



TRI-CITY CARDIOLOGY CONSULTANTS, P.C.

Leaders in Cardiovascular Excellence

...Where Patients Come First

Hot Topics in Cardiology



Dr. Kai Sung is an electrophysiologist at Tri-City Cardiology. He is board certified in Cardiovascular Disease, Cardiac Electrophysiology, and Internal Medicine. Dr. Sung completed his education and training at Columbia University, Baylor College of Medicine, and Brown University. While at Brown, Dr. Sung trained under Dr. Alfred Buxton, a world renowned expert in arrhythmia medicine. Dr. Sung is a Fellow of the American College of Medicine and a Fellow of the Heart Rhythm Society. He has lectured extensively in both national and international forums, and has conducted advanced research in the fields of arrhythmia ablation and heart failure devices. Dr. Sung consults at the Dobson, Baywood, and Gilbert offices.

The Heart of A Poet

Percy Shelley (8/4/1792-7/8/1822) was one of the major English Romantic poets. Though his political and social views were considered too radical during his lifetime, his poetic influence extended for generations. His wife Mary Shelley wrote Frankenstein, and his closest friends included Lord Byron and John Keats. Oscar Wilde, George Bernard Shaw, W.B. Yeats all recognized Shelley as an inspiration.

On July 8, 1822, while sailing to Lerici, his boat Don Juan sank in the midst of a severe storm, and Shelley drowned with a copy of Keats in his pocket. After Shelley's death, his body was cremated in the presence of his friends Edward Trelawny and Leigh Hunt. Strangely, Shelley's heart did not burn and was retrieved undestroyed from the fire by Trelawny, who gave the heart to Hunt, who ultimately gave it to Shelley's wife, Mary.

His gravestone bears the inscription "Cor Cordium", Heart of Hearts. A tribute from his friends, who believed the heart of a true poet never dies.

His heart was eventually buried in 1889, 67 years after Shelley's death, with the body of his son.

Why did the heart remain? A 1955 article in The Journal of the History of Medicine, by Arthur Norman, suggested that Shelley may have suffered from "a progressively calcifying heart, which indeed would have resisted cremation as readily as a skull, a jaw, or fragments of bone." Pericardial calcification is certainly well described in modern cardiology literature, and a layer of calcium encasing the heart would certainly shield the heart from the cremation process.



Kai Sung, M.D., F.A.C.C., F.H.R.S.

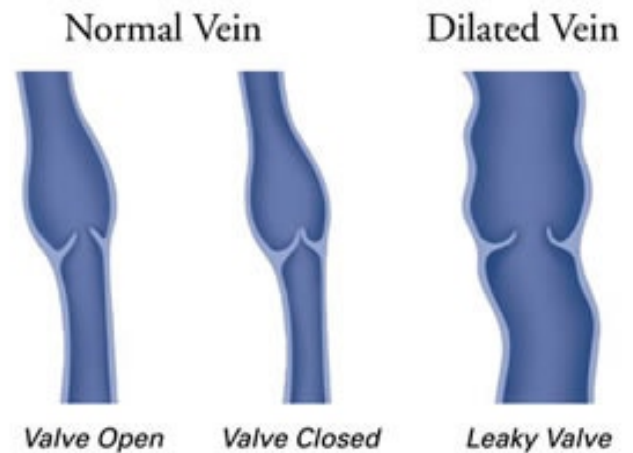


Dr. Berkowitz is currently chairman of the Department of Cardiology at Banner Desert Medical Center. He is board certified in Cardiovascular Disease, Vascular Medicine, Nuclear Cardiology, Interventional Cardiology, and Internal Medicine. He has advanced training from Columbia University and New York University, and specializes in coronary and peripheral vascular disease diagnosis and management. He is one of the leading experts in the treatment of varicose veins, and founded the Tri-City Cardiology varicose vein program. Dr. Berkowitz consults at the Dobson, Baywood, and Gilbert offices.

New Advances in Venous Disease Offers Patients Less Invasive Treatment Solutions

Do your legs ache, hurt, or swell by the end of the day? Do you have large painful varicose veins? These are all symptoms of venous disease. Approximately 30% of the US population, or 25 million people will develop venous insufficiency or “venous reflux disease.” Complications such as phlebitis (inflammation), blood clots, infections, or ankle ulcers can occur in those that develop advanced venous disease. There are new options for treating this common disorder that offer an outpatient, less invasive solution with quick recovery and excellent results.

Normally, the job of the veins is to bring blood back to the heart and lungs. Healthy veins in the legs function as one-way valves, keeping blood moving upwards in the right direction. In people who develop venous disease, the veins become “insufficient”, allowing blood to leak backwards away from the heart and pool in the legs. The veins become congested causing aching, throbbing, heaviness, burning, and swelling. In advanced cases, this can progress to skin rashes, inflammation, infection, and ulceration.



