



# Medications and the Liver

## Medications and the Liver: Overview

One of the main functions of the liver is to break down substances that we take by mouth, including medications, dietary supplements. When new medications are developed, they are extensively tested for safety prior to being approved by Food and Drug Administration (FDA). For this reason, majority of the FDA approved medications are safe even for people with known liver disease.

However, some person can be susceptible to liver injury after taking a certain. It is very rare and often cannot be predicted.

Occasionally, medications that proved safe during testing are found to be potentially harmful when they are released for general use and millions of people take it.

People with known liver disease may be at increased risk of liver injury when certain medications are used.

Medications that are known to be toxic to people with liver disease usually carry a warning regarding its use in people with liver problems.

## Symptoms

In most cases substantial liver damage can occur before symptoms appear. Typical symptoms of liver disease may include:

- nausea
- lack of appetite
- discomfort on the right upper corner of the abdomen
- generalized itching
- dark urine and jaundice (yellow discoloration of the eyes and skin)
- many people have no symptoms at all.

## Diagnosis

Blood tests can usually detect evidence of liver damage before symptoms develop. When a medication known to possibly cause liver damage is used, your physician may recommend that blood tests be checked after starting the medication so that any evidence of liver damage can be detected before symptoms appear.

The most common test used to monitor the liver damage is a liver panel, which consists of

- AST (aspartate aminotransferase)
- ALT (alanine aminotransferase)
- AP (alkaline phosphatase)
- Bilirubin.

There are many other causes for elevated liver tests. For that reason your physician may obtain a baseline liver panel prior to starting a medication to be sure that it is normal.

Minor elevations (less than 3 to 5 times over normal level) may occur after starting a medication and do not indicate significant liver damage, the medication is continued and the liver tests are monitored. In most cases, the liver tests will return to normal despite continuing the medication.

## Common Medications That Can Cause Liver Damage

Acetaminophen or Tylenol® is the best known medication that can damage the liver. This medication is widely available without prescription and is present in many of the cold and flu remedies as well as in prescribed pain medications.

Most pain medications that are labeled as “non-aspirin” have acetaminophen as its main ingredient.

Acetaminophen, when used as directed, is extremely safe even for people with liver disease. However, taking too much acetaminophen at once, or taking a high dose of acetaminophen continuously over several days can cause damage to the liver.

Healthy individuals should not take more than 1,000 mg of acetaminophen per dose and should not take more than 4,000 mg in one day. In addition, even healthy persons should avoid taking 3,000 mg of acetaminophen daily for more than 3 to 5 days.

Patients with liver disease should restrict the daily amount of acetaminophen to 2,000 mg per day, or even less if severe liver disease is present.

It is important that you read the labels of all prescription and over-the-counter medications that you take. Often acetaminophen may be present and you could accidentally exceed the safe limit dose of acetaminophen.

People who drink alcoholic beverages regularly are at higher risk of developing severe liver damage from acetaminophen. Drinking alcohol regularly changes the way the liver breaks down certain medications. In the case of acetaminophen, alcohol use leads to accumulation of a toxic byproduct of acetaminophen in the liver that can kill the liver cells. People who drink alcohol regularly should not take acetaminophen.

# Cholesterol Lowering Medications

Cholesterol lowering medications commonly known as “statin” have been used in millions of people with an excellent safety record and very little evidence of liver damage, even when used in people with mild liver disease.

It is not rare, however, for people to develop minor liver tests elevation soon after start taking these medications.

In majority of cases, these elevations are less than 3 times over the normal level and return to normal despite continued use of the medication; FDA discontinued the recommendation for routine monitoring of liver tests when starting a patient on statins. If the liver tests are monitored, the medication should not be stopped if only minor elevations of liver tests are noted.

## Supplements and Herbs

Dietary supplements including herbal products are not being regulated as similar as prescribed medications or over-the-counter drugs.

Despite being “natural” but some ingredients can be toxic to the liver. “Dietary include herbal supplements can be sold with little testing, no proof of efficacy, and no safety guarantee.

Some of the natural products known to be toxic to the liver include chaparral, comfrey tea, kava, skullcap, and yohimbe, but there are many others.

Even vitamin supplements and dietary supplements, such as weight losing products, muscle builders, too much iron or vitamin A can be harmful to the liver.

## Medication Use in People with Liver Disease

With very rare exceptions, people that have mild liver disease can safely take most common prescription and non-prescription medications at the recommended dose.

Having mild liver disease such as hepatitis C or fatty liver does not increase the risk that a given medication will be toxic to the liver.

However, if a person with pre-existing liver disease happens to develop liver injury from a medication, the resulting liver damage may be more severe than would occur in an otherwise healthy person with the same reaction.

For that reason, whenever possible, physicians prefer to use “liver-safe” medications when we know a person has liver disease.

Often physicians may be reluctant to start patients on a cholesterol lowering medication if the liver tests are already mildly elevated; usually due to fatty liver disease.

Research has shown that cholesterol lowering medications are safe in people with fatty liver disease or mild hepatitis C infection, and in fact, may be beneficial to the liver by decreasing inflammation.

People with more severe types of liver disease such as cirrhosis have to be more careful regarding the types and dose of medications they take.

While the ability of the liver to properly break down and utilize medications is preserved even when severe liver disease is present, there are some medications that should not be used or should be used at reduced dose when given to patients with advanced cirrhosis.

### Recommendations to Minimize the Risk of Liver Injury from Medications

1. Always keep a list of all the prescription and non-prescription medications that you take, including herbs, vitamins and supplements. Bring this list with you to every physician’s appointment.
2. The fewer medications you take the better. This includes herbs, supplements, prescription and non-prescription medications. If you have several physicians prescribing medications for you, be sure all of them are updated on your current list of medications.
3. When using non-prescription medications, be sure to read the label carefully and never exceed the recommended amount. Avoid taking the maximum recommended dose for a prolonged period without consulting a physician.
4. If you are taking several medications, be sure the ingredients are not the same; otherwise you may risk taking an accidental overdose.
5. If you drink a significant amount of alcohol daily, avoid or restrict the use of acetaminophen; never take the maximum recommended dose.
6. If you have liver disease, make sure that your physician is aware of your diagnosis and the severity of your liver disease.
7. If you have advanced liver disease such as severe cirrhosis, it is a good idea to consult with the liver specialist before starting new medications.

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[Return to Top](#)