

Dr. Bruce M. Coull Named to Feinberg Endowed Chair

he William M. Feinberg, MD, Endowed Chair in Stroke Research at the Sarver Heart Center was created to honor a celebrated physician who dedicated his professional life to prevention and treatment of stroke and cerebrovascular disease. Dr. Feinberg was a professor of neurology at the UA. He founded the first comprehensive stroke program at the College of Medicine in 1996 but was prevented from seeing its full realization by his untimely death in 1997. With support from Dr. Feinberg's many patients, colleagues and friends, his family established the Feinberg Chair to allow his vision of effectively treating



and preventing stroke to continue.

Bruce M. Coull, MD, who has served as professor and head of the Department of Neurology at

William M. Feinberg, MD the UA Col-

The Sarver Heart Center is pleased to announce that Bruce M. Coull, MD, head of The University of Arizona Department of Neurology and member of the Sarver Heart Center, has been named to the William M. Feinberg, MD, Endowed Chair in Stroke Research.

lege of Medicine since his appointment in 1995, is the first to hold the Feinberg Chair. He enjoyed a long friendship with Dr. Feinberg, which dates back to a conference many years before they would actually work together at the UA, and he credits Dr. Feinberg for being the one to bring him to Arizona. "I was quite content with my position in Oregon," Dr. Coull recalls. "But then I received a call from Bill about the department head position being vacant." For many years Dr. Coull had tried to recruit Dr. Feinberg to Oregon, but it seems that it was Dr. Feinberg who eventually did the recruiting.

"Bill was so much more than a



Bruce M. Coull, MD

great doctor," says Dr. Coull. "He was also a great friend. This is an honor. It gives me the opportunity to develop the program in an image he would be proud of."

Dr. Coull also holds a joint appointment at the UA as professor in the Department of Medicine. His main research interest lies in the treatment and prevention of stroke, and he is involved in numerous trials on stroke prevention. He is the principal investigator, at the UA site, of a study on vitamin intervention for stroke prevention, is co-investigator of a study of stroke prevention by aggressive reduction of cholesterol levels and is co-investigator on a study of

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Feinberg Endowed Chair

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the accumulation of cerebral vascular leukocytes after stroke. He is widely published in the area of stroke research and serves on the editorial boards of several stroke journals.

As the first to hold the Feinberg Chair, Dr. Coull hopes to focus much of his energies and resources on developing young talent in the program. "We have some outstanding fellows and being able to keep them on staff is critical," he says. "Through the chair in Bill's name, we will be able to accomplish this.

"My primary goal is to grow the program, focusing on prevention, acute intervention and recovery from stroke."

Dr. Coull also looks forward to strong collaborations with other Sarver Heart Center members. "We want to develop depth in the complementary areas of stroke treatment and prevention," he says. Some of those areas include imaging and other noninvasive measures to identify stroke risks and the consideration of inflammation of the cardiovascular system and its role in stroke.

"The Feinberg Chair will allow me to continue to improve our stroke program, making it one of the premier programs in the country."

Lois Loescher, PhD, RN, Dr. Feinberg's widow, comments, "We are so pleased that this chair has come to fruition and honors Bill." Noting that her family has known Dr. Coull for many years, Dr. Loescher says he is a great choice not only from a professional perspective, but also because Bruce helps her children, Max and Hope, now teen-agers, to remember their father and understand how exceptional he was. "I am confident that through their work, Bruce and others in the department will keep the spirit of Bill's research and his great love for his professional mission alive,"

says Dr. Loescher.

"The entire family is in agreement that Bruce is a great choice," adds Dr. Feinberg's brother, Lawrence.

If you were to ask anyone in the Department of Neurology or a member of the Sarver Heart Center who knew the late Dr. Bill Feinberg what he was like, you most certainly would be answered with a wide smile quickly followed by a hint of sadness in their eyes. He was known for his acute sense of humor, gentle smile, devotion to his family, love of fly fishing and an unending level of energy and brilliance.

"Bill was a cornerstone of the department," says Dr. Coull.

