

# Yoga Therapy for Heart Disease

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## Abstract

The project discusses the pathophysiology and causes of atherosclerotic heart disease (coronary artery disease) and its signs and symptoms. The project provides the comparison between Western and Yogic views on this condition and on its treatments.

### 1. Disease/condition overview:

Coronary artery disease (CAD) is a condition in which plaque builds up inside the coronary arteries. These arteries supply the heart muscle with oxygen-rich blood. Plaque is made up of fat, cholesterol, calcium, and other substances found in the blood. Over time, plaque hardens and narrows the arteries. The flow of oxygen-rich blood to the organs and other parts of the body is reduced. When the coronary arteries are narrowed or blocked, oxygen-rich blood can't reach the heart muscle. CAD can lead to angina, heart attack, heart failure, and arrhythmias (irregular heartbeats).

When plaque builds up in the arteries, the condition is called atherosclerosis. Plaque narrows the arteries and reduces blood flow to the heart muscle. It also makes it more likely that blood clots will form in the coronary arteries or any other arteries of the body. Blood clots can partially or completely block blood flow. This can lead to serious problems, including heart attack, stroke, or even death.

Angina is chest pain or discomfort that occurs when not enough oxygen-rich blood is flowing to an area of the heart muscle. Angina may feel like pressure or squeezing in your chest. The pain also may occur in your shoulders, arms, neck, jaw, or back.

A heart attack occurs when blood flow to an area of the heart muscle is completely blocked. This prevents oxygen-rich blood from reaching that area of heart muscle and causes it to die. Without quick treatment, a heart attack can lead to serious problems and even death.

Over time, CAD can weaken the heart muscle and lead to heart failure and arrhythmias. Heart failure is a condition in which your heart can't pump enough blood throughout your body. Arrhythmias are problems with the speed or rhythm of your heartbeat.

CAD is the most common type of heart disease. It's the leading cause of death in the United States for both men and women. Lifestyle changes, medicines, and/or medical procedures can effectively prevent or treat CAD in most people.

### 2. Brief Description of Condition (Pathophysiology and causes from both the Western model and Yogic model):

**Western research** suggests that CAD starts when certain factors damage the inner layers of the coronary arteries. When damage occurs, the body starts a healing process. This healing causes plaque to build up where the artery is damaged. Over time, the plaque may crack and causes blood clots to form in the arteries. This can worsen angina or cause a heart attack.

Many factors raise the risk of developing CAD. Major risk factors include unhealthy blood cholesterol levels, high blood pressure, smoking, insulin resistance, diabetes, overweight or obesity, metabolic syndrome, lack of physical activity, age, and a family history of early heart disease.

The cause of atherosclerosis isn't known. There are a number of factors that influence and control the level of cholesterol in an individual. They are diet, age, weight, gender, genetics, diseases, and lifestyle.

#### Diet

There are two dietary factors associated with increase in **blood cholesterol levels**: Foods those are high in saturated fats, including foods containing high levels of hydrogenated vegetable oils, especially palm and **coconut oils**, avocados, and other high-fat foods of vegetable origin.

#### Foods

Containing high levels of cholesterol, which include eggs and red meat—the most maligned of the cholesterol culprits—as well as lard and shrimp. These foods can significantly raise blood **cholesterol levels**, especially when combined with foods that are high in saturated fat.

#### Age

Older people have a higher cholesterol level than younger ones. The blood levels of cholesterol tend to increase with age.

#### Weight

Overweight people are more likely to have high blood cholesterol levels. They also tend to have lower HDL levels. A greater risk of increased cholesterol levels occurs when that extra weight is centered in the abdominal region, as opposed to the legs or buttocks.

#### Gender

Before the age of 50, men tend to have higher LDL levels and lower HDL levels than do women. After 50, when women are in their post-menopausal years, decreasing amounts of estrogens are thought to cause the LDL level to rise.

#### Genetics

Some people are genetically predisposed to having high levels of cholesterol. A variety of minor genetic defects can lead to excessive production of LDLs or a decreased capacity for their removal.

#### Diseases

such as diabetes can lower HDL levels, increase triglycerides and accelerate the development of atherosclerosis. High blood pressure, or hypertension, can also hasten the development of atherosclerosis, and some medications used to treat it can increase LDL and triglycerides and decrease HDL levels.

## Lifestyle

Factors that negatively affect cholesterol levels also include high levels of stress, which can raise total cholesterol levels, and cigarette smoking, which can lower a person's HDL level as much as 15 percent. On the other hand, strenuous exercise can increase HDL levels and decrease LDL levels. Exercise also can help reduce body weight, which, in turn, can help reduce cholesterol. Recent research has shown that moderate alcohol use (one drink per day for women, two drinks a day for men) can raise HDL cholesterol and therefore reduce the risk of heart attack.

