



NAFLD/NASH AND DIABETES: WHAT SHOULD PATIENTS KNOW?

It is common for patients to have both NAFLD/NASH and diabetes and, unfortunately, patients with both conditions have a higher risk of liver-related and non-liver related illness and premature death than those without liver disease.¹ Read more below about how you can prevent, manage, and treat NAFLD/NASH and diabetes.



An estimated 2-3 out of every 10 people in the world currently have NAFLD



An estimated 1 out of every 10 people in the world have diabetes



7 out of 10 people living with type 2 diabetes in the United States have NAFLD

What is NAFLD/NASH?

Nonalcoholic fatty liver disease (NAFLD)

Nonalcoholic fatty liver disease (NAFLD) is a condition in which too much fat builds up in the liver. If left untreated, NAFLD can lead to serious liver problems.

Nonalcoholic Steatohepatitis (NASH)

Nonalcoholic steatohepatitis (NASH) is caused when that extra fat turns into inflammation (swelling in the liver) and fibrosis (scarring) of the liver. If severe enough, NASH can lead to cirrhosis or liver cancer, potentially requiring a liver transplant, which presents a difficult situation. Livers for transplants usually come from deceased donors, or people who have recently passed away,² and the waiting period for these livers can be long, ranging from less than 30 days to five years in the United States alone.³

What is Diabetes?

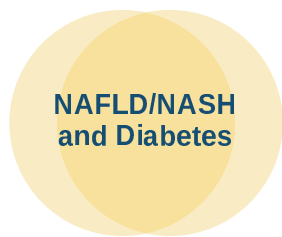
The pancreas secretes insulin which helps glucose from food get into your cells for energy. Without insulin, the glucose stays in the blood and does not reach inside the cells.⁴

Diabetes, a chronic disease, occurs when a person's blood glucose (blood sugar) is elevated. In type 1 diabetes (T1D), the most common form appearing in children and adolescents,^{5,6,7} a person's pancreas produces little to no insulin by itself. Evidence suggests that T1D is an autoimmune disease.⁸ In type 2 diabetes (T2D), the most common form usually occurring in adults, a person's body becomes less responsive (resistant) to insulin and the body cannot compensate and produce enough insulin to normalize glucose levels.⁹

How Common Are NASH and Diabetes?

Both NASH and diabetes are increasing in global prevalence. It is estimated that 25–30% of people worldwide currently have NAFLD and 2–6% have NASH,^{10,11} and the prevalence of NASH could increase by over 50% by 2030.¹² For diabetes, researchers estimate that 9.3% of the global population, or 463 million people, had diabetes in 2019 and project that number to increase 25% by 2030 and 51% by 2045.¹³

It is common for patients to have both NASH and diabetes. For individuals with T2D, the prevalence of NAFLD affects 70% of adults in the U.S. with an estimated 30% having NASH and about 20% having liver fibrosis.^{14,15,16,17} In a large study in India, 56.5% of patients overall with T2D between the ages of 25 and 84 had NAFLD; in the northern Indian states alone, NAFLD was prevalent in 72.4%.^{18,19} Notably, researchers in Romania examined patients with T2D who were mostly Caucasian and older and found that having a higher body mass index (obesity) increases the risk of developing severe steatosis and fibrosis.²⁰



What If I Have Both NAFLD/NASH and Diabetes?

Early detection, management, and treatment are key for patients who have both NAFLD/NASH and diabetes. Patients with both conditions have a higher risk of liver-related and non-liver related illness and premature death than those without liver disease.²⁷ Fortunately, doctors can use a number of non-invasive diagnostics, including blood tests, to help assess and monitor fibrosis for NAFLD/NASH and can also use blood tests to diagnose diabetes.

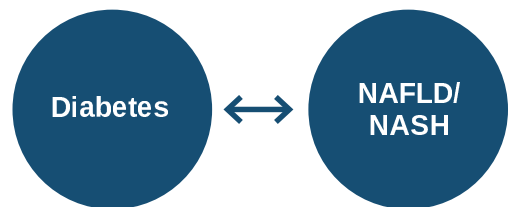


Doctors can use non-invasive diagnostics such as blood tests to help assess and monitor your conditions.

How Are NAFLD/NASH and Diabetes Connected?

NAFLD/NASH and T2D are both closely linked with obesity, which is one of the risk factors for metabolic syndrome. Metabolic syndrome is a group of interconnected factors that increase the risk of T2D, heart diseases, and other diseases,²¹ and NAFLD/NASH have a close relationship with metabolic syndrome that researchers are examining.

Researchers are also continuing to study the link between NAFLD/NASH and diabetes and the ways in which each condition can contribute or lead to the other. Through in-depth studies, researchers have learned that:



NASH is associated with an increased risk of developing T2D.

NAFLD is associated with a two- to three-fold increased risk of developing T2D; this risk may be higher in patients with more severe liver disease.²²

Patients with diabetes are at high risk of disease progression from NAFLD to NASH.²³


T2D and diabetes risk are closely associated with the severity of NAFLD, progression to NASH, advanced fibrosis, and the development of hepatocellular carcinoma (HCC),^{24,25} independently of liver enzymes.²⁶

What Are the Treatment Options for NAFLD/NASH and Diabetes?

Currently, only India has a medication approved specifically for NASH, leading many providers to concentrate on prevention and lifestyle modification to reverse the disease. This behavioral treatment focuses on diet, exercise, and behavioral therapy.²⁸

For the treatment of diabetes, providers focus on diet, lifestyle, medication, and insulin. Certain medications used to treat T2D could potentially be useful for managing NAFLD or NASH, such as pioglitazone and glucagon-like peptide-1 receptor agonists (GLP-1RAs).^{29 30} Another class of agents called sodium-glucose co-transporter-2 (SGLT2) inhibitors are promising, but there is currently less evidence.³¹ More work is needed, however, to fully understand the clinical potential of these treatments.

Speak to your doctor about the options that may be best for your personal treatment.



Lifestyle modification focuses on diet, exercise, and behavioral therapy.

Talk to your doctor about your risk for NASH or diabetes and your options for screening and treatment.

Diabetes

What Questions Should Patients with Diabetes Ask Their Doctors About NAFLD/NASH?

If you have diabetes, consider asking your doctor the following questions about NAFLD/NASH:

- What are the risk factors for NAFLD/NASH?
- Should I be tested for NAFLD/NASH?
- What are my options for non-invasive diagnostic tests?
- What is your approach to managing NAFLD/NASH and diabetes together?
- What resources are available to me to manage or prevent NAFLD/NASH?
- Are there other doctors with whom I should connect? If so, who will be my main point of contact?

NAFLD/ NASH

What Questions Should Patients with NAFLD/NASH Ask Their Doctors About Diabetes?

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- What are my options for diagnostic tests?
- What is your approach to managing NAFLD/NASH and diabetes together?
- What treatments and resources are available to me to manage or prevent diabetes?
- Are there other doctors with whom I should connect? If so, who will be my main point of contact?



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