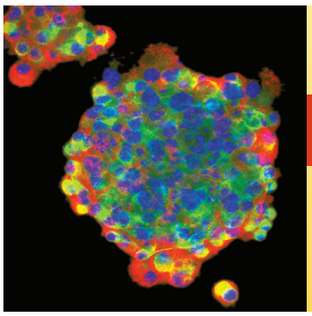
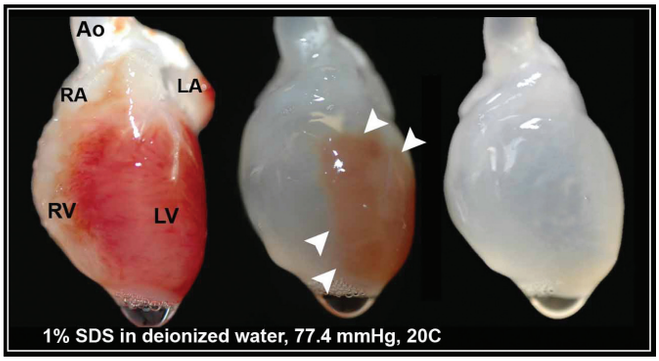


Christian Wilde's **STEM CELL & TURMERIC RESEARCH REPORT™**

ISSUE 4

A Live Beating Heart From Stem Cells

Those of you who have read *Miracle Stem Cell Heart Repair* are familiar with Professor Doris Taylor's work while on faculty at Duke University. It was at Duke that she had discovered a way (for the first time) to repair a damaged heart from heart attack. The initial experiment was performed on a canine. The animal's own stem cells were harvested from its leg muscle and successfully injected into its heart. It was exactly that breakthrough at Duke that has lead to the ongoing FDA trial for congestive heart failure. Doctors are today using the patient's own stem cells to transition "no option" heart failure patients from near death to recovery, in a one-time, minimally invasive procedure. The Duke experiment had been what Dr. Taylor would affectionately refer to as one of her *crazy ideas.* It would be several years later, while in her laboratory at the University of Minnesota that another landmark procedure was envisioned and later successfully performed. Dr. Taylor, the Medtronic-Bakken Chair in Cardiac Repair and Director of the Center for Cardiovascular Repair had long been aware that 3,000 people a year die from heart failure while waiting for a donor heart to become available, Dr. Taylor had been considering another one of her *"crazy ideas."* After all, wasn't it a crazy idea to believe that harvesting stem cells from Fido's leg could actually (even though it had never been done before) rejuvenate a damaged heart? How radical was that? Yet that is how she had discovered the *skeletal myoblast* heart failure breakthrough while at Duke. Now, what if, just what if she could bring a dead rat heart back to life using a similar, yet different stem cell procedure? And if this could be accomplished, how might it meaningfully translate to eventually possibly building hearts for 3.000 patients yearly in dire need of a miracle?



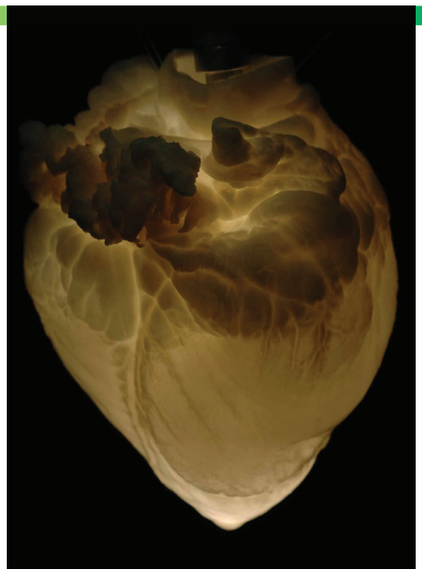
Removing stem cells from rat heart. *(Images shown by special permission)*

THE EXPERIMENT: Using a common detergent to strip the existing stem cells from a dead rat's heart, Dr. Taylor and her colleague, Dr. Harold Ott from Massachusetts General Hospital (MGH) left a structure (i.e. matrix, scaffold) of a heart in place with the cells removed. The dead heart cells were washed away from where they had resided in the rat heart, leaving a thin translucent structure in place. The next step would be to re-seed the rat heart with new, younger and healthy stem cells. Would it work? Imagine the excitement of the research team to find in the laboratory four days later that the heart actually had begun to beat! A week later the heart had continued to beat and pump blood. What is the significance of what has just happened with Taylor's *crazy idea?* As she has explained to the media, rat hearts obviously cannot be put in a human but what about say,

IN THIS ISSUE

Abigon Press

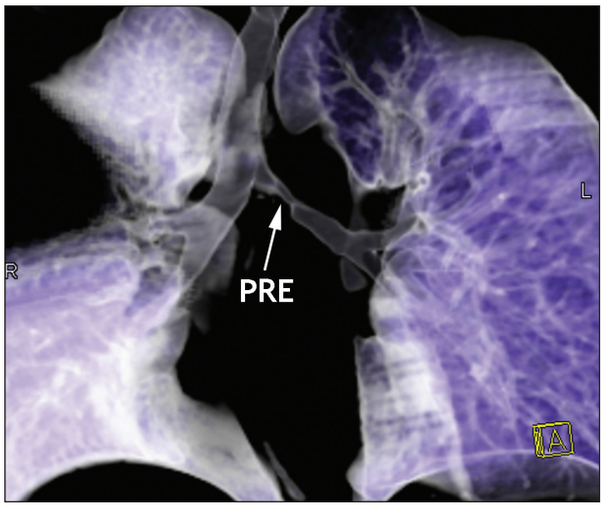
the possibility of using a pig heart? The structure is actually quite similar to a human heart and medical science has been using porcine heart valves in humans for decades. What was surely looked upon as science fiction just a few years ago is now considered "cutting edge" regenerative medicine. What you are seeing is a real look into the window of how replacement limbs and other organs will one day be manufactured. Dr. Taylor does not rule out the possibility that one day an alternative heart could be produced for many of the 3,000 people who die yearly waiting for a donor heart that never arrives. If it could be done for a heart patient, then why not for a kidney, a lung or a liver patient? She does not see this as decades away but possibly more like years away. ■



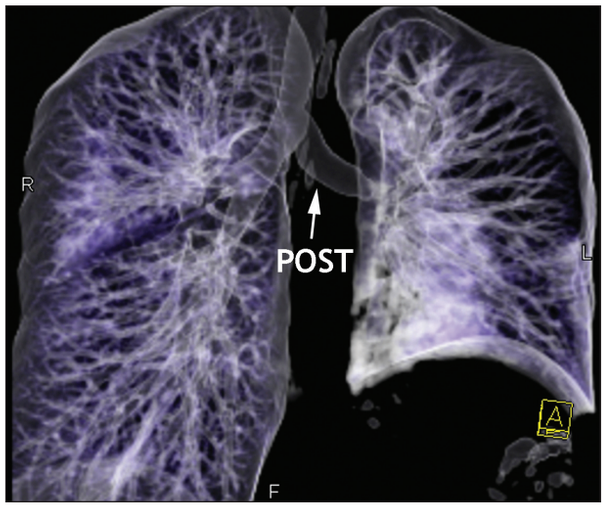
Pig heart ready for new cells.
(Image by special permission)

