

WELLNESS MIDSOUTH GUIDE

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Stern Cardiovascular Center

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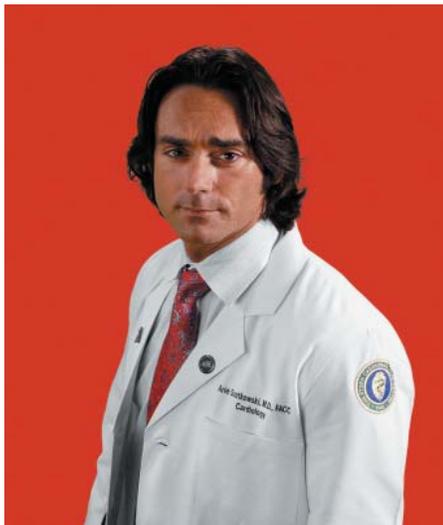
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Sudden Death:

“What do we know and what can you do...”

By Arie Szatkowski, M.D., FACC

Stern Cardiovascular Center

The recent unfortunate event involving the sudden death of MSNBC's Tim Russert raised many questions for all of us. These ranged from 'how could this have happened' to 'can it happen to me'.

It appears that Tim Russert was the victim of what we physicians call 'Sudden Death' and that the likely cause of his sudden death was a malfunction of the heart's electrical system that caused the heart to fibrillate leaving it unable to pump life sustaining blood. The fibrillation, if not treated within minutes, deteriorates to no rhythm at all called asystole. All of this was probably triggered by a heart attack.

A heart attack occurs when there is abrupt closure of an artery that supplies heart muscle; the resultant lack of blood flow results in the death of heart muscle and tissue supplied by the closed artery. The scarring that ensues then leads to the electrical event that causes sudden death. Thankfully this result does not occur every time someone has a heart attack. The key is to prevent the heart attack all together!

I will attempt to explain Sudden Death, (it's causes, mechanisms, and treatment) as well as provide the reader with the information needed to reduce his/her risk of Sudden Death.

How is Sudden Cardiac Arrest different from a Heart Attack?

Sudden Cardiac Arrest occurs when the electrical system to the heart malfunctions and the heart suddenly beats fast and irregularly or not at all resulting in loss of the hearts ability to pump blood to the body. If not corrected in minutes the person loses consciousness because no blood flows to the brain and shortly after he/she dies due to lack of blood flow to all vital organs of the body. A Heart attack occurs when one of the arteries that supply blood to the heart abruptly closes and the part of the heart that is no longer receiving blood dies and scars.

Therefore Sudden Cardiac Arrest or Sudden Cardiac Death is an electrical malfunction which can be caused by a heart attack. However, several things can cause an electrical malfunction of the heart, leading to sudden death.

What are the symptoms of Sudden Cardiac Death?

In about 50% of the victims of Sudden Death dizziness, racing heart beat, chest pain, shortness of breath and/or a feeling of doom can be experienced. These occur suddenly. Unfortunately in about 50% of people there are no prior symptoms.

What Causes Sudden Death?

Most sudden cardiac deaths are caused by abnormal heart rhythms called arrhythmias. The most common life-threatening arrhythmia is ventricular fibrillation, which is an erratic, disorganized firing of impulses from the ventricles (the heart's lower chambers). When this occurs, the heart is unable to pump blood and death will occur within minutes, if left untreated.

There are many cardiac and non-cardiac causes for ventricular arrhythmias that lead to sudden death. This includes coronary artery disease with heart attack or ischemia (transient decreased blood flow to the heart), coronary spasm, cardiomyopathy (abnormalities of the heart muscle), valvular heart disease, congenital heart disease, prolonged QT syndrome, complete heart block, arrhythmogenic right ventricular dysplasia, myocarditis, acute pericardial tamponade, acute myocardial rupture, primary electrical disease, sudden infant death syndrome, pickwickian syndrome, drug-induced, airway obstruction.

What Are The Risk Factors?

There are several risk factors which you and your doctor should be aware of. These include prior heart attack, coronary artery disease (you are at a risk of coronary artery disease if you have high cholesterol, smoke, have

diabetes, hypertension or a family history), weak heart muscle, family history of cardiac arrest or sudden death, personal or family history of abnormal rhythms associated with sudden death, history of specific congenital heart abnormalities, heart failure, history of syncope (fainting episodes of unknown cause), hypertrophic cardiomyopathy, significant changes in potassium and magnesium, obesity, diabetes, recreational drug use, and certain prescribed drugs or drug combinations.



Tim Russert collapsed and died of a heart attack in NBC's Washington bureau Friday, June 13th. He was 58 and the host of "Meet The Press".

If you are concerned your doctor should be a good source of information. **If you are at risk you should be seen by a cardiologist**

Can Sudden Cardiac Death be Prevented?

You can significantly reduce your risk. If you have any of the above risks it is important that you keep regular follow up appointments with your doctor, make certain lifestyle changes and take medications as prescribed. If you wish to stop any medications discuss this with your doctor first.

There are also surgical procedures and interventions that can reduce your risk.

