KIMS HOSPITALS™

NEWSLETTER ON WELLNESS

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Editor's Desk

Dear Reader,

Greetings, and welcome to the KIMS e-newsletter on wellness titled "Know Your Heart".

The human heart, right from the moment of birth, works non-stop pumping blood to all parts of the body throughout the span of our lives. Hence, it is essential that one takes proper care of such a vital organ on which, literally, our life and death depend. Adopting lifestyle changes can reduce the risk of cardiac disorders. It is never too late to make positive changes. The current issue covers various points concerning the heart and measures one can adopt to protect it. Healthy diet, adequate sleep, regular exercise, a stress-free lifestyle and refraining from use of tobacco - all these go a long way in keeping one's heart healthy. Go on.. Have a hearty read. I am sure, you will find it revealing and rewarding.

We value your feedback as always.

With best wishes

Dr. Bhujanga Rao Vepakomma
Chief Editor

From ancient times, people have believed that the heart is the centre of all emotions, including love and affection. There are words in our vocabulary such as sweet heart, heartless, heart throb, soft-hearted, and hard-hearted. In both senses of the word, the HEART is the most essential part of a human being. A healthy heart is central to overall good health. Embracing a healthy lifestyle at any age can prevent heart disease and lower your risk for a heart attack or stroke. In order to live a long and healthy life, it is important to understand the fundamentals of the cardiovascular system.

People's deaths from heart attacks are often in the news leaving everybody with a number of questions.

- Is heart disease, blockages, heart attacks, and cardiac arrest the same?
- My loved one was diagnosed with blockages of the heart arteries. What does it imply?
- I experience chest discomfort / pain occasionally. Could it indicate a cardiac problem?
- What to do if someone is having a heart attack?
- Why do so many people get unexpected heart attacks?
- What can I do to keep my heart healthy?
- Is the Covid vaccine responsible for the surge in heart attacks?

Cardiovascular Disease (CVD)

Cardiovascular disease (CVD), commonly called "heart disease", is responsible for more deaths worldwide than any other disease. However, equating all CVD to heart attacks is not correct. The heart, like any engine, has various working components, each with a particular purpose. Four main features of the heart include:

i) Heart muscle: Acting like a pump, heart muscle is the power train that pumps blood to the rest of the body, and its power is denoted as the ejection fraction. "Heart failure" might be the result of a heart muscle that is too weak.

ii) Heart valves: Four cardiac valves are located within the heart chamber. By opening and closing with each heartbeat, these valves facilitate unidirectional blood flow. An improperly opening or closing valve can impede normal cardiac function. An echo cardiogram (2D-Echo) or an MRI can examine valve function as well as the heart's pumping capacity.

iii) Electrical system: Within the heart's muscle, there are thin, intricate fibers that carry current within the heart. The electrical current travels through conduction pathways and triggers the heart's ventricles to contract and pump out blood. Abnormalities related to current are known as arrhythmia and can be captured on an electrocardiogram (ECG) or a Holter test.

iv) Blood flow: Over the heart's outer surface lies a set of blood vessels called coronary arteries, which supply blood to the heart muscle. Cholesterol and other components often deposit inside these arteries, leading to blockages or plaques. If severe enough, these blockages can interrupt the blood flow. Since blood carries oxygen and other necessary nutrients to sustain life, an interruption in the blood supply to the heart muscle will be detrimental to the functioning cells, leading to cell death, aka a heart attack. Myocardial infarction (MI), commonly known as a heart attack, is the quintessential medical emergency that must be treated as early as possible.

An angiogram or a Computed Tomography (CT) scan can evaluate the presence and severity of the blockages. Indirect tests to exclude major blockages include treadmill stress test (TMT), stress echo, or stress perfusion imaging.

Abnormalities related to various components of the heart are often interlined, as shown in Figure-1. For example, Coronary artery blockages can weaken the heart muscle, leading to valve dysfunction and / or rhythmic disturbances.

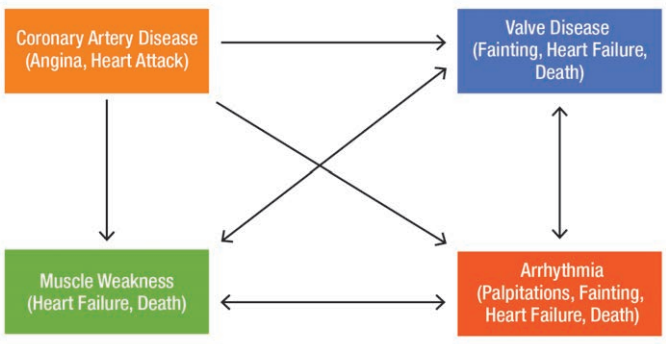


Figure-1: *Flowchart demonstrating how various heart abnormalities are interlinked.*

Narrowing of the heart arteries, heart attack, and cardiac arrest

Coronary artery disease (CAD) is the technical term for blockages or plaques. If you cut open a blood vessel and dissect the plaque, you will find a complex mixture of cholesterol, calcium, dead cells, blood clots, and many other types of cells. How a blockage starts is a matter of scientific debate. However, an unhealthy lifestyle, metabolic risk factors, genetics, environmental factors, etc. play a significant role in plaque formation and progression.