Atherosclerosis can affect any artery in the body, including arteries in the heart, brain, arms, legs, and pelvis. As a result, different diseases may develop based on which arteries are affected.

- Coronary artery disease (CAD). Plaque builds up in the coronary arteries and when blood flow to your heart is reduced or blocked, it can lead to chest pain and heart attack. CAD also is called heart disease, and it's the leading cause of death in the United States.
- Carotid artery disease. This happens when plaque builds up in the carotid arteries. These arteries supply oxygen-rich blood to your brain. When blood flow to your brain is reduced or blocked, it can lead to stroke.
- Peripheral arterial disease (PAD). This occurs when plaque builds up in the major arteries that supply oxygen-rich blood to the legs, arms, and pelvis. When blood flow to these parts of your body is reduced or blocked, it can lead to numbness, pain, and sometimes dangerous infections.

Some people with atherosclerosis have no signs or symptoms. They may not be diagnosed until after a heart attack or stroke.

Cholesterol is a soft, fat-like, waxy substance found in the bloodstream and in all your body cells. It is an important part of a healthy body because it's used for producing cell membranes and some **hormones**, and serves other bodily functions. But a high level of cholesterol in the blood, called Hypercholesterolemia, is a major risk factor for coronary **heart disease**, which leads to a heart attack. Procurement of **cholesterol** is via two routes. The body makes some of it, and the rest comes from cholesterol in animal products, such as meat, poultry, fish, egg, butter, cheese and whole milk. Food from plants — like fruits, vegetables and cereals — doesn't have cholesterol. Foods with saturated fats also cause the body to make more cholesterol. **Cholesterol**

and other fats can not dissolve in the blood. They have to be transported to and from the cells by special carriers called lipoproteins. These are of two kinds. Low-density lipoprotein, or LDL, is known as the "bad" cholesterol. Too much LDL cholesterol can **clog** your arteries, increasing your risk of heart attack and **stroke**. High-density lipoprotein, or HDL, is known as the "good" cholesterol. **The body** makes HDL cholesterol for the protection. It carries cholesterol away from the arteries. **Studies**

suggest that high levels of HDL cholesterol reduce the risk of heart attack. A high level of LDL in the blood may mean that cell membranes in the liver have reduced the number of LDL receptors due to increased amounts of cholesterol inside the cell. After a cell has used the cholesterol for its chemical needs and doesn't need it any more, it reduces its number of LDL

receptors. This enables LDL levels to accumulate in the blood. When this happens, the LDLs begin to deposit cholesterol on artery walls, forming thick plaques. In contrast, the HDLs—the “good” guys—act to remove this excess cholesterol and transport it to the liver for disposal.

Cholesterol is needed for:

1. Formation and maintenance of cell membranes (helps the cell to resist changes in temperature and protects and insulates nerve fibers)
2. Formation of sex hormones (progesterone, testosterone, estradiol, cortisol)
3. Production of bile salts, which help to digest food
4. Conversion into vitamin D in the skin when exposed to sunlight.

**In a Yogic view**, heart disease is a problem of modern times. It is psychosomatic in nature. Improper lifestyle, faulty **diet** and negative thinking play an important part in triggering heart disease. Our thoughts, feelings and emotions affect our body and mind. Negative emotions spark chemical processes throughout the entire body. Any irritation in the lining of arterial walls - which includes high levels of fat in the blood, smoking and high blood pressure, - can trigger heart diseases. Vedic wisdom in yoga lays emphasis on four aspects that have a direct bearing on health. They are:

Achaar (character and conduct): It stands for moral virtues - truthfulness, chastity, compassion and kindness.

Vichaar (perception or the way we think): The way we think influences our way of life. Develop a positive outlook in life and remove negative thoughts from the mind.

Vyayahaar (the way we behave): It pays to replace undesirable habits with positive ones. If we fear change and cling to old, negative habits, we cannot succeed in yoga.

Ahaar (diet or the food we eat): Food sustains our body. What we eat affects our mind directly. Intake of proper and healthy food nourishes body and mind. Avoid over- eating and eat in moderation.

Any imbalance in any of these aspects results in disharmony of body, mind and soul. This paves the way for diseases.

Effects of a Stressed Out Heart

The involuntary function of the body, like circulation, is controlled by the autonomic nervous **system** and the endocrine system. The **autonomic nervous system**

is divided into two parts: the sympathetic and parasympathetic.

When the sympathetic nervous system is stimulated, a person's stress level increases. Stress increases our heart rate. Again, when this system is stimulated beyond a point, it results in decrease in HDL level, rise in oxidized LDL level, and increase in vascular spasm. These changes in the body cause atherosclerosis, plaque formation, plaque rupture and increase in platelet stickiness. Prolonged stress causes psychosomatic diseases like hypertension, diabetes etc.

