

# Heart Disease Update 2005

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In the last fifty years, medical journals from across the world including England, the United States, India, Canada and Singapore - have published hundreds of reports detailing an alarmingly high prevalence of heart disease in Indians. The prevalence of the problem is independent of the Indian's sex, age and vegetarianism.

Despite the wealth of data pointing towards this problem in our own population, we have not been able to curb the epidemic. However, recent insights into the risk factors leading to heart disease, the role genetics and environment play and the therapeutic benefits of customized diets, exercise and medication help us develop effective preventive and treatment programs. But first, we should know the enemy:

The National Vital Statistics System of the Center for Disease Control reported that, in the 1990s, heart disease was the leading cause of death in Asian Indians in the US, accounting for 34.6 per cent of all deaths. In India, surveys conducted over the past two decades have indicated a three-fold increase in heart disease in Indians living in urban areas, and a two-fold increase in those living in rural areas. By 2015, it is projected that heart disease will replace infectious diseases as the number one killer in India and account for 33.5 per cent of all deaths.

The National Institutes of Health 'Healthy People 2010' program has designated the Asian Indian immigrant population in the US as a high-risk group for heart disease.

Indians are not only in more danger of getting heart disease, but are also likely to develop it earlier. The *British Medical Journal* has reported that the mortality rates of Indian males aged 30-39 is twice that of similar males in the United Kingdom and, in the 20-29 age group, three times as high. On average, Indian males also suffer their first heart attack five years earlier than whites. *BMJ* has also reported onset of insulin resistance (a pre-diabetic condition) in early childhood in Indians.

In 2001, J Lee of the National University of Singapore and his team reported in the *International Journal of Epidemiology* that, Indians had a higher rate from heart disease before 40 than Malaysians or Chinese.

Latha Palaniappan of Stanford University reported rising death rates from heart disease in Indian women whereas mortality rates have been declining in other ethnic groups in the US.

We (Kotha, Enas, Superko) recently (in the spring of 2005) reported in *Preventive Cardiology* lower levels of HDL-2b (heart-protecting 'good' cholesterol) in Indian men in the US

than comparable Caucasian men. Traditionally, factors such as hypertension, smoking, and high LDL ('bad' cholesterol) have been good predictors of a person's risk to develop heart disease.

Metabolic Syndrome (with three or more of these symptoms - high levels of triglycerides, low HDL, abdominal obesity, high fasting blood sugar and high blood pressure) seem to play a very important role in the genesis of heart disease, right next to high cholesterol in the Western community. In Indians, though, the syndrome may be the primary cause.

Kiran Misra from San Diego State University reported in *Ethnicity and Disease (Fall 2005)* that individuals with Metabolic Syndrome but physically active have a better risk profile than those with sedentary life

water-soluble vitamins, minerals, antioxidants and flavanoids. This contributes to heart disease.

Physical activity is very important and plays a key role in controlling blood pressure, blood sugar, insulin resistance, triglycerides, blood viscosity and HDL levels, and in releasing the lipoprotein lipase from muscles that mobilizes and burns body fat. Low physical activity results in the build-up of plaque, the development of blood clots in arteries, insulin resistance, obesity, and osteoporosis.

In western countries, mortality from heart disease has been on a decline; in fact, it is no longer the number one killer of people in America, having been replaced by cancer. This was accomplished through aggressive public education programs and primary and secondary prevention measures, whereas it is still on the rise and reaching epidemic proportions in India and Indians living abroad.

Although westerners consume more animal fat and red meats, they also eat salads, fresh fruits and vegetables. They are physi-

2. Don't hide behind the fact that many of you are vegetarians and non-smokers. Acknowledge that we can be physically inactive and that we need to adopt healthy indoor and outdoor activities. Exercise increases HDL-C, lowers triglycerides, improves insulin resistance, and releases lipoprotein lipase from skeletal muscles, increases fibrinolytic activity improves arterial compliance, decreases blood pressure and blood viscosity and helps you sleep better and live younger and fit with vigor. A simple but very effective exercise is walking two miles a day every day of the week.

3. Change your culinary habits drastically. Stop deep frying, stop using cooking oil more than once. Bake, broil and stir-fry instead. Avoid trans fats (hydrogenated oils); eat more fresh vegetables and fruits, increase plant stanols in your diet for more fiber, and antioxidants and flavanoids to decrease cholesterol absorption.