The majority of obstructions intensify over time. With optimal medical care, this progression can be prevented in a lot of cases, but not all. A few blockages may disrupt and rapidly worsen over minutes to hours, often culminating in a heart attack. Such plaque disruptions occur during periods of physical or mental stress or can happen without any apparent reason. With optimal medical care and a healthy lifestyle, many blockages may remain stagnant over the years. A plaque that remains stable over the years is less likely to cause a heart attack. In rare situations, blockages can regress by a few percentage points.

Heart Attack:

Any damage to the heart muscle due to the reduced blood supply is called a heart attack or myocardial infarction. It typically happens when severe coronary artery narrowing leads to a marked reduction in blood supply to the heart muscle. Cells of the heart muscle, when kept devoid of oxygen and other nutrients long enough, die. Such damage is often permanent. A heart attack is treated with urgent angioplasty and supportive medicines for the damaged heart muscle. Treatment of blockages after a heart attack aims to save the remaining live heart muscle since it is impossible to revive dead cells. It is worth mentioning that while blockages are the most common reason for damage to the heart muscle, there are instances where such injury may happen without major blockages as well.

Cardiac Arrest:

Cardiac arrest is when the heart stops beating. Cardiac arrest implies the person is dead unless revived using cardiopulmonary resuscitation (CPR). Cardiac arrest happens due to an electrical disturbance or life-threatening arrhythmia of the heart, almost like a short circuit or a power outage. While a heart attack most commonly triggers cardiac arrest, other causes of electrical disturbances exist, particularly in young individuals. A person with cardiac arrest requires immediate CPR. CPR started within 2 minutes of cardiac arrest may increase the likelihood of survival.

The basic difference between a heart attack and a cardiac arrest is depicted in Figure-2

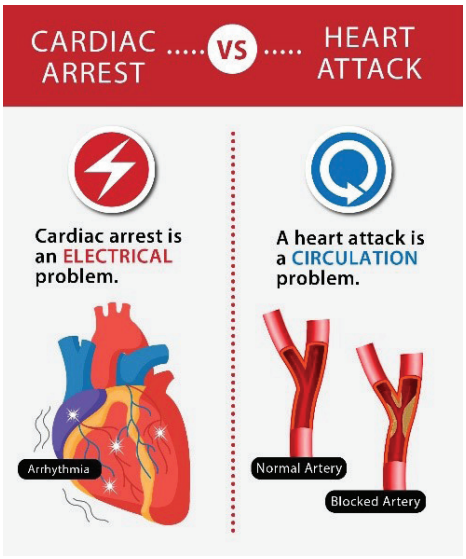


Figure-2

Since timely CPR is crucial in cardiac arrest, bystander participation in resuscitation is necessary. Basic Life Support (BLS) comprises of CPR and related components that every individual should yearn to learn ***(Figure-6)***. Many hospitals and government agencies periodically conduct community training programmes that one can avail. Since most cardiac arrest happens due to an electrical disturbance (arrhythmia), an "electrical reset" of the heart can be performed by emergent defibrillation.

Figure-3

An Automated ***(Figure-3)*** External Defibrillator (AED) is a device attached to a person's chest via sticky pads. Once turned on, the AED automatically reads the heart rhythm and advises the bystander to 'deliver a shock'. Upon pressing the designated button, the AED delivers an electrical shock to the heart with clinical precision. This act, in effect, 'resets' the electrical disturbance of the heart. If the reset is successful, a life is saved. Further treatment is directed at finding the cause of cardiac arrest, which in most cases is a heart attack, and treating it. AEDs are installed in a few of the common public places such as shopping malls, train stations, etc.

The State Government of Telangana has taken the initiative to install many more AEDs in public places. Therefore, it may be prudent to familiarize oneself with how to use an AED as you may be able to save a life during crises.

Chest pain:

While chest pain is classically associated with heart-related pain (angina) or a heart attack, there are certain things worth noticing:

Every chest pain is not a heart attack. Problems related to the stomach or food pipe (acidity, ulcer, etc.) or muscles or bones (injury, inflammation, spasm), nerve irritation, etc., are common causes of non-anginal chest pain.

Not every heart attack presents with chest pain. Some people will only have mild discomfort, such as a little stomach ache, trouble breathing, or jaw pain. Even in such unsuspected cases it is prudent to consult a doctor immediately to steer clear off any heart ailment.

Angina has a classic medical description, but up to 50% of patients with heart attacks do not have classic angina. We will miss all those atypical presentations if we go by textbook angina characteristics. Hence, with every chest or related discomfort, there is always some degree of diagnostic uncertainty mandating a comprehensive medical evaluation. A standard do-it-yourself toolkit is difficult to recommend. The best way to address any chest discomfort is to get checked up at the nearest doctor's office or an emergency room. After a detailed assessment, a doctor may conclude one of the following:

i. Physician determines it is a heart attack, a severe kind (STEMI) that requires immediate intervention. Here, the sooner you intervene, the more heart muscle you can save.

ii. It is a heart attack, but not of the severest kind (non-STEMI). It means medicines, ICU stay, and angiography the following day, depending on the patient's health status.

