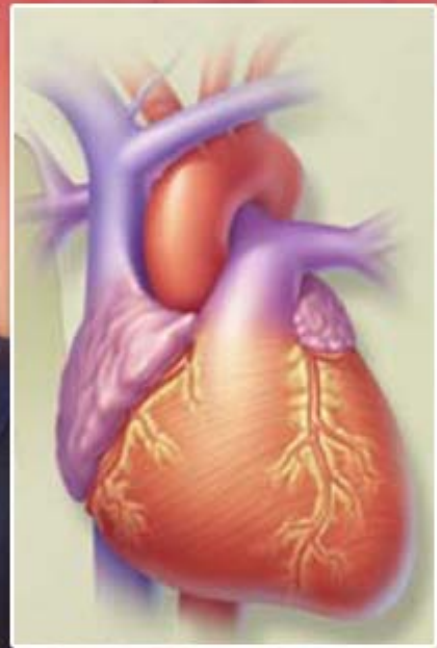


What is Heart Disease?



**Everything You Ever Wanted
to Know About Heart Disease**

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Chapter 1 - What is Heart Disease?

Statistically speaking, heart disease is the most common cause of death in the U.S. today. More than 450,000 Americans died last year from heart disease, and over 1.2 million people experience a heart attack each year.

Heart disease is any illness or disorder that affects the heart, and causes it to operate abnormally. There are different types of heart disease; the most common variety is called coronary artery disease. Everyone reading this book has probably had some experience with heart disease, either personally or through a friend or family member.

If you or someone you care about has been diagnosed with heart disease, you probably have questions about what causes heart disease, how it can be treated, and how it can be prevented. This book will attempt to address all of these issues so that you can be more informed and in control. Remember the old saying that “Knowledge is power?” It definitely holds true in the case of heart disease - the more you know, the more you can do to help treat and prevent this condition!

Heart disease is a common affliction, but as is the case with most illnesses, few people understand how heart disease happens and how it can affect the body. In order to learn more about how heart disease works, it is important to understand how the heart itself functions.

A Healthy Heart

Along with the brain and the lungs, the heart is one of the three most important organs in the body. In a healthy human, the heart is a fine-tuned machine that pumps blood like clockwork. It supplies every cell in your body with life-giving, oxygen-rich blood. If anything happens to disrupt this blood flow, every cell in your body suffers.

This amazing machine is divided into four chambers. The upper 2 chambers are called atria, and the lower two chambers are called ventricles. The ventricles are responsible for pushing blood out of the heart to nourish the rest of the body. The atria hold the blood coming back into the heart, and then empty it into the ventricles.

The right ventricle and the right atrium work in concert to move blood that has been depleted of oxygen into the lungs, where it picks up a fresh supply of O₂. Then, it comes back to the left side of the heart. From there, the left atrium and ventricle push it out to distribute oxygen to the rest of the body.

In addition to the muscular chambers of the heart, an assortment of valves keeps everything flowing the right way at the right time. Blood-filled tubes of various sizes are used to distribute the blood throughout the body. These tubes are known as veins and arteries. Arteries carry blood away from the heart; veins carry it back to the heart for a fresh supply of oxygen. The coronary arteries are the arteries that give fresh blood to the heart - these arteries are very important because the heart will start to die if it is not supplied with blood.

If everything is running smoothly, the heart keeps your body going by supplying it with fresh, oxygenated blood. However, this entire mechanical system is interconnected, and all of the different pieces are dependent on each other for proper functioning. If one part of the system fails, so does everything else. In a nutshell, then, heart disease occurs when any part of the cardiovascular system begins to work improperly or fail.

Chapter 2 - The Different Kinds of Heart Disease

There are many different diseases and disorders that can affect your heart, but all of them can basically be placed into two different categories: congenital and adult.

Congenital Heart Diseases

A congenital heart disease is one that a person is born with - a birth defect. However, if you have a mild congenital defect, you may not find out about it until you are an older child or even an adult. Congenital heart diseases can be thought of as defects in the construction of the heart. They could include malformed valves, holes in the heart, and other problems in the heart's physical structure. Here are some of the more common congenital heart diseases:

- **Patent ductus arteriosus** - This defect is most common in preemie babies. Basically, when an unborn baby is developing in the womb, the mother supplies it with blood and oxygen. Before birth, the developing baby has a large artery called the ductus arteriosus that keeps blood from going to the lungs while the baby is still in the womb. Patent ductus arteriosus occurs when this artery doesn't close after birth like it is supposed to. This disease can be treated successfully with drugs or surgery.
- **Septal defect** - Septal defects are known more simply as a "hole in the heart." Basically, babies born with a septal defect have a hole in the wall that separates the right side of the heart and the left side of the heart. Remember, the right side of the heart handles poorly oxygenated blood and sends it to the lungs, while the left side handles oxygenated blood and distributes it to the rest of the body. If the wall separating the right and the left sides has a hole in it, blood with oxygen and blood without oxygen will mix when they shouldn't, which creates a lot of extra work for the heart. Septal defects can occur in either the upper or lower chambers of the heart. Surgery is more likely to be required for atrial septal defects than for ventricular septal defects because many ventricular septal defects close on their own.