The parasympathetic nervous system works against the sympathetic system, to balance the stress level. Practice of yoga stimulates the parasympathetic system and combats stress.

Care should be taken to avoid negative emotions that dominate the mind (emotions like anger, hostility, resentment, jealousy, fear, vanity, egoism and criticism). These negative emotions induce secretion of hormones that increase the irritability of the myocardium (the muscle of the heart). Negative emotions also bring down the immunity level of a person, causing an overall deterioration of health.

In addition, mental relaxation through **meditation** and yoga contribute immensely in offsetting arteriosclerosis (coronary artery blocked due to the deposition of fats on the inner walls of the heart). Thus, owing to its many positive effects- direct and indirect on the cardiovascular system, yoga assumes a pivotal role in heart care.

**According to Ayurveda**, the heart is the seat of prana, ojas, and mind (Lad 195). It is a most vital organ, and the person is as old as his/her heart. The greatest risks for the heart problems come from high blood pressure, high cholesterol, and stressful lifestyle. Angina or chest pain, according to Dr. Lad, is caused by kapha dosha. Accumulated kapha blocks the flow of prana into the coronary artery, so that the heart muscle does not receive sufficient blood and oxygen supply. It creates local anemia and pain. Typically, the pain starts from the breastbone in the center of the chest, goes to the left shoulder, and to the inner side of the upper arm, ending at the tip of the little finger.

According to the Ayurvedic perspective, the heart has two equally important aspects that need to be taken into account when discussing heart health: the physical aspect of the organ that pumps blood and the emotional heart that experiences every human emotion from joy to sorrow. The heart is the seat of prana, or life- force. It is also the repository of the eight essential drops of ojas in the body. Ayurveda defines ojas as the substance that sustains life and promotes vitality, longevity and bliss. In one stroke, ojas both infuses your mind with bliss and enlivens the healing intelligence of the physical body. (Better Heart). Ayurvedic healers recognized many millennia ago what modern medicine says today - that eating fatty foods in excess (which do not get completely digested and create toxins or ama in the system) and too much stress are the prime factors that lead to heart damage (Better Heart).

### 3. Signs and Symptoms:

Common symptoms of CAD are angina and shortness of breath. However, some people have no signs or symptoms and this condition is called silent CAD. It may not be diagnosed until

a person shows signs and symptoms of a heart failure, heart attack, or an arrhythmia (irregular heartbeat).

Angina is chest pain or discomfort that occurs when the heart muscle doesn't get enough oxygen-rich blood. Angina may feel like pressure or a squeezing pain in the chest, but it may also be present in the shoulders, arms, neck, jaw, or back. This pain tends to get worse with activity and go away with rest. Emotional stress also can trigger the pain.

Another common symptom of CAD is shortness of breath. This symptom happens if CAD causes heart failure. In this case, the heart can't pump enough blood throughout your body. Fluid builds up in the lungs, making it hard to breathe.

Heart failure is a condition in which the heart can't pump enough blood to the body. Heart failure doesn't mean that the heart has stopped or is about to stop working. It means that the heart can't fill with enough blood or pump with enough force, or both. This causes the shortness of breath and fatigue that tends to increase with activity. Heart failure also can cause swelling in the feet, ankles, legs, and abdomen.

The severity of these symptoms varies. The symptoms may get more severe as the buildup of plaque continues to narrow the coronary arteries.

A heart attack happens when an area of plaque in a coronary artery breaks apart, causing a blood clot to form. The blood clot cuts off most or all blood to the part of the heart muscle that's fed by that artery. Cells in the heart muscle die because they don't receive enough oxygen-rich blood. This can cause lasting damage to the heart. The most common symptom of heart attack is chest pain or discomfort. Most heart attacks involve discomfort in the center of the chest that lasts for more than a few minutes or goes away and comes back. The discomfort can feel like pressure, squeezing, fullness, or pain. It can be mild or severe. Heart attack pain can sometimes feel like indigestion or heartburn.

Heart attacks also can cause upper body discomfort in one or both arms, the back, neck, jaw, or stomach. Shortness of breath or fatigue (tiredness) often may occur with or before chest discomfort. Other symptoms of heart attack are nausea (feeling sick to your stomach), vomiting, lightheadedness or fainting, and breaking out in a cold sweat.

An arrhythmia is a problem with the speed or rhythm of the heartbeat. The heart may skip some beats or produce extra beats. Some people describe arrhythmias as a fluttering feeling in their chests. These feelings are called palpitations. Some arrhythmias can cause the heart to suddenly stop beating. This condition is called sudden cardiac arrest (SCA), which can lead to fainting and death if it's not treated right away.