If you would like to help support stroke research, you can make a gift to the William M. Feinberg, MD, Endowed Chair in Stroke Research by contacting the Sarver Heart Center Office of Development at (800) 665-2328. ♥

SASCI Captures Echo Title

The Southern Arizona Society of Cardiac Imaging (SASCI) captured the Local Echo Society Challenge title during the American Society of Echocardiography Annual Scientific Sessions in Boston last June. The Echo Challenge pits teams of echo experts from local societies around the country in a contest to make an accurate diagnosis from only a few selected images shown to the contestants.

The SASCI team faced teams from Connecticut, New York and Texas as each team presented actual cases chosen to stump their colleagues.

SASCI founder Vincent Sorrell, MD, FASE, associate professor of



The winners! (left to right) Dr. Vincent Sorrell and technicians of echocardiography Sid Hall, RDCS, and Jeffrey Gregoire.

cardiology at the Sarver Heart Center, notes that people in the audience are the beneficiaries of the event, as they watch teams trying to make sense of often perplexing data. "Imaging is a great big detective story," he says. "You have to look beyond the borders of a picture to see what other information you can gain."

Charles Hall Awards

Congratulations to Huy Phan, MD, and Jamison Jones, MD, for their selection to receive the Charles W. Hall Jr. Memorial Award.

The award is given annually to two outstanding "house officers" – recent medical school graduates working as residents – for their service on the coronary care unit. The recipients are selected by a vote of cardiology faculty members.

The awards were created with the establishment of the Charles W. Hall Jr. Memorial Endowment. The endowment was created by friends and family of the late Hall to support the work of future physicians dedicated to the battle against heart disease.

Hall, an Illinois native, moved to Arizona in 1959 and became an active supporter of efforts to build a medical school at the UA. He died in October 1966 of heart failure.

Heart Failure in Women

Gordon A. Ewy, MD

Director, Sarver Heart Center

You probably figured this out years ago, but I'll repeat it for those of you who may have failed to notice: Men and women are different. And heart

failure in a woman is often different from that in a man.

Heart failure occurs when the major pumping chambers of the heart, the ventricles, are not working properly. The right ventricle pumps blood to the lungs, where the blood picks up oxygen. Blood then returns to the left side of the heart. The left ventricle pumps blood to arteries that supply the body. When the pumping chambers fail to do their work appropriately, the

patient is said to have heart failure. Right heart failure is rare. Left heart failure is common.

There are two broad categories of left heart failure. The first is that due to weakness of the left ventricular muscle; it does not contract well. Since when the ventricles contract it is called "systole," this is known as systolic heart failure. The second is due to stiffness of the left ventricle. It contracts normally in systole, but during diastole it does not relax normally, so it takes a higher pressure to fill the ventricle. This is known as diastolic heart failure.

The symptoms and physical findings of systolic and diastolic heart failure are similar. The symptoms are due to both a decrease in forward blood flow and a backup of blood into the veins of the lungs and the body.

When a patient with heart failure is active, the decrease in forward blood flow results in a reduced blood supply to the body, often causing fatigue. Because of the decrease in forward blood flow, the body diverts blood from less essential organs, such as the skin and kidneys, so that enough blood is supplied to the brain and heart as well as to exercising muscles. The decreased blood flow to the skin makes the patient look pale, and the decreased blood flow to the kidneys results in the retention of fluid, caus-



Heart failure: More common in women than in men.

ing buildup of fluid in the lungs and body. The result may be shortness of breath and/or swelling, usually of the legs.

The backup or increased volume of blood in the veins draining the lungs results in the lungs being stiffer. It takes more work to expand such lungs with inspiration. The result is shortness of breath, especially with exertion. When severe, the patient wakes up at night with difficulty breathing.

During sleep, the muscles do not require as much blood, so the body begins diverting more blood to the kidneys, trying to get rid of the excess fluid. Individuals with this condition have to get up frequently at night to urinate to get rid of the excess fluid retained during the day.

Women, like men, develop coronary artery disease, but in the absence of diabetes, they develop the disease on average a decade later than men. Coronary artery disease may result in a heart attack, which damages the muscle. The loss of muscle causes the remaining non-damaged muscle to work harder, and via a variety of mechanisms, become weaker and fail – systolic heart failure. Accordingly, women develop systolic heart failure due to coronary artery disease about a decade later than men. There are other causes of systolic heart failure, such as malfunction of one

> or more of the heart valves, or abnormalities of the heart muscle due to a hereditary defect or due to an infection of the muscle.