SCIENTISTS GROWING REPLACEMENT BODY PARTS

In the emerging field of regenerative medicine, scientists continue to lay solid groundwork and in so doing offer you and me a glimpse into their crystal ball of what might lie ahead. The most recent and successful breakthrough of 30 year old Claudia Castillo's full recovery following transplantation of her own stem cells into a donor trachea (windpipe) that had been severely damaged from tuberculosis, is just one more example as to what is already being done in regenerative stem cell medicine. Professor, Paolo Macchiarini, head of thoracic surgery at Barcelona's Hospital Clinic, whose expertise includes tracheal surgery, looked at two options for the young patient. One option was the traditional one, to remove her entire lung. The second option was to venture "outside the box" and perform a revolutionary and rarely attempted windpipe transplant. This groundbreaking procedure would require an international effort that would include the harvesting of a windpipe of a 51-year old male cadaver. Once retrieved, the trachea was prepared at Barcelona's Hospital Clinic for transplant by stripping out the existing cells from the donor organ leaving only a (matrix), a tube of collective tissue.Basically, the same science as was used in Minnesota. Scientists at Italy's University of Padua confirmed the absence of viable donor's cells. In preparation for the surgery and transplant, Claudia's own stem cells would be harvested and sent to a laboratory in Bristol in the UK where Professors Martin Birchall and Antony Hollander, at the University of Bristol, processed and differentiated the population of cells. When the donor trachea was ready for transplant, the patient's own stem cells returned to Barcelona where Macchiarini then successfully injected the cells into and within the harvested trachea's physical structure via a bioreactor designed by Professor Mantero from the Politecnic Institute of Milan. One of the significant advantages of the procedure to be performed was that these stem cells would originate from the patient's own body and would not require a need for a lifetime of immune suppressing



Claudia Castillo's stentotic left trachea before.
(Images by special permission of Dr. Macchiarini)



Engineered tissue airway after transplant.

expensive and risk fraught-drug therapy. The successful procedure done in Barcelona prompted Dr. Allan Kirk of the American Society of Transplantation to comment: "They have created a functional, biological structure that can't be rejected." ■

WHAT WAS DONE IN BARCELONA WON'T STAY IN BARCELONA

What Macchiarini and his team have accomplished will surely encourage other scientific teams who are considering similar science to transplant stem cells into other organs. Regenerative medicine is of course a growing science and what is learned in one attempt in one part of the world will be applied in another university or clinic elsewhere. As Dr. Doris Taylor brought a dead rat heart back to function in a Minnesota laboratory earlier, the Barcelona team used stem cells to reconstruct an organ that is actually functioning successfully in a live human being. We are all getting one more look through the prism of what is to come in regenerative medicine. As more and more breakthroughs are emerging from adult stem cell research, a growing number of scientists, have been turning to *autologous* stem cells (patient's own cell) that do not create tumors nor are rejected. In my conversation with the Barcelona surgeon, he explained, "I started out with embryonic stem cells and at a point came to adult cells but not because of political, religious or other "social" reasons." The significance of Dr. Macchiarini's recent trachea surgery and Dr. Taylor's experiment with the cadaver rat heart, as well as her introduction of skeletal myoblast treatment for heart failure, and Dr. Colin Mcguckin's umbillical cord cell construction of human livers *(issue 3)* is that procedures of this nature are already being planned for other bodily organs. We will of course stay tuned. ■

MELANOMA, STEM CELLS AND TURMERIC

The National Cancer Institute (NCI) reports 62,480 cases a year from melanoma (an aggressive form of skin cancer) that results in 8,420 deaths per year. Only 14 percent of patients with metastatic melanoma survive for five years, making early diagnosis and prevention imperative. I might add, this is a disease that renders our children and grandchildren very susceptible to acquiring from sun exposure. It should not be a surprise that this form of malignancy has progressed more dramatically than any other form of cancer. Some believe the dramatic rise of diagnosed cases is a result of depletion of the ozone. Blame is also assigned to tanning salons that contribute to the rising numbers. A March 2007 issue of the International Journal of Cancer, featured a study that had found tanning bed use before age 35, increases the risk of developing melanoma as much as 75 percent. I had occasion to interview a dermatologist about this subject 15 years ago and even at that early time he was depressed over the number of Southern California young surfers, marathon runners and volleyball enthusiasts he had diagnosed with melanoma. As he explained, exposure to UV radiation is cumulative and someone spending time under the tanning lights in addition to what might even be considered normal radiation from sunshine, in combination, increases one's risk. You might have read that fair skinned blue-eyed individuals are even at higher risk for acquiring melanoma, the evidence strongly agrees. ■