#### **4. Chakra Focal Point:**

Anahata, the fourth Chakra or the heart chakra, rests in the center of the chakra system, at the core of our spirit. Its physical location is the heart, upper chest, and upper back. The fourth chakra is the balance point, integrating the world of matter (the lower three chakras) with the world of spirit (the upper three chakras). Through the heart chakra, we open to and connect with harmony and peace. The health of our heart center registers the quality and power of love in our life. In Sanskrit, Anahata means “unstruck” or “unhurt.” Its name implies that deep beneath our personal stories of brokenness and the pain in our heart, wholeness, boundless love, and a wellspring of compassion reside (Yoga journal).

## 5. Common Medical Treatments:

The main treatment for atherosclerosis is lifestyle changes. Medicines and medical procedures may also be needed. Ongoing medical care can help you live a healthier life. Better treatments have reduced the number of deaths from atherosclerosis-related diseases. These treatments also have improved the quality of life for people with these diseases. Still, the number of people diagnosed with atherosclerosis remains high.

The prevention and delay of the atherosclerosis and related diseases is possible by maintaining a healthy lifestyle.

Treatment for CAD may include lifestyle changes, medicines, and medical procedures. Lifestyle changes include following a heart healthy eating plan, increasing physical activity, maintaining a healthy weight, quitting smoking, and reducing stress. Taking action to control the risk factors, making lifestyle changes, and/or taking medicines can help prevent or delay CAD.

The goals of treatments for CAD are to:

- Relieve symptoms
- Reduce risk factors in an effort to slow, stop, or reverse the buildup of plaque
- Lower the risk of blood clots forming, which can cause a heart attack
- Widen or bypass clogged arteries
- Prevent complications of CAD

### **Lifestyle Changes**

Making lifestyle changes can often help prevent or treat CAD. For some people, these changes may be the only treatment needed:

- Follow a heart healthy eating plan to prevent or reduce high blood pressure and high blood cholesterol and to maintain a healthy weight
- Increase your physical activity. Check with your doctor first to find out how much and what kinds of activity are safe for you.
- Lose weight, if you're overweight or obese.
- Quit smoking, if you smoke. Avoid exposure to secondhand smoke.

- Learn to cope with and reduce stress.

**Therapeutic Lifestyle Changes (TLC).** Your doctor may recommend TLC if you have high cholesterol. TLC is a three-part program that includes a healthy diet, physical activity, and weight management.

With the TLC diet, less than 7 percent of your daily calories should come from saturated fat. This kind of fat is mainly found in meat and poultry, including dairy products. No more than 25 to 35 percent of your daily calories should come from all fats, including saturated, trans, monounsaturated, and polyunsaturated fats.

You also should have less than 200 mg a day of cholesterol. The amounts of cholesterol and the different kinds of fat in prepared foods can be found on the Nutrition Facts label.

Foods high in soluble fiber also are part of a healthy eating plan. They help block the digestive track from absorbing cholesterol. These foods include:

- Whole grain cereals such as oatmeal and oat bran
- Fruits such as apples, bananas, oranges, pears, and prunes
- Legumes such as kidney beans, lentils, chick peas, black-eyed peas, and lima beans

A diet high in fruits and vegetables can increase important cholesterol-lowering compounds in your diet. These compounds, called plant stanols or sterols, work like soluble fiber.

Fish are an important part of a heart healthy diet. They're a good source of omega-3 fatty acids, which may help protect the heart from blood clots and inflammation and reduce the risk for heart attack. Try to have about two fish meals every week. Fish high in omega-3 fats are salmon, tuna (canned or fresh), and mackerel.

You also should try to limit the amount of sodium (salt) that you eat. This means choosing low-sodium and low-salt foods and "no added salt" foods and seasonings at the table or when cooking. The Nutrition Facts label on food packaging shows the amount of sodium in the item.

Try to limit alcoholic drinks. Too much alcohol will raise your blood pressure and triglyceride level. (Triglycerides are a type of fat found in the blood.) Alcohol also adds extra calories, which will cause weight gain. Men should have no more than two alcoholic drinks a day. Women should have no more than one alcoholic drink a day.

**Dietary Approaches to Stop Hypertension (DASH) eating plan.** Your doctor may recommend the DASH eating plan if you have high blood pressure. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are heart healthy and lower in salt/sodium.

This eating plan is low in fat and cholesterol. It also focuses on fat-free or low-fat milk and dairy products, fish, poultry, and nuts. The DASH eating plan is reduced in red meat (including lean red meat), sweets, added sugars, and sugar-containing beverages. It's rich in nutrients, protein, and fiber.

**Increase Physical Activity.** Regular physical activity can lower many CAD risk factors, including LDL (“bad”) cholesterol, high blood pressure, and excess weight. Physical activity also can lower your risk for diabetes and raise your levels of HDL cholesterol (the “good” cholesterol that helps prevent CAD).

