

# Chemical Cardioversion

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## What is chemical cardioversion?

Cardioversion is a procedure used to return an abnormal heartbeat to a normal rhythm. This procedure is used when the heart is beating very fast or irregular. This is called an arrhythmia. In chemical cardioversion, medicines are used to get the heart back to a normal rhythm. It is different from electrical cardioversion. This is where an energy shock is used to bring back a normal heart rhythm.

Normally, a special group of cells begin the electrical signal to start your heartbeat. These cells are in the sinoatrial (SA) node. This node is in the right atrium, the upper right chamber of the heart. The signal quickly travels down the heart's conducting system on the way to the ventricles, the 2 lower chambers of the heart. As it travels, the signal triggers nearby parts of the heart to contract. This helps the heart contract in a coordinated way.

Many problems can upset this signaling pathway and lead to abnormal heart rhythms. The heart might beat very quickly, not leaving it enough time to fill with blood between beats. This can keep your heart from pumping enough blood to the body. Some abnormal heart rhythms raise your risk of stroke. Some also raise the risk of life-threatening rhythms that can lead to sudden death. Cardioversion upsets the abnormal signaling. It allows the heart to reset itself back into a normal rhythm, like when you reboot your computer to reset it.

## Why might I need a chemical cardioversion?

Chemical cardioversion can help to treat a number of different abnormal heart rhythms. It is often used to treat atrial fibrillation (AFib). With this condition, the atria of the heart quiver instead of contracting properly. People with AFib may have shortness of breath, fatigue, and a very fast heartbeat. They are also at increased risk for stroke.

Your healthcare provider may suggest some type of cardioversion if this is your first episode of AF. He or she may also advise it if you have constant AF, especially with severe symptoms. Your healthcare provider may try a chemical cardioversion first. This is because it does not need sedation and is less traumatic than an electrical cardioversion. If this treatment does not work, your healthcare provider may give you an electrical shock. The chemical cardioversion makes it more likely that the electrical shock will work.

Your healthcare provider may suggest not having cardioversion if you have mild symptoms. He or she may also advise you not to have it if you have had AFib for a long time. It may also not be advised if you are elderly or have other major medical problems. Other treatments might be better for you. These include heart rate control with medicines.

Chemical cardioversion can also help treat other abnormal heart rhythms. These include atrial flutter, supraventricular tachycardias, and ventricular tachycardia (VT). All of these heart rhythms can cause heart rates that are too fast. This can prevent the heart from pumping enough blood.

Before trying chemical cardioversion, your healthcare provider may try to reset the heart rate in other ways. This might include the Valsalva maneuver. This is a method where you hold your breath and increase the pressure in your belly. This can help bring the heart rate down. Your healthcare provider may then use chemical cardioversion to change your rhythm to normal. If these things don't work, electrical cardioversion is often the next step.

## What are the risks for chemical cardioversion?

Although many people have a successful chemical cardioversion, the procedure has certain risks. Your own risks may differ based on your age, the type of abnormal heart rhythm you have, and your other medical conditions. Ask your healthcare provider about the risks for you.

In rare cases, a chemical cardioversion can cause a new, more dangerous heart rhythm. If that happens, you will get medicines or a stronger electric shock to stop this rhythm. Some other risks are:

- Increased frequency of the original abnormal rhythm
- Other more dangerous abnormal heart rhythms

- Dislodged blood clot (which can cause stroke or other problems)

A medicine called blood thinner may be given before and after the procedure to reduce your risk of blood clots especially if you have atrial fibrillation or flutter.

Each of the medicines used in chemical cardioversion has risks and possible side effects. Ask your healthcare provider about the risks of the medicines you will be using.

In some cases, the cardioversion may not restore a normal heart rhythm. Or, you might go back to your abnormal rhythm shortly after your cardioversion.

## How do I prepare for a chemical cardioversion?

Talk with your healthcare provider about what you should do to get ready for your chemical cardioversion. Follow your healthcare provider's instructions about what medicines to take before you start the cardioversion. Don't stop taking any medicine unless your healthcare provider tells you to do so. You might need blood tests before the procedure to make sure it is safe to have the procedure.

Depending on the type of irregular heart rhythm you have, you could be at a higher risk of blood clots. Your healthcare provider may want you to take blood thinner medicine for several weeks before and after your cardioversion. This is to help prevent blood clots. Your healthcare provider may want a transesophageal echocardiography test before the procedure. This test is a special kind of ultrasound. A thin, flexible tube is put down your throat and into your esophagus. Here, the tube is close to your heart. It lets your healthcare provider see if you have any blood clots.

Your cardioversion may be pushed back a few weeks if your healthcare provider finds a clot. You'll take blood thinner medicine for a while until your healthcare provider thinks your risk of clots is low. It's important to take this medicine (such as warfarin) exactly as your healthcare provider tells you. You are also likely to need blood thinner medicine if your abnormal rhythm has lasted more than 48 hours. This is also true if you have had a blood clot in the past.

## What happens during a chemical cardioversion?

The procedure may be done in a hospital. Or it may be done in a healthcare provider's office or in your home. Your healthcare provider will give you an antiarrhythmic medicine. This is given by mouth or through an IV. If you are treated at home, you will need careful follow-up with a cardiologist. If you have chemical cardioversion at a hospital, someone will check your heart rate and rhythm.

The type of medicine used will vary based on your type of abnormal rhythm and your other medical problems. The following are some examples of medicines that your healthcare provider might use:

- Flecainide, dofetilide, propafenone, amiodarone or ibutilide, for AF
- Adenosine or verapamil, for supraventricular tachycardia (SVT)

## What happens after a chemical cardioversion?

Sometimes chemical cardioversion works very quickly. Other times it may take hours to work. In rare cases, it may take up to a few days to work. In some cases, you may need an electrical cardioversion if the chemical cardioversion did not work. Your healthcare team will create a new care plan for you if this happens. Your healthcare provider may want to check your heart rhythm for a period of time after you have been given the medicine.

Ask your healthcare provider about the possible side effects of the medicine used in your chemical cardioversion. Be on the lookout for these side effects. Tell a healthcare provider right away if these side effects are severe. Call a healthcare provider right away if your symptoms get worse.

## Next steps

Before you agree to the test or the procedure make sure you know:

- The name of the test or procedure
- The reason you are having the test or procedure
- What results to expect and what they mean

- The risks and benefits of the test or procedure
- What the possible side effects or complications are
- When and where you are to have the test or procedure
- Who will do the test or procedure and what that person's qualifications are
- What would happen if you did not have the test or procedure
- Any alternative tests or procedures to think about
- When and how will you get the results
- Who to call after the test or procedure if you have questions or problems
- How much will you have to pay for the test or procedure