"The two scenarios described above are referred to as Unstable CAD, demanding urgent attention"

iii. Unclear if it is a heart attack or not. In this case, few medicines are started (assuming a heart attack is present), and the patient is reassessed every few hours until a definitive diagnosis is made.

iv. It is not a heart attack, but chest pain is suspicious for angina, the premise being the presence of one or more blockage that is liming the blood flow enough to cause chest pain but not severe enough to cause a heart attack. In such scenarios, routine investigations like ECG, Echo, and blood tests will be normal. A stress test, CT scan, or angiogram is the only way to diagnose the presence or absence of blockages.

v. Not a heart attack but another major medical issue like a blood clot in the lungs (Pulmonary Embolism). Such problems also need immediate medical attention.

vi. It's neither a heart attack nor any other major medical issue, rather something as simple as acidity-related pain, muscle sprain etc.

A quick interview and a basic assessment will all be needed for a doctor to reach this conclusion; still, whenever there is diagnostic uncertainty, coronary artery blockages must be excluded by relevant investigations.

Risk Analysis and Mitigation Strategies

We hear unsettling stories of unexpected heart attacks or deaths affecting high-profile individuals or even our acquaintances. It universally surfaces the question of who is at risk for a heart attack and how to mitigate such a risk.

Risk Factors:

Diabetes, smoking and **high cholesterol** are the traditional bad guys often implicated in early CAD and heart attacks. Each of them increases the risk by 2 to 3 times compared to a person who does not have any of these factors.

High blood pressure is associated with a higher risk of stroke, heart failure, and CAD, in that order. **Obesity** and a **Sedentary** lifestyle are established CAD risk factors. An overweight but physically active individual has a lower risk of developing CAD than a lean but sedentary individual.

Metabolic Syndrome is a cluster of abnormalities, including increased blood pressure, blood sugar, excess body fat around the waist, and high cholesterol levels. It denotes a deranged metabolism and is associated with a higher incidence of CAD, stroke, and full-blown diabetes.

Environmental Factors contribute to early CAD as well. For example, **Air and Noise Pollution** negatively affect our health. In addition, a **Stressful Lifestyle** may contribute to early CAD and trigger a heart attack by causing plaque disruption. Higher mental stress also increases the likelihood of developing hypertension, obesity, metabolic syndrome, diabetes, etc., which can negatively affect heart health.

A host of non-modifiable risk factors contribute to early CAD. **Males** have a higher predisposition, as does **Indian ethnicity.** Increasing age is associated with increased risk. **A positive family history** of having a family member who didn't have any risk factors and had premature CAD is a potent risk predictor. "Premature" is defined as an age (at the time of diagnosis) less than 55 for men or less than 65 for women.

Blood cholesterol (or lipids) is a prime determinant of CAD. Lipids are vital for healthy living, but beyond a certain tipping point (different for different individuals), fat molecules deposit inside the arteries, forming plaques. Therefore, the lower the cholesterol level, the lower the chance of developing blockages.

A typical Lipid Profile includes the following

HDL is good cholesterol. More than 40 mg/dl is considered good. Two critical determinants of HDL levels are genetics and physical activity.

LDL is bad cholesterol. We should keep the levels below 130 mg/dl in the general population and less than 70 mg/dl in those with a higher risk of a heart attack. Medicines not only reduce LDL levels in the blood, but they also reduce the chance of someone getting a heart attack.

Triglycerides: Levels higher than 300 mg/dl need correction. The best way to manage is through diet and exercise. Medicines are used only if the levels are very high

Common medical tests to diagnose heart conditions

- **Blood tests**
- **Electrocardiogram (ECG)**
- **Exercise stress test (TMT)**
- **Echocardiogram (2D Echo)**
- **Nuclear cardiac stress test (SPECT)**
- **Coronary Angiogram**
- **Magnetic resonance imaging (MRI)**
- **Coronary computed tomography angiogram (CT Angiogram)**

Prevention is easier than cure

1) Eat healthy: A balanced diet is necessary for both good nutrition and health. You are shielded from a variety of degenerative noncommunicable diseases, including heart disease, diabetes and cancer. A balanced diet that excludes excessive amounts of salt, sugar, saturated fat, and trans fats is necessary for good health. Generally, carbohydrates should be reduced to the bare minimum or replaced with complex carbohydrates. Fruits, nuts, beans, legumes, and vegetables are good for health across the board. There is no evidence to demonstrate the superiority of plant- or dairy-based protein over lean animal protein. Red meat is best avoided, though. The cooking style also matters. Air frying, roasting, and baking are better alternatives to deep frying.