- **Complete Atrioventricular Canal** - This is a serious defect that includes a septal defect in both the upper and lower chambers of the heart, as well as malformations of the valves in the heart. Usually, this defect can be repaired surgically. However, even after surgical correction, the heart valves may not work exactly like they are supposed to.
- **Coarctation of the Aorta** - This occurs when a child is born with an aorta that is too narrow to allow blood to flow at the correct rate. This can be corrected surgically, using the same type of techniques that are used to help adults whose arteries are narrowed or clogged.
- **Heart Valve Abnormalities** - Being born with heart valves that are formed abnormally can cause one of two different issues. The valves can become hard and narrowed, not allowing enough blood to flow through and increasing the pressure on the heart. This is known as “stenosis,” and it can damage the heart. Abnormally formed valves can also become leaky, which forces the heart to work harder than it should to get blood where it needs to go. These defects often go unnoticed because they don’t always cause symptoms at first. Sometimes the defective valves work perfectly for an entire lifetime, and no treatment is needed. However, if the valves do go bad, surgical options are available for treatment.
- **Tetralogy of Fallot** - This is basically a quadruple-whammy of a congenital heart defect. It consists of 4 different defects: a hole between the ventricles; stenosis in the pulmonary valve, which leads to the lungs; thickened muscle in the right ventricle; and the aorta enters the heart directly over the ventricular defect. Tetralogy of Fallot is a serious defect that prevents the body from getting enough oxygen, because a lot of the oxygen-poor blood gets pumped back into the body instead of going to the lungs. Fortunately, several different surgical options have been developed to repair this defect, and most babies born with it today will have normal lives once the surgery is complete.

- **Transposition of the great arteries** - Babies born with this defect have the aorta on the side of the heart where the pulmonary artery should be, and vice-versa. This is an extremely serious defect because it means that oxygenated blood is pumped back to the lungs instead of being distributed to the body. Fortunately, surgery is usually successful in allowing children with this birth defect to live relatively normal lives.
- **Single-Ventricle Defects** - This is a subset of birth defects in which an entire ventricle is underdeveloped and small. This type of birth defect is the most serious cardiac birth defect. It is also the one most likely to cause death. Surgical options are available to help your child live a more normal, longer life. However, they will always need follow-up care and are likely to have limits placed on physical activities.

It can be heart-breaking to realize that your child has one of the illnesses listed above. The most important thing to remember, especially for the mother, is that most of these defects are not your fault. We tend to focus so much on doing everything right during pregnancy that some people have a tendency to blame the mother if the child is born with a birth defect. However, most congenital heart defects are not preventable. Some behaviors in pregnancy can increase the risk of cardiac birth defects - for example, drinking heavily, using drugs, or being exposed to certain industrial chemicals or taking certain medications. These behaviors only account for a small percentage of congenital heart defects.

It's also important to realize that there are many medical and surgical options available today that will help your child live a normal life. Most serious congenital heart diseases can be corrected surgically before the child reaches their first birthday.

Adult Heart Diseases

Most people who have heart disease today were not born with it. Instead, it is something that developed over time. Adult heart diseases are usually caused by hereditary factors, lifestyle factors, or a combination of the two. When most people think of adult heart disease, they picture the typical heart attack as it is portrayed on TV and in the movies. The victim gasps,

clutches their chest, and collapses. However, heart attacks are not really a heart disease in and of themselves - rather, they are the result of heart disease that has gone untreated until it was too late. Here is a list of common heart diseases in adults:

- **Coronary Artery Disease** - This is the single most common form of heart disease in adults today, and also the main cause of heart attacks. Coronary artery disease occurs when the coronary arteries, the arteries that feed blood to the heart, are blocked or obstructed. Remember, no other muscle in your body works as hard as your heart does, or has such a crucial job. Because the heart is so busy, it needs more blood and oxygen to function than the other muscles in your body do. If that blood flow is cut off, the heart can't pump like it should and starts to die.
- **Peripheral Artery Disease** - Peripheral artery disease occurs when arteries other than the coronary arteries are blocked. For example, an artery in the leg might narrow and become blocked or obstructed. This can also cause a heart attack or a stroke.
- **Valvular Heart Disease** - Not all heart valve problems are congenital. Some people are born with heart valve defects, but in many other people, problems in the heart valves develop over time. This can occur when the valves become hardened, or calcified, as a result of old age. It can also be a result of rheumatic fever or of other types of heart disease. Valvular heart disease occurs when a valve becomes either stenotic or leaky. Both types can weaken the heart and cause it to fail if they are left untreated. Valvular heart disease sometimes produces no symptoms other than a heart murmur.
- **Cardiomyopathy** - Cardiomyopathy is a doctor's way of saying that your heart muscle is getting weaker. This can occur as a result to other heart conditions, such as coronary artery disease or valvular heart disease. Also, it may be caused by illnesses in other bodily systems. For example, kidney failure can cause it. There are two types of cardiomyopathy: dilated and hypertrophic. *Dilated cardiomyopathy* happens when the muscle in the heart becomes enlarged, or dilated. When heart muscle enlarges it

also becomes more flaccid and can't contract with as much force as it should. On the other hand, *hypertrophic cardiomyopathy* occurs when the heart muscle becomes too thick and stiff, and can't pump enough blood to keep up with the body's needs. This type of cardiomyopathy is usually caused by genetics.