> High blood pressure leads to increased thickness of the left ventricle (like the blacksmith's biceps, muscles get bigger with more work). Diastolic heart failure most often is due not only to thickening or hypertrophy of the heart muscle from inadequately recognized or treated high

blood pressure, but also to diffuse scarring of the ventricles. Since these occur most often with hypertension and older age (both more common in women) diastolic heart failure is more common in women.

Diabetes is a risk for cardiovascular disease in both men and women. However, while diabetes doubles the risk in men, it quadruples the risk in women. The reason for this is related to the fact that the lipid abnormalities with diabetes are worse in women with diabetes compared to nondiabetic women than in diabetic men compared to non-diabetic men.

Awareness of risk factors is the logical approach to preventing heart failure. Sarver Heart Center's major therapeutic focus is on preventive therapy, with aggressive management of the risk factors for coronary artery disease and treatment of hypertension to prevent the ventricular enlargement and scarring that result. And heart failure is a major research focus of the Sarver Heart Center.

Heart Failure and Heart Disease in Women: Two focus areas of the Sarver Heart Center. ♥

D is for Diet

Jack Wilmore, PhD

For those of you who have been following this series on the "ABCs" of preventing cardiovascular disease or preventing the recurrence of, or complications from, cardiovascular disease, you knew that we would eventually get to your least favorite topic – diet!

It's the dreaded four-letter word. But if you don't take it seriously, it can turn into a very ugly five-letter word, like heavy or obese ... and early death.

We all love to eat, and most of us do not like to be told that we are eating too much – particularly too much of the foods that we enjoy most. Yet most of us cannot deny that our weight has increased over the past few years.

The United States is in the middle of an obesity epidemic, as is most of the Western world. But, before we go into the shocking details, we need to define obesity. Simply stated, obesity means that a person has an excessive amount of body fat (i.e., he or she is "over fat"). For purposes of simplification, people are placed into one of four categories: underweight, normal weight, overweight and obese. In a clinical or research laboratory, the actual fat content of your body can be accurately estimated, using underwater weighing or imaging techniques. Good estimates also can be obtained from skin-fold thickness measures, air displacement or bioelectric impedance.

Scientists, however, have come up with a much simpler method of classifying people by their body fat levels - the Body Mass Index (BMI). The BMI is a ratio of your weight to height squared (weight/height²). For those of us who are mathematically challenged, a table was developed to make it easy for us to calculate our BMI (see Table 1). Since most of us are not familiar with what a BMI value means, a panel of obesity experts was convened by the World Health Organization to establish BMI values for the four weight classification categories (see Table 2). There is one additional factor that has been added to this table – waist circumference. When fat is stored predominantly in the waist area (this is termed visceral fat), the risk for cardiovascular diseases and diabetes increases. Note: Women typically store more fat in the hip, buttock and thigh areas, while men store more fat in the waist area.

We will use two hypothetical examples to show you how this works. In the first example, we have a 50-yearold man who is 6 feet tall and weighs 235 pounds. From Table 1, using 72 inches and 235 pounds, we see he has a BMI of 32. From Table 2, we see that this places him in the Class I obesity range. His waist circumference is 44 inches, so he is considered at very high risk. In the

BMI	19	20	21	22	23	24	25	26	27	28	20	30	31	32	33	34	35
Divit	10	20			20	27	20	20	21	20	20	- 50	51	52	00	-04	- 55
Heig	ht							Body	Weight	(pound	s)						
(inch	es)																
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287

Table 1. Estimation of Body Mass Index from height (inches) and weight (pounds). From: National Heart, Lung and Blood Institute, NIH. The Practical Guide: Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. NIH Publication #00-4084, October 2000. Note: You can calculate your BMI by visiting www.heart.arizona.edu/patientinfo/bmi.asp

second example, we have a 40-year-old woman who is 5 feet, 6 inches tall (66 inches) and weighs 160 pounds. Her BMI would be 26, which would place her in the overweight range. With a waist circumference of 34 inches, she would be in the increased risk category.

