

PATIENT INFORMATION



► Coronary Heart Disease

April 2021

CHD – NARROWING OF THE CORONARY ARTERIES

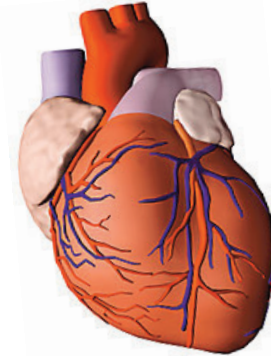


Diagram: www.internisten-im-netz.de

DEAR PATIENT,

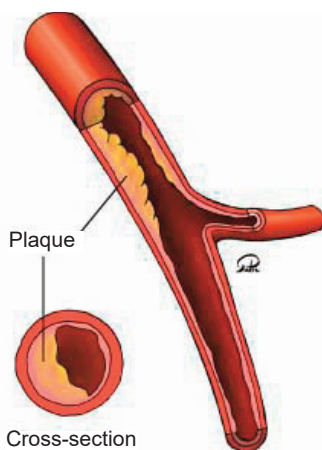
Your doctor has diagnosed you as having a *chronic coronary heart disease* (CHD). This is a serious disorder which remains with you throughout your life. If treated properly, you can live well with this disorder.

► WHAT CAUSES A CHD?

A CHD is caused by narrowing of the coronary arteries. Their name is derived from the corona these arteries form around the heart. They supply the heart with blood which transports vital oxygen.

The narrowing is caused by fat and calcium deposits on the inside walls of the coronary arteries. The medical term for this is *plaque*.

One consequence is that the heart is no longer supplied with enough oxygen. Particularly during physical exertion it is no longer able to transport enough blood around the body, and this leads to complications.



The plaque deposits restrict blood flow.

► SYMPTOMS

The symptoms associated with a coronary heart disease are not always present. In the course of this disorder, however, there may be repeated episodes of symptoms that can vary in intensity. You may experience the following:

- pain behind the breast bone, which frequently radiates into the throat, jaw, arms or upper abdomen
- shortness of breath, respiratory distress, “you quickly become short of breath”
- sweating or nausea
- a life-threatening sensation

The term *angina pectoris* is used to describe a seizure-like feeling of tightness or pain in the chest which is normally triggered by physical exertion or stress.

In some patients a coronary heart disease can lead to other severe disorders such as a heart attack, cardiac arrhythmia or myocardial insufficiency and thus become life-threatening. You should, therefore, talk to your doctor about what to do in an emergency. Your family members should be informed about this, too.

► HOW IS A CHD DIAGNOSED?

Your doctor will undertake a thorough examination. In addition, you will be asked to give details of your symptoms, habits, mental strain, medication and other illnesses. The most important examinations in the case of the typical symptoms and clear signs of a CHD are:

- an *electrocardiogram* (ECG)
- an ultrasound of the heart (medical term: *echocardiography*)

An ECG identifies signs of a CHD and helps to distinguish it from other heart diseases. An ultrasound is an in-depth heart examination. It can identify, for instance, additional myocardial insufficiency. Other tests may follow to ensure optimum treatment planning.

▶ TREATMENT

You cannot heal a coronary heart disease. However with the right treatment, you can live well with this condition. The treatment has two goals: to alleviate symptoms and to prevent dangerous consequences such as a heart attack.

The most important component of any treatment is a healthy lifestyle. This means plenty of exercise, a balanced diet and avoiding smoking.

Moreover, a coronary heart disease can be treated with medication alone, with stents or surgery.

Temporary relief in the event of sudden seizure-like symptoms can be provided by nitrates such as nitro sprays or nitro capsules. You should definitely keep taking some medications whether you experience any symptoms or not. Reliable studies confirm that they can prolong the life of some patients:

- **Anticoagulants** prevent blood platelets from being deposited on the walls of the coronary arteries. People with a CHD are normally prescribed acetylsalicylic acid (ASS).
- **Statins** have a positive impact on blood lipid levels. Less plaque builds up on the inside walls of the arteries.

Beta-blockers, ACE inhibitors and other medication may also be prescribed for some patients.

If the symptoms cannot be sufficiently alleviated with medication, your doctor may insert stents. Stents are thin, wire-mesh tubes which secure a passage through narrowed blood vessels. Patients often experience rapid relief, but stents do not prolong life. You will still have to take your medication.

