



# Heartbeat

Newsletter of the Cardiovascular Health Study (CHS)  
for Participants, Family, and Friends ~ Winter 2015

## Scientific Findings from CHS: Kidneys and Heart Health

By Dena Rifkin, M.D., M.S.

What do the kidneys have to do with a healthy heart? Aren't they just there to make urine? When the Cardiovascular Health Study started, physicians didn't know much about the relationship between the kidneys and heart health, or about the kidneys' influence on healthy aging in general. In fact, the study didn't even collect urine in the first visit! But since then, CHS researchers have learned from data collected over many years that there are strong links between kidney and cardiovascular health.

Using CHS data, researchers have published over 60 scientific papers showing that healthy kidneys are important for overall health in all kinds of ways. They have shown that the kidneys' ability to filter blood is important for bone health, heart function, reducing the risk of hip fractures, and aging free of cognitive or physical function problems.

CHS researchers have measured standard clinical markers of kidney function, such as protein in the urine and blood levels of creatinine. In addition, using stored blood samples from CHS participants, they have contributed to the development of a relatively new test of kidney function called Cystatin C. Through extensive study

they have learned that a higher Cystatin C level is associated with increased risk of cardiovascular events and death in older adults, even when other risk factors like smoking or diabetes are accounted for. Cystatin C, we have learned, is a stronger marker than the traditional creatinine blood test of kidney function.

Because CHS participants were seen repeatedly over many years, researchers have been able to characterize how kidney function changes over time. They have also confirmed what might seem obvious: Maintaining good kidney function over time is associated with better long-term health outcomes.

Why do we think the kidneys are so important to successful aging? Because they are influenced by the cardiovascular system, and, as such, are affected by atherosclerosis. They help maintain blood volume and content, and they clean out toxins that might be part of the aging process. There is a great deal more to understand about this pair of underappreciated organs and their important role in health. CHS will continue to make important contributions to that understanding. ❤️

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## Scientific Findings from CHS: The Importance of Collecting Data about Medication

By Joseph Delaney, Ph.D.

Cardiovascular Health Study participants continue to provide the study with lots of information about their medication use. We realize that it takes time and effort for you to provide this medication information, and we thank you for sharing it with us! You may be interested to know that it is being used by the CHS investigators to better understand the patterns of medication use among older adults.

Research on medications can be split into two types. The more visible type focuses on medication effectiveness and is often in the news. In this kind of research, medications are compared to each other or to a placebo (a pill with no active ingredient). As you know, CHS does not do this type of research.

Although less visible in the news, there is a second type of medications research that CHS is ideal for: looking at medication use patterns. This important type of research evaluates the ways in which medications are prescribed and the overall effects of those prescriptions. For example, we can determine whether changes in medication prescribing guidelines actually result in changes in medication use over time. In addition, we can also determine whether the types of medications used are associated with particular health outcomes. CHS researchers have published several articles about medications use. The results of our research show that:

***The medication information you provide is simply irreplaceable and of great importance to understanding how people use (or don't use) medications.***

- ♥ The use of blood pressure lowering medications in people with high blood pressure is associated with slower decline in kidney function.<sup>1</sup>
- ♥ The use of thyroid medication in CHS participants increased from 9% in 1989-90 to 20% 16 years later, reflecting increased use at older ages.<sup>2</sup>
- ♥ The treatment of heart failure has changed over time; in particular, there has been a trend toward increased use of a class of drugs called beta-blockers.<sup>3</sup>

CHS is a unique and important study. We have more than 20 years of data on medication use that has been collected during a period of rapid drug discovery. When you contribute your time to do a medication inventory with our study staff, you are building on that knowledge. ♥

### References:

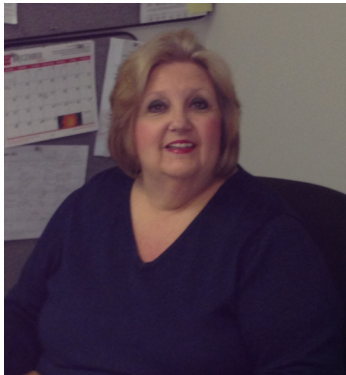
1. Odden MC, Tager IB, van der Laan MJ, Delaney JAC, Peralta CA, Katz R, Sarnak MJ, Psaty BM, Shlipak MG. Antihypertensive medication use and change in kidney function in elderly adults: a marginal structural model analysis. *Int J Biostat.* 2011 ;7(1):Article 34.
2. Somwaru LL, Arnold AM, Cappola AR. Predictors of thyroid hormone initiation in older adults: results from the cardiovascular health study. *J Gerontol A Biol Sci Med Sci.* 2011 ;66(7):809-14.
3. Smith NL, Chan JD, Rea TD, Wiggins KL, Gottdiener JS, Lumley T, Psaty BM. Time trends in the use of beta-blockers and other pharmacotherapies in older adults with congestive heart failure. *Am Heart J.* 2004 ;148(4):710-7.

