



Acute Myocardial Infarction (Heart Attack)

MU Patient Education Series

Definition:

In common terms, an acute myocardial infarction is a heart attack. When there is a blockage of oxygen-filled blood flow towards a part of your heart, eventually, that part of your heart becomes damaged and slowly begins to die. This damage and slow death marks the occurrence of a heart attack. Though they are the lead killer for both males and females in the United States, with proper attention and care, heart attacks can be treated and even prevented.

CONDITIONS THAT MAY LEAD TO A HEART ATTACK/CAUSES:

In most cases, heart attacks are caused by blood clots in the coronary arteries. The coronary arteries are blood vessels that carry blood and oxygen towards the heart. When there are blood clots found in these specific blood vessels, the heart is left without blood and oxygen, leaving the cells of the heart to perish. One may ask what causes the clot—a waxy substance, also known as plaque, fills the arteries, causing the clot. Plaque in the arteries can build up for years and will eventually break open and form a clot, blocking the flow of blood and oxygen to the heart. Another, less common cause of a heart attack is a coronary artery spasm. In this case, there is a sudden, severe tightening of a blood vessel that completely blocks off blood and oxygen flow to the heart. Certain triggers such as illegal substances, emotional pain, smoking cigarettes, and extreme cold can lead to these coronary artery spasms. Some heart attacks have completely unknown causes and occur during sleep, rest, after intense physical activity or after being outside in cold weather.

WHO HAS A HIGH RISK OF HAVING A HEART ATTACK?

Like other diseases and conditions, there are certain individuals who either by chance or lifestyle choice are more prone to heart attacks. The risk factors that can be controlled are factors such as smoking cigarettes, being overweight or obese, having high blood pressure or high cholesterol, living by an unhealthy diet, sleep apnea, lack of physical activity and high blood sugar as a result of diabetes. If you try to eliminate these controllable factors, you are on the right track to diminishing your risk of a heart attack. In addition to the controllable factors, there are heart attack risks that cannot be avoided such as age and family history of heart attacks. After age 55 for women, and 45 for men, heart attacks become



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increasingly more likely. Your family history of heart attacks can also pose a major risk. **So, if you have this condition in your family, you must be taking precautionary measures!**

SIGNS/SYMPTOMS:

The heart attack experience varies from person to person. There can be excruciating, crouching over pain and there could be no pain at all, which is called a silent heart attack. But the majority of heart attack victims experience some form of chest pain. This pain could feel like indigestion, a rock sitting atop your chest, a squeezing pain, a tight rubber band around your heart or just a slight pressure. The pain can range from mild to severe. Usually, the discomfort occurs in the center or left side of the chest and lasts for five minutes at a time. In addition to the chest pain, the following is a list of other possible signs of a heart attack:

- Upper body pain—usually in one or both of your arms, your jaw, your neck or back or the upper part of your abdomen
- Anxiety
- Cough
- Difficulty breathing
- Nausea or vomiting
- Sudden dizziness
- Exhaustion or lack of energy
- Quickened heart beat
- Heavy sweats
- Fainting
- Clammy skin

As aforementioned, heart attack symptoms vary between victims. Not everyone will experience the signs listed above, therefore it is important to pay attention to your body and act fast! It is **extremely** important to know that a heart attack is a serious medical emergency. If you or someone around you is experiencing any of the symptoms of a heart attack, do not hesitate, **call 911 immediately! Do not drive yourself to seek medical attention as driving puts you and others at risk if your condition worsens. Do not wait—get yourself help as soon as possible.**

DIAGNOSIS/TESTS:

Once you arrive to your healthcare provider, he or she will ask about your medical history and conduct a physical examination. Your physician will likely find abnormal breathing, a rapid pulse and a possible high or low blood pressure reading. Your doctor may then perform one or more diagnostic tests. An electrocardiogram (EKG) may be used to detect your heart's electrical activity. The EKG depicts your heart's beats and rhythm in order to show signs of a heart attack. Your doctor may also perform a coronary angiography, a test that uses dye and specific x-rays to view the insides of your coronary



arteries. This test shows if your coronary arteries that carry oxygen and blood to your heart are narrowed or blocked. When having a heart attack, the dead heart cells release proteins into the bloodstream. Doctors can perform blood tests to measure the protein in the blood to reveal if there are dead heart cells. Certain heart enzymes slowly leak out into your blood if your heart has been damaged by a heart attack. There are even further tests that can be performed.