- **Cardiac Arrhythmias** - Cardiac arrhythmias are disturbances in the rhythm of your heart. Each side of your heart is told when and how fast to pump by an electrical impulse. These impulses originate in the sinus node, and are communicated throughout the heart via electrical pathways that function like invisible wires. If anything happens to the sinus node or disrupts the flow of electricity through the wires, arrhythmia can result. There are two different kinds of arrhythmia. When the heart beats too slowly, doctors refer to it as bradycardia. When the heart beats too quickly, it is called tachycardia. Arrhythmias can either be mild and self-correcting, or serious enough to kill.
- **Pericarditis** - A thin lining of tissue known as the pericardium encircles your heart and protects it. However, some times this protective sac can become inflamed, a condition called pericarditis. This can cause chest pain, shortness of breath, and sometimes complications if the inflammation is severe or does not resolve itself quickly.
- **Heart Failure** - Contrary to what you might think, heart failure does not mean that the heart stops beating. However, it means that the heart is no longer able to pump blood with as much power as it should be able to. Therefore, none of your organs are getting as much blood as they need, and waste products are also not being removed as fast as they should be. Heart failure cannot be cured, but it can be managed. At least 5 million Americans live with a diagnosis of heart failure.
- **Coronary Artery Spasm** - In this disorder, the coronary artery experiences an involuntary contraction or spasm. This can interfere with blood flow to the heart, even causing a heart attack. Medical scientists are not yet sure why this happens. It

does not appear to be connected to narrowed or hardened arteries, or to other forms of heart disease. Drug treatment is available.

Chapter 3 - How Do You Know if You Have Heart Disease?

What do all of the heart diseases covered in the last chapter have in common? The earlier you catch them, the better your prognosis will be. Therefore, it's important to understand what the symptoms of heart disease are, so that you can identify it and seek help before a heart attack happens.

Symptoms of Heart Disease in Children

Severe heart defects in infants are often diagnosed either in utero or immediately after birth. Problems with the structure of the heart are often visible to the trained eye when ultrasounds are taken, or irregularities can be detected in the fetal heartbeat. However, less severe heart defects may not show symptoms until later in life.

If you notice any of the symptoms below in your child, make sure to report it to your doctor immediately. He or she will be able to perform more tests to verify if a heart defect might be the cause.

- **Tiring quickly** - The child seems to get tired far more quickly than his or her peers do.
- **Slower than usual growth** - The child does not seem to be growing as fast as a normal baby. This doesn't necessarily mean they have a heart defect, but they should be checked out just in case.
- **Breathing Problems** - The child may begin to gasp, breathe rapidly, or experience shortness of breath. This is caused by the heart not getting oxygen to the rest of the body in an effective manner.

- **Cyanosis** - Cyanosis is a blue coloration of the skin. It is usually most visible in the lips and under the fingernails. Cyanosis is a very serious symptom because it indicates that the child's body is not getting enough oxygen.
- **Fainting spells, especially during exercise** - Fainting during strenuous activity can also be a sign that the child's heart is not providing enough oxygen to the rest of the body.
- **Difficulty in feeding** - As every parent knows, most babies will find a normal rhythm during feeding and stick to it. However, babies with heart defects may experience difficulty eating because they become short of breath. They may stop sucking and start to breathe rapidly.

Also, it's important to be aware that many children with abnormal heart valves show no visible symptoms at all. Therefore, it is crucial to take your child in for all of their regular checkups. A physician can often detect these problems by listening to the child's heart. Children with leaky or stenotic valves usually have audible heart murmurs.

Symptoms of Heart Disease in Adults

In adults, symptoms of heart disease can be sneaky and easy to miss at first. Parents, doctors, and teachers constantly monitor children and investigate anything that seems abnormal. However, as an adult, you have to monitor yourself, and it's all too easy to make excuses for symptoms that you don't want to be there in the first place.

However, heart disease is the number one killer for adults in America today, so you really can't afford to be anything less than vigilant. If you experience any of the symptoms below on a regular basis, please talk to your doctor about it to make sure that you receive the appropriate screening and treatment.

Angina

This is the most common symptom of coronary artery disease, although it also occurs as a result of some other forms of heart disease. Angina is basically chest pain. It is often described as a crushing sort of pain, or a combination of pain and pressure in the chest region. Angina is caused when the blood supply to the heart is blocked and the heart is being starved for the oxygen it needs. In addition to chest pain, you may also feel discomfort in the shoulders, neck, and arms.

Angina is classified based on how predictable the pain is. There are two types: stable and unstable. Stable angina always happens under certain conditions - after running, climbing stairs, or doing anything that increases the workload of your heart. Unstable angina is unpredictable - you might be watching TV when it strikes.