# Field Center News & Notes: Who's on the Phone?

*Forsyth County* participants who enrolled at the Baptist Hospital clinic in Winston-Salem are now receiving follow-up calls from **Cathy Nunn**, who joined the study in 2014. Cathy was the CHS study coordinator back in the 1990s and has returned to CHS after 15 years with the Multi-Ethnic Study of Atherosclerosis (MESA). She is wearing multiple hats this time, serving as study coordinator, health events coordinator, and follow-up interviewer. Cathy is a registered nurse who has worked in cardiovascular research for 25 years. She looks forward to speaking with all our Wake Forest participants during the coming year.



**Cathy Nunn**



**Sheree Shaffer**

For CHS participants originally from *Pittsburgh*, **Sheree Shaffer** is the pleasant voice you hear on the phone twice each year. Sheree has a background in special education. She has been in our clinic for 16 years and has been the CHS clinic coordinator for about five years; she also works on several studies that include memory testing. Sheree is so very grateful for everyone's continued participation in CHS.

The *UC Davis* interviewer **Mary Misquez** and principal investigator **John Robbins** wish you all well. As you age, so do we. Life has its ups and downs but things are generally good. We hope to be with you for the foreseeable future and trust you will remain with us. CHS has been a wonderful study that has provided many answers to difficult questions about heart disease and aging in general. We wholeheartedly thank you and your proxies for your continued participation.



**John Robbins and Mary Misquez**



**Lynne Hammann**

The CHS participants in *Washington County* have the pleasure of speaking with CHS interviewer **Lynne Hammann** every six months during their follow-up calls. Lynne has been at the Johns Hopkins Comstock Center since January 2005, and she has enjoyed every minute of those 10 years! Prior to her work with CHS, Lynne worked at a family physician's office for 21 years as a medical assistant. In addition to interviewing, Lynne is also responsible for collecting data from all of the Washington County CHS participants' medical records. Lynne always enjoys catching up with the new happenings for each CHS participant during their follow-up calls.



CHS study participant Jane Hixson and CHS interviewer Lynne Hammann have an interesting connection – they are co-workers at the Johns Hopkins George W. Comstock Center for Public Health Research and Prevention.

Jane Hixson's connection with public health research began in 1964, when she began working for Dr. George Comstock, a leading epidemiologist and the founder of the Johns Hopkins Training Center for Public Health Research. Over the next 50 years, Jane worked on many of the hundreds of research studies that originated at the Training Center, meeting countless research participants and interacting with public health students and staff. Jane is a valued member of the Comstock Center staff, prized for her hard work and long years

## *A Participant Story*



**CHS participant Jane Hixson, with  
CHS interviewer Lynne Hammann**

of service – and for her important link to the earlier, fundamental days of the Comstock Center.

Lynne says that Jane hasn't changed a bit in the 10 years that she has known her. The two women share an enjoyment of their research work, and both feel energized by their interaction with study participants and staff. Jane, who recently celebrated her 94th birthday, feels very fortunate to enjoy

such good health and a long life. She believes that her participation in CHS is an important way for her to gauge and monitor the status of her own health.

