

NIH News in Health

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Fighting Fatty Liver Steps Against a Silent Disease

You may not give your liver much thought. But it performs essential functions every day. Like other parts of the body, fat can build up in your liver. That may damage the liver and lead to serious health problems.

It's normal to have some fat in your liver cells. But too much can interfere with your liver's normal functioning. The liver acts as a filter to remove toxins from your blood. It helps digest your food. And it also helps keep your blood sugar constant, among other activities.

Fatty liver disease has become increasingly common. But it often has no symptoms. If you have symptoms, they may include fatigue and discomfort in the upper right side of your abdomen.

"There are an awful lot of people walking around with liver disease, and most of them don't know it," says Dr. Matt Cave, a liver specialist at the University of Louisville. "It's important to be aware of the disease so people can get screened by their doctors."

Fat Build Up • Certain health conditions, your genes, your diet, and your digestive system can make you more likely to develop fatty liver disease.



When this happens, it is called non-alcoholic fatty liver disease.

"About one-third of U.S. adults have nonalcoholic fatty liver disease," says Dr. Rohit Loomba, a liver disease expert at UC San Diego Health.

People with obesity or type 2 diabetes are at greater risk of nonalcoholic fatty liver disease. It affects about 75% of people who carry excess weight and 90% of people with severe obesity.

Heavy alcohol consumption can also cause fatty liver disease. This is called alcohol-associated fatty liver disease.

"Alcohol is **metabolized** in the liver. And if you drink high amounts, it basically acts as a toxin," explains Dr. Laura Nagy, who studies alcohol's effects on the liver at the Cleveland Clinic.

It's long been known that obesity and alcohol contribute to fatty liver disease. But more recently, scientists have learned that some toxins

around us may also play a role.

"The new kid on the block, so to speak, is the role of chemical pollution in fatty liver disease," Cave says. His research was among the first to link chemicals to the disease.

His team discovered a high rate of the disease among workers at a chemical manufacturing plant. All worked heavily with a chemical called vinyl chloride. This chemical is mainly used for making the PVC in plastic products.

Since then, many more chemicals have been linked to fatty liver disease. Some are found in common household products and stick around in the environment. Chemical exposures may work together with other risk factors to worsen the disease.

"We're finding that these things probably serve as double whammies," Cave explains. "Say you eat a bad diet and have a chemical exposure. The chemical may make the effects of the diet worse."

Finding Fatty Liver • Most people who have fatty liver disease don't

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Definitions

Metabolize

To change a food or drug in the body into another form through chemical reactions.

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end up with liver damage. But some develop **inflammation** and damage in their liver cells. This stage of fatty liver disease is known as nonalcoholic steatohepatitis, or NASH.

If NASH gets worse, it can cause permanent scarring and liver hardening. Liver disease at this stage is called cirrhosis. It can lead to liver failure or liver cancer.

Researchers are still trying to understand why liver disease worsens in some people but not others. But you can take steps to reverse this damage. The liver has the ability to repair itself. That's why it's important to find fatty liver disease in an early stage.

Often, a doctor will discover fatty liver disease when running blood tests for other reasons. If you have symptoms or are at higher risk, your health care provider may want to

Definitions

Inflammation

Heat, swelling, and redness caused by the body's protective response to injury or infection.

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run blood or imaging tests. These tests can help look for a fatty liver and determine how severe it is.

The only test to determine whether the disease has progressed to NASH is a liver biopsy. During a biopsy, your doctor will take a small piece of tissue from your liver. The sample is then examined for signs of inflammation or scarring.

"A biopsy can be painful, and it can lead to bleeding, perforation, or infection," Loomba says. And many of the people who undergo biopsy don't end up having NASH. So Loomba's research team is focused on noninvasive tests for fatty liver disease. They're also looking at new ways to test for advanced liver disease.

His team has developed advanced imaging techniques that reduce the need for biopsies. They're able to painlessly measure how much fat and scarring is present in the liver.

Undoing Early Damage • The most effective fatty liver treatment involves a change in lifestyle. Weight loss is helpful.