With this as background, we can now better understand what has happened to our country over the past 40 years. National health surveys conducted by the National Center for Health Statistics, Centers for Disease Control and Prevention (CDC) provide a rich

Classification	BMI	Obesity	Disease Risk Relative to Waist Circumference					
		Class	Men 40 inches	Men > 40 inches				
			Women 35 inches	Women > 35 inches				
Underweight	< 18.5							
Normal weight	18.5 – 24.9							
Overweight	25.0 – 29.9		Increased	High				
Obesity	30.0 - 34.9	1	High	Very high				
	35.0 – 39.9	11	Very high	Very high				
Extreme obesity	40.0	111	Extremely high	Extremely high				

HEART NEWS FOR YOU

Table 2. Classification of overweight and obesity by BMI, waist circumference, and associated disease risk for cardiovascular disease, hypertension and type 2 diabetes. World Health Organization, 1998.

source of information on health trends across time in the United States. Data are collected on large samples of the U.S. population allowing estimates of national trends for various risk factors for disease. Studies reported in *The* Journal of the American Medical Association show that, from 1960 through 1976-80, the prevalence of obesity in the United States was relatively stable, at about 10 percent to 13 percent of the total population for men and 15 percent to 17 percent for women. However, from 1980 through the year 2000, the prevalence increased to about 28 percent for men and about 34 percent for women – about two and a half times higher in just 20 years (JAMA, 2002; 288: 1723-1727)! When looking at both overweight and obesity (BMI values of ≥ 25), the percentage of men and women in the U.S. who are overweight or obese increased from about 48 percent of the total population in 1976-80 to about 65 percent of the total population in 1999-2000. Sadly, this same trend has been reported in children and adolescents (JAMA, 2002; 288: 1728-1732).

As body fat levels have increased, so has the risk for cardiovascular diseases, diabetes, cancer and the metabolic syndrome. The metabolic syndrome is a combination of hypertension, high triglycerides, low HDL, abdominal obesity and insulin resistance – a grouping of risk factors that places the individual at a much higher risk of cardiovascular disease (See SHC newsletter, Summer 2005).

In fact, many scientists now suspect that increasing body fat is the trigger for the metabolic syndrome. Resting blood pressure and fasting blood sugar (glucose) levels increase in direct proportion to gains in body fat. Conversely, as body fat levels are reduced, blood pressure and blood glucose levels are reduced.

In summary, good health is directly related to keeping your body weight in the normal weight range. We have demonstrated that as body weight goes up into the overweight and obese categories, the risk for chronic debilitating disease increases proportionally. There also are health risks associated with being underweight, so moderation is the key. It has become clear that there is a genetic basis for overweight and obesity, but even with a genetic predisposition, you can maintain your weight in the normal range with proper nutrition and physical activity. Most importantly, prevention is the key, as once you become overweight or obese, it is very difficult to achieve and sustain the weight loss needed to get you into the normal weight category.



This lecture is held in honor of Paul Anthony Baltes, who died unexpectedly in December 2003. A graduate of the U.S. Military Academy in West Point, N.Y., Baltes had served as director of Engineering Professional Development at the UA College of Engineering since retiring from the U.S. Army in 1984.

PAUL BALTES MEMORIAL HEART HEALTH LECTURE

Tuesday, Oct. 18, 2005 3 p.m. - 5 p.m.

UA Student Union Memorial Center in the North Ballroom.

Preventing Cardiovascular Disease

Gordon A. Ewy, MD Chief and Professor of Cardiology Director, UA Sarver Heart Center

Preventing Sudden

Cardiac Arrest Julia Indik, MD, PhD Assistant Professor of Medicine

Continuous Chest Compression CPR Training – SAVE A LIFE! Gordon A. Ewy, MD

Arrive 30 minutes early to participate in free health screenings. For more information, call (520) 626-4083. Event is free and open to the public.

Stroke – Like a Heart Attack in the Brain

By Jeremy Payne, MD, PhD

Stroke fellow, UA Department of Neurology

Strokes are the third leading cause of mortality in the United States, after heart disease and cancer, and the leading cause of disability. They affect more than 700,000 Americans each year, leading to 160,000 deaths. The estimated annual cost of this disease in this country, both direct and indirect, is \$41 billion.

Why is *stroke* part of the Sarver *Heart* Center? The risks of stroke are quite similar to those of cardiovascular disease, and, as with heart disease, our best treatment for stroke is prevention.

What is a stroke?

"Stroke" refers to a sudden onset of neurological dysfunction, such as weakness in an arm, leg or part of the face or difficulty speaking, caused by damage to the brain because its blood supply has been interrupted. Generally speaking, strokes are divided into two main types. *Hemorrhagic strokes* are caused by bleeding in the brain, usually from ruptured blood vessels. Ruptures can happen because of aneurysms – congenital weak areas in the walls of the brain's arteries, trauma or high blood pressure.

The vast majority of strokes, though, are *ischemic*. They occur when the blood supply to a part of the brain is stopped by blockage of an artery. The mechanisms of ischemic strokes are closely related to those of heart at-

ARE YOU AT RISK?

While anyone can suffer from a stroke, strokes are more common in people with advancing age, in men, and in African Americans and Hispanics. Effective management of the following other risk factors is essential in preventing strokes:

RISK INCREASE
2-4 times
2-4 times
1.5-3 times
1.5-2.5 times
1.5-3 times
1-3 times
1-1.5 times
1.8-3.5 times
up to 20 times
up to 4 times

tacks and can be thought of as "brain attacks."

Ischemic strokes can be caused by plaque in carotid arteries or by direct damage to the small vessels of the brain itself due to smoking, diabetes or high blood pressure.

Atrial fibrillation also can cause an ischemic stroke. As a result of atrial fibrillation, blood clots can form in the small upper chambers of the heart. When dislodged, they float in the blood to smaller arteries and can block blood vessels in the brain.

A stroke sometimes resolves spontaneously, after a brief period of time, without resulting in permanent damage to the brain. This kind of event is called a *transient ischemic attack*, or *TIA*.

The warning signs

All signs of stroke occur suddenly, when part of the brain is deprived of its blood supply. The symptoms depend on the part of the brain involved. As areas of the brain have specific functions, damage to any area becomes evident when normal function is impaired. The most common sign is the sudden onset of weakness in an arm, leg or part of the face, usually on one side of the body. Other symptoms include sudden numbness in part of the body, sudden trouble speaking or understanding speech, sudden loss of vision, sudden problems with balance or walking or a sudden severe headache. Any one of these symptoms should prompt immediate medical attention – call 911 or be taken to a hospital emergency department skilled in the care of stroke patients.

Who is at risk?

Because the mechanisms of stroke have much in common with those of heart disease, it is not surprising that the presence of cardiac disease increases someone's risk of stroke approximately two to four times.

Other significant risks are from high blood pressure, diabetes, smoking, narrowing of the carotid arteries, heavy alcohol use, high cholesterol and a sedentary lifestyle. A serious culprit, particularly in older patients, is atrial fibrillation, which can increase the risk of stroke almost twentyfold.

It stands to reason that anyone who has had a stroke is at risk to have another. While TIAs do not result in permanent damage to the brain, they still convey significant risk of a future stroke. In that regard, one should seek medical attention immediately for any new stroke-like symptoms.

How are strokes prevented or treated?

It is estimated that more than twothirds of all strokes may be preventable. Treating high blood pressure, diabetes and atrial fibrillation and stopping smoking can reduce the risk significantly, as can taking aspirin or related medications if indicated.

When a stroke is due to a blood clot, our best treatment is to administer a medication that dissolves clots. These "clot busters" have been shown to help reduce the disability a stroke can cause, but must be given within three hours of the onset of symptoms. And the stroke specialist must be sure the stroke is not due to a bleed! Nationwide, less than 5 percent of patients with stroke are given clot-buster drugs, in part because patients do not seek attention soon enough or do not have access to specialized emergency care.