In Lynne's view, Jane is a good example of one of the many amazing current CHS participants – still living active, productive, and full lives into their 90s and beyond. ❤️

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## Scientific Findings from CHS:

### The Importance of Atrial Fibrillation in Aging

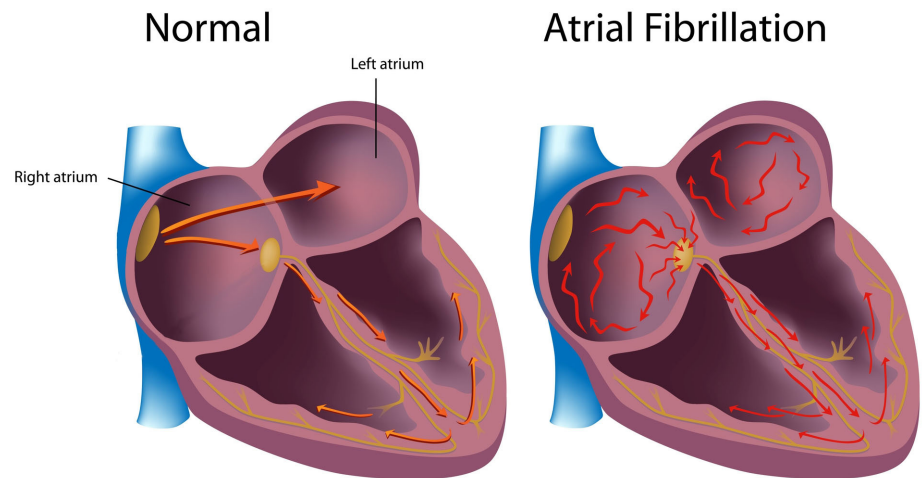
John Gottdiener MD, Professor of Medicine, Division of Cardiovascular Diseases, University of Maryland School of Medicine

The heart is a well-regulated pump controlled by an elegant system of “wiring” that sends electrical impulses to the heart muscle to coordinate the pump. The heart has four chambers that pump blood. In some individuals, rapid irregular electrical impulses in the atria (the upper chambers) cause the atrial muscle to contract rapidly and irregularly, a condition known as *atrial fibrillation* or A-fib. This leads to a rapid, irregular pulse and can cause symptoms of dizziness, weakness, difficulty with exercise, and/or chest pain.

The presence of A-fib can result in the formation of a blood clot. Small fragments of the clot may break free and travel to the brain, causing a stroke. In addition, research suggests that A-fib may increase the risk of dementia.

A-fib can be caused by heart valve disease, but in older individuals it commonly occurs without a valve abnormality, or other major abnormality of heart structure and function. We call this “lone A-fib,” and it becomes common as we age. In the Cardiovascular Health Study, our research has shown that A-fib is present in about 5% of women and 6% of men. In people who have heart disease A-fib is present in 9%, while in otherwise healthy individuals it is present in only 2%.

Fortunately, for some individuals with A-fib who are at risk of stroke, blood thinning medications (anticoagulants) lower the risk of stroke. It is not known if treatment with anticoagulants reduces the risk of dementia. Anticoagulants like warfarin (also known as Coumadin) carry some risk of bleeding. Hence, the benefit of anticoagulation must be great enough to justify the risk of bleeding.



Arrows in the image on the left show the normal flow of electrical signals in the heart. The image on the right shows the disorganized signals of atrial fibrillation.

CHS investigators are actively working with other scientists, pooling information from several studies to learn more about what causes A-fib and what may decrease the risk of A-fib and stroke. It is the hope of all of us to live long and productive lives unimpaired by the ravages of stroke and dementia. Volunteers who give of their time by participating in studies such as CHS contribute immensely to achieving that goal. ❤️

## Health Events: Releasing Your Medical Records to CHS

Every six months, a CHS staff member calls study participants or their contacts to ask questions about health and function.

We ask about overnight hospitalizations and, if necessary, request the release of medical records from hospitals.

These records help us determine if participants have had cardiovascular events like heart attack, stroke, or heart failure, or other conditions like a broken bone, cancer, or infection.

This has enabled the researchers to learn a tremendous amount about risk factors for these diseases and how they affect participants' lives.

As you may know, there are very strict laws to protect the privacy of your health information. For CHS to have access to hospital medical records, study participants

***Please be assured  
that we protect  
your confidential  
information with  
great care.***

or their medical power of attorney (POA) are asked to sign a form that allows hospitals to share medical records with us. Some hospitals are asking for proof of current POA. We are now updating these signed forms, so we can continue this important part of the study. Many of you have already received and returned these forms, and for that we thank you. If you have received a form and not yet returned it, please sign it and return it to the clinic, as soon as you are able, in the self-addressed stamped envelope that was included with the form. If you have not received a form, please look for it in the mail in the coming weeks.

Please be assured that we protect your confidential information with great care. Thanks so much for allowing us to continue this valuable scientific work in CHS! ❤️

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