

DON'T LOSE HEART

Cardiovascular disease accounts for one-fourth of all deaths in India and a number of studies are telling us how grave the epidemic is

By MADHAVANKUTTY PILLAI



Dr

Enas A Enas migrated from Kerala to the United States in 1970. Either the same year or the next (he doesn't remember clearly), as a medical resident at Cook County Hospital in Chicago, he saw a junior doctor, another Malayali like

him in his early twenties, come to the Emergency Room with chest pain. "He was sent home. He came back the next day. He was sent home again. Third day, he came again and went back because they didn't think it was serious." On the fourth day, tests finally revealed that he had had a heart attack. "Someone getting a heart attack in the twenties was unheard of then," he says. The next year he was working in the cardiac ward and had just reached home after finishing a 36-hour shift when he got a call from the hospital asking to resume duty. They needed a fill-in following a doctor there having just had a heart attack. This man too turned out to be an Indian in his twenties. Both events stayed with Dr Enas.

In 1976, Dr Enas started practising as a cardiologist when he came to know that one of his friends from Kerala, who was 39, had had a heart attack. That made two men in their twenties and one in his thirties that he had seen afflicted. "Soon there were two or three more cases. My own brother-

in-law had a bypass surgery at the age of 40 or 45. Another person had a heart attack at age 37. A Trivandrum Medical College principal, a vegetarian, had not one but two heart attacks in my office and he survived after an emergency surgery," says Dr Enas.

Later, when he became the president of an association of US-based doctors whose origins were from Kerala, they organised a convention in which 300 of them participated. "They were all young and friends. I just opened their shirt and saw if they had a scar on their chests to see if what I had observed in Chicago was happening at other places also. I found a disproportionate number of them with zipper scars from bypass surgeries," he says. Subsequently he became the treasurer of American Association of Physicians of Indian Origin and when 1,000 doctors from all over America came to Chicago to attend its convention, Dr Enas used the opportunity to do a formal survey. The next year, he did it again at a Pittsburgh convention. "I studied about 2,000 doctors from all over India in the US," he says. Known as the CADI (Coronary Artery Disease among Asian Indians) study, it showed that the percentage of Indian doctors who had heart disease—heart attack, angioplasty or bypass—was about 10-12 per cent. This was four times more than the average.

