

Patient information from BMJ

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Acetaminophen overdose

Most people recover completely from an acetaminophen overdose, but it can cause lasting liver damage or be fatal. If you think that you or someone else have taken too much acetaminophen, talk to a doctor right away. If you think someone has taken a very large amount, call an ambulance.

What is acetaminophen overdose?

Acetaminophen is a medication used to treat pain and fever. It is widely available without prescription.

The recommended dose for an adult is no more than 4 grams (4 g or 4000 milligrams [mg]) in a 24-hour period. Any amount more than this is considered to be an overdose. The dosing for children is much lower and depends on the child's age.

Too much acetaminophen can cause liver damage. If someone takes enough acetaminophen to cause liver failure, this can be fatal.

Accidental overdose

An acetaminophen overdose can happen if someone takes too much of it without meaning to: for example, they might misread the instructions on the packaging.

But an overdose can happen even when people take the correct dose: for example, if they then take a second medication, such as a cold-and-flu remedy, without realizing that it contains acetaminophen.

Accidental overdoses in children can also happen if parents and carers don't use the special measuring spoons or cups that come with the medication, or if they don't use them correctly.

Deliberate overdose

Some people take an acetaminophen overdose on purpose, as a suicide attempt. Acetaminophen overdose is a common method of attempted suicide in many countries.

What are the symptoms?

An acetaminophen overdose often doesn't cause any noticeable symptoms in the first 24 hours. But symptoms that may occur in the first 24 hours after an overdose can include:

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- Loss of appetite
- Nausea (feeling sick to your stomach)
- Vomiting
- Pain in the abdomen.

Signs of liver damage generally develop two or three days after an overdose. These can include:

- Pain and tenderness on the right side of the chest
- Nausea
- Vomiting
- Yellowing of the skin and the whites of the eyes (jaundice).

What treatments work?

If you are treated for an acetaminophen overdose the medical staff will ask you a lot of questions. The information you give them will help them to give you the best possible treatment. The medical staff will ask you:

- Exactly, or as near as you can remember, when you (or your child) took the acetaminophen
- How much acetaminophen you think you or your child took
- Whether you took acetaminophen with alcohol, and how much alcohol you drank. Drinking a lot of alcohol with acetaminophen can increase the damage the drug does to your liver
- What other medications or recreational drugs you may have taken, and exactly when you took them.

Many people who have taken too much acetaminophen will recover completely with just careful monitoring in the hospital. This means that medical staff will regularly check how much acetaminophen is in your system, to make sure it is falling to a safe level quickly enough. They may also do other tests to check whether your liver has been damaged.

Drug treatment

A drug called acetylcysteine is used when doctors think that your liver will not recover enough on its own.

Acetylcysteine is highly effective in preventing and reducing liver damage, even in people who have taken large overdoses. But it works best when given as soon as possible after an overdose.

Acetylcysteine can be given as pills, but it is often given as an intravenous (IV) drip, as it can cause nausea and vomiting in some people. It can also cause other side effects, including a

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rash, itching, breathing problems, and, very rarely, death. So doctors tend to only use it if they think you really need it.

Some doctors also give charcoal tablets to some people after an acetaminophen overdose. The idea is that charcoal attracts toxic substances to itself in the digestive system. These substances can then pass harmlessly out of the body when you go to the bathroom.

Preventing another overdose

If you have accidentally taken too much acetaminophen or given too much to your child, a doctor or nurse should talk to you about how to prevent this happening again.

These are some of the things they might discuss with you:

Don't take (or give) more than the recommended dose

If you are in a lot of pain, or if your child is suffering with pain or a fever, it can be tempting to use more acetaminophen than is recommended. But this can be dangerous.

If your symptoms are so bad that basic pain medications like acetaminophen don't work, see your doctor. There may be medications that will suit you better. Or your doctor may be able to help you find out why your pain is so bad. Don't just keep taking more pain medications without talking to your doctor.

Look carefully at the dosing advice on the packaging. It should advise you how and when to take the medication. For example, the recommended adult dose in any 24-hour period is 4000 mg.

But this doesn't mean that you take it all at once. The instructions on the packaging should explain that, if you need to take acetaminophen over a 24-hour period, you take a little at a time. For an adult this usually means two 325 mg tablets every 6 to 8 hours.

Be aware of other medications that contain acetaminophen

It's easy to take too much acetaminophen if you don't know which other medications contain it, too. Many common prescription and over-the-counter medications can contain acetaminophen. Examples of these include:

- Medications for sinus pain
- Cold-and-flu remedies
- Cough medications
- Other pain medications, such as combinations of codeine and acetaminophen
- Teething medications for children.

Carefully read the ingredients and instructions on any medication you take alongside acetaminophen. If you are in any doubt about dosing, seek help from a pharmacist. If you have already taken the recommended dose of acetaminophen, taking another medication that contains acetaminophen could be dangerous.

There are different doses for adults and children, and for children of different ages

Liquid acetaminophen for children can come in different strengths for different ages. For example, in many countries there is one version for children aged up to 5 years, and one version for children aged 6 years and over.

And each version will have detailed dosing instructions on the packaging depending on your child's age, and possibly on their weight. So, for example, the recommended dose of liquid acetaminophen for a child of 12 months will be different than for a child aged 2 to 4 years old, and so on. And a child who is small for his or her age might need less than a larger child.

For children, use the spoon, cup, or syringe provided

Liquid acetaminophen medications for children should come with a special-sized spoon or measuring cup that helps you give them exactly the right dose for their age. Some versions come with a plastic syringe that helps you drip the medication into your child's mouth if they have trouble taking it from a spoon.

It's important to use these measures correctly. To avoid losing them, try keeping them in a special compartment in a drawer, or in a bag with the medication bottle.

If you don't understand the recommended dosing, ask for help

Instructions on packages and bottles can be confusing, especially if you are in pain or feeling ill. If possible, ask someone to help you make sure you're not taking too much.

What will happen?

About 10 in 100 people will have some lasting liver damage after an acetaminophen overdose. Some people need to have a liver transplant. One or 2 in every 100 people will die from liver failure.

But most people recover all their liver function, usually in between one and three weeks.

If you took a deliberate overdose it is likely to have been the result of depression, stress, or similar problems. So it's important that you get the support you need with your mental health. Your doctor should arrange an appointment with a mental health professional as soon as possible so that you can start having the therapy that is most helpful for you.

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