Stable angina means that an artery is narrowed, but that the width of the blockage remains constant. The heart is able to keep the body well-fed with oxygen unless physical demands are placed upon it. Unstable angina means that an artery is partially obstructed and the width of the blockage is changing - either chunks of it are breaking off or blot clots are forming at the site and then being pushed onward. Unstable angina is the most dangerous form because an unstable blockage is more likely to suddenly and completely shut off blood flow to the heart.

Palpitations

A heart palpitation is the sensation that your heart is “skipping a beat.” This symptom often signals that you have a heart arrhythmia. Sometimes, arrhythmias are temporary and not dangerous, so if it only happens very occasionally and is not combined with other symptoms, there is probably not cause for concern. However, if this symptom occurs frequently or in conjunction with any of the other symptoms listed here, it is important to see your doctor.

Fast heartbeat

Feeling like your heart is racing even though you have not been engaging in strenuous activity can be a symptom of heart disease. This symptom also occurs in people without any problems, however, so don't worry if it only happens occasionally. If it happens often or in conjunction with other symptoms, you should see a doctor.

Dizzy spells

Spells of lightheadedness or dizziness can have many causes. However, heart disease is one possible cause, so if it happens often, it's best to be examined by a doctor who can determine the cause and administer the appropriate treatment.

Fainting

Fainting, or sudden loss of consciousness, is a very common experience and usually not serious. However, if you have had any issues with heart disease in the past or you experience a fainting spell in conjunction with other possible symptoms of heart disease, it is imperative that you see a doctor to rule out a potentially fatal arrhythmia.

Fatigue

Suddenly becoming more tired than usual during your day-to-day activities is another possible indicator of heart disease.

Shortness of breath

If you lose your breath and find yourself gasping for air during your normal daily activities, you may have either heart disease or a lung disorder.

Nausea

Nausea can also be a symptom of some heart conditions. Of course, nausea can have a variety of other causes . . . anything from drinking too much to bad sushi the night before. So, use your best judgment before you start worrying about it.

Sudden, rapid weight gain

This can be a sign of heart failure. Now, merely gaining a few pounds over the holidays is not a cause for concern. However, gains of 2 to 3 pounds in one day accompanied by swelling in the legs, ankles, or belly and/or any other cardiac symptoms are a definite cause for concern.

If you experience any of the above symptoms, it's important not to immediately panic. Many of these symptoms have a variety of other possible causes aside from heart disease. Most of the time, these other possibilities are both more probable and more benign. However, if you experience any one of these symptoms frequently or experience more than one of them at the same time, it is best to go see a doctor to make sure that you don't have an undiagnosed heart condition.

Symptoms of a Heart Attack

On the other hand, if you experience any of the following symptoms, it's best to start worrying and call 911 immediately. The symptoms below are signs that you may be experiencing a myocardial infarction - otherwise known as a heart attack.

A heart attack happens when blood flow to the heart is stopped for any reason. Most commonly, this happens due to fatty deposits called plaque building up along the arteries and making them narrower. Sometimes, a plaque deposit will break off and narrow the artery even further. Blood clots often form around the bits of broken off plaque, completely shutting down blood flow to the heart. Without blood, the heart is starved of the oxygen it needs and begins to die - a heart attack. This process can produce some or all of the symptoms below:

- **Chest pain** - Chest pain is the stereotypical symptom of a heart attack. Usually, heart attack sufferers describe it as an intense, crushing pain. Sometimes it radiates to the left arm, the neck and the jaw. For some people, the pain is accompanied by a pins-and-needles sensation, as though the arm had gone to sleep. However, it's important to realize that only a little over 50% of the patients who experience a heart attack actually have chest pain. So, make sure you are also aware of other possible symptoms.
- **Pain in the arms or abdomen**
- **Nausea, including throwing up**

- **Profuse sweating, even when you are in a cool environment**
- **Angor animi: A feeling of absolute terror caused by a sense of approaching death.**
- **Dizziness, light-headedness and loss of consciousness**
- **Feeling like you are “out of breath” for no apparent reason**
- **Becoming extremely and unusually tired after physical activity**

What to do if you have a heart attack

If you begin experiencing any combination of the symptoms listed above, you could be having a heart attack. If you have had episodes of angina before, it may be hard to tell the difference between a heart attack and a severe episode of angina. Try taking 3 doses of angina medication every 5 minutes or until the chest pain goes away. If the pain persists after 15 minutes or 3 doses of medication, you are probably having a heart attack instead of just experiencing angina.

The first action to take if you suspect that you or someone you are with is having a heart attack is to call an ambulance immediately. If you're alone, DO NOT attempt to drive yourself. Even if you think you can make it, you could suddenly lose consciousness and cause an automobile accident.

The next step is to chew an aspirin if one is available. Aspirin helps break up blood clots, and most heart attacks are caused by a combination of plaque and blood clots blocking the coronary arteries. Chewing it may not taste very pleasant, but it will get the aspirin into your bloodstream much faster than swallowing the pill whole. When the ambulance gets there, make sure to advise the emergency personnel that you have taken aspirin already so that they don't give you more.

After the emergency crew arrives, they will assess the situation and get you to the hospital as quickly as possible. Many people are afraid to call an ambulance due to the cost. Or, they may be unsure of their symptoms, and not want to be rushed to the hospital in an ambulance for what might be a false alarm. However, if you suspect a heart attack, it really is best to go ahead and make the phone call. There are several advantages to being picked up by an ambulance, and if you suspect a heart attack it's definitely worth the extra cost.