▶ MORE INFORMATION

This Patient Information is based on the **Patient Information “Chronic CHC”**:

www.patienten-information.de/patientenleitlinien/khk

The Patient Guideline was prepared as part of the Programme for National Care Guidelines. It is funded by the German Medical Association (BÄK), the Association of Statutory Health Insurance Physicians (KBV) and the Working Group of Scientific Medical Societies (AWMF).

Other useful brief information “Coronary Heart Disease – What to do in an emergency”: www.patienten-information.de

Methodology and sources: www.patienten-information.de/kurzinformationen/koronare-herzkrankheit#methodik

Contact to self-help groups

You can find out from NAKOS (national contact and information office for the encouragement and support of self-help groups) where there is a self-help group in your area: www.nakos.de, Tel.: 030 3101 8960

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The medical team can bridge narrowed blood vessels by heart surgery using arteries from your body or artificial tissue for the bridging procedure (heart bypass). In some cases, this can help to prevent heart attacks and patients live longer. This has been confirmed by reliable studies. However, the surgery itself involves major side effects and there may be a higher incidence of strokes afterwards. Sometimes, it doesn't offer any benefits, for instance, if only one artery is narrowed. You will still need medication.

▶ WHAT YOU CAN DO

- Try to give up smoking.
- Physical activity and sports are good for you.
- A healthy diet is important.
- Your medications can only have the desired effect if you take them as prescribed.
- Have your blood pressure, blood sugar and, if necessary, blood lipids checked regularly.
- Healthcare professionals recommend having the annual flu vaccination. Ask your doctor about the pros and cons.
- You can have a chat with other people about your condition and inform people you come into daily contact with about your illness.

In patient training courses you can learn how to put these tips into practice. You can also attend a special CHD management programme (DMP CHD). The goal is to coordinate your care by various specialists. Talk to your doctor about this option.

With the compliments of

CHD – WHAT YOU OR YOUR FAMILY MEMBERS CAN DO IN AN EMERGENCY



Foto: © Bobo / Fotolia

DEAR PATIENT,

You have a *chronic coronary heart disease* – also known as a CHD. A CHD may have life-threatening consequences, for instance a heart attack.

It is not always easy to distinguish between a short temporary worsening of a CHD and a serious emergency situation. The dividing line is often blurred. This Patient Information gives you some insights on how to recognise an emergency and the best way to react. It also contains a few tips for your family members.

What to do in an emergency

In an emergency you should immediately call for help!

Dial **112**.

Give the following information:

- Who is calling?
- What is happening? e.g. suspected heart attack
- Where are you?
- What have you taken for the symptoms? e.g. used your nitro spray

Until help arrives:

- Try to keep calm.
- Take your emergency medication.
- Loosen any tight clothing.
- If you are alone in your house or flat, open the front door.

Basic information about this disorder is provided in the Patient Information leaflet “CHD – Narrowing of the coronary arteries” and in the Patient Guideline “Chronic CHD”: see box overleaf.

► SIGNS OF AN EMERGENCY

The signs of an emergency are:

- severe pain behind the breast bone which may radiate out into the neck, throat, jaw, shoulder blades, arms or upper abdomen
- major feeling of tightness, considerable pressure in the chest
- increased shortness of breath, respiratory distress
- cold sweats
- nausea, vomiting
- fear of dying
- pale grey facial skin colour
- symptoms that last longer than a few minutes
- symptoms that occur when you are resting
- persistent symptoms although you have ceased the physical exertion, for instance climbing stairs
- persistent symptoms although you have taken your emergency medication, for instance a nitro spray

A cardiac emergency may also present less typical signs. Some people feel the symptoms more in the stomach combined with nausea and vomiting. Women in particular experience this frequently. However, almost all patients say that they “suddenly felt very unwell”.

It is not always easy to distinguish between a temporary, short-term worsening of a CHD and a serious emergency situation. The dividing line is often blurred.

If you are unsure whether you’re experiencing an emergency, consult a health professional as soon as possible, for instance your doctor or an emergency medical service. The nationwide number is **116 117**. If you think this is an emergency, phone for an ambulance immediately.

PATIENT INFORMATION

► What to do in an emergency

► WHAT YOU CAN DO BEFOREHAND

An emergency often occurs unexpectedly and suddenly. Therefore it is important to be prepared.