CAD is more likely to happen if you eat a lot of heavy fat. Any oil that gets solid when it gets cold, like coconut oil, palm oil, vanaspati (dalda), etc., is high in saturated fat and should be avoided. Also, you should stay away from oils that have a lot of trans fats. Cold-pressed oil keeps its

nutrients, so it's better than refined oil. It's a good idea to change the type of oil used every month.

2) Exercise: Exercise helps your cardiovascular system function more effectively and delivers oxygen and nutrients to your tissues. Your muscle strength and endurance can both increase with regular exercise. Additionally, you have more energy to complete daily tasks as your heart and lung health improves. Resistance, as well as aerobic forms of exercise, promote healthy living. Brisk walking, swimming, cycling, using stairs, rowing, and supervised training in the gym are all fair. The use of a fitness tracker is recommended for walkers for optimal results. People will be motivated when they begin watching the numbers every day and get lured to accomplish the daily goal of 10,000 steps virtually every day. This will be an effective method of motivation.

Keep your exercise intensity at such pace that you can carry a conversation but have difficulty singing. A more precise way to judge the exercise intensity using the target heart rate is shown in the box below.

A moderate-intensity exercise duration of 150 to 300 minutes per week (or high-intensity of 75 to 150 minutes), divided over 5–6 days, is reasonable.

3) Keep your weight in check. A body mass index (BMI) between 18 and 25 is widely regarded as normal. BMI is calculated as (body weight in kg)/(height in metres). Weight loss is best achieved by reducing total caloric intake.

4) Quit smoking: Tobacco use is the single most important risk factor for cardiovascular disease, stroke, and cancer. The harmful effects of smoking start with the first puff and are exponentially additive to other risk factors. Quitting smoking promotes reversing some of its ill effects from day one, and the risk of heart attack reduces by half within the first year of quitting. If you smoke, there is nothing better you can do for your health than to quit smoking. The risk of heart disease starts to drop in as little as a day after quitting. No matter how long or how much you smoked, you'll start reaping rewards as soon as you quit.

5) Be physically active: Sedentary life is considered the new age smoking. It is a significant risk factor for various human illnesses, including CVD. Studies show that an

How to determine target heart rate for exercise? (Stepwise approach with an example case)

Step 1: Calculate maximal heart rate (MHR) = 220 - Age (Example case age 50, (MHR) -> 220 – 50 = 170)

Step 2: Note down early morning heart rate (called resting heart rate) (Example case: 70)

Step 3: Calculate Heart Rate Reserve (HRR) = Maximal – Resting heart rate (Example case, HRR -> 170 – 70 = 100)

Step 4: Multiply HRR with 0.5, 0.7, and 0.85 to get 3 set of numbers (Example case, 100 x 0.5 = 50, 100 x 0.7 = 70, 100 x 0.85 = 85)

Step 5: Obtain three target values by adding Resting heart rate to the three set of numbers obtained above (Example case, Target value 1 -> 70 + 50 = 120. Target value 2 -> 70 + 70 = 140. Target value 3 -> 70 + 85 = 155)

Target heart rate for moderate intensity exercise is 50 to 70% of HRR. In this example, it will be between 120 to 140.

Target heart rate for vigorous intensity exercise is 70 to 85% of HRR. In this example, it will be between 140 to 155.

Ask your doctor to prescribe you exercise duration/intensity tailored to your clinical needs.

overweight but active individual is likely to live longer than a lean but sedentary person. Folks with sitting jobs should ensure that they get up and take a short walk every hour. Being physically active can improve your brain health, help manage weight, reduce the risk of disease, strengthen bones and muscles, and improve your ability to do everyday activities better.

6) Be happy and positive: The mind-matter connection is responsible for many good or bad things happening around us. A healthy and happy mind is as vital for cardiac health as everything written above. Making attempts to actively reduce professional and personal stress, engaging in activities that promote mindfulness, spending time with your loved ones, taking some time off your daily routine to do things you enjoy, etc., should be a part of healthy living.

7) Plan a periodic health check-up:. This is probably the most misunderstood concept. A health check-up does not mean investigations alone. A scientific approach always starts with a doctor's visit, who, based on an individual's clinical risk profile, may (or may not) suggest a set of investigations to define a tailored regimen. The main aim of health packages is to push a healthy individual to see a doctor. Other than meeting the doctor, the basic elements of a health check-up include a blood pressure check, sugar and cholesterol levels, and further age-appropriate preventive checks. Pre-menopausal women with no major risk factors are less likely to develop CAD. In that age group, a preventive check-up for women is geared more towards non-heart-related issues. Gender differences disappear beyond age 60 for those with CAD risk factors.

If you or a member of your family has a history of

American Heart Association, Life's Essential 8

Figure-4

cardiovascular disease or if you have a personal history that includes risk factors, it is essential to have a primary care physician who is skilled and experienced. Talk to your primary care physician and make sure he or she is treating you in an active way to reduce your risk of developing heart disease. It is very vital to locate a physician who is covered by your health insurance plan and to develop a positive working connection with that doctor.