For example, if your heart has stopped, the paramedics can try to revive you using special equipment. They also have heart medicine, medication to break up clots, medicine to relieve pain and portable machines to monitor your heart rate. Another advantage of calling the ambulance instead of being driven to the hospital by a friend or family member is that people who come into the ER by ambulance get care faster than people who are admitted in the waiting room. The ambulance personnel can start evaluating your condition immediately and sometimes they can even call ahead to let the hospital know that you're coming.

Once you arrive at the hospital, measures will be taken to evaluate and stabilize your condition. You will be seen by a cardiologist, a doctor that specializes in heart conditions. He or she will determine the best way to proceed in order to clear away the blockage in your artery.

Chapter 4 - What Causes Heart Disease in Adults?

Heart disease is caused by a number of different factors. Learning about these potential causes and risk factors can help you determine if you are at risk for heart disease.

The most common type of heart disease in adults is coronary artery disease, often abbreviated as CAD. CAD is caused by atherosclerosis, which is a medical term for hardening of the arteries. What makes your arteries harden? Children's arteries are generally clear, elastic and flexible, but as we get older, deposits of fat, cholesterol, calcium, blood clots and other junk builds up along the artery walls.

To get an idea of what this is like, think of the plumbing in an old house with hard water. Water flows through the pipes, but it leaves deposits of minerals behind. Eventually, the faucet will begin to take longer than usual to turn on, and the water that does come out will be copper-colored for a minute or so due to the minerals clogging the pipes. In this analogy, of course, the pipes represent your arteries. Blood flows through them, but it also leaves deposits behind.

Knowing this, the next logical question becomes "What causes plaque to build up in the first place?" Plaque builds up as a response to damage to the arterial walls. During the body's natural healing process, plaque forms like a scar where arterial damage was located. Damage to the arterial walls can be caused by any one of the following:

Tobacco use

Bad news for those who smoke: smoking cigarettes doesn't just affect your lungs and your teeth. It also increases your risk of heart disease. The chemicals in cigarette smoke can damage the walls of your blood vessels, leading to atherosclerosis.

Even worse, nicotine increases blood clotting. Remember, blood clots often form where plaque breaks off of the artery wall, stopping up blood flow and causing a heart attack. Also, smoking increases your blood pressure and reduces the amount of oxygen that gets to your heart.

High Cholesterol

Cholesterol is a natural substance that your body uses to perform many essential functions, such as making cell membranes and manufacturing the bile acid that helps you digest fat. However, your body does not require very much cholesterol to perform these functions. Most of us are able to produce plenty of cholesterol on our own, and we also obtain it from our diets.

Cholesterol cannot move through our bodies under its own power. Instead, it hitches a ride on substances called lipoproteins. The type of lipoprotein that a molecule of cholesterol is attached to determines whether it is good cholesterol or bad cholesterol. High-density lipoproteins are the good guys. They carry HDL cholesterol, which actually cleans the walls of your arteries on its way back to the liver. Low-density lipoproteins are the bad guys. They carry LDL cholesterol, which smears across your artery walls and accumulates, particularly in areas that have been inflamed or damaged. High levels of LDL cholesterol have been associated with increased incidents of heart disease and heart attacks.

High Blood Pressure

High blood pressure can increase your risk of heart disease. When your blood pressure is too high, your heart is on overdrive all the time. Your heart is the one muscle in your body that never sleeps, so if it has to work harder than it should it can get damaged. Also, some arteries can become narrowed solely due to high blood pressure.

Stress

High levels of emotional stress have been shown to raise cholesterol levels and blood pressure. Also, some studies show that heart attacks increase after a severely stressful event, such as the death of a spouse or loved one. In addition, stress can also raise your adrenaline levels, which increases clotting. Of course, some stress can be beneficial and enjoyable, stimulating you to be more competitive at work and at play. This kind of stress is not implicated in heart disease. Also, even when it comes to bad stress, it's not necessarily the stress itself that's the problem. How you deal with stress is just as important. Try not to let it get under your skin.

Obesity

Obesity is yet another factor that can contribute to the risk of developing both coronary artery disease and other heart diseases. This was illustrated in a recent study known as the Framingham Heart Study. In this study, participants were observed for a period of 14 years and monitored for a variety of different risk factors for heart disease. The result? Obesity increased the risk of heart failure by 104%!

Another study, this one conducted by the University of Michigan, showed that participants who were considered obese developed coronary artery disease faster than participants with normal bodyweight, even when other risk factors were the same. Additionally, obesity is known to cause the wall of the left ventricle to become thickened so that it cannot pump as effectively. This can lead directly to heart failure.

Exercise

Lack of enough physical activity is also a risk factor for heart disease. This is mainly because being a couch potato intensifies several other risk factors. For example, getting enough exercise helps keep you from becoming obese. Also, it can increase the levels of good cholesterol in your bloodstream and may inhibit the production of bad cholesterol. Additionally, it helps reduce stress. Regular exercise also has a beneficial effect on your cardiovascular system, training your heart to work harder with less effort.