4. Check your fasting blood sugar, HbA1c, fasting lipid profile, lipoprotein (a), homocysteine and use appropriate medications

## Tips to modify your diet

Keep simple sugars to a minimum. Cut sweets and candy.

Eat whole grain, multigrain cereals and chapattis.

Fat is an important nutrient because the body cannot produce it. A low-fat diet accompanied by weight reduction will lower triglycerides. However, a no-fat, high-carbohydrate diet with no weight loss will increase triglycerides and decrease good cholesterol, increasing the risk of heart disease. Fat comes in different forms, and not all fats are bad. Saturated fats - the kind found in butter, ghee, lard, shortening, coconut and the fat in meat, including chicken - quickly raise LDL (bad cholesterol). These fats are also commonly found in pastries, kulfi, rasmalai, pies, cakes, and cookies - and restaurant foods like fried appetizers, marinated entrees, and butter- and cream-based sauces.

Unsaturated fat, on the other hand, is thought to be 'good'. It carts along far fewer energy calories than saturated fat, and thus will not cause as much weight gain as the same amount of saturated fat. Monounsaturated fat also result in lower cholesterol levels than the same amount of saturated fat. So monounsaturated fats and oils can be used in place of saturated fats and oils. It is found in olives and olive oil, canola oil, and peanuts and peanut oil. It is also found in some butters and margarines.

Fish and fish oil are good sources of good fat (omega oils).

For those seeking alternative foods with less fat, three food groups are especially attractive. Other than avocados and olives, fruits and vegetables contain almost no fat. Unprocessed legumes and whole grains also contain almost no fat and include whole wheat, corn, oats, rice, split peas, black-eyed peas, pinto beans, navy beans, black beans, red beans, soybeans, barley and more. In addition to the vitamins and other nutrients in fruits, vegetables, legumes and grains, they are a great source of complex carbohydrates, protein and fiber, plus soluble and insoluble fiber.

Dietary fiber is the plant material digestive enzymes cannot digest. Soluble fiber - found in dried beans, oats, black-eyed peas, soybeans, potatoes in their jackets, fruits and vegetables - reduces cholesterol, probably acting like sponges in the intestine in absorbing bile acids (which contain cholesterol and cholesterol-building units).

Insoluble fiber is found in wheat, corn, rice or other grains and helps prevent colon cancer and intestinal problems. Thus fiber can help us fight both heart disease and some forms of cancer.

For more information, visit [www.heartsmart.info](http://www.heartsmart.info) or [www.aapiusa.net](http://www.aapiusa.net), or send e-mail to [pkotha@heartsmart.info](mailto:pkotha@heartsmart.info).

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| GRAINS<br>Make half your grains whole   | VEGETABLES<br>Vary your veggies  | FRUITS<br>Focus on fruits   | MILK<br>Get your calcium-rich foods  | MEAT & BEANS<br>Go lean with protein  |
|---|--|---|--|---|
| <p>Eat at least 3 oz. of whole-grain cereals, breads, crackers, rice or pasta every day</p> <p>1 oz is about 1 slice of bread, about 1 cup of breakfast cereal, or 1/2 cup of cooked rice, cereal, or pasta</p>   | <p>Eat more dark green veggies like broccoli, spinach and other dark leafy greens</p> <p>Eat more orange vegetables like carrots and sweet potatoes.</p> <p>Eat more dry beans and peas like pinto beans, kidney beans and lentils</p> | <p>Eat a variety of fruit</p> <p>Choose fresh, frozen, canned or dried fruit</p> <p>Go easy on fruit juices</p> | <p>Go low fat or fat free when you choose milk, yoghurt and other milk products</p> <p>If you don't or can't consume milk, choose lactose-free products or other calcium sources such as fortified foods and beverages</p>   | <p>Choose low fat or lean meats and poultry</p> <p>Bake it, boil it or grill it</p> <p>Vary your protein routine. Choose more fish, beans, peas, nuts and seeds</p> |
| For a 2,000-calorie diet, you need the amounts below from each food group. To find the amount that is right for you, go to <a href="http://myPyramid.gov">myPyramid.gov</a> .   |  |   |  |   |
| Eat 6 oz every day  | Eat 2 1/2 cups every day   | Eat 2 cups every day  | Get 3 cups every day; for kids aged 2 to 8, it's 2   | Eat 5 1/2 oz every day  |
| <p><b>Find your balance between food and physical activity</b></p> <ul style="list-style-type: none"> <li>Be sure to stay within your daily calorie needs.</li> <li>Be physically active for at least 30 mins most days of the week.</li> <li>About 60 mins a day of physical activity may be needed to prevent weight gain.</li> <li>For sustaining weight loss, some physical activity is needed for at least 80 to 90 mins a day.</li> <li>Children and teenagers should be physically active for 60 mins on most days.</li> </ul> |  |   | <p><b>Know the limits on fats, sugars, and salt (sodium)</b></p> <ul style="list-style-type: none"> <li>Make most of your fat sources fish, nuts, and vegetable oils.</li> <li>Limit solid fats like butter, margarine, shortening and lard, as well as foods containing these.</li> <li>Check nutrition labels to keep saturated fats, trans fats, and sodium low.</li> <li>Choose food and beverages low in added sugar. Added sugar contributes calories and low, if any, nutrients.</li> </ul> |   |