It is recommended that all patients with venous disease should be wearing compression stockings, participate in weight loss and exercise, and elevate the legs on a daily basis. There are now new procedures that can provide a minimally invasive, simple, and effective treatment of this common condition. Radiofrequency ablation is a procedure performed in our office, with no general anesthesia, and no recovery time. A small catheter is introduced through a small needle-stick into the diseased vein. The catheter delivers radiofrequency (heat) energy to the vein causing it to collapse and seal. This novel procedure causes no pain or bruising and essentially has replaced previous surgical operations in the treatment of venous disease. The procedure is performed in usually less than one hour and the patient is able to resume normal activities immediately.

If you have symptoms and suspect venous disease please talk with your doctor. The vascular specialists at Tri-City Cardiology can provide a comprehensive assessment of venous disease and develop a patient-specific treatment plan.

M. Joshua Berkowitz, M.D., F.A.C.C., F.S.C.A.I., F.S.V.M.



Dr. Kolli is an electrophysiologist at Tri-City Cardiology. He is board certified in Cardiovascular Disease and in Cardiac Electrophysiology. He trained under Dr. Alfred Buxton and Dr. Jose Jalife, both world-renowned experts in arrhythmia disorders. Dr. Kolli was the winner of the Haffenreffer Award, which designated him as the best fellow of the year at Brown University. He has conducted cutting edge research projects at Brown University, Johns Hopkins University, and State University of New York. Dr. Kolli is a Fellow of the American College of Cardiology and a Fellow of the Heart Rhythm Society. Dr. Kolli consults at Baywood, Dobson, and Gilbert offices.

Which blood thinner is right for me?

Every 40 seconds someone in the US is diagnosed with a stroke. Every fourth minute someone dies of a stroke. Atrial Fibrillation is one of the most common reasons for stroke worldwide. Stroke can occur both in patients who are intermittently in atrial fibrillation or always in it. It can occur at any point during the clinical course of the arrhythmia.

Long term therapy with blood thinners is recommended in patients with atrial fibrillation to prevent the risk of stroke. The choice between treatment with aspirin and full blood thinners like Coumadin depends on several factors including your doctor's assessment of risk, the ability to provide high quality monitoring of Coumadin, patient's risk of bleeding, kidney function and patient preference like cost, convenience and dosing frequency.

The risk of stroke in patients with atrial fibrillation is predicted using the CHADS2 score. The score is based on one point for Congestive Heart Failure, Hypertension, Age > 75 yrs, Diabetes Mellitus and two points for Stroke. In patients with no risk factors Aspirin 81mg is recommended. In patients with one point either Aspirin or full anticoagulation is recommended. In patients with two points, full anticoagulation is recommended.

Warfarin has been evaluated in numerous trials with thousands of patients and has been shown to significantly decrease the risk of stroke by two thirds compared to no blood thinner treatment and decrease the risk of stroke by half compared to treatment with aspirin. It is effective in all age groups of men and women including above 75 years. Being a blood thinner, it does increase the risk of bleeding. The goal is to thin the blood two to three times the norm. This requires monitoring and follow up in the Coumadin clinic in either your cardiologist or primary doctor's office. In emergency situations of bleeding, the effect of Coumadin can be reversed using either vitamin K or fresh frozen plasma. Advantages include low cost, ability to be reversed in emergencies, and no need for special considerations in

renal failure. Disadvantages include the need for monitoring of INR, interactions with several other drugs and dietary interactions.



Over the past few years, there have been two new agents Dabigatran (Pradaxa) and Rivaroxaban (Xarelto) that have been approved in the US for anticoagulation in patients with atrial fibrillation. In research trials the full dose of Dabigatran has been shown to have lower incidence of stroke and same incidence of bleeding. Xarelto has also been evaluated in comparison to Coumadin and has been shown to be noninferior to Coumadin. Advantages of these two newer medications include no requirement for INR monitoring and less susceptibility to dietary and

drug interactions. Disadvantages include higher cost, lack of antidote/reversing agent, and need for adjustment of dose with change in renal function.

This is a very important decision. Discuss in detail with your physician to make the decision regarding the best blood thinner for you. Once initiated, it is very important to continue taking the medication regularly. These medications should not be interrupted without discussing with your physician.

Arun K. Kolli, M.D., F.A.C.C., F.H.R.S.



Dr Atmakuri is an interventional cardiologist at Tri-City Cardiology. He is board certified in Interventional Cardiology, Echocardiography, Cardiovascular Disease, Peripheral Vascular Disease, and Internal Medicine. Dr Atmakuri was trained at Columbia University, Baylor College of Medicine, and Emory University. He is one of the most respected and versatile experts in interventional cardiology where he performs coronary intervention, peripheral intervention for PAD and carotid disease, and structural valve intervention with his expertise in catheter based valvular replacements. He has done extensive research and publications in the fields of interventional cardiology and vascular medicine. Dr Atmakuri consults at the Baywood, Dobson, and Gilbert offices.