In addition to being caused by any combination of the factors listed above, heart disease can also just happen as part of the normal aging process. However, it's still important to take these risk factors into account. Not only do these factors increase your risk of heart disease, they also increase your risk of getting heart disease at a younger age. There is a world of difference between getting heart disease when you're 100, and having a heart attack when you are only 45.

Heart Disease - Difference in Risk Based on Age, Sex, Gender and Race

One comforting fact about heart disease is that most of the factors that cause it are factors that you as an individual can exert some control over. However, there are two big risk factors that you can't control - your demographic characteristics and your family history.

The word *demographic* means “a segment of the human population.” Demographics can involve several characteristics, including age, gender and race. Studies have shown that different demographics have different risks of heart disease.

So, who is at risk? As far as gender goes, men are the biggest losers here. Men have a greater risk of both developing and dying from heart disease at an earlier age than women. That's not to imply that heart disease is not a serious problem for women as well . . . it definitely is! But, women's death rate from heart disease does not start to exceed the male death rate from heart disease until after age 65. However, heart attacks are more likely to be misdiagnosed in women because they often have atypical symptoms - nausea, vomiting and fatigue instead of chest pain, for example.

Once a heart attack happens, women as a group have poorer survival rates and poorer outcomes. Some women's rights groups say that the disparity is due primarily to women being under treated. That may be part of the problem, but no doubt part of the disparity results from women having heart attacks at a more advanced age than men.

As far as age goes, younger people have a lower risk of heart disease. For example, over 83% of deaths caused by heart disease happened in people over the age of 65. However, coronary artery disease is a long-term, progressive illness. Don't feel invulnerable just because you are under 65. The habits you develop now can either cause heart disease in the future or help protect you from it.

Race is another demographic factor that can raise your risk of heart disease. For example, the American Heart Association estimates that approximately 40% of African Americans are

afflicted with some form of heart disease. For Latinos, the figure is 25%. In recent years, heart disease has also become a serious problem among Native Americans. Historically speaking, it was almost unheard of in this population. However, it is now the leading cause of death in this group.

Nobody is quite sure what causes these variations. It could be a genetic variation that is widely shared among people with the same ethnicity. However, these variations could also be due to differences in diet, smoking habits and access to preventative healthcare.

Is It All in the Family?

You may have inherited your father's eyes and your mother's smile. But could you also have inherited their risk of heart disease? Fortunately or unfortunately, depending on your family history, there is also a genetic component to your risk of heart disease. For example, a study done by scientists at John Hopkins University in Baltimore, Maryland showed that siblings of people with heart disease show an increased risk of getting heart disease themselves over the next 10 years.

The increased risk was highest for males. Brothers who had a sibling develop any form of heart disease had a 10 percent greater than normal chance of developing heart disease themselves. For sisters, the increase in risk was 7 percent. Genetic factors appear to play a role in how your body manufactures cholesterol and how likely your arteries are to harden and develop plaque.

However, just because heart disease runs in the family doesn't mean that you are doomed to experience it yourself. Instead, knowing that relatives suffer from heart disease can be seen as a warning that should lead you to look over your lifestyle for risk factors for heart disease. Even for people with a genetic component, there is usually a lifestyle factor as well. Bad heart genes increase the risk of heart disease developing in response to lifestyle factors such as diet and exercise. It's possible to reduce or even cancel out the effect of genetics. You just have to be willing to take extra care of yourself. In the chapter on prevention, we will look at some strategies to help you do just that.

What about congenital heart defects? Once you've had one baby with a heart defect, you do have a higher than usual chance of having another baby with a similar problem. This is because some heart defects are inherited. However, many are not. If your child's heart defect is not caused by genetics, you should be able to conceive again without any worries. Unfortunately, genetic science is still in its infancy. So, for some heart defects, a clear hereditary link has been established. However, for others, scientists simply are not sure.

The best way to find out about your risk of conceiving another child with a congenital heart defect is simply to talk with your doctor. He or she will be able to give you more information about your individual situation. Your doctor may also refer you to another specialist for genetic testing and counseling, if applicable.

Chapter 5 - Treatment of Heart Disease

Once you've been diagnosed with heart disease, it's easy to feel frightened and overwhelmed. Although it's important to take heart disease seriously and follow your doctor's instructions, you should know that we are fortunate enough to live in a time when treatment for heart disease is fairly advanced. There are many different treatment options available that can help you live a long, full life even after being diagnosed with a heart condition. Treatments fall into 3 basic categories: drugs, lifestyle changes and surgery. Your treatment plan may include some or all of these categories, depending on how advanced your condition is.

Drugs

There are many drugs available to treat heart disease, and more are being introduced all the time. It can be difficult and confusing to keep track of what's available and what's right for you, especially given the barrage of drug ads that we are confronted with on a daily basis. Here is a brief rundown of the different types of drugs available, and their benefits and risks.