CLUE TO MELANOMA GROWTH

Scientists in Boston, report they were able to beat back cancer in mice by targeting and destroying tumor stem cells. The findings on malignant melanoma add weight to the growing belief among scientists, that many types of cancer return aggressively after treatment. This is because small tenacious groups of stem cells survive and begin multiplying again. We have shared information in several of our issues that support this claim. According to Dr. Markus Frank of Children's Hospital Boston, who is the senior author on the article in Journal Nature, the research, demonstrates that attacking melanoma stem cells in animal studies is enough to halt a tumor's growth. It thus offers new hope that this strategy will also work in humans. Perhaps, researchers say, within just a few years. In the meantime, take heed and use sunscreen and caution while in the sun. ■

TUMERIC CAUSES CANCER CELLS TO SELF-DESTRUCT

A study in the journal Cancer, demonstrated how curcumin stops laboratory strains of melanoma from proliferating. In a process known as ***apoptosis,*** (ap-op-to-sis), turmeric literally programs the cancer cells to destroy themselves, to self destruct. We have been reporting on how this phenomenon of cell self destruction is now understood as an almost miraculous function of turmeric that has shown promise in treating other cancers as well. **Buying Turmeric in casules. For the right combination of turmeric to curcumin, visit Abigon.com for reasonably priced Turmeric.** ■

WHY STORE A NEW BORN'S UMBILICAL CORD IN A CELL BANK?

It is a little like buying insurance for the future in the unfortunate event that a child might fall victim to any one of a hundred childhood illnesses. Many of these diseases do not manifest until a child reaches his or her teen age years and sometimes beyond. Cryogenically freezing the cord cells is a little like hedging your bet on the promise that stem cell breakthroughs will one day be available to cure diseases. If your child or grandchild, niece or nephew were to experience such tragedy, your proactive thinking might very well change the outcome of an otherwise dismal and dire situation. It is becoming more apparent everyday that if a child's cord blood were available when a cure presents itself the physician would be able to use the child's own stem cells to correct the disease. These stored (frozen) stem cells from the child's birth may also provide reparative stem cells for other family members and close relatives. **An actual case in point:** In issue 3, we talked about how a pediatrician at Duke University was able to use a young boy's own stem cells to cure his cerebral palsy because the parents had been forward-thinking in storing their child's umbilical cord stem cells. Cell banks are readily available today. ■

CORNEAL EYE TRANSPLANTS WITH STEM CELLS

In a normal eye, corneal cells are constantly regenerated by a special type of stem cells but in the instance of corneal damage as often happens in occupational injuries involving acids or chemicals or acute infections the stem cells also get damaged, resulting in an inadequate number of stem cells produced. There has never been a more opportune time or reason for hope for patients with corneal disease. Nine years ago this area of medicine was already experimenting with stem cell therapy. Today, at the Cincinnati Eye Clinic, doctors are performing more than eight procedures a month. Dr. Holland who has pioneered the procedure for more than nine years harvests stem epithelial adult cells from a cadaver donor and combines them with cells from a living relative. The country of India (where the disease is prevalent) had reportedly healed 450 cases as of six months ago. E. Lee Stock, MD, Medical College Professor of Ophthalmology at the Wisconsin Eye Institute has been successfully transplanting stem cells directly onto the cornea of the eyes of corneal patients. A congenital eye disease called ***Aniridia,*** affects 60,000 patients in the US. Aniridia leads to the deterioration of the iris, the membrane that surrounds the pupil and the cornea. As early 2001 Dr. Holland was successfully performing stem cell transplants for patients with this disease. Five years after the first transplants there was a 80-90% sustained vision result. Dr. Holland is Director, Cornea Services at the Cincinnati Eye Institute and Professor of Ophthalmology at the University of Cincinnati. ■

SYSTEMIC LUPUS ERYTHEMATOSUS

Systemic Lupus Erythematosus, commonly known as SLE lupus is also sometimes referred to as Discoid lupus and is an immune disorder that can be fatal (although with more recent understanding and treatment) case fatalities are much less common. Chronic Systemic Lupus can attack and affect any number of bodily systems and therefore is a difficult disease to correctly diagnose. As an example, consider how this partial list of complaints; elevated fever, fatigue, malaise, joint pains and temporary diminished mental function could also be mistaken for any number of diseases, including ***fibromyalgia, polymyalgia rheumatica, rheumatoid arthritis, chronic fatigue syndrome*** and perhaps a dozen or so more. Double trouble. According to Dr. Paul Kincade, head of the Immunology and the Cancer Research Program at the Oklahoma Medical Research Foundation (OMRF), lupus is another inflammatory/autoimmune disease that requires a two-pronged effort in treatment. It requires a protocol that would simultaneously eliminate abnormalities of the immune system while repairing tissue that has become damaged by inflammation. ■