Peripheral Arterial Disease (PAD)

There are approximately 7 million Americans who are diagnosed with peripheral artery disease or PAD. PAD refers to development of atherosclerotic plaque or more commonly referred as “blockages” that build up in the arteries of the body, other than coronary arteries and decrease blood supply to the organs causing various symptoms.

For example, blockages that prevent blood flow to the kidneys cause uncontrolled hypertension. PAD in the legs causes leg pain in the calves, thighs or hips with exercise. If patients have resting pain in the legs or have a cold leg, they should contact their physician immediately, as appropriate treatment may prevent surgery and/or amputation.

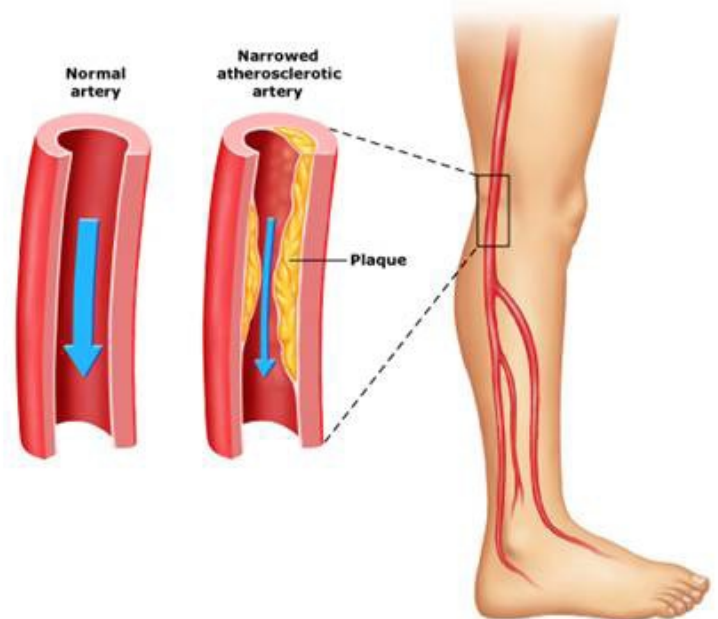
The risk factors for developing PAD are similar to those for coronary artery disease or CAD and include age greater than 65, diabetes, smoking, hypertension, hyperlipidemia (or elevated cholesterol). Patients who have these risk factors should undergo a history and physical exam and get a screening ABI or arterial brachial index, that measures the blood supply in the legs when compared to the arteries in the arms.

In addition, patients who have leg discomfort with walking most commonly have one of four reasons. These include PAD, arthritis or orthopedic issues, spinal stenosis or neuropathic causes and venous disease. Your physician will order the appropriate studies to diagnose the cause of leg discomfort.

The most important and preventable cause of PAD is smoking and efforts should be maximized to quit smoking.

If you have any further questions, please contact your primary care physician or one of the cardiologists at Tri-City Cardiology Consultants.

Satya Reddy Atmakuri, M.D.



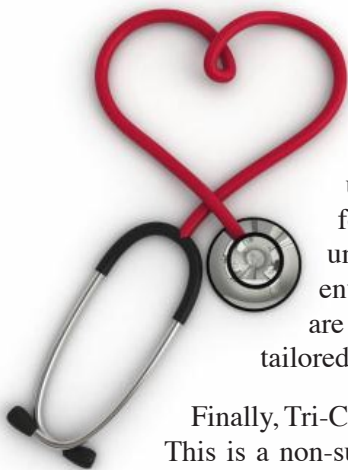


Dr. Todd Perlstein is a recognized national authority on hypertension. He is board certified in Cardiovascular Disease, and most recently served as faculty at Harvard Medical School. Dr. Todd Perlstein has published more than 30 articles and textbook chapters, focusing on hypertension and vascular medicine, and serves as a reviewer of 20 different peer-reviewed academic journals. He completed his education at the University of Arizona College of Medicine, and thereafter trained at Emory University and Harvard Medical School Brigham & Women's Hospital. He has presented extensively in national meetings, and has conducted advanced research in the fields of hypertension management and endovascular diseases under the support of National Institute of Health, American College of Cardiology, and American Heart Association. He joined Tri-City Cardiology in 2012, and now practices along side his father, Dr. Edward Perlstein. Dr. Todd Perlstein consults at the Dobson, Gilbert, and Ironwood offices.