"But the weight loss has to be pretty significant," says Loomba. You have to lose about 7% of your body weight to resolve NASH. You'll need to lose at least 10% to reduce fibrosis, or scarring.

Losing weight can also help reduce your risk of heart attack and stroke. Heart disease is the leading cause of death in people with nonalcoholic fatty liver disease.

Better nutrition can help, too. Try to avoid weight gain and increase your exercise. And limit your alcohol use. Alcohol can have harmful effects on liver disease.

You might also consider washing your fruits and vegetables before eating. This can lower your exposure to pesticides.

Right now, there are no FDA-approved treatments for fatty liver



Wise Choices Protect Against Fatty Liver Disease

- Try to maintain a healthy weight and eat sensible portions.
- Try to lose weight gradually if you're overweight.
- Limit how much fat you eat. Replace saturated fats with healthier unsaturated fats, like those in fish, flaxseeds, and walnuts.
- Eat more fruits, vegetables, and whole grains.
- Avoid foods and drinks with large amounts of sugars, especially fructose. These include sweetened soft drinks, sports drinks, sweetened tea, and juices.
- Avoid heavy alcohol use. Drinking too much alcohol can have harmful effects on the liver.
- Quit smoking. Smoking may increase the chances of developing nonalcohol fatty liver disease. Get free help to quit smoking at smokefree.gov, 1-800-QUIT-NOW (1-800-784-8669), or by texting QUIT to 47848.

disease. Studies have shown that vitamin E and diabetes medications that also cause weight loss may help patients with NASH. Several promising drugs are being tested in clinical trials.

To prevent fatty liver disease, aim for a healthy weight and drink alcohol in moderation. Understanding what counts as one drink can help you keep track, says Nagy. To learn about the different sizes of drinks, visit www.rethinkingdrinking.niaaa.nih.gov. For more tips to protect your liver, see the Wise Choices box. ■



Web Links

For more about fatty liver disease, see "Links" in the online article: newsinhealth.nih.gov/2021/10/fighting-fatty-liver

Taking the Pedal Off the Metal

When Should Older Adults Stop Driving?

You may have gotten your driver's license the day you turned 16. By the time you retire, you could have driven daily for more than half a century. But for some people, there comes a time in the aging process when driving becomes dangerous.

"On the whole, older drivers are safe," says Dr. Marian Betz, an expert in healthy aging at the University of Colorado, Anschutz Medical Campus. "They tend to drive slower than younger drivers and have a lot of experience."

But some health conditions common with aging may make it riskier to get behind the wheel. Stiffer joints and weaker muscles can make it harder to steer or brake safely. Eye diseases and some medications can cause vision

problems. Hearing loss can blunt the sounds of horns or sirens. And **cognitive** changes, even mild ones, may impair quick decisions behind the wheel.

Deciding to stop driving can be emotionally challenging for older adults, says Betz. "Many people see their car as a marker of independence. Giving up the privilege of driving can feel like a real loss."

People often depend on cars to get them to and from the activities they enjoy. Or to see the people they care about. So stopping driving can lead to isolation. That's why it's important to have a plan for alternative transportation.

"We don't want older adults isolated and shut in," Betz says. "We want people to be emotionally and socially connected, as well as be able to get out and exercise."

Feeling disconnected can lead to poorer health. Studies have shown that loneliness and social isolation are linked to higher risks for some health problems. These include heart disease, depression, and cognitive decline.

There are many alternatives to driving. Some areas provide free or low-cost bus or taxi services for older adults. Some communities offer a carpool service, or scheduled trips to stores or the doctor. Rideshare service may also be an option. Your local Area Agency on Aging can help you find services. Call 1-800-677-1116 or go to eldercare.acl.gov to learn more.

Betz and her colleagues are currently testing an online tool to help older adults and their families make decisions about driving.

"We're not telling people 'you need to stop,'" explains Betz. But



they hope to make people feel comfortable and empowered when they do decide to stop driving. "That makes such a decision more likely to stick," Betz says.

Options for getting things done without leaving the house have also boomed recently. Grocery delivery, telehealth visits, and online social hours can reduce the need to drive every day.