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These are complex discussions that should take place with your cardiologist. These include angioplasty and stenting, bypass surgery, pacemaker and/or automatic cardiac defibrillator implantation.

If you have survived an episode of sudden death you will likely need close and frequent follow up with your doctor. Furthermore, involving a cardiologist at this point is extremely important.

When you see a cardiologist he/she may have you undergo an echocardiogram (ultrasound of the heart). This test, which should be done by an accredited lab, will provide important information about your heart. One of the measurements is the Ejection Fraction or EF. The EF is the percentage of blood that is pumped out of your heart with each beat. A MUGA or Gated SPECT (nuclear based tests done at the cardiologist office) can also provide this information. The normal EF is greater than 50%. It can change based on your heart's health. If you have heart disease or symptoms of heart disease it is important that your EF be measured. You may have to have the EF re-measured during the course of your life based on treatment changes and changes in your condition. Your cardiologist should know how often your EF should be checked. Based on your EF there are certain known life-saving therapies that your doctor should at least offer you. Again, I can't stress the importance of having a Board Certified cardiologist see you regularly if you have an abnormal EF.

Reducing Your Risk Factors

It is a well established fact that if you can reduce your risk factors then you can reduce your risk of sudden cardiac arrest. Whether or not you have been diagnosed with heart disease here are some things you can do to lower the chances you'll die suddenly.

- Quit smoking. Don't cut down, that doesn't so you any good. You have to stop completely. You are fooling only yourself.

- Lose Weight. If your overweight or obese then it's time to do something about it before it's too late. Not only will you lower your risk of sudden death but you will feel better.

- Exercise regularly. That means at least 5 days out of 7 days of cardiovascular training, at least 30-45 minutes at a time. Don't just go out and take a stroll, push yourself. (if you haven't ever exercised and you're ready to start, get clearance from your doctor first.)

- Follow a low-fat, low carbohydrate diet. That doesn't mean temporarily, that means all the time.

It is difficult to make a complete change overnight so I recommend taking small steps, setting goals and sticking to those goals.

- Managing diabetes. In spite of two recent trials stating that tight diabetes control

does not improve risk of death due to cardiovascular causes there was a trend towards improvement. And tight control does help prevent problems with your vision and kidneys due to diabetes.

- Managing other health conditions including high blood pressure and high cholesterol. There are known optimal targets that you and your doctor should set as your goal.

There is no one who can tell you that your risk of sudden death is zero. Heart disease is the number one killer of Americans and people of industrialized countries and therefore we are all at risk. The key is to make the necessary changes in your life, accept the medical opinions that could lead to minimizing the risk for you, and take care of yourself all the time.

Implantable Cardioverter-Defibrillator (ICD)

Your doctor may recommend an ICD if you have survived an episode of sudden death or if you are at significant risk. An ICD is a small metal machine similar to a pacemaker that is designed to correct arrhythmias that lead to sudden death. They also record the person's heart rhythms which allow the doctor to make treatment decisions. They have been shown to reduce the risk of death significantly in patients who are at high risk. You may be at high risk if you had a heart attack or if your EF is severely low. There are other indications that your cardiologist would know. Sometimes pacemakers and ICDs are combined.

There are automatic external defibrillators (AEDs) available in casinos and airplanes. These are machines that anyone can attach to a passed-out person's chest. The machine then can detect the rhythm of the heart and deliver the necessary therapy (a shock) to correct the rhythm. The AED needs to be more widely available. In fact if there were one in Tim Russert's vicinity he might have received the therapy necessary to keep him alive long enough to receive more definitive treatment. There are commercially available AEDs for anyone who wants to keep one at home. I would discuss this with your doctor first.

Interventional Procedures or Surgery

For patients with coronary artery disease angioplasty and stenting might be recommended to reduce the risk of sudden death. For some surgery may be the only way to correct the problem. In some patients who have congenital defects or a specific type of cardiomyopathy combined procedures such as surgery, electrical mapping and ablation, or cardioversions may be necessary to treat the problems that lead to sudden death. In some situations when the heart muscle is scarred part of the muscle may need resection.

These are all very complex scenarios that are best addressed and dealt with by an expert who is board certified in cardiology and

sometimes in electrophysiology.

Education

It is important if you are at risk of sudden death and that your family or anyone who you spend lots of time with understand your condition and know to call 911 in the event of an emergency. I strongly recommend that anyone who lives with someone who is at risk of sudden death learn CPR.

Can Sudden Cardiac Arrest/Death Be Treated?

Yes, sudden cardiac arrest can be treated and reversed if emergency action takes place immediately. Survival can be as high 90% if treatment is initiated within minutes. Those who survive have a good long term outcome. Immediate treatment includes CPR done properly and calling 911. An AED can save someone's life and if available should be used within seconds. There needs to be legislation to make AEDs more available in public places and in companies with a large number of employees. In fact it is CPR and defibrillation that saves a person's life.

After successful defibrillation, people need to be further assessed at a hospital.

If you want more information please go to the following websites:

www.acc.org (The American College of Cardiology- Cardiosource.

www.HRSpatients.org (Heart Rhythm Society)

www.sads.org (Sudden Arrhythmia Death Syndromes Foundation)



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