As in heart disease, there are still many unanswered questions about the prevention and treatment of strokes. This is an ongoing area of active research. V

More information is available at www.strokecenter.org www.strokeassociation.org www.neurology.arizona.edu



al manager, (left) and Brent Berge, owner of Desert Toyota, present Nancy Edling, UMC transplant coordinator, a check in support of the Jack G. Copeland, MD, Endowed Chair of Cardiothoracic Surgery. Thank you, Desert Toyota, for your many years of sup-



Griffin Dew Gregg

(born July 28)



Dr. Smith and Samantha Rileigh Smith (born Aug. 10)



Dr. Juneman and Audrey Katherine Juneman (born Aug. 12)

Sarver Heart Center Babies Arrive

Cardiology fellows Michelle Dew, MD, and Elizabeth Juneman, MD, and cardiothoracic surgery fellow Cristy Smith, MD, are proud mothers of newborns, delivered within 16 days of one another this past summer. Why the excitement? "While several of our cardiology fellows have been the fathers of babies during their three-year fellowship trainings, these are the first female Sarver Heart Center fellows to have babies. I feel like a proud surrogate grandfather," said UA Cardiology Fellowship Training Program and Sarver Heart Center Director, Gordon A. Ewy, MD. Of course credit must also be given to fathers Ron Gregg, Rory Juneman and Jim Smith.

UMC Heart Care Ranked 22nd in the Nation

Heart care at University Medical Center is again ranked 22nd in the nation in U.S. News and World Report's most recent annual guide to "America's Best Hospitals."

UMC was the only Arizona hospital to be included on the list.

UA Sarver Heart Center Director Gordon A. Ewy, MD, said, "This is a tribute to all at UMC and SHC dedicated to research, education and patient care. When these academic principles are followed, the patients always win."

The 2005 hospital guide appeared in the July 18 edition of U.S. News, and also can be found on the magazine's Web site, www.usnews.com. In it, UMC is ranked among the top 50 hospitals in the United States in 10 medical specialties.

SHC Brings its Message to Yuma Nov. 19

Mark your calendars now for the Yuma Take Heart! Conference, 9 a.m.-noon, Saturday, Nov. 19, at the Yuma Regional Medical Center Conference and Business Center. This program will include important discussions by some of the country's leading cardiologists on presenting and treating cardiovascular disease. It also offers a unique opportunity to learn the new method of continuous chest compression CPR from one of its creators, Dr. Gordon A. Ewy! Registration will begin shortly.

For more information about this conference please call Pila Martinez, (520) 626-4083 or e-mail pila@u.arizona.edu.

FROM THE DIRECTOR



he vision of the Sarver Heart Center is "A Future

Free of Heart Disease, Vascular Disease and Stroke." This issue of our newsletter highlights "Stroke." As a faculty member of The University of Arizona College of Medicine, William M. Feinberg, MD, was very active in stroke research before his untimely death from congenital heart disease. His collaboration with other members of the Sarver Heart Center

helped to define the role of anticoagulation in patients with atrial fibrillation to prevent embolic stroke. The endowed chair established in Bill's name is a fitting memorial to our friend and colleague. It is also fitting that the first recipient of this chair is such a prestigious, internationally known neurologist, Bruce M. Coull, MD, professor and chief of neurology at The University of Arizona College of Medicine.

Many have wondered why "stroke" is part of the Sarver "Heart" Center. The reason is obvious to those who understand that the risk factors for ischemic stroke, the most common type of stroke, are very similar to those for cardiovascular disease.

Dr. Payne's article on stroke documents similarities of risks and makes note of the financial cost of stroke. However, there is much more to be done in the area of stroke research, for the burden of stroke goes far beyond the cost of those cases that are clinically recognized. Newer imaging techniques have shown small areas of brain damage in patients without a history of stroke. The frequency of these lesions increases with age, cardiovascular risks and, like coronary disease, with inflammation. Of interest to all is that these lesions are associated with neurobehavioral deficits as well as the dementia-related syndromes.

These lesions, like cardiovascular disease, are associated not only with traditional cardiovascular risk factors, including age, but also with the inflammatory marker, C-reactive protein, or hsCPR (see issue 37 of the SHC newsletter, Spring 2003).

This issue also highlights two other focus areas of the Sarver Heart Center, namely heart failure and heart disease in women.

If you want to be added to the SHC newsletter mailing list, are interested in our public education programs or want to become involved in SHC activities, call Pila Martinez, (520) 626-4083.

Sincerely,

adam a Timpan

Gordon A. Ewy, MD Director, UA Sarver Heart Center

The UA Sarver Heart Center Newsletter is published regularly. News reporters are welcome to quote from newsletter articles and are kindly asked to provide credit. Correspondence or inquiries should be addressed to: UA Sarver Heart Center, Public Affairs, PO Box 245046, Tucson, AZ, 85724-5046.

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