BONE MARROW STEM CELLS AND TURMERIC FOR LUPUS

Scientists at the (OMRF) have discovered receptors on the surface of bone marrow stem cells that recognize bacteria and viruses and which, when activated, trigger the stem cells to fight foreign pathogens in the body's immune system. Offered by Dr. Kincade, "We did not believe that infectious agents played an active role in the process. What we have now discovered is that these stem cells have a sort of antennae that detect bacteria and viruses. And when stem cells receive these distress signals, they spring to action, creating cells the body most needs early in life-threatening situations. Scientists need to study stem cells and leukemia cells in these diseases to determine if they are using this messaging system. It may be possible to boost immunity when necessary and also to shut down inappropriate responses. That could provide a powerful tool to fight cancer, lupus and many other diseases." ■

TURMERIC FIGHTS LUPUS INFLAMMATION

Turmeric has known effective analgesic properties and studies have shown, it helps in relieving pain and inflammation associated with systemic lupus. One natural medicine source suggests boiling half teaspoon of turmeric powder in 100 ml of water for 10 minutes. The suggestion is to strain and drink the extract twice a day for a month. According to reputable sources, the symptoms of (SLE) are in many cases reduced within a few days with greater results witnessed over a month's use. ■

CROHN'S DISEASE

Even though it is known to have a genetic linkage and even though it affects between 400,000 and 600,000 in the US alone, the definitive cause of Crohn's disease still remains unidentified. Crohn's disease, because of it's autoimmune activity, produces inflammation in the gastrointestinal tract and therefore classifies as an inflammatory bowel disease. In 1932 the disease acquired its name from gastroenterologist Burrill Bernard Crohn. One example of how this disease may impact one's life is to realize that during a severe bout with Crohn's one may actually experience attacks of diarrhea 10-20 times a day. Unfortunately while there has not been a known cure of this ailment, scientists look to stem cells and apparently that faith has been well placed. One of the most promising reasons for hope lies in the new drug Prochyma developed from mesenchymal (mes-en-ki-mal) bone marrow stem cells. The FDA has already given physicians the green light to administer Prochyma for treating pediatric patients severely stricken with "graft vs. host disease." Osiris Therapeutics manufacturers of Prochyma are expecting to gain approval anytime to use the drug to treat Crohn's patients. Because Crohn's is also classified as an inflammatory disease in which the walls of the intestines become inflammed and often infected, turmeric as an anti-inflammatory is being applied in treatment. Not only in Crohn's but in Colitis, IBS (irritable bowel syndrome) and other diseases and conditions of the intestinal tract. Doctors of natural medicine often prescribe a turmeric/curcumin tea to be taken two times a day. It is suggested that doses can range from 450 milligrams of curcumin in capsule form to 3 grams of turmeric root daily, divided into several doses, taken by mouth. As a tea, 1 to 1.5 grams of dried root may be steeped in 150 milliliters of water for 15 minutes and taken two or more times daily. One may open and dilute the capsules with warm water or tea. Scientists have reported that curcumin inhibits a major cellular inflammatory agent called NF kappa-B. It is associated with cancer and other inflammatory and autoimmune diseases. In intestinal diseases, curcumin helps minimize inflammation related congestion in the mucus membranes that coat the stomach and intestines. **Turmeric works in a dual role, it not only reduces the irritation but it also brings anti-bacterial properties that prevent infection and lessen infection.** This spice is considered very tolerable but there is still the caution for pregnant mothers and anyone on blood thinners like Coumadin or Plavix. Consult with your physician. ■

Tumeric root.