Check with your doctor about how much and what kinds of physical activity are safe for you. Unless your doctor tells you otherwise, try to get at least 30 minutes of moderate-intensity activity on most or all days of the week. You can do the activity all at once or break it up into shorter periods of at least 10 minutes each. Moderate-intensity activities include brisk walking, dancing, bowling, bicycling, gardening, and housecleaning. More intense activities, such as jogging, swimming, and various sports, also may be appropriate for shorter periods.

**Maintain a Healthy Weight.** Maintaining a healthy weight can decrease risk factors for CAD. If you’re overweight, aim to reduce your weight by 7 to 10 percent during your first year of treatment. This amount of weight loss can lower your risk for CAD and other health problems.

After the first year, you may have to continue to lose weight so you can lower your body mass index (BMI) to less than 25. BMI measures your weight in relation to your height and gives an estimate of your total body fat. A BMI between 25 and 29 is considered overweight. A BMI of 30 or more is considered obese. A BMI of less than 25 is the goal for preventing and treating CAD.

**Quit Smoking.** If you smoke or use tobacco, quit. Smoking can damage and tighten blood vessels and raise your risk for CAD. You also should avoid exposure to secondhand smoke.

**Reduce Stress.** Research shows that the most commonly reported “trigger” for a heart attack is an emotionally upsetting event—particularly one involving anger. Also, some of the ways people cope with stress, such as drinking, smoking, or overeating, aren’t heart healthy. Physical activity can help relieve stress and reduce other CAD risk factors. Many people also find that meditation or relaxation therapy helps them reduce stress.

### Medicines and Procedures

You may need medicines to treat CAD if lifestyle changes aren’t enough. Medicines can:

- Decrease the workload on your heart and relieve CAD symptoms
- Decrease your chance of having a heart attack or dying suddenly
- Lower your cholesterol and blood pressure
- Prevent blood clots
- Prevent or delay the need for a special procedure (for example, angioplasty or coronary artery bypass grafting (CABG))

**Medicines** used to treat CAD include anticoagulants, aspirin and other antiplatelet medicines, ACE inhibitors, beta-blockers, calcium channel blockers, nitroglycerin, glycoprotein IIb-IIIa, statins, and fish oil and other supplements high in omega-3 fatty acids.

You may need a **medical procedure** to treat CAD. Both angioplasty and CABG (coronary artery bypass graft) are used as treatments.

**Angioplasty** opens blocked or narrowed coronary arteries. During angioplasty, a thin tube with a balloon or other device on the end is threaded through a blood vessel to the narrowed or blocked coronary artery. Once in place, the balloon is inflated to push the plaque outward against the wall of the artery. This widens the artery and restores the flow of blood. Angioplasty can improve blood flow to the heart, relieve chest pain, and possibly prevent a heart attack. Sometimes a small mesh tube called a stent is placed in the artery to keep it open after the procedure.

In **CABG**, arteries or veins from other areas in your body are used to bypass your narrowed coronary arteries. CABG can improve blood flow to the heart, relieve chest pain, and possibly prevent a heart attack.

Your doctor may prescribe **cardiac rehabilitation (rehab)** for angina or after CABG, angioplasty, or a heart attack. Cardiac rehab, when combined with medicine and surgical treatments, can help you recover faster, feel better, and develop a healthier lifestyle. Almost everyone with CAD can benefit from cardiac rehab. The cardiac rehab team may include doctors, nurses, exercise specialists, physical and occupational therapists, dietitians, and psychologists or other behavioral therapists.

Cardiac Rehab has two parts:

- Exercise training. This part helps you learn how to exercise safely, strengthen your muscles, and improve your stamina. Your exercise plan will be based on your individual abilities, needs, and interests.
- Education, counseling, and training. This part of rehab helps you understand your heart condition and find ways to reduce your risk for future heart problems. The cardiac rehab team will help you learn how to cope with the stress of adjusting to a new lifestyle and with your fears about the future.

## 6. Yogic remedies:

The Ayurvedic approach to heart health focuses as much on building up ojas as it does on strengthening and nourishing the physical heart muscle. So a healthy diet, exercise and stress management techniques are the cornerstones of the ayurvedic program for heart health. Yogic lifestyle can help prevent and cure cardiovascular heart diseases. Proper life-style and **diet** play a key role in managing and avoiding heart disease. The good news about heart disease is that nearly all of it is preventable, and much of it may be reversible. Heart disease can largely be prevented by eating a healthier diet, exercising in moderation and actively managing stress levels.

**Yoga** has a vital role in eliminating the negative impacts of modern living. When one incorporates yoga into their daily routine, it can definitely help in halting the progress of cardiac

diseases. The physical activity in yoga enhances cardiac health and promotes a feeling of well-being. Yoga is a way to healthy living.