- Health professionals recommend that you always keep your emergency medication, for instance nitrates as a spray, drops or capsules on you.
- Your doctor can show you exactly how to take your emergency medication.
- Ensure that you always have sufficient medication on hand.
- It is a good idea to inform your family members and colleagues that an emergency may arise with your condition. Tell them what to do if this happens. Ask your partner to go on a first aid course.
- It's helpful to have a note in your purse listing all the medicines that you are taking and stating that you have a coronary heart disease. You should also note the telephone numbers of your next of kin and your doctor.

► HOW FAMILY MEMBERS CAN HELP

When someone with cardiac arrest becomes unconscious, every minute counts. You can provide assistance until medical help arrives.

- Call **112** or make sure that somebody else does.
- Start cardiac massage immediately:
 - The patient is lying on his back.

- Kneel down beside the patient at chest height.

- Place the heel of one hand in the middle of their chest.

- Place your other hand on top.

- With outstretched arms, press straight down force fully by 5 to 6 centimetres on their chest.



Grafik: Patrick Rebacz / www.visionom.de

- Repeat this action quickly: roughly two times a second.

- This is very tiring. If possible, you should switch places with someone every few minutes.

- Keep this up until professional help arrives or the person affected regains consciousness.

- This is exactly the right procedure to adopt. You should not hesitate for fear of getting it wrong. Untrained persons do not need to perform mouth-to-mouth resuscitation on an unconscious person. You are providing valuable assistance even without rescue breaths.

- A defibrillator is often available in public areas, for instance in large railway stations or entrance halls. You will recognise the device by this mark: If possible, you should use it. The device talks you through each step of what you should do. It would be a mistake not to use it.



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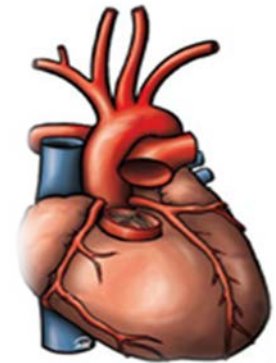
Overview: Treatment options for stable CHD

	Medication alone	Medication + stents	Medication + bypass surgery
Symptom relief?	Yes	Yes	Yes
Can treatment prolong life?	Yes, compared to treatment with-out medication	No, compared to treatment with medication alone	Sometimes, compared to stents or medication alone: surgery prolonged the life of 3 in 100 patients.
Side effects/ complications?	Side effects of medication	Side effects of medication, minor bleeding : in around 5 in 100 patients, serious complications : in fewer than 1 in 100 patients	Side effects of medication, strokes : stroke caused by surgery is experienced by around 1 in 100 patients; infection, bleeding, impaired wound healing, risks of anaesthesia
(Renewed/ revision) surgery needed?	In around 30 in 100 patients (stents or bypass)	In around 20 in 100 patients after 4 years (stents or bypass)	In around 6 in 100 patients after 4 years (stents or bypass)
Cardiac catheterisation needed?	No	Yes	Yes

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Suspected coronary heart disease (CHD): Do I need cardiac catheterisation (heart cath)?

Your doctor suspects you have “stable coronary heart disease” or has already diagnosed the disease. In certain cases a heart cath test is important to plan further treatment. But it is not always necessary. Before you decide to take the test, you should familiarise yourself with the main treatment options. This will help you to decide whether the cath test will be beneficial for you.



What is coronary heart disease?

Coronary heart disease (CHD) is associated with narrowing of the coronary arteries. These arteries are positioned around the heart. They supply the heart with blood which transports vital oxygen. Narrowing is caused by fat and calcium deposits on the inside walls of the coronary arteries (plaque). The heart is then no longer supplied with enough oxygen. CHD is a disorder that should not be taken lightly. It can seriously impair daily life. It can lead to a heart attack or cardiac insufficiency. These conditions are linked to elevated mortality.



What are the symptoms of CHD?

The symptoms associated with coronary heart disease are not consistent. Exertion can lead to pain behind the breast bone which frequently radiates into the nape of the neck, throat, jaw, arms or upper abdomen. The name for this is **stable** angina (tightness in the chest). The intensity of the pain can vary. It may be accompanied by sweating, shortness of breath or nausea. If the symptoms occur whilst at rest, this is called unstable angina. In this case there is an urgent need for action.

This patient information leaflet is only relevant for stable CHD.