8) Enjoy plenty of sleep. Most adults need 7 to 9 hours of high-quality sleep to stay healthy. Sleep deprivation is cumulative over the years and leads to a higher incidence of diabetes, hypertension, metabolic syndrome, cancer, mental health issues, and heart disease.

9) Keep Stress under control: Inflammation can be caused by stress, which is linked to other factors that can be harmful to your heart, such as high blood pressure and lower levels of the "good" HDL cholesterol. This in turn can increase the risk of heart disease. However, chronic stress can also have a more indirect effect on your cardiovascular system. When you're stressed out, it's common to have trouble sleeping. If you are stressed , you are less likely to engage in physical activity, select nutritious foods, or keep an eye on your weight. Changing any one of these aspects of your lifestyle can put your heart's health in jeopardy. Instead of letting stress prevent you from working out, use it as motivation. Walk with friends during lunch, for instance, can provide a pleasant distraction from a tiring day at the office.

Unexpected or Premature Cardiac Events

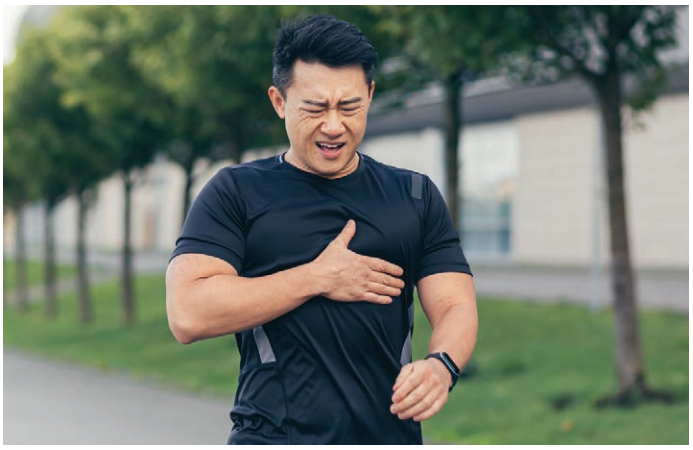
In middle age individuals who suffer from unexpected heart attacks or related death, a closer inspection often yields one of these patterns: (1) the presence of one or more risk factors which were not evident at the time of the event, (2) overcompensation of one deficit with another good act, for example trying to counter ill effects of high cholesterol with mindfulness (3) death due to cause other than heart attack; a misinformation cascade that dubs every sudden death as a heart attack.

Other Causes of cardiac arrest in young people may include:

i. People born with anomalous coronary arteries.
ii. Abnormalities of the heart's electrical system.
iii. Abnormalities of other components of the heart, including muscles, valves, etc.
iv. Sickness involving other organs, with an indirect effect on the heart

It is important to note that risk factors for CAD / Heart Attack are additive and that risk imposed by one aspect cannot be entirely mitigated by incorporating an unrelated good behaviour. For example, the threat imposed by smoking cannot be mitigated by excessive focus on a healthy diet and exercise. In this particular example, the only way to reduce the risk imposed by smoking is by quitting smoking.

While our understanding of cardiovascular risks and how to mitigate them has evolved, bringing the overall risk to zero is impossible. Factors like ageing and genetics cannot be modified, and a fundamental level of risk exposure will always be there. A healthy community will have a background rate of 0.5% or less chance of someone having an unexpected heart attack or a similar cardiac



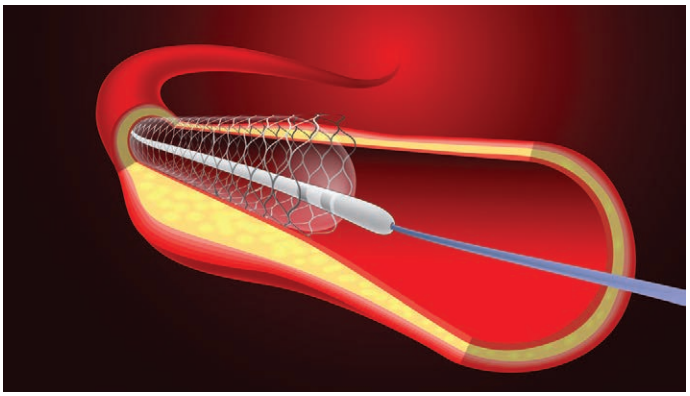
event. When we look at the population at large, even a low risk of less than 0.5% translates to a large absolute number. Such unexpected events, particularly involving public figures, bring about hypotheses which don't stand scientific scrutiny.

Treating Coronary Artery Disease

Compared to those without, individuals with blockages involving coronary arteries are more likely to have a heart attack; that's axiomatic. While evidence-based medicine is very effective in reducing future cardiac events, the risk cannot be brought down completely.

While it won't be possible to cover the entire spectrum of CAD treatment, a few salient points are mentioned here.