Tri-City Cardiology Offers High Blood Pressure Specialty Care

Do you have high blood pressure (hypertension)? If you are an adult living in the United States, chances are that you do. By age 40 years 33% of American adults have hypertension, and by age 65 years 66% of American adults have hypertension. Most of us know that uncontrolled hypertension can lead to heart disease, stroke and kidney failure. You may not know that hypertension is the second leading preventable cause of death in the US, after smoking. You also may not know that the risk of disease and death due to hypertension can be greatly reduced with effective control of the blood pressure.

Tri-City Cardiology (TCC) has developed a special program in the treatment of hypertension. Dr. Todd Perlstein, the most recent member of TCC, is an expert in the care of patients with hypertension. Dr. Perlstein was Co-Director of Hypertension for the Cardiovascular Medicine Division at Brigham and Women's Hospital in Boston, MA, a Harvard Medical School affiliate. There he conducted research in the treatment of hypertension, as well as running a clinical program that specialized in the treatment of patients with difficult-to-control hypertension.



The TCC Hypertension Program takes a structured approach to the care of patients with hypertension. A careful history, physical examination, and review of prior studies (e.g. laboratory tests, X-rays) are performed to identify any potentially reversible underlying cause of hypertension. A comprehensive assessment of an individual's risk for cardiovascular disease is made. All prior treatments are reviewed to develop an understanding of what has and has not worked to control the blood pressure. Lifestyle and environmental factors that can contribute to hypertension such as diet, exercise and stress are considered. After integrating all of this information, a diagnosis and treatment plan is tailored to fit a patient's needs.

Finally, Tri-City Cardiology is working hard to be the first center in Arizona to offer Renal Denervation. This is a non-surgical, catheter-based procedure that has been shown to profoundly reduce the blood pressure of patients with treatment-resistant hypertension.

If you would like to be seen in the Hypertension Program at TCC, please call to schedule an appointment.

Todd S. Perlstein, M.D., M.M.s.c., F.S.V.M.



Heather M. Duquette-Wolf is a Registered Dietician and Certified Specialist in Sports Dietetics. She received her degree in Food Science and Nutrition from Plattsburgh State University of New York. She completed her post graduate work in nutrition at Yavapai County Medical Center in Arizona. She is the owner of HMD Nutrition, has developed and taught nutrition courses for a therapeutic college, is a nutrition consultant for the Internal Revenue Service as well as Glendale and Phoenix Fire Departments. She continues to consult and lecture for private, corporate and medical communities. Heather consults at the Baywood, Dobson, and Gilbert offices.

Nutrition Tip:

Stay away from margarines, butter substitutes or sprays as they are highly processed and do not benefit your health. Use organic butter or organic coconut oil for your cooking needs. Even in recipes that call for oils, refined coconut oil works well and it will not have the coconut taste. Beware that heating olive oil can cause damage to the oil and is best used cold for salads.

Why you should avoid margarine, shortening and spreads:

- Trans Fats
- Free Radicals
- Synthetic Vitamins
- Preservatives
- Bleach
- Solvents
- Artificial Flavors
- Soy Protein Isolate
- Sterols

Using organic butter and coconut oil offer health promoting benefits and do not raise our cholesterol.

Recipe:

Breakfast Smoothie

Blend together....

- 1 cup of unsweetened vanilla almond milk
- 5 whole strawberries (fresh or frozen)
- 1-2 TBSP of natural peanut or almond butter
- 1 TBSP of coconut oil
- 1 Tsp vanilla and/or 1 packet of Stevia

(Use frozen fruit or add ice if you like more of a shake consistency)





Leaders in Cardiovascular Excellence.....



Established in 1980, Tri-City Cardiology has become widely known for its progressive and innovative approach in the specialty area of Cardiology. Our Vision at Tri-City Cardiology is to be among the best providers of cardiovascular care in the entire country.



Our practice consists of 21 board certified physicians coming from some of the top medical universities and fellowship programs in the country. Our sub-specialty programs include Echocardiography, Nuclear Cardiology, Peripheral Vascular, and Interventional Cardiology; and each is led by a board certified cardiologist. Our Electrophysiologists are board certified in Clinical Cardiac Electrophysiology. The physicians at Tri-City have been frequently recognized as “Top Doctors” in the Phoenix Magazine, an honor ranking them among the best physicians in the Phoenix Metro area.



Customer Service Focus:

- Patient Satisfaction is a top priority with every patient
- We utilize Press Ganey to compile patient satisfaction scores
- We rank in the top percentiles for Patient Satisfaction



Quality Care Focus:

- PQRS and Meaningful Use Participant with Medicare
- Heart Stroke Recognition Program through the NCQA
- American College of Cardiology PINNACLE Registry Quality Reporting
- Accredited with Banner Heart Hospital for Heart Failure
- Accredited Nuclear, Echo, and Vascular Labs with ICANL, ICAEL, and ICAVL



Visit us online at www.TriCityCardiology.com





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The physicians and staff at Tri-City Cardiology Consultants look forward to providing patients and their families with very good care and service.