### Recent studies

say that diseases of the heart are preventable and reversible. They say that by changing one's lifestyle, one can create a healthier heart. At the deeper level, surgery and drugs do not offer the ultimate solution to diseases of the heart. People with heart disease should not suppress their feelings. Rather they should seek support groups or friends to vent out their emotions. Many people manifest their repressed feelings through the physical body, as disease.

A positive frame of mind with the practice of yoga will help in the cure of the disease. The path of yoga helps in the prevention of stress in healthy people, aids in the recovery of diseases and other illnesses, gives strength to the physical body and helps in weight\_loss. Yoga induces deep relaxation and wellness of body, mind, and soul. The essential parts of yoga practice involve yoga postures or asanas, exercise, pranayama or breathing exercises, yoga nidra or deep relaxation, visualization or imagery, meditation, diet, and lifestyle changes.

### Yoga postures or asana

Yoga sutras say that a posture that is comfortable and stable is an asana. Stability and feeling of well-being are the results of asana. The practice of asana teaches us to sit erect, keep ourselves healthy and free the mind of thoughts.

The health of the human body depends on the health of the tissues. The organs of the human body are made up of tissues. Practice of asana replenishes the tissues with a fresh supply of oxygen. Elements necessary for nourishment of tissues are carried to them by blood. The circulatory system plays a vital role in the nourishment of tissues.

The heart is the strongest muscle in the body. It can be made healthier by means of proper yogic exercises. It is the contraction and relaxation of the heart that causes circulation of blood to all parts of the body.

Yogic exercises give a good massage to the hard working heart. Asanas involve very little muscular activity. In such a condition, the heart has a tendency to slow down its speed and the heart beats in a controlled manner. When the muscular activity is less, there is minimum production of carbon dioxide. This reduces the levels of stress to the heart.

Asanas improve cardiovascular efficiency even in a diseased person. Asanas are an essential component of yoga that brings steadiness and stability to the body.

In asana practice, one can afford to stretch the muscles, provided relaxation is practiced during the effort. This relaxation helps in enhancing the function and efficiency of internal organs and regulates blood supply to these organs.

- Yoga exercises are not about accomplishment.
- Yoga helps in turning inward, focusing the mind and relaxing into the asana.

- Always have a non- striving attitude without the desire to perform the asana in a perfect manner.
- Do not force the stretch and always accept your flexibility. Never try to emulate another person.
- Go easy and slowly. Pain should never be a part of yoga.

### **Anjali Mudra**

The word ‘Anjali’ means to adorn, honor, to celebrate or anoint. This mudra or gesture is also known as Hridayanjali Mudra, which means, reverence to the self or the heart. This mudra is an excellent way to induce a peaceful state of mind. This mudra is a gesture of reverence to the divinity within.

#### **Benefits**

- Balances our energies; the heart is opened to prayer.
- Calms the brain and reduces the level of stress and anxiety.
- Improves flexibility in the hands and enhances poise.

#### **Steps:**

- Sit comfortably in a cross- legged position. Inhale and bring your hands together.
- The two hands are pressed against each other and held close to the heart.
- The head should be gently bowed as in prayer.
- Do these mudras for 5 minutes till a feeling of peace takes over.

### **Swastikasana or Padmasana Pose (or any variations of the Padmasana)**

In ancient times, swastika was considered an auspicious symbol of good luck.

#### **Benefits**

- Concentration is improved.
- Abdominal muscles are toned.
- Strain on the heart is reduced.
- Functioning of the backbone is improved.

#### **Steps:**

- Sit in a cross-legged position with the spine erect.
- Place the right heel on the inner side of the left thigh.
- Then take the left heel and place it on the inner side of the right thigh
- Place your hands on the respective knees.
- Keep the spine erect and close your eyes and free your mind from all wandering thoughts.
- Just be still.
- Sit in this position for 10 minutes.

**Bhujangasana (cobra pose)**

This posture promotes flexibility in the spine and ensures movement of the chest.

**Benefits**

- It strengthens the spine.
- It helps relieve stress and fatigue.
- It opens the heart and lungs.

**Steps:**

- Lie on your abdomen and place your forehead on the floor. The arms must be placed at the sides.
- Take in 3-4 deep breaths and slowly lift your head away from the floor.
- Then raise shoulders slowly and maintain this position.
- Place your hands besides your chest with palms touching the floor.
- Without raising your stomach off the floor, raise your chest with the arms to balance the body.
- Breathe even and hold this position for some deep breaths.
- Exhale. Slowly lower the body and place your forehead on the floor.
- Repeat the asana 3-4 times and relax.

**Viparitakarani**

This traditional pose gives strength and restores youth and vitality to the body.