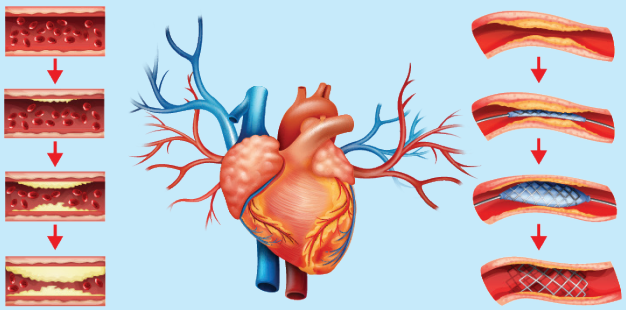
i. Unstable CAD or a heart attack are best treated urgently with medicines and an invasive approach of angiogram/ angioplasty. Scientific data unequivocally suggests that tackling the blockages early with stent or bypass surgery improves longevity and symptoms. Delays in such cases lead to permanent damage to the heart muscle.



ii. Stable CAD, or those blockages that may be severe but are not causing an active heart attack, can be treated with medicines alone, intervention, or both. Medications alone do an excellent job of controlling the symptoms and also help people live longer by reducing the risk of future heart attacks.

Angiogram means "taking pictures of the blood vessels". A conventional angiogram is a minimally invasive procedure where a thin plastic tube is threaded via the patient's wrist up the heart. X-ray equipment helps take pictures of the coronary arteries.

Angioplasty refers to "fixing the blood vessels". It is performed in a similar manner to an angiogram. Angioplasty almost always utilizes placing one or more stents inside the arteries.



To explain the difference: the act of going up to the door of your kid's room to check how messy the room is can be equated to an angiogram, vs the act of you going past the door and enter into the room to clean the mess can be equated to angioplasty.

Figure-5 - *Difference between Angiogram and Angioplasty*

The first response for a suspected Heart Attack

If someone around you is having chest discomfort or related symptoms suspicious of a heart attack, here are a few things you should do:

1) Call for help if you are alone
2) Let the patient sit or lay down comfortably. Unwarranted physical or mental engagement should be avoided
3) Call for a vehicle so that a patient can be transferred to the nearest emergency. Do not allow the patient to drive.
4) Make an attempt to gather the patient's Medical history, active prescription, etc.
5) If the patient has previously been instructed by a doctor to take certain medicines during such an event, you can follow that
6) Do not delay transfer to the emergency room under any circumstances
7) If the patient becomes unconscious, initiate the basic life support (BLS) sequence and look for an AED; all the while transfer to the nearest hospital is arranged.

The first response for a Cardiac Arrest

A patient with cardiac arrest will be unconscious with no pulse or spontaneous breathing. This is a crisis where survival will depend on the pace of resuscitative efforts.

1. Shout for help. There isn't much time.
2. Confirm cardiac arrest: check for responsiveness by tapping the person and shouting their name. Look for lack of any response, absent pulse, and absent breathing.
3. Ask someone to call for an ambulance.
4. Make the patient lay flat on a hard surface in a face-up position.
5. Start chest compressions immediately, as per BLS.
6. Ask someone to check for AED availability. If available, attach the AED to the patient's chest and deliver a shock if appropriate.