How is CHD treated?

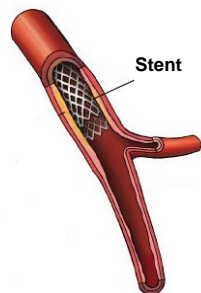
There is no cure for CHD. But with the right treatment you can enjoy a lifestyle that is similar to healthy individuals. Two of the treatment goals are: to relieve symptoms and to prevent dangerous consequences such as a heart attack. The most important thing is a healthy lifestyle. This means: plenty of physical exercise, a balanced diet and, if possible, not smoking. Furthermore, CHD can be treated with medication alone or in combination with stents or bypass surgery. Even if you are fitted with stents or have undergone surgery, you should regularly take your medication.

Treatment with medication alone

Several active substances are combined in CHD treatment: antiplatelet agents, statins and, in some cases, beta blockers. Sometimes, other active substances are added, for instance ACE inhibitors or antagonists. Reliable studies have shown that these different types of medication reduce the risk of heart attack or stroke. It is important to take the medication regularly. There is also medication to immediately alleviate discomfort. Approximately one in three patients do not experience any symptom relief. In this case, it may be necessary to undergo surgery or have stents inserted. A heart cath test is recommended in order to choose between these two options.

Stents

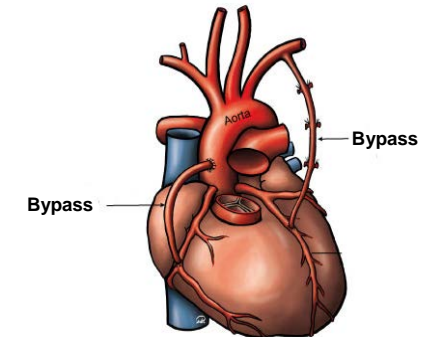
Stents are thin tubes that keep blood vessels open and ensure improved blood flow. A thin tube (catheter) is inserted into a blood vessel in the groin or arm and then threaded to the point of blockage. At its tip there is a balloon and a stent. The narrowed point is inflated and the stent inserted. In emergencies, for instance a heart attack, stents are the preferred option. Stents can bring relief where symptoms associated with **stable CHD** cannot be controlled with medication alone. However, reliable studies have shown that, in this case, stents do not reduce the risk of heart attack or prolong life compared to treatment solely with medication.



Bypass surgery

During heart surgery narrowed blood vessels are bypassed. "Bypass" means going round. Veins or arteries taken from other parts of the patient's body can be used for the bypass. Reliable studies have compared bypass surgery with stents. They have shown that the surgery relieves symptoms in a more lasting manner than stents. This means: after surgery a renewed surgical procedure is required less frequently.

An overall assessment of all the studies has shown that surgery can increase life expectancy, too: 4 years after surgery 7 in 100 patients had died, compared to 10 patients who had been given stents. This means: around 3 in 100 patients lived longer thanks to the surgery. However, surgery does come with higher risks. Strokes occur more frequently within 4 years of surgery: in around 3 in 100 surgical patients compared to 2 in 100 patients given stents. This means: 1 in 100 had a stroke caused by the surgery. It also takes longer to recover from the surgery. In certain cases the bypass surgery did not offer any survival benefit: for instance when only one blood vessel was blocked.



When do I need a heart cath test?

The purpose of a heart cath test is to allow the doctor to determine whether bypass surgery would be beneficial and how it could be conducted.

The test is **not necessary** when:

- surgery is not possible because of your physical condition.
- you opt initially to treat the symptoms with medication alone.

Cath test in the case of coronary heart disease: Insert stents or wait and see?

You are scheduled for a heart cath test. This involves inserting a thin tube into your arm or groin and threading it to your heart. The doctor then determines whether there is severe narrowing of blood vessels. This can be treated with bypass surgery. The doctor may identify narrowed vessels for which surgery does not offer any benefits. During the actual heart cath test, stents can then be inserted which keep the narrowed blood vessels open. These stents cannot prevent heart attacks or heart failure but they can relieve the symptoms. Often, these symptoms can also be adequately treated with medication. In both cases you will be given medication that can partially prevent heart failure or heart attacks*. A healthy lifestyle is beneficial, too. Use this chart prior to the planned test in order to decide, together with your doctor, whether stents should be inserted or you should be treated first with medication alone. Reliable studies have compared the two options:

	Medication	Mediation and stents
What does the treatment involve?	After the test, you take several tablets regularly. Initially, your doctor checks whether the treatment is working and adjusts it if necessary.	During the test the narrowed vessel is widened with a balloon and a wire mesh tube (stent) is inserted. After the insertion of stents you are on permanent medication.
What complications can occur?	The medication and heart cath test can lead to side effects/complications.	The medication and heart cath test can lead to side effects/complications. The inserted stent does not normally lead to any additional complications.
What is the probability that the symptoms will be relieved?	Approximately 70 in 100 patients treated with medication experienced long-lasting symptom relief. Around 30 in 100 of them decide to have further surgery (stent or bypass) because the symptoms persist.	Approximately 80 in 100 patients treated with stents and medication experienced long-lasting symptom relief. Renewed surgery (stent or bypass) was necessary for around 20 in 100 patients due to blockages that form in the stents or new narrowing that has occurred.
Does the treatment reduce the risk of a heart attack?*	The frequency of heart attacks is roughly the same for both treatment options.	
Will the treatment prolong my life?*	Life expectancy is roughly the same for both treatments.	
Will the treatment impede my daily life?	To ensure optimum treatment you must take your medication regularly and go for your medical check-ups.	

* **In some cases regular intake of prescribed medication can prevent heart attacks and heart failure:** reliable studies have shown that the intake of statins over a period of 5 years statins help prevent a heart attack or heart failure in around 3 in 100 people. Antiplatelet agents (e.g. ASS) were able to prevent this after 2 years in 4 in 100 patients. The benefit is greater for patients with an elevated risk of subsequent illnesses. It is important to take the medication regularly and as prescribed by your doctor.

Narrowed coronary vessels: stent or bypass?

Narrowing in several of your coronary vessels and/or your left coronary artery has been diagnosed and you have decided to have surgery. Use this chart in order to decide, together with your doctor, whether the blood vessels should be kept open with stents or surgically bypassed (circumvented). Reliable studies have compared the two procedures:

	Insertion of stents	Bypass surgery
What does the treatment involve?	A thin tube (catheter) is inserted via an incision into the groin or wrist and threaded to the heart. The narrowed vessel is widened with a balloon and a wire mesh tube, a stent, is then inserted. After insertion of the stents you are on permanent medication.	After separating the breast bone to create an opening, narrowed blood vessels are bypassed during open-heart surgery. Tissue taken from the patient's body is used for this. In most cases a heart-lung machine is utilised. After surgery you are on permanent medication.
How long will it take to recover from the treatment?	After the surgery you are normally monitored overnight. Most patients can resume their normal lives just a few days after the procedure.	It takes several weeks to fully recover. This is followed by cardiac rehabilitation.
What complications can occur?	Around 5 in 100 patients experience minor complications like bleeding after the cath test. Severe complications occur in around 1 in 100.	1 in 100 patients have a stroke caused by surgery. There may be bleeding, infection, pain and problems with wound healing. Some of these side effects can be severe. 30 days after surgery around 97 in 100 patients are still alive.
What is the probability that the symptoms will be relieved?	In around 80 in 100 patients stents provide permanent relief. In around 20 in 100 renewed surgery is required within 4 years (stent or bypass) because the stents have become blocked or new narrowing has occurred.	In around 94 in 100 patients the bypass surgery provides permanent symptom relief. In around 6 in 100 renewed surgery is necessary within 4 years because new narrowing occurred.
Does the treatment reduce the risk of a heart attack?*	No. Around 9 in 100 patients have a heart attack within 4 years caused by the underlying disease.	Around 5 in 100 patients have a heart attack within 4 years. This means, compared to stents, surgery prevented a heart attack in 4 in 100 patients.
Will the treatment prolong my life?	No. Around 10 in 100 patients die in the first 4 years after surgery as a consequence of the underlying disease.	Around 7 in 100 patients die in the first 4 days after surgery. This means, compared to stents, surgery prevented 3 in 100 from dying. Under certain circumstances surgery does not offer any benefits, for instance when only one blood vessel is affected.
Will the treatment impede my daily life?	For optimum treatment you must regularly take your medication and go for your medical check-ups.	After successful rehabilitation, to ensure optimum treatment you must regularly take your medication and go for your medical check-ups.

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