**Benefits:**

- The practice of this asana improves blood circulation.
- The asana promotes health of the thyroid glands.
- It gives maximum rest to the internal organs.

**Steps:**

- Lie on your back with hands straight by the side of thighs and palms resting on the ground.
- Slowly raise your legs from the floor without bending the knees.
- Raise the legs until they are perpendicular to the floor.
- Bring the legs slightly towards the head, so that the buttocks are also raised.
- Support your buttocks with your hands. Keep your legs straight with elbows placed on the floor.
- Straighten your legs parallel to the elbows, while giving support to the buttocks.
- Come back to the original position, by slowly bringing the legs towards the ground and placing the hands on the ground.
- Then, bring the buttocks to the ground, keeping the legs straight.
- Bring the legs to the ground and relax.

^ Those suffering from hypertension are advised to avoid this posture.

### **Sarvangasana (shoulder stand)**

Sarvangasana activates the entire body. It helps stimulate the endocrine, nervous and circulatory systems and rejuvenates the whole body.

#### **Benefits:**

- Purifies the blood and ensures good circulation.
- Improves digestion.
- Massages the heart.
- Relieves fatigue, sleeplessness, lethargy and mental sluggishness.

#### **Steps:**

- Lie on your back.
- After inhaling and exhaling, lift the legs, hips and trunk till they are vertical and over the head.
- Support the trunk and the back with hands bent at the elbows.
- Bring the breastbone to touch the chin.
- Keep your legs straight and breathe evenly.
- Maintain this position for several breaths.
- Keep your legs straight, relaxed and perpendicular to the floor.
- Breathe evenly and hold for several deep breaths.
- Exhale and slowly come to the original position.

^ Those suffering from hypertension are advised to avoid this posture.

### **Sirshasana (the headstand)**

Hatha yoga considers this asana as the king of asanas, as it acts as a powerful blood purifier.

#### **Benefits**

- The whole body is re-energized.
- It improves the power of digestion.
- The heart rate is slowed down and blood circulation to the brain is increased.
- It increases memory, concentration and intellectual capacity.

#### **Steps:**

- Sit on your knees.
- Place your arms on the ground by bending forward and lock your fingers.
- Slowly rest your head in the palms and raise your hips along with the legs upwards.
- The back must be kept perpendicular to the floor.

- The whole body is raised up with head being supported by the interlocked fingers.
- Inhale and exhale evenly. Maintain this position for a few breaths.
- Relax and come back to the original position
  - ^ Those suffering from high blood pressure, acute heart disease, cough or chronic cold should not practice this asana.

In addition, if there is no acute chest pain, practicing asanas like Ushtrasana (Camel), Navasana (Boat), Shalabasana (Locust), and any variation of the Spinal Twist will gently stretch the coronary arteries and increase circulation to the heart (Lad 126). To strengthen the heart, practice Padmasana (Lotus) or any variation of it, Sukhasana (Easy pose), Setu Bandha Sarvangasana (Bridge), Gomukasana (Cow), Dhanurasana (Bow), Bhujangasana (Cobra), Uttanasana (Standing Forward Bend), and Vrksasana (Tree) poses.

To reduce cholesterol, practice Sun Salutations, Sarvangasana (Shoulderstand), Mayurasana (Peacock), Bhujangasana (Cobra), Spinal Twists, Shalabasana (Locust), and Padmasana (Lotus) or any variation of it (Lad p. 151).

### **Uddiyana Banda**

'Uddiyana' involves pulling the abdominal organs above and below the navel. The uplifting of the diaphragm

massages the muscles of the heart.

#### **Steps:**

- Stand erect.
- Spread the legs with the legs bent more at the knees.
- Slowly lean forward. Place hands on the thighs and exhale fully, until all the breath is thrown out.
- The chest must be expanded and the abdomen must be drawn in. The upper portion of the abdomen must be pulled towards the spine.
- Remain in this position and hold it for a few seconds till you can.
- Then slowly relax the abdominal region and stand erect after inhalation.

### **Nauli**

It should be practiced after uddiyana bandha. It should be practiced always on an empty stomach and never after a meal.

#### **Steps:**

- Stand erect with legs apart.
- Bend the legs a little at the knees.
- Place your [palms](#) on the thighs and touch the chest with your chin.
- Force all the breath from the lungs by inhaling and exhaling deeply.
- Hold breath; the rectus muscle of the abdomen must be pulled and pushed towards the spine.
- Maintain this position for a few seconds and then relax.

- Begin to inhale evenly.

## Exercise

To keep the heart healthy, daily exercise is very important, however, the quantity and degree of strenuousness depend on age, level of fitness, and constitutional type. Kapha needs the most vigorous exercise, Vata the most gentle, and moderate exercise is ideal for Pitta. For most people, walking at least two miles a day is very beneficial. In addition, some vigorous aerobic activities like fast walking, swimming, gentle jogging, or jogging in place on trampoline should be done daily (Lad p.150).