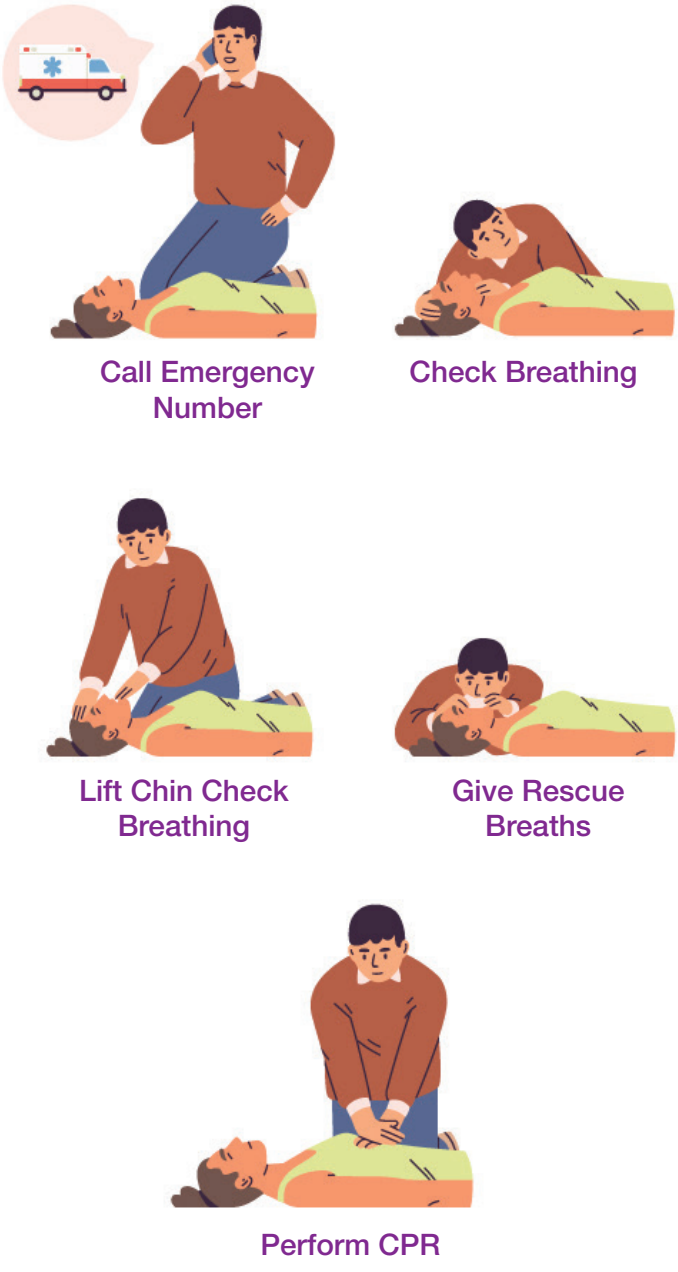


Figure-6 - *Steps of Basic Life Support (BLS)*

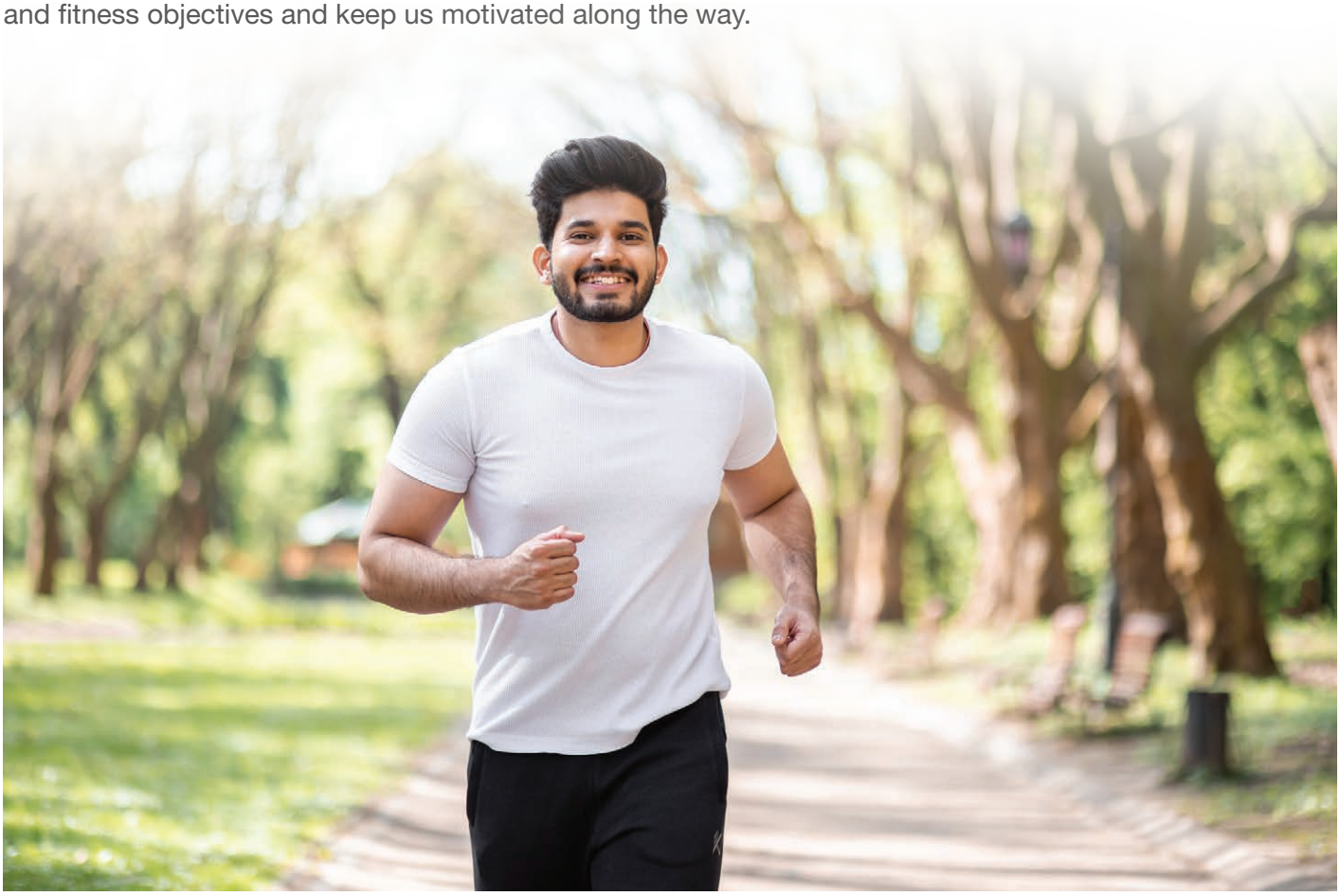
TAKE HOME

Take care of your heart health to avoid heart disease. Some risk factors for heart disease, like family history or age, can't be changed. However, there are a number of risk factors that can be changed.