ACE Inhibitors

This class of drugs can widen your arteries and help your heart pump blood more effectively. Here is a list of some commonly used ACE inhibitors: Capoten, Vasotec, Prinivil, Zestril, Lotensin, Monopril, Altace, Accupril, and others. They are often prescribed on a short-term basis after a heart attack to help you recover, and on a long-term basis to treat heart failure and to prevent a heart attack in high-risk individuals. Side effects can include coughing, dizziness, a strange aftertaste in your mouth, increased levels of potassium in the body, swelling, vomiting and diarrhea. If any of these symptoms occur, contact your doctor immediately. If you experience swelling anywhere around your face while taking these drugs, you need to see a doctor immediately. If your doctor is not available, go to the emergency room and tell them what you are taking and the symptoms you are experiencing.

ARBs

ARBs are drugs that are prescribed for people who are unable to take ACE Inhibitors. Examples of ARBs include Micardis, Atacand, Avapro, Diovan and Cozaar. ARBs help block the effect of certain chemicals that your body makes to narrow arteries, keeping your arteries open wider and your blood pumping freely. Side effects include dizziness, digestive disturbances, cramps, insomnia, inability to think clearly and dehydration.

Beta Blockers

Beta blockers are another commonly prescribed category of drug. They help your heart to relax. Over time, this helps the heart to pump blood more efficiently. They are used to treat heart failure, reduce blood pressure, and normalize heart rhythms for people with cardiac arrhythmia. Here is a list of commonly prescribed beta blockers: Lopressor, Toprol-XL Coreg, Normodyne, Trandate, Tenormin, Inderal, Brevibloc, Zebeta, and Sectral. Side effects of beta blockers can include weight gain, dizziness, insomnia and bad dreams, digestive disturbances, exhaustion, and headaches. If you experience problems breathing, this is a very serious side effect and it requires immediate medical attention, at the ER if necessary.

Calcium Channel Blockers

Calcium channel blockers help your heart get more of the oxygen-rich blood that it needs. They relax blood vessels to allow blood to circulate more freely. Commonly prescribed drugs in this category include Procardia, Cardizem, Calan and Isoptin. These drugs are used to treat coronary artery disease and spasm, arrhythmia, angina, high blood pressure, cardiomyopathy and some forms of heart failure. Side effects can include sleepiness, weight gain, digestive disruptions, fainting and swelling.

Antiarrhythmics

These are drugs that help keep your heart beating at a normal pace. They include: Betapace, Cordarone, Procanbid and Tambocor. Side effects can include chest pain, arrhythmia, lightheadedness and fainting, swelling of the extremities, blurred vision and digestive issues. Call your physician immediately as the side effects of antiarrhythmics can be very serious if they are not addressed immediately.

Anti-Platelet Drugs

This class of drug helps keep blood clots from forming. Since clotting inside an artery can often trigger a heart attack, they are an important part of the drug regimen prescribed for many people who have heart disease. The most familiar anti-platelet drug is aspirin. Other anti-platelets include Plavix and Ticlid. Anti-platelet drugs are used to treat coronary artery disease and peripheral artery disease, as well as to prevent and treat heart attacks. Minor side effects can include digestive upsets and rashes. Serious side effects include excessive bleeding, headache, lightheadedness, difficulty breathing, fever, chest pain and tinnitis.

Clot-Busting Drugs

Clot-busting drugs are given intravenously in a hospital to break up clots that have already formed. Given early enough, they can help keep heart muscles from dying and forming scar tissue after a heart attack. These drugs include Tissue Plasminogen Activator, Tenecteplase, Alteplase, Urokinase, Reteplase, and Streptokinase. If you have received any of these drugs, make sure to contact a doctor or nurse immediately if you notice any signs of excessive or abnormal bleeding.

Digoxin

Digoxin is a powerful heart medication that was originally synthesized from the foxglove plant. It is given to people with arrhythmia and heart failure. Side effects can include digestive disturbances, changes in vision or in clarity of thought, and irregular heartbeat.

Inotropic Therapy

Inotropic drugs are the drugs of last resort for heart failure. They are prescribed at the end stages of the disease, when other medications no longer work. They are administered intravenously, either at a hospital or at home. Side effects can include headache, digestive upset, rapid heartbeat, shortness of breath, fever, and high blood pressure.

Statins

Statins are used in people who have coronary artery disease or simply have high cholesterol that puts them at risk of developing coronary artery disease. These drugs help lower bad cholesterol

by stopping the liver from producing it. Usually, you will try to lower cholesterol through improving your diet first. However, your doctor may recommend statins immediately if you've already had a heart attack or are at a high risk to have one in the future.

For more information about any of these different types of drugs, it is best to ask your doctor. Also, remember that drugs can interact with other drugs, over-the-counter medication, supplements, and even certain foods. Make sure to discuss possible interactions with your doctor each time you are prescribed a new medication. If you see many different doctors, it's a good idea to bring a list of all the medications you take on regular basis to each appointment. This will reduce the likelihood of your doctor unknowingly prescribing a drug that can have harmful interactions with medicine you are already taking.

Lifestyle Changes

Lifestyle changes are another crucial part of any treatment plan for heart disease. As hard as changing your habits or losing your favorite foods can be, it's not enough just to take pills each day. No medication has yet been invented that can completely erase all of our bad habits-we have to change those ourselves. As you may have noticed when reading Chapter 4, many possible causes of heart disease are lifestyle-related. Here is a quick look at some of the changes you may be asked to make if you receive a diagnosis of heart disease.

- Exercise regularly - If you have had surgery or a heart attack, you may be placed in a cardiac rehab program where you will engage in supervised, controlled levels of exercise. Or, your doctor may simply provide you with guidelines for exercising on your own.
- Eat a heart-healthy diet - A diet that is low in saturated fat, trans-fatty acids and cholesterol can help keep plaque from forming on your arteries, which will slow the progression of coronary artery disease.

- Quit smoking - Remember, nicotine damages artery walls and leads to plaque build-up, as well as increasing blood pressure.
- Get down to a healthy weight - If you are overweight, your doctor will give you guidelines for how to lose weight in a healthy way through diet and exercise.
- Reduce stress - You may be advised to avoid stressful situations, or your doctor may give you tips on how to handle it more effectively.

Surgery and other Medical Procedures

In an emergency situation, or in situations where drug therapy and lifestyle changes are not helping, surgery may be the only option. There are several different types of surgeries that are used to help people with heart disease. There are also some medical procedures that can be done nonsurgically, through a thin tube called a catheter that is threaded through a blood vessel up to your heart. Your doctor will decide which one is right for you.

Coronary Bypass Surgery

If your coronary arteries are blocked, your heart is not getting the blood that it needs. Sometimes, the best option is simply to reroute the blood supply to the heart to bypass the blocked artery, much like a traffic detour would bypass construction. This is accomplished by removing a piece of blood vessel from another part of your body and grafting it onto the heart.

Angioplasty

In angioplasty, a cardiac catheterization specialist can use any one of a number of techniques to open up a clogged artery. These techniques can include inflating a “balloon” at the site of the plaque to push the artery back open, or implanting a stent to brace the walls of the artery apart.

Ablation Therapy

Ablation therapy is a type of surgery that is used to treat heart arrhythmias. It can be done either through open-heart surgery or through a catheter. This type of surgery cuts off the electrical impulses that are throwing your heart off from its normal rhythm.

Implantable devices

For people with cardiac arrhythmia or who are at risk of sudden cardiac death, devices that can regulate the heart's rhythm are sometimes surgically implanted. For example, an implantable cardioverter defibrillator or ICD is basically a miniature implantable heart monitor and defibrillator. If your heart begins to beat abnormally, this device will shock it back into a normal rhythm. Another type of implantable device is the pacemaker. Instead of simply monitoring the heart for abnormal rhythm and correcting it when needed, the pacemaker sends an electrical impulse out to tell the heart when to beat.

Valve repair and replacement

When a heart valve ceases to function as it should, it can cause the heart to pump inefficiently and overwork itself. If the problem is severe, the valve will have to be either repaired or replaced. Your doctor will evaluate you beforehand to decide if repair is possible. If it's not, a defective valve can be replaced with a mechanical device, a replacement valve from a pig or a cow, or a replacement valve from a donor heart.

Chapter 6 – Prevention: The Best Medicine for Heart Disease

Heart disease can be extremely frightening. However, even though it is one of the most common illnesses in the U.S today, it is also one of the most preventable. Basically, most of the lifestyle changes that treat heart disease will also help prevent it if you don't have it already. Here is a quick rundown of some excellent ways to prevent heart disease.

- Exercise - Try to incorporate at least 30 minutes a day of moderate exercise into your daily life. Park a little farther away from work, take the stairs, go to the gym...simply moving more will help reduce your risk of coronary artery disease.
- Tobacco Use - To reduce your risk of heart disease, quit smoking.
- Drinking - One alcoholic drink a day should be fine, and may even protect against heart disease. However, binge drinking can damage your heart. Therefore, you can't just refrain from drinking that one glass a day for a whole month and then go to a keg party.
- Diet - Eat a low fat, low cholesterol diet that contains whole grains and lots of fruits and vegetables. Fruits and vegetables contain chemicals called antioxidants that may help prevent damage to your arterial walls. Also, try to keep your salt intake down, as too much salt can raise your blood pressure. Consuming foods rich in omega-3 fatty acids such as fish, soybeans, flaxseed and walnuts, may help reduce your risk as well.
- Stress - Learn to handle stress gracefully. Don't let unpleasant situations make you angry or get under your skin. Take time off to relax and engage in a hobby that you enjoy. Learning meditation or scheduling a massage might also help.

- See your doctor regularly - Your doctor can monitor risk factors and may recommend other preventative therapies as needed.

If you are a parent, it's also important to encourage your kids to develop heart healthy habits now. Another concern that relates to children and heart disease is the high levels of childhood obesity that have been observed recently. Kids are constantly bombarded with ads for junk food and soda, they don't get to play outside as much as they used to, and recess is being cut out of many schools.

However, evidence is growing that atherosclerosis can start in children over 10 if they have high cholesterol levels. So, even if your child is normal, it's important to encourage him or her to develop healthy habits now. This is one of the most important things you can do as a parent, because it will keep them from experiencing heart disease when they are older. This is one of the best gifts you can give as a parent - a healthy life for your children!