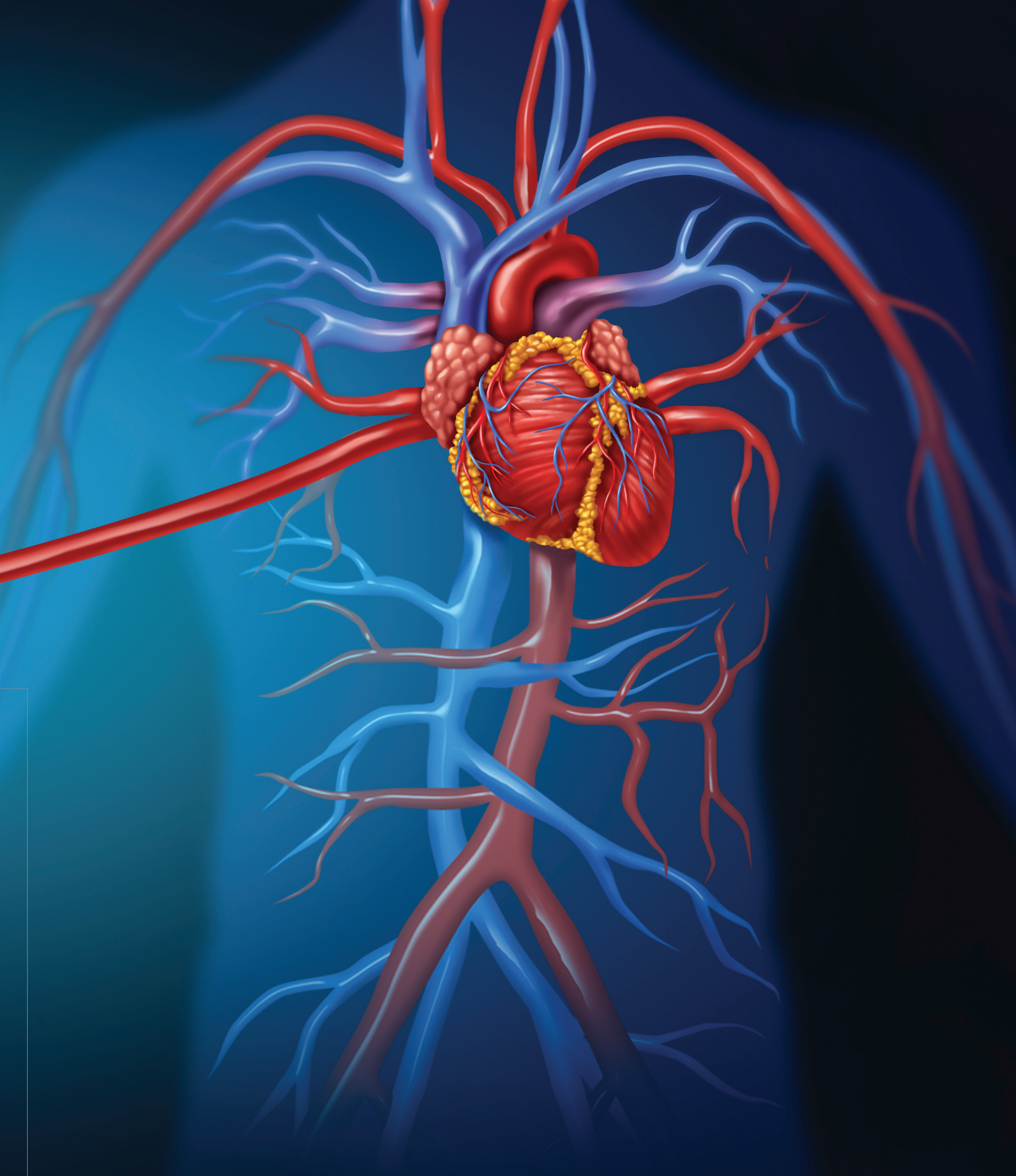


Illustration by SAURABH SINGH

Dr Enas published the paper in 1996. “In the meantime, the internet and other things had started coming. We found that this information was available from 1959 onwards. Singapore was the first country to report that Indians have a higher rate of heart disease. Studying 10,000 post mortems, they found that the rate of heart disease was seven times higher than the Chinese,” he says. After the CADI paper, studies in countries like the UK, South Africa, Trinidad, Mauritius, etcetera, wherever Indians were present in large numbers, reaffirmed their propensity for heart disease. “Everywhere, usually when people go from one country to another, they adjust to the lifestyle of the adopted country and in a few generations, blend with that of the host country. For example, Italians have less heart disease, but when they come to the US, their rates are no different from German Americans or British Americans. Indians have however been exceptions,” he says.

Nowadays, Barkatali Pirani is certain to go to bed by 10 pm, but on June 2nd, 2011, when the businessman from Mumbai returned home from dinner at a restaurant, it was about 11 at night. Around midnight, he decided to turn in and two hours later woke up to pain in his upper body around the shoulders. He sat down on his bed and the pain subsided. He lay down, it returned. He alternated like this for a while. In between he got up and sat on a chair near the balcony; the pain reduced. He came to bed; it was back. After about 45 minutes, he woke up his wife and said he would need to go to a hospital. There was one nearby. The lift wasn't working and Pirani walked five floors down. In the Emergency ward at the hospital, they did a few tests and told him he had just had a massive heart attack. The next morning, he shifted to another hospital where, in the ICU, they did an angiogram and found that he had four major blockages. Four days later, he had a bypass operation. Some of the factors responsible for Pirani's ailment became obvious to him. “I was overweight at 104 kilos. There was also business stress,” he says. He was 52 years old then, an age when the risk is high for Indians. Plus, there was the fact that his own father had died of a heart attack at 59. So, Pirani had a family history. He ticked many of the boxes that makes Indians susceptible to cardiovascular diseases. As a resident of Mumbai he was an urban dweller, which correlated with the sedentary lifestyle he led. When he got his heart attack, Pirani became one of the more than 5 crore Indians with cardiovascular disease.