OVARIAN CANCER

Something of major significance is happening in cancer treatment. We have reported several times how different researchers at universities studying different kinds of cancers are independently arriving at a better understanding of how various cancers survive chemotherapy (the first line of defense) to live to kill another day. We have talked about how in issue 1, cancer stem cells in breast cancer have finally been identified. In issue 3, how researcher Jeremy Rich at Duke University had successfully found the way in which a small but lethal number of stem cells can mount a resistance to chemotherapy and radiation in brain cancer, only to survive to destruct again. In this issue melanoma and also ovarian cancer may be totally eliminated in a patient by a better understanding of stem cell involvement in the disease process. It is becoming clear to this author that these discoveries are what science has searched for in cancer treatments for decades. I

hope for women everywhere, particularly for those who have family history it all proves true. In the Proceeding of the National Academy of Sciences (PNAS) cancer researchers at Massachusetts General Hospital (MGH) identified potential ovarian cancer stem cells, which may be behind the difficulty of treating these tumors with standard chemotherapy. ■

Why You Will Want to Reorder

Thank you for your support of the Stem Cell Research Report. You and I have shared information that I do not believe more than a tiny segment of the country is even remotely aware of. Still, with more than 1600 stem trials now in progress, we have only scratched the surface, as to what we will explore in the New Year. In the coming issues I will continue to update you with progress, not only with the dozens of diseases and trials we have already discussed but will continue to research and report on many other studies of additional diseases benefiting from stem cell research. I will, on occasion, in future issues, interview several world leaders whose opinion I know you will value. I believe you will want to hear from actual patients who have successfully gone through stem cell procedures to now live normal lives. If you are amazed at the information and number of diseases that are scientifically benefiting from turmeric, you are not alone. I must confess, even though I have for more than ten years been aware and advocated the benefits of turmeric as an anti-inflammatory aid, in regard to cardiovascular disease, dementia and Alzheimer's, the benefits for many other diseases and particularly several cancers astound me as well. I realize, that economically, times are difficult but I hope you will continue in the new year as perhaps something you may read will be helpful to someone you know who is hoping and praying for a miracle.

You just may be the messenger who brings a beginning to an answer. Remember, in health, information is King! You and I are not getting younger and need not only to be knowledgeable as to what is available today but what is showing the most promise in trials for the future. The research community is generally 15-20 years ahead of the practicing physician's offices, to be ahead of the curve families need the information now. There will be a growing debate in the coming months between embryonic and adult stem cell research and where the allocated funding would best be invested in developing cures for catastrophic diseases. My position has been to report to you accurately whichever form of stem cells are showing the most promise in the shortest time to delivery. Nothing you been presented in the reports have come from embryonic therapy. That is not by design but simply is because there has never been a successful treatment documented anywhere in the world to report on. Certain scientific obstacles, including tissue rejection and an embryonic cells propensity to develop uncontrolled tumor growth have not been resolved to the safety of the patient. The future research reports will include interviews with world leaders learning where they stand on both sides of the issue to better help us formulate an intelligent informed opinion. ■

M.D. WARREN SHERMAN, Director of Cardiac Cell-Based Endovascular Therapies, Columbia University Medical Center is the Principal Investigation Officer directing the ongoing FDA trial in the US. "With 35 leading heart failure centers engaged, we are making tremendous progress in patient screening and enrollment," Said Dr. Sherman. We are listing 16 of the sites in this issue which are currently enrolling heart failure patients for stem cell transplant. The remaining sites (because of space limitation) are posted for you on the website. Dr. Sherman will again host the 5th International Stem Cell Cardiovascular Conference in New York City where the world's leading cardiologists in stem cell repair will be gathered, I will report. This is an exciting time. ■

Dr. Sherman pioneering heart failure therapy

Partial List Of Contacts and Locations Recruiting in The United States

Mayo Clinic Hospital
Phoenix, Arizona
Contact: Kellye Wagner, CRC 480-342-2922

Arizona Heart Institute
Phoenix, Arizona
Contact: Ashley Cunningham, BS 602/266-2200

Scripps Green Hospital
La Jolla, California
Contact: Heather Catchpole, MS 858/554-5258

