



Diabetes, Heart Disease, Stroke and Peripheral Arterial Disease

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Diabetes, a disorder of blood sugar metabolism, is strongly linked to heart disease, stroke and peripheral arterial disease. In fact up to 85% of people with diabetes will die of a vascular related event. In other words if you have diabetes you need to be concerned about coronary artery disease (blockage in the heart arteries), carotid artery stenosis (blockage in the arteries leading to your brain) and vascular disease (blockage in the arteries in your legs, abdomen, and kidney arteries) because these abnormalities are the ones most likely to result in death. These complications along with vision loss, kidney failure and neuropathies (disorders of the peripheral nerves) are more likely to occur if your diabetes is not well controlled and if other risk factors for atherosclerosis are left untreated. The relative increase in the rate of coronary heart disease among patients with diabetes is greater for women than for men and it is believed that diabetes eliminates the protective effects of women who are premenopausal. Studies have shown that diabetic patients presenting to the emergency room with heart attacks are less likely to survive than those without diabetes. Within a year after a heart attack the likelihood of a poor outcome is 50% higher in patients who have diabetes than those who do not.

What are the Risk Factors for Heart Disease and Stroke in People with Diabetes?

Diabetes itself is a risk factor but having other conditions increases your risk even more. The more risk factors you have the more likely you will have a heart attack or stroke.

There are modifiable risk factors and non-modifiable risk factors. The non-modifiable risk factors include a family history of a direct relative who had a cardiovascular event (heart attack or stroke) at a young age. If you have a brother or father who had a stroke or heart attack at age 55 or younger or a mother or sister who had a stroke or heart attack at age 65 or younger then you are at increased risk. There is not much you can do about this genetic-linked risk at this juncture in modern medicine but you can do a lot about other risk factors that can be modified such as smoking, high blood pressure and cholesterol. If you have diabetes then it is imperative that you and your doctor make every effort to attain certain goals. If these goals are not met then you are not doing enough to lower your risk.

The target goals for high blood pressure is 130/80 mmHg or less. The target goal for cholesterol is LDL < 100 (optimal around 70); HDL > 45 for men and 50 for women, and triglycerides < 150. Complete smoking cessation is recommended without any exceptions. You should perform at least 30-45 minutes of cardiovascular training at least 5 days per week. Of course diabetes needs to be well controlled with target goal hemoglobin A1C of 7 or less. These goals take hard work but have been shown to reduce events and death. If you simply treat the diabetes to goal while ignoring the other risk factors then the risk of heart attack and stroke is not affected. The major point is that controlling diabetes alone is not enough to avoid the complications. You must achieve optimal control of all the risk factors to make the best possible impact on reducing your risk of having a cardiovascular event. This includes optimal blood pressure control, optimal

cholesterol control, complete smoking cessation, initiation of an active lifestyle and healthy diet.

When should I see a cardiologist?

It is a known fact that about 30% of patients with heart attacks never had symptoms. Since diabetes attacks the nerve fibers that control sensations such as pain and feeling, most of the patients who are unaware of their heart attack have diabetes. It is for this reason and because of the strong link between heart disease and diabetes that I recommend that everyone with diabetes be seen by a cardiovascular specialist at some point. After a careful history and physical, further testing may need to be performed; even if there are no significant symptoms. The cardiologist can determine your risk and after doing so might order tests such as a calcium score. The calcium score measures the concentration of calcium in the coronary arteries. The score you receive will contribute to the overall likelihood that you have severe coronary artery disease. The lower the score is, the less likely the presence of severe coronary artery disease. The greater the score is, the higher the likelihood.

Other tests you may undergo include a stress test either with nuclear imaging or echocardiographic imaging to assess the presence of severe coronary artery disease, an ankle-brachial index to rule out severe peripheral arterial disease, or a carotid ultrasound to assess the severity of disease in the neck arteries. In some instances if your risk is felt to be high, as it almost always is

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in diabetics, a cardiac catheterization might be ordered. If you are diabetic and have chest pain, exertional shortness of breath, new onset indigestion, exercise fatigue or any new worrisome symptom then you should seek medical attention immediately.

What if I am found with significant coronary artery disease, carotid stenosis or severe blockage in the arteries of my legs?

Each of these problems might exist separately or together as they often do in diabetics. Coronary artery disease can be treated medically, with angioplasty and stenting or with surgery. The treatment choice is dependent on multiple variables and should be discussed with a cardiologist. Suffice it to say that the evidence is overwhelmingly in favor of coronary bypass graft surgery in patients who have diabetes and multiple blockages. Carotid artery blockage can be dealt with medically, surgically or with stents as well. The same goes for blockage in the arteries of the legs. For every single one of these complications of diabetes, optimal medical therapy is warranted for all. That means it's not good enough to 'fix' an artery and not get the blood pressure to goal. It's not enough to do bypass on the leg and not stop smoking too. Whatever choice you and your doctor make to treat your blockage it is important to discuss the options along with the risks and benefits of each option. A long term plan must also be developed to reduce the chances that you will have a recurrent problem.

While there are several ongoing studies evaluating new therapies and strategies aimed at reducing mortality and morbidity associated with diabetes, there is much about diabetes and heart disease that is uncertain. What is certain is that the link between heart attack/stroke and diabetes is so close that we cardiologists consider having diabetes equal to having a heart attack or stroke. That is why the presence of diabetes in anybody must be taken seriously, treated aggressively and monitored frequently.



About The Author

Arie Szatkowski, M.D., FACC is Board Certified in Internal Medicine and Cardiology. He received his M.D. from Cornell University Medical College in New York. Dr. Szatkowski completed his Cardiology Fellowship, as well as, internship and residency in Internal Medicine at New York Presbyterian Hospital, Columbia University in New York. In 2000, he was named "Physician of the Year". Also, while in his residency, Dr. Szatkowski earned the prestigious Arnold P. Gold Award for Excellence in Humanism and Teaching and was appointed Chief Fellow in Cardiology. Dr. Szatkowski joined the Stern Cardiovascular Center in July, 2003. Dr. Szatkowski's interests include: Clinical Cardiology, Congestive Heart Failure, Valvular Disorders, Adult Congenital Disease, Coronary Artery Disease and Preventive Cardiology. He also offers Nuclear Cardiology and Clinical Echocardiography including Transesophageal Echocardiography. Dr. Szatkowski is on the staff of Baptist Memorial, Saint Francis and Methodist hospitals. 901-271-1000

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