TREATMENT/CARE:

As mentioned before, when dealing with heart attacks, **it is critical that you act fast!** The sooner you reach medical attention, the more likely you are to limit or avoid further heart damage. Once you arrive at the hospital, you will likely be treated in the emergency room. There, you will immediately receive some of the following treatments:

- You will be given oxygen so your lungs and heart do not have to work as vigorously
- You will be attached to a heart monitor so your physician can monitor your heart's activity
- You will have an IV put in your veins so medicine and other fluids can quickly enter your system
- You may be given aspirin to thin your blood and limit clotting
- You may be treated to alleviate your chest pain

After you are stabilized and it has been confirmed that you had a heart attack, your doctors will immediately create a plan to restore normal blood flow to your heart. Two common treatments for doing so are medicines to diminish your blood clots, called thrombolytic medicines, and an angioplasty.

Thrombolytic Medicines

Thrombolytic medicines are used to help dissolve, or break up the blood clots that are blocking your body's flow of oxygen and blood to your heart. These drugs are most effective the sooner they are used.

Angioplasty

An angioplasty is a procedure that physicians use to open the blocked or narrow coronary arteries, allowing blood to flow more freely to your heart. A long, thin tube with a balloon-like device is inserted through a blood vessel usually in to your leg or groin towards the blocked artery. Once it reaches the artery, the balloon-like device will be inflated in hopes of restoring normal blood flow to your heart. A metal mesh stent may also be inserted into the artery at the same time to keep the artery open long-term. This is usually a doctor's first choice treatment method and should be performed within hours of arriving at the hospital.

Your physician may also prescribe medications to ease your pain or anxiety or lower your cholesterol level. As well as the treatments previously mentioned, there is a plethora of other medications and procedures that can be used to treat a heart attack. It is important to know that once you are released



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from the hospital; your treatment is not over! You may be given daily medications or you may be instructed to attend cardiac rehabilitation to re-teach your heart muscles how to work properly. Your doctor may even suggest certain lifestyle changes to manage your condition and lower your chance of having another heart attack. He or she may suggest:

- A heart healthy diet
- No smoking
- Maintaining a heart healthy weight
- Remaining physically active
- Cardiac rehabilitation
- Blood thinners to prevent clots

PREVENTION:

Following a prevention plan is a great way to avoid a heart attack. Not only does following this plan help you steer clear of a heart attack, but keeps you healthy and in good shape! Some ideas of how to prevent heart attacks are:

- Follow a heart healthy diet
 - Assortment of fruits and vegetables
 - Whole grains
 - Lean meats, poultry, fish
 - Beans
 - Fat-free or low-fat milk
 - Low in saturated fats, trans fats, cholesterol, sodium, sugar substitutes, refined grains
- Maintaining your weight
- Quit smoking
- Manage your blood pressure, cholesterol level and blood sugar
- Exercise at a level manageable for you
- Attend support groups
- Limit your alcohol consumption

It is also important to mention that these prevention strategies are for both people who have had a heart attack and those who have not. It is crucial that those who have had a heart attack follow this plan because once you have one heart attack your risk of another is extremely high.

CALL YOUR HEALTHCARE PROVIDER IF:

Remember that heart attacks act fast, so you should too! Heart attacks can be sneaky, even silent, so it is essential that you stay aware of possible symptoms and follow a prevention plan that works for you.



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In order to beat the attack, you must call your healthcare provider or 911 immediately if you suspect you or someone around you is having a heart attack!

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