Florida Hospital Center Cardiovascular Center
Orlando, Florida
Contact: Leann Goodwin, RN 407/303-7556

Jim Moran Heart & Vascular Research Institute
Fort Lauderdale, Florida
Contact: Terri Kellerman, RN 954/229-8400

University of Florida
Gainesville, Florida
Contact: Tempa Curry 352/356-3689

RUSH University Medical Center
Chicago, Illinois
Contact: Gary Schaer, MD 312/942-4655

Minneapolis Heart Institute
Minneapolis, Minnesota
Contact: Patti Mitchell, RN 612/863-6287

The Lindner Center
Cincinnati, Ohio
Contact: Darlene Rock 513/585-1777

Newark Beth Israel Medical Center
Newark, New Jersey
Contact: Laura Adams, RN 973/926-3190

Texas Heart Institute
Houston, Texas
Contact: Deirdre Smith, RN 832/355-9801

Swedish Medical Center
Seattle, Washington
Contact: Katy Borenson 206/215-2455

Stern Cardiology
Germantown, Tennessee
Contact: Barbara Hamilton, BSN 901/271-4063

Cleveland Clinic
Cleveland, Ohio
Contact: Susan Stein, RN 216/445-0628

University of Iowa Hospitals and Clinics
Iowa City, Iowa,
Contact: Holly Verry, RN 319/384-7128

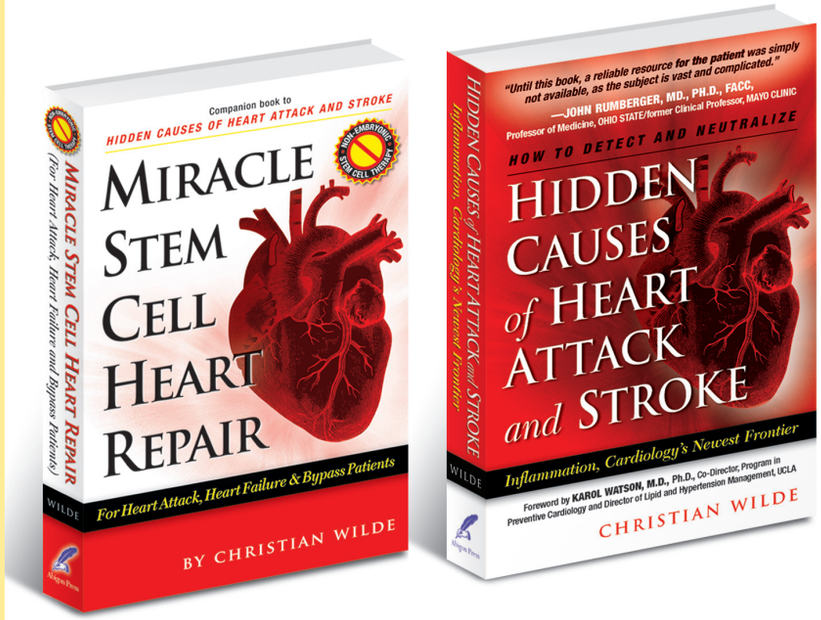
University of Oklahoma
Oklahoma City, Oklahoma,
Contact: Genne Straughn, RN 405/517-6542

Disclaimer: *The author is a researcher and not a physician. The information you read in this letter is not to be miscontrued as the author's recommendation or endorsement of the studies or therapies presented. Always seek your physician's advice and counsel.*

"We CAN know more than most doctors!"

Review by Tobias Handschin

This book is magnificent. It is easy to understand because it is not exclusively directed towards scientists. It provides detailed descriptions about new research that most doctors are not yet aware of as they are caught up in traditional methods to treat heart disease. It empowers those concerned about their cardiovascular health as it provides clear ways to avoid important risk factors. The choice of reading it is rewarding. I am doing heart research at Winthrop University, and since heart disease runs in my family, I am interested to find out why so many of my ancestors suddenly died from a heart attack. ■



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- **More Trials Recruiting**
- **Aortic Valve, Non-Surgical Replacement**
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