A NUMBER OF RECENTLY published research papers now reveals just how widespread the epidemic is and the necessity of an urgent policy to contain it. A study published in the August issue of the journal *Lancet Global Health* looked at nationwide deaths due to cardiovascular diseases, mainly heart attacks and strokes, over 15 years from 2000 to 2015. This was part of a survey known as the ‘Million Death Study’, which was initiated by Dr Prabhat Jha of the Canada-based Centre for Global Health Research (CGHR), a University of Toronto-sponsored non-profit organisation.

He had tied up with the Registrar General of India in 2002 to survey 1.4 million homes at random all over India. Ten million

people die annually in India, but data on causes is hazy because most occur at home without medical attention.

For the present study published in *Lancet*, researchers looked at what the Million Deaths Study says about cardiovascular diseases in India. That it is India's biggest killer was already known, thanks to smaller surveys. Jha's paper showed that for the year 2015, 2.1 million people died of a cardiovascular disease, more than a quarter of all deaths. The paper said, ‘At ages 30–69 years, of 1.3 million cardiovascular deaths, 0.9 million (68.4%) were caused by ischaemic heart disease and 0.4 million (28.0%) by stroke. At these ages, the probability of dying from ischaemic heart disease increased during 2000–15, from 10.4% to 13.1% in men and 4.8% to 6.6% in women.’

Heart disease has been known to be correlated with urbanisation, but one of the surprises for Dr Jha in the study was that death rates in rural areas had increased rapidly and even surpassed urban areas. He says, “The earlier assumptions were based on models from high-income countries applied to India which are often wrong. Rural areas have less access to treatment, so this might be an explanation. But our study says we need to do more to understand the surprises.” Adults born after 1970 were also found to have higher mortality rates from heart disease. Dr Jha says that more research is needed for definitive answers, but young adults in India having higher body mass and different levels of diabetes might be causes. “India accounts for about one-sixth of all global deaths, but importantly as India goes, so go the global trends. So the 2030 United Nations goal of cutting non-communicable disease (NCD) deaths, including vascular disease death rates, by one-third, is not likely to be met unless there is progress in India,” he says.

In June, the open-access journal *PLOS Medicine* published a paper which looked at how risk factors—blood pressure, diabetes, smoking, Body Mass Index, etcetera—that lead to cardiovascular diseases, varies in India between regions and social classes. There had been no country-level estimates of cardiovascular disease risk and this study, which featured Harvard researchers, was the first to do so. They ‘pooled data from two large household surveys, the District Level Household Survey–4 (DLHS-4) and the second update of the Annual Health Survey (AHS), both of which were conducted between 2012 and 2014.’ Their sample size was 797,540 adults between 30 to 74 years covering 27 of 29 states and five of seven Union Territories. The study looked at the probability of population groups affected by cardiovascular diseases over the next 10 years based on risk factors. Men were found to have a higher prevalence of these factors. The rich were also at higher risk than the poor, but a surprise for the researchers was that the rural rich and urban rich were on par, being similarly prone to obesity, blood pressure, smoking and diabetes. Dr Ashish Awasthi, assistant professor, Indian Institute of Public Health, Gandhinagar, and one of the co-authors of the study, says this is one of the significant findings of the study that they did not expect. There was wide variation among states too, with Kerala topping at 19.5 per cent while Jharkhand was the lowest at 13.2 per cent. All southern Indian states had higher risk of heart disease. Dr Awasthi says there could be a number of reasons

for this. For instance, non-communicable diseases and communicable diseases have an inverse relationship. Better developed states like Kerala have more of the former and less of the latter. It is the opposite for less developed states like Jharkhand. “Another reason is life expectancy, which is affected by disease patterns. In less developed states, life expectancy at birth is less than in developed states. It is also affected by lifestyle, dietary patterns and other factors,” he says.