Talk to your primary care doctor about what kind of activities you can do that will put you in the least amount of danger. You should try to do some kind of physical activity for at least 150 minutes every week. You should do everything you can every day to avoid sitting for long periods of time at a stretch. Say goodbye to sedentary life style. If you smoke, quit. Tobacco use is the leading preventable cause of death around the world. It's never too late to stop smoking and start enjoying the health benefits that come with this choice.

Keep eating in a way that is good for your heart health. Instead of food that are high in added sugars, saturated fats, and salt, choose food that are low in these things. People who eat a lot of saturated fats are more likely to get heart disease. Eat a lot of fruits, vegetables, and food that are high in fibre, like those made from whole grains. This will help you have a healthy digestive system. Make it your goal to stay at a healthy weight. A healthy weight can be kept up if the number of calories taken is equal to the number of calories burned through physical activity. You need to take care of your diabetes, high blood pressure, and / or high cholesterol levels. Listen to what your doctor says and take your medicine exactly as he or she tells you to get the best results from treating these conditions. It will help you to feel better physically and mentally. However, healthy habits are hard to develop and require changing of a mindset to give enduring satisfaction, contentment and happiness.

There are a variety of digital gadgets (eg. pedometers, digital apps, blood pressure monitors, body fat weighing scale, fitbit for physical activity and 3D body scan etc.) available today to help us achieve our health and fitness objectives and keep us motivated along the way.

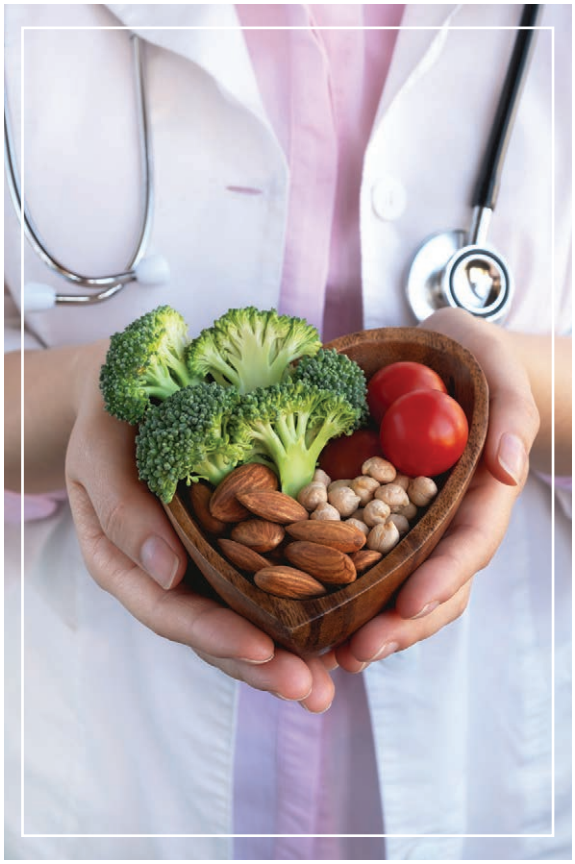


Cheat sheet for a healthy heart

Aim for	Best way to achieve
Active lifestyle	Dedicated exercise of moderate intensity, 150 minutes per week; divided over 5 days Avoid sitting down for more than an hour at a time. Take short breaks intermittently
Maintain BMI between 18-25 Maintain Waist to Height ratio less than 0.5	Limit daily caloric intake; portion control
Keep blood pressure lower than 130/90	Limit salt intake Practice meditation, yoga Take medicines if BP is consistently above 130/90
Keep sugar levels under control (HbA1C less than 7.0)	Limit intake of simple carbohydrates Take Diabetes medicines if needed
Keep HDL (good cholesterol) above 40	Exercise and active lifestyle
Keep LDL (bad cholesterol) low Targets are person specific	Diet and exercise Medicines play an important role here
Eat right	Refer to dietary recommendations chart below
Sleep right	Aim for a good quality sleep, 7 to 9 hours per day
No smoking	Quit smoking
Limit alcohol intake	Minimize alcohol intake as much as possible Recent CDC guideline would suggest quitting alcohol altogether
Manage stress	Figure out what works for you like Yoga, Meditation & Pranayama etc.

Dietary recommendations for a healthy heart (adapted from American Heart Association, 2021)

- Eat plenty of fruits and vegetables across a wide variety (except white potato)
  - Deep coloured food items tend to be more nutritious than light coloured ones
- Choose whole grains over refined grains
- Choose healthy protein source:
  - Plant-based, or low-fat dairy
  - Lean meat (avoid fried preparations)
  - Avoid red meat and processed meat
- Avoid tropical oils (coconut, palm), animal fat (butter, lard), and partially hydrogenated oils
- Choose plant-based oil (example: soyabean, canola, safflower, corn, olive and others)
- Avoid ultra-processed readymade food
- Minimize sugar and salt intake
- Limit (or stop) alcohol intake
- Adjust total energy intake to maintain a healthy body weight



Practical tips to practice Health & Wellness

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