



Heartbeat

A Newsletter of the Cardiovascular Health Study for the dedicated participants, family and friends who have committed their time as we approach 25 years of success.

Fall 2012

CHS: A National Treasure

On June 16, 1948, President Harry S. Truman signed the National Heart Act, authorizing a new institute to conduct research “relating to the cause, prevention, and method of diagnosis and treatment of diseases of the heart and circulation.” That institute grew over the years to become the National Heart, Lung, and Blood Institute (NHLBI), part of the National Institutes of Health (NIH).

By the mid-1980s, a great deal had been discovered about factors that contribute to and prevent heart disease and stroke in middle-aged adults. However, far less was known about what increases risk for these diseases later in life. To fill this gap in our knowledge, the NHLBI launched the **C**ardiovascular **H**ealth **S**tudy in 1988. Since that time, you and the almost 6,000 other volunteer participants have made CHS the largest and longest-running NHLBI-supported study focused exclusively on older adults. To date, more than 900 scientific articles reporting CHS findings have been published.



What have we learned from CHS?

Jean Olson MD MPH, NHLBI

Thanks to the dedication and ongoing commitment of our CHS participants, staff, and researchers, this study has provided answers to many of the original CHS questions about health of older adults. For example:

- Systolic blood pressure (the first or “top” number reported when your blood pressure is measured) is an important predictor of heart attacks and strokes in older age.
- Diabetes, even when it develops late in life, increases risk for heart disease.
- Chronic kidney disease is an important risk factor for heart disease.
- Low-level inflammation, whether caused by infections, chronic diseases, or behaviors like smoking or over-eating, increases the risk of heart attack or stroke.
- In middle-aged adults, heart failure usually occurs because the heart cannot pump enough blood to meet the body’s needs. In older adults, it often occurs because the heart can’t



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fill with enough blood. How best to treat these conditions may differ.

- Small, “silent” strokes seen on brain MRI studies are more common among older adults than was previously realized and are related to greater cognitive decline over time. These clinically unrecognized strokes are more often seen in people who smoke.
- Vascular disease (disease of blood vessels) is an important cause of dementia in older adults and has a worse prognosis than Alzheimer’s disease.
- Among persons who reach old age in good health, those with more disease risk factors (smoking, lack of physical activity, diabetes, high blood pressure) are less likely to continue aging successfully without disability or cognitive decline.

What’s next?

The value of CHS is a result of the continued involvement of participants like you. With the information you provide, researchers are exploring newer areas, like genetic factors (that may be important in disease development) and heart rhythm problems (such as atrial fibrillation), as well as other topics important to the health of older adults, such as chronic lung diseases, bone fractures, