver.¹
- Liver biopsies are an invasive procedure where a needle is inserted through the skin to remove a small piece of the liver.¹



- There are not currently any approved treatment options for NASH.¹
- Lifestyle changes are encouraged for patients with NASH, including:¹
 - Reduce body weight (if obese or overweight)
 - Follow a balanced diet
 - Increase physical activity
 - Avoid alcohol
- Weight loss can improve liver tests in patients with NASH and may reverse the disease to some extent.¹

Clinical trials are currently underway to investigate new treatment options for NASH. Find out more about Bristol Myers Squibb's commitment to fibrosis research at www.bms.com



1. National Institute of Diabetes, Digestive and Kidney Diseases (Updated: May 2014) <https://www.niddk.nih.gov/health-information/health-topics/liver-disease/nonalcoholic-steatohepatitis/Pages/facts.aspx>

2. World Gastroenterology Organization NAFLD/NASH Guidelines 2012

3. Adams LA et al. Expert Rev Gastroenterol Hepatol 2010;4(5):623-635

4. American Liver Foundation (Page updated: January 14th 2015) <http://www.liverfoundation.org/abouttheliver/info/naflid/>

5. Chalasani N et al. Hepatology 2012;55:2005-23

6. World Gastroenterology Organisation NAFLD/NASH Guidelines 2012

7. Lyn Patrick, ND. Nonalcoholic Fatty Liver Disease: Relationship to Insulin Sensitivity and Oxidative Stress. Treatment Approaches Using Vitamin E, Magnesium, and Betaine. Alternative Medicine Review; 2002; 7(4): 276-277.

8. Wong R et al. Gastroenterology 2015;148:547-555.