style.

Vegetarian Indians show the same incidence of heart disease as non-vegetarian Indians, and females have almost the same rate of incidence as males, though many more males than women smoke cigarettes.

Why is heart disease so prevalent in Indians? The answer involves genes and the environment. The genetic make-up of an individual loads the gun, and the environment pulls the trigger.

Westernization of Indians at home and abroad has resulted in them adopting western dietary habits, including changes in the vegetarian status and in meal patterns, the increased use of fast and processed food, and the changing frequency of use of traditional Indian meals, which often have been replaced by American or other menus. This resulted in the abandonment of a diet traditionally rich in complex carbohydrates and low in fat and an adoption of a diet high in saturated fat and animal protein but low in fiber. Our culinary habits, such as deep frying, using the same cooking oil over and over again and the excess consumption of milk, milk products, hydrogenated vegetable oils (trans fats), high carbohydrate consumption in the form of simple sugars (sweets) all deprive the body of omega oils, soluble and insoluble fiber,

cally more active and spend more time outdoors. These factors help reduce some effects of their high-cholesterol diet. Active public health prevention strategies that target Indians are needed to fight heart disease seen in other groups. This requires a multidisciplinary approach involving all healthcare professionals and public health agencies.

Homocysteine, an amino acid toxic to the lining of the blood vessels and causes clogging and clotting in the arteries, when it is present in excess, leading to strokes and heart attacks.

Lipoprotein (a) causes the production of plaque and blood clots in arteries, leading to heart attack and has been reported to have a high incidence in Indians.

People with diabetes have, in 10 years, a 20 percent risk of suffering a heart attack; the comparable risk in 10 years is less than 10 percent for those without diabetes.

## Ways to help ourselves

1. Establish risk criteria for our own community, where the prevalence of metabolic syndrome is high, and there are unnatural levels of lipoprotein (a) and homocysteine, and high insulin resistance.

For this, we can look forward to an ongoing AAPI study using a large sample of people.

such as statins, niacin, folic acid, insulin sensitizers, after making a maximum positive effort with diet and exercise to correct some of these metabolic abnormalities.

5. Get an exercise treadmill test at age 40 and, once in five years thereafter, even if you are asymptomatic. Get on the treadmill earlier if you are a smoker or have a family history of premature heart disease (by age 40).

6. Aim to control hypertension and diabetes and stop smoking. You should know your numbers - such as blood pressure figures, cholesterol values and the levels of blood sugar. The last applies to both diabetics and non-diabetics.

7. Learn to handle stress, because stress raises blood pressure, and releases into the circulation stress steroids that increase blood thickness, injures the inner lining of blood vessels and causes plaque ruptures, leading to heart attacks.

8. Incorporate humor and laughter into daily life; practice yoga and meditation to help you relax and reduce stress.

9. The best gift you can give to your family is to make them aware of these facts and to help them adopt a healthier life style to live longer.

10. Be a role model at your home and work and for your community to adapt a heart healthy life style and promote physical and mental well-being.