TO GET AN idea of where India is placed when it comes to cardiovascular diseases, it is useful to contrast it with other developed nations. In July, Dr Prabhakaran Dorairaj, vice-president, research and policy, Public Health Foundation of India, led a study, ‘Cardiovascular Diseases in India Compared With the United States’, that was published in the *Journal of the American College of Cardiology*. They looked at the literature and did a comparison between the two countries of both the toll taken as well as the presence of risk factors. Between 1990 and 2016 in the US, deaths by cardiovascular diseases had decreased by 41 per cent, while over the same period in India they had increased by 34 per cent. Dr Prabhakaran says there are multiple reasons for this. “One is to look at it in historical fashion. Every disease starts rising and then falling. This is how epidemics progress. It reaches its peak and then it starts falling. The US had its peak somewhere in the 60s and 70s. We are reaching the peak now. Indians have a higher propensity to develop cardiovascular disease due to multiple reasons. Particularly the high risk of diabetes. There is also the rapid economic changes India has undergone. Because of that, internal migration has happened and people urbanise very quickly. When they urbanise, lifestyles become sedentary, smoking increases, dietary practices change and they start eating high-energy dense foods instead of traditional foods which are rich in fibre. There is reduced vegetable and fruit consumption, high oil consumption and so on.”

He believes that India is close to its peak, but it is difficult to predict when this will occur. But the toll it exacts on society is substantial. “Of all the deaths that occur in India, cardiovascular disease, according to the latest estimates, accounts for 28 per cent. It is the leading cause of death. More importantly, the number of people who die between the age of 30 to 69 years is very high because of it. They are the most productive years of peoples' lives and we call it ‘potentially productive years of lives lost’. One of the estimates which was done 10 years back in a book called *A Race Against Time* (by The Earth Institute, Columbia University) was that by the year 2020, India will have around 17 million potentially productive years of lives lost. This is much higher than the potentially productive years of lives lost in China, the US, South Africa and Portugal put together,” he says.

From his research, Dr Enas hypothesised that there is a genetic factor making things worse. Specifically, a variant of LDL cholesterol called lipoprotein (a) that we have might have a role to play. But he is quick to add that any preventive policy, both at the individual and government levels, must address all risk fac-



“THE 2030 UNITED NATIONS GOAL OF CUTTING NON-COMMUNICABLE DISEASE DEATH RATES, INCLUDING VASCULAR, BY ONE-THIRD IS NOT LIKELY TO BE MET UNLESS THERE IS PROGRESS IN INDIA”

Dr Prabhat Jha
director, Centre for Global Health Research

tors. Even if we are handicapped by genetics, other factors make it worse. “If you do seven things right, you can reduce the risk of a heart attack and stroke by more than 90 per cent,” he says. These, according to him, are:

- Don't use tobacco products.
- Be physically active, eat less and move more. “For Americans, recommended physical activity is 150 minutes per week. For Indians, we have so much diabetes and other issues, it must be 200 or more minutes.”
- Eat a healthy diet, moderate in salt and high in fruits and vegetables.
- Manage weight. For Americans and Europeans, normal BMI is below 25; for Indians it is below 23 and they need to keep it at that.
- Keep blood sugar readings below 100 mg/dl. “Indians are predisposed to diabetes. By keeping weight lower and physical

activity high, you can keep sugar below 100 mg/dl.”

- Blood pressure should be kept less than 120.
- A total cholesterol reading below 200 is considered normal for an American, but Dr Enas says that for Indians it should be less than 150.

Dr Prabhakaran of PHFI points out a few things to focus in public health messaging based on the last 50 years of research from all parts of the world. “Number one, pay attention to portion size. Eat whatever you want to some extent, but keep it moderate, don’t eat too much. Second, deep fried foods and processed foods are high in trans fats and so we should avoid them as much as possible. Reheating of oil increases trans fat levels. Third, consume fruits and vegetables that are locally available and so inexpensive, seasonal and procured easily. You don’t have to think that a Washington apple is the best fruit. You can eat a local berry. Fourth, salt has to be reduced. Salty foods like pickles, *papad* and so on should be kept to the bare minimum. Salt increases blood pressure. In terms of food grains, our traditional diet, which comprises millets like *ragi* and *jowar*, [is] rich in fibre and very good. Unpolished rice and red rice, like the one consumed in Kerala, are excellent,” he says.