Online options can't—and shouldn't—replace everything, says Betz. "But some of these things are good solutions for people to reduce their need to drive."

If you're wondering whether it may be time for you or someone else to stop driving, see the Wise Choices box for questions to ask. ■



Wise Choices

Is It Time to Stop Driving?

If you answer "yes" to any of the below questions, it may be time to consider stopping driving:

- Do other drivers often honk at you?
- Have you had some accidents, even if they were only "fender benders?"
- Do you get lost, even on roads you know?
- Do cars or people walking seem to appear out of nowhere?
- Do you get distracted while driving?
- Has anyone told you they're worried about your driving?
- Do you have trouble staying in your lane?
- Do you have trouble moving your foot between the gas and the brake pedals, or sometimes confuse the two?



Definitions

Cognitive

Related to the ability to think, learn, and remember.



Web Links

For more about older adults and driving and an online-only Q&A, see "Links" in the online article: newsinhealth.nih.gov/2021/10/taking-pedal-metal





Health Capsules

For links to more information, please visit our website and see these stories online.

COVID-19 Vaccines Prevented Nearly 140,000 U.S. Deaths

COVID-19 vaccines are a key tool in fighting the pandemic. They slow the spread of the virus. They've also been shown to reduce COVID-19 deaths. A study estimated how many deaths were prevented because of the vaccines.

Researchers collected data on state vaccination rates and COVID-19 deaths. They used the data to create a statistical model.

Based on the model, COVID-19 vaccines saved nearly 140,000 lives in the U.S. through May 2021. About

570,000 people died of COVID-19 in the U.S. through that time. The model estimated that there would have been about 709,000 deaths without the vaccines.

Some states had more effective vaccine rollouts. They were able to vaccinate more people faster. This led to greater protection of their population.

The study found that New York had the greatest reduction in COVID-19 deaths. Researchers estimated that vaccines led to nearly

12 fewer deaths per 10,000 people in the state. Hawaii had the smallest reduction, with about one fewer death per 10,000 people.

The findings highlight the crucial role of vaccines in saving lives during the pandemic.

“This study brings into focus the dramatic success of the early months of the nation’s coronavirus vaccine rollout,” says Dr. Christopher Whaley of the RAND Corporation, who led the study. ■

How Research Works

Have you ever wondered what it means to “follow the science?” Sometimes it may seem like what’s true one day changes the next. But when what we know changes, it often means science is working.

Research helps us understand the world through careful testing. Each advance builds on past discoveries. This process can take a long time. But the end result is a better understanding of the world around us.

In general, the scientific process follows many steps. First, scientists start with a question. They look at

past research to see what others have learned. Different scientists have diverse skills and training. They each bring their own approaches and ideas. And they design new experiments to test their ideas.

Next, scientists perform their experiments and collect data. Then, they evaluate what their findings might mean. This often leads them to new questions and ideas to test.

The next step is to share their data and ideas with other scientists. Other experts can give new perspectives or point out problems.

It’s natural to want answers. But it’s important not to draw conclusions based on a single study. Scientists start to form conclusions only after looking at many studies over time. Sometimes, even these conclusions change with more evidence. Science is an evolving process. But it’s the best way we have to seek out answers.

NIH has created a one-page guide to explain more about how research works. Find the guide in English or Spanish at newsinhealth.nih.gov/2021/10/how-research-works. ■



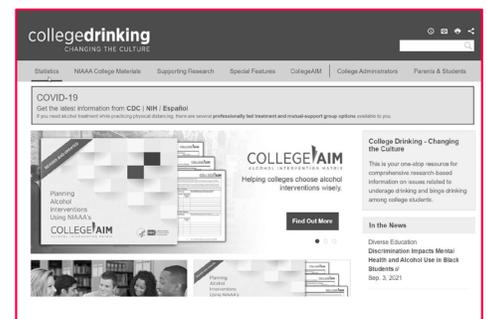
Featured Website

College Drinking: Changing the Culture

www.collegedrinkingprevention.gov

Dangerous drinking remains a major concern on college campuses. One in three college students reports binge drinking

in the past month. Find resources for parents to discuss the risks of college drinking. Intervention tools are also available.



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