



HEARTBEAT

Newsletter of the Cardiovascular Health Study ~ Spring 2009

The Cardiovascular Health Study: It Only Gets Better With Age!

By Diane Ives, MPH, University of Pittsburgh

The Cardiovascular Health Study (CHS) continues to make major contributions to the understanding of heart disease and stroke in older adults. The evidence for this success is based on a 19-year track record of continual follow-up of our valued participants through visits and telephone calls. In addition, we continue to publish numerous articles in high-quality scientific journals, to share CHS's findings with other researchers and physicians. Since the study began in 1990, over 550 published articles have reported important results from CHS. In the last four years alone, CHS published 239 papers! This additional knowledge about cardiovascular health and disease in older adults helps doctors and their patients make important healthcare decisions. It could also help people live longer, through the prevention of early onset coronary heart disease.

CHS has been able to publish so many papers due to the tremendous efforts of senior CHS investigators in mentoring scientists who are just beginning careers in research. The CHS investigators contribute their time, knowledge, and

experience with new investigators with whom they have common interests. CHS has been considered "exemplary in terms of productivity and data sharing, and for providing a training vehicle for junior investigators."

Further collaborations have recently been established to explore the role that genes play in disease and longevity (see Dr. Psaty's article on page 6). CHS has joined with four other large studies of older adults to form a consortium called CHARGE (Cohorts for Heart and Aging Research in Genomic Epidemiology). The consortium includes scientists from the four other studies (two from the US and one each from the Netherlands and Iceland), providing strength and diversity to the research.

CHS investigators are committed to continuing their track record of success through coordination, cooperation, and collaboration with new and experienced scientists from around the world. And we will always remember that at the heart of our success is the continued support of our wonderful participants. 



CHS Adventures

By Melissa McWilliams & Cheryl Albig,
Pittsburgh Field Center

With the idea that CHS is over twenty years old, now seemed like a good time to show our Pittsburgh participants who have moved away how much we miss them and just how important they are to us. Armed with airline tickets from Pittsburgh to Tampa, a car rental reservation that included a global positioning system (GPS), multiple maps, and two boxes of equipment, we set out to see sixteen participants in ten different cities over seven days.



We were welcomed with open arms and smiling faces everywhere we went. Everyone was so gracious and appreciative that we would travel the whole way from Pittsburgh just to visit them. Little did they know that we were the ones who were thankful for the opportunity to chat for a while and learn just what makes our "friends" so special. As a token of our appreciation, each person received a book about Pittsburgh so that they can always keep "a little piece of home" nearby in sunny Florida!

Four hotels and six hundred miles later we flew out of Miami toward the chilly weather of Pittsburgh and couldn't help but recollect the events of the past week. Our travels through Hudson, Wesley Chapel, Venice, Boca Raton, Boynton Beach, Delray Beach, Tamarac, Sunrise, Ft. Lauderdale and Miami Beach left us with fond memories of great people and an education in aging well. ❤️

Changes in Physical and Mental Abilities over Time May Predict Disability or Death

By Calvin Hirsch, MD, University of California, Davis; and
Caterina Rosano, MD, MPH, University of Pittsburgh

A lot of research has confirmed what experience already tells us: As we get older, our physical and mental abilities change. The question is, can those changes predict future disability and death?

In this article, we look at the results of two CHS studies that set out to answer this question.

In the first study, CHS investigators looked at the scores of two tests you took in 1992/93: the Digit Symbol Substitution Test (DSST), which evaluates how well different parts of the brain work together to help coordinate the body's movements; and the gait speed test, which measures how long it takes a person to walk 15 feet. Investigators then followed the participants for an average of 8.4 years, recording when they developed a disability or died.

The results? In participants who had no disability when they completed the two tests, poorer scores were associated with an increased risk of developing a new disability and dying. And these two tests were reliable predictors of death and disability, even after other risk factors were considered.

These results have given us some important and potentially useful information. Gait speed or DSST score could someday become

Disability is defined as difficulty with one or more of the following: eating, bathing, dressing, using the toilet, transferring (from a bed to a chair, for example), and continence.

Simple Secrets to Successful Aging

By You, CHS participants and very successful agers!

Just over a year ago, we asked you to share with us your observations on what it takes to live well and live long. Many of you responded with wonderful, thoughtful letters and emails, parts of which we've included in this newsletter. Thank you for taking the time to put your thoughts to paper for everyone to see.

At the end of 2007 I was honored by my Veteran's Auxiliary for serving as president for 25 years, and by my Hadassah for volunteer work.

~ A participant from
Pittsburgh Field Center

I have always been active in sports: basketball, baseball, soccer, and track, and I started to play golf in my mid-forties – I would highly recommend it, because you can play it for the rest of your life, if you stay healthy! I would also tell people to read, read, read! I send lots of cards to friends, because I love to get them – and it works! Keep in touch with your friends and always tell them “I love you”!

Friendship

~ Melba Dorsett
Wake Forest Field Center

For me the key to successful aging is to maintain a cheerful and positive attitude in all of life's situations. Never clutter your life with greed, envy, dishonesty, jealousy, or gossip. They will all gnaw away at you. Be strong in your faith – it can be a positive force against seemingly insurmountable conditions. Get proper rest, visit your doctor on a regular basis, exercise daily, and keep an active mind. And hope your genes are good!