When it comes to policy intervention by the Government, he thinks that tobacco control is the most important because smoking increases the risk of cardiovascular diseases almost threefold. “All policies relevant to tobacco control, taxation, advertisement bans, pictorial warnings, banning of smoking in public places should be implemented rigorously and effectively. Second, we should encourage production of fruits and vegetables, increase tax breaks for them. Reduce transport losses, which increases cost of vegetables and fruits. Taxing sweetened beverages will reduce consumption of sugars, which increase the risk of diabetes. Banning of trans fats, which is being done already in many parts of India, should be on a national scale,” he says. One specific problem in India is that people who have had a heart attack don’t continue with medicines, making it a major reason for deaths. “There are modelling data to suggest that after a heart attack, if you give the right kind of treatment, there is 80 per cent effectiveness in decreasing mortality. But what happens is a cascade of events. Some doctors don’t prescribe all the medicines that are required. Then patients take for some time and stop them. Some patients don’t take [them] at all. Patients don’t follow lifestyle advice. Ultimately, the effectiveness comes down to 25 per cent reduction. It is important to cater to this cascade of events and improve the quality of care,” he says.

Barkatali Pirani bucked the trend. A day before he was discharged, the hospital gave a briefing to a small group of heart patients, including him, advising them on the road ahead with respect to lifestyle, diet and exercise. He made up his mind to get back to a normal life. They had a ‘Cardiac Rehab’ programme and as part of that, he joined a gymnasium. He would walk on the treadmill with a heart monitor under the supervision of a doctor



**“AT LEAST 50 COUNTRIES
BROUGHT DOWN
HEART ATTACK RATES
BY OVER 50 PER CENT.
IN INDIA, IT’S GOING UP
3-5 PER CENT PER YEAR”**

Dr Enas Eenas
director, CADI Research
Foundation



**“OF ALL
DEATHS IN INDIA,
CARDIOVASCULAR
DISEASE ACCOUNTS
FOR 28 PER CENT”**

Dr Prabhakaran Dorairaj
vice-president, research and
policy, Public Health
Foundation of India

present there. A couple of months later, he took part in what is called a ‘Dream Run’, a 7-km stretch of the Mumbai Marathon, and finished by walking most of the length. He did it in 2012, and then in 2013. That year, after the event, he saw that heart patients in their mid-sixties had finished running the half-marathon of 21 km. He was 10 years younger than them. He told his doctor that he wanted to do it the next year and started training, beginning with alternating 200-metre jogs and walks. In 2014, he finished his first half-marathon with a timing of 2 hours and 54 minutes. He then did another running event within a month. Now every year, he does four to five half-marathons and about ten 10-km runs. His best half-marathon timing is 2 hours and 29 minutes. He trains thrice a week with a group, and the days he is not running, does power yoga. When he was discharged from hospital, his weight was just under 100 kg. Now he is 76 kg.

His post-heart attack lifestyle saw massive changes. “Earlier I used to stay awake till 12.30 or 1 in the morning and get up also late. Now I get up by 4.30 am every day. I used to eat anything earlier. I am now mostly on seafood and vegetarian with chicken once a week or so. No red meat. Oil is very less. After I come home from a run in the morning, I have a bowl of fruits within half-an-hour. Then 9.15-9.30 am, I have a light breakfast. Lunch is a little salad, one *chapaati*, one vegetable, one fruit. By 7.30 pm, I finish my dinner and before 10 pm, I am off to sleep.” He monitors his heart but has never felt healthier. His advice to one who has had a heart attack: “He must feel that he has got a second life now and make the best of it.” □

५००० सदाबहार गाणी



SAREGAMA
CARVAAN™
MARATHI | मराठी

AVAILABLE AT NEARBY STORES AND SAREGAMA.COM