

# Why Do South Asians Have Such High Rates of Heart Disease?

“We all have someone in our first-degree circle that has either died suddenly or had premature cardiovascular disease,” said one researcher.



By Anahad O'Connor

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Mahendra Agrawal never imagined he would have a heart attack. He followed a vegetarian diet, exercised regularly and maintained a healthy weight. His blood pressure and cholesterol levels were normal.

But when Mr. Agrawal experienced shortness of breath in June 2013, his wife urged him to go to a hospital. There, tests revealed that Mr. Agrawal, who was 63 at the time, had two obstructed coronary arteries choking off blood flow to his heart, requiring multiple stents to open them.

“I’m a pretty active guy and I eat very healthy, my wife makes sure of that,” said Mr. Agrawal, who lives in San Jose and worked in the electronics industry. “It makes me wonder why this happened to me.”

Despite his good habits, there was one important risk factor Mr. Agrawal could not control: his South Asian ancestry. Heart disease is the leading killer of adults nationwide, and South Asians, the second fastest-growing ethnic group in America, have a higher death rate from the disease than any other ethnic group. People of South Asian descent, which includes countries like India, Pakistan, Bangladesh, Nepal, Sri Lanka, Bhutan and the Maldives, have four times the risk of heart disease compared to the general population, and they develop the disease up to a decade earlier.

“Every South Asian has a very common experience unfortunately, and it’s that we all have someone in our first-degree circle that has either died suddenly or had premature cardiovascular disease,” said Dr. Abha Khandelwal, a cardiologist at the Stanford South Asian Translational Heart Initiative.

Experts are only now beginning to uncover why rates of heart disease are so high in this group. For the last seven years, a team of researchers at the University of California, San Francisco and Northwestern University has followed more than 900 South Asians in Chicago and the Bay Area. Their ongoing study, known as Masala, for Mediators of Atherosclerosis in South Asians Living in America, has found that South Asians tend to develop high blood pressure, high triglycerides, abnormal cholesterol and Type 2 diabetes at lower body weights than other groups. South Asian men are also prone to high levels of coronary artery calcium, a marker of atherosclerosis that can be an early harbinger of future heart attacks and strokes.

“South Asians represent almost 20 to 25 percent of the world’s population, and this is a major public health problem in this huge population,” said Dr. Alka Kanaya, a professor of medicine at U.C.S.F. and one of the Masala principal investigators. Born in Mumbai and raised in California, Dr. Kanaya was inspired to launch the Masala project after seeing many of her friends and family members die from heart disease at relatively young ages.

In November, the American Heart Association and other medical groups issued updated cholesterol guidelines that, for the first time, urged doctors to consider ethnicity when determining a patient’s cardiovascular risk and treatment options. Citing studies by the Masala researchers, the guidelines identified South Asians as a “high risk” group and “stronger candidates” for statin medications when other risk factors are present.

Some of the most striking findings to come out of Masala relate to body composition. Using CT scans, Dr. Kanaya and her colleagues found that South Asians have a greater tendency to store body fat in places where it shouldn’t be, like the liver, abdomen and muscles. Fat that accumulates in these areas, known as visceral or ectopic fat, causes greater metabolic damage than fat that is stored just underneath the skin, known as subcutaneous fat.

Studies show that at a normal body weight — generally considered a body mass index, or B.M.I., below 25 — people of any Asian ancestry, including those who are Chinese, Filipino and Japanese, have a greater likelihood of carrying this dangerous type of fat. Despite having lower obesity rates than whites, Asian-Americans have twice the prevalence of Type 2 diabetes, which promotes heart attacks and strokes.

Heart risks tended to be greatest in South Asians, the Masala researchers found. In one recent study, in the *Annals of Internal Medicine*, they found that 44 percent of the normal weight South Asians they examined had two or more metabolic abnormalities, like high blood sugar, high triglycerides, hypertension or low HDL cholesterol, compared to just 21 percent of whites who were normal weight.

The Masala researchers also found that using the standard cutoff point to screen for diabetes, a B.M.I. of 25 or greater, would cause doctors to overlook up to a third of South Asians who have the disease. “Many of them may never get to that B.M.I. and they will have had diabetes for years,” Dr. Kanaya said.

The findings helped prompt the American Diabetes Association to issue updated guidelines in 2015 that lowered their screening threshold for diabetes, to a B.M.I. of 23 for Asian-Americans. A public awareness campaign, organized by the National Council of Asian Pacific Islander Physicians, called Screen at 23 has drawn attention to the issue, and at least three states, including California, Massachusetts and Hawaii, have enacted policies to promote more aggressive health screenings of Asian-Americans. Representative Pramila Jayapal of Washington, the first Indian-American woman to serve in the House, recently introduced a bill to provide more funding for South Asian heart health awareness and research.

Most of the participants in the Masala study are first-generation immigrants, and the researchers found that their cultural practices also impact their disease rates. Cardiovascular risks tended to be highest in two groups: those who maintained very strong ties to traditional South Asian religious, cultural and dietary customs, and those who vigorously — embraced a Western lifestyle. Those with lower risk are what the researchers call bicultural, maintaining some aspects of traditional South Asian culture while also adopting some healthy Western habits.

This discrepancy plays out in their dietary behaviors. Almost 40 percent of Masala participants are vegetarian, a common practice in India that is widely regarded in the West as heart healthy. But vegetarians who eat traditional South Asian foods like fried snacks, sweetened beverages and high-fat dairy products were found to have worse cardiovascular health than those who eat what the researchers call a “prudent” diet with more fruits, vegetables, nuts, beans and whole grains (and, for nonvegetarians, fish and chicken). People who eat a Western style diet with red and processed meat, alcohol, refined carbohydrates and few fruits and vegetables were also found to have more metabolic risk factors.

Dr. Namratha Kandula, a Masala investigator at Northwestern, said she hopes to study the children of the Masala participants next because they tend to influence their parents’ health and lifestyle habits, and the researchers want to understand whether health risks in second-generation South Asians are similar or not. But for now, some experts say their goal is to increase outreach to South Asians who may be at high risk and neglecting their health.

“As a South Asian Bay Area resident, I see that we focus a lot on success and academic achievements in our families,” said Dr. Khandelwal at Stanford. “But we don’t necessarily look at our health success, and your health is something that you can’t easily get back.”

Anahad O’Connor is a staff reporter covering health, science, nutrition and other topics. He is also a bestselling author of consumer health books such as “Never Shower in a Thunderstorm” and “The 10 Things You Need to Eat.”

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