Positive outlook

These have all been a positive part of my living day-to-day, but perhaps the most satisfying practice has been to look for the good in everyone I know.

~ J. Gilbert Everline
Johns Hopkins Field Center

I turned 90 years old on November 29th. I feel fine! I keep active: I walk every day, wash my clothes, and keep my apartment. I do my own shopping at Giant Eagle, which is several blocks away, and I walk both ways. I meet my friends every Wednesday at Eat'n Park to socialize, and I go to the Jewish Community Center for activities.

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I am 88 years old and as healthy and happy as my present circumstances allow. I have always been physically active, and I watch my diet. I work out at the gym three times a week, as I've done for 25 years, and, weather permitting, I play golf. When I watch TV, I look for happy entertainment, such as music and comedy programs. And I watch the news, to keep current with what's going on today. I live alone, but I still date.

I'm not a church goer, but I'm a firm believer in the "serenity prayer." I've had many sorrows in my life, but each day I count my blessings for good health, caring friends, and the ability to pay my bills.

Good spirits

~ Mary Ann Stewart
University of California, Davis, Field Center



The best way to take care of your health is to start when you're young! Eat right, don't drink, don't smoke, and try to get lots of rest. God has blessed me with my days and with good health, and I don't worry about anything!

~ Ardianna Dansby
Pittsburgh Field Center



Active mind and body

As far as what I believe contributes to longevity, I think keeping active is very important.

Many years ago, I started walking four miles a day. I kept it up for 13 years, until arthritis and subsequent dual knee replacement intervened. Since then, I can manage only about two miles a day.

The very most important factor for a long, healthy life is happiness. Happiness doesn't come from getting what you want. It comes from loving what you have. This works at any age, and anyone can accomplish it.

~ Joan Hopkins
University of California, Davis, Field Center



And in the end, it's not the years in your life that count. It's the life in your years.

~ Abraham Lincoln

Mental and physical changes, continued from page 2

a simple way to identify non-disabled people who are at risk for future disability. Healthcare providers might then be able to recommend treatments or lifestyle changes that could prevent or delay the onset of disability or death.

In the second study, CHS investigators looked at five measures of physical ability in CHS participants over seven years: chair stands, grip strength, gait speed, stride length, and the number of finger-taps in 15 seconds. After taking into account each person's age, sex, race, and prior disability, we found that as stride



length decreased, the risk of disability and death increased. For example, the 20% of participants with the fastest decline in stride length were 73% more likely to become disabled than the 20% with the slowest decline.

Changes in other measures of physical ability also predicted future disability and death, but decline in stride length was the most reliable predictor.

Is it possible to slow the decline in your physical abilities, and in stride length in particular? Perhaps: Exercise may be able to slow the decline. ❤️

Kidney Function and Successful Aging

By Mark Sarnak, MD, MS, Tufts University, Boston

Every day, a pair of well-functioning kidneys filters about 200 quarts of blood, removing waste products and water and producing urine. As we get older, though, kidney function declines. Decreased kidney function is associated with inflammation and subclinical cardiovascular disease (CVD), two factors that may contribute to unsuccessful aging. CHS investigators wanted to find out if the results of tests that measure kidney function could help predict unsuccessful aging.

In 1992/93, CHS assessed participants' kidney function by measuring two waste products in the blood: creatinine and cystatin C. For each participant, they also estimated the rate at which the kidneys filter blood. In general, when kidney function declines, creatinine and cystatin C levels rise.

CHS investigators selected 2140 participants who were considered, in 1992/93, to be aging successfully. Over several years, in-

vestigators kept track of which participants developed COPD, CVD, cancer, and problems with thinking and physical function.

Successful aging is defined as aging without mental and physical disability; and without developing chronic obstructive pulmonary disease (COPD), CVD, or cancer.

After taking into consideration several other factors that could affect successful aging, we found that the group of participants with the highest levels of cystatin C had 27% fewer years of successful aging compared with the group with the lowest levels. This was the case despite the fact that the other two measures of kidney were in the normal range.

These results indicate that cystatin C may someday be a reliable way to predict who is at risk for unsuccessful aging. And once we know who is at risk, we may be able to take steps to decrease the risk. ❤️

CHS Leads the Way in Studying Genes and Disease Risk

By Bruce Psaty, MD, PhD, University of Washington



Family history is an important part of understanding medical conditions. Risk factors, such as high blood pres-

sure, being overweight, or diabetes often run in families. There are several reasons why risk factors or diseases might cluster within family groups. First, members of families often live and work in similar places and have similar incomes. All of these factors may affect risk. Second, family members often have similar diets, activities, and habits such as smoking or drinking. Diet, physical activity and smoking are all known to influence the risk of heart disease and stroke. Finally, family members also share genes.

The **human genome** is the full collection of genes needed to produce a human being

In the Cardiovascular Health Study, the investigators have started a major effort to understand how genes may affect risk. The approach is called a "genome-wide association study." Using information from the **human genome** map, the investigators have assessed the presence or absence of more than 300,000 genetic variants in about 4000 participants. Analysis of this information is helping investigators locate new places in the human genome that may be associated with risk factors, such as blood pressure or other conditions.

We still have a lot to learn, but this new work is exciting. Some findings may encourage scientists to conduct new laboratory studies to understand how diseases occur. In the long run, other findings may eventually help in the prediction of risk or affect how drugs are prescribed. ❤️

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