## Pranayama for the Heart

Both the Breath of Fire (Bhastrika) and Ujjai Pranayama can reduce cholesterol and strengthen the heart (Lad p.151). Deep breathing opens up the shrotas in the body.

## Yoganidra or Deep Relaxation

This is a powerful yoga technique, which helps in achieving deep relaxation and awareness of one's own body through yogic sleep. This is practiced by lying down flat on the back. Close your eyes and exhale the air out completely from the lungs. Mentally chant any mantra with perfect calmness. As one does this with tranquility, a spiritual energy is generated and different organs of the body absorb this energy. This energy works on the mind in the subconscious level. As a result, all physical and mental disorders get destroyed. Confidence, strong will and concentration increases. Peace of mind follows and enables the practitioner to attain calmness and clarity of mind.

In addition, practice daily Savasana for 20 minutes - it brings tranquility and rest and heals the heart (Lad p. 196).

## Visualization and Imagery

Images are created in the mind to fill it with peace and tranquility. This should be done consciously and efforts must be made to create them in our minds. This acts as a powerful tool to heal our mental and physical bodies. Visualize your heart as a healthy organ and free from any disease that troubles you. Think health and you have it. Affirm and picture only positive images in the mind. The image of a healthy heart helps the body respond favorably to the image in the mind, thereby making it a reality.

## Meditation

Meditation is one of the best ways to relax, dissolve stress, and allow the body to heal.

### Meditation

is effective in reducing stress. Sit in a comfortable position. Take a deep breath, hold it briefly and exhale. Gently release any tension that you feel within. Again take a second deep breath, hold it briefly and slowly exhale. Let go of all the thoughts that make you restless. Take a third deep breath and slowly exhale. Release all the energies and distractions from the body and move into a peaceful, serene and tranquil state of mind. Turn your attention to the heart and feel positive vibrations of love, compassion, forgiveness, and understanding emanating from the heart. That will fill you with a feeling of well-being and calmness.

Practice meditation for 20 minutes twice a day. The meditation program has been shown in research studies to lower blood pressure, reverse arterial blockage and enhance resistance to heart disease and strokes. Meditation is beneficial in improving the symptoms and exercise capacity, and in lowering weight and serum lipid levels. It also retards the progression of coronary atherosclerosis in patients with severe coronary artery disease (Better Heart).

## Diet

The following measures will help control cholesterol and improve heart condition.

- A low-fat, low-cholesterol diet helps a great deal in this direction. This means keeping the total fat consumption—saturated, polyunsaturated and monounsaturated—to fewer than 30 percent of your daily intake of calories. Keep the cholesterol intake to fewer than 300 milligrams per day. Saturated fats contained in butter, whole milk, hydrogenated oils, chocolate shortening, etc. should comprise no more than 1/3<sup>rd</sup> of the total fat consumption.
- Using skimmed milk and including fish in the diet has been found to be beneficial.
- Consumption of a wide variety of vegetables, pasta, grains and fruit is another effective method.
- Being aware of the nutritional labels and choosing low cholesterol foods also helps keep the intake lower.
- It is important to avoid foods with high fat content such as fatty fried food, ice cream, heavy meats, yogurt, and cheese (Lad p. 195). Stick to Kapha reducing diet.
- Include in your daily diet some cholesterol-reducing foods like oatmeal, corn, apples, fresh fruit juice (orange, grapefruit), millet, quinoa, almonds, fresh vegetables (Lad p. 196).
- Cook with heart- friendly spices such as small amounts of freshly cracked black pepper, fresh ground cardamom, ginger, garlic, and onion.
- In the morning, drink 1 cup of hot water, add 1 teaspoon of honey, and 1 teaspoon of lime/lemon juice or apple cider vinegar to reduce cholesterol and fat in your body (Lad p. 151).

## Cultivate the Ojas-Enhancing Lifestyle

Drink lots of warm water through the day to help cleanse the physiology. Manage your mental workload and lessen your daily mental stresses. Go to bed by 10 p.m. and awake before 6 a.m. Walk into the rising sun to nourish your mind and spirit. Practice deep breathing. Avoid mental stress and instability.

In addition, the practice of non-violence is the best among life-promoting practices; it conserves and nourishes vital energy, and promotes strength and acquisition of knowledge. Control of the sensory organs helps to achieve happiness and knowledge of the reality. From the heart, ten great vessels carry ojas throughout the body. Therefore, the heart should be regarded as the central supporter of the whole organism.

Finally, the most powerful way to open, energize, and balance the heart is to love others and ourselves. Love is the greatest healer. Remembering what we love and appreciate as we practice asanas enhances the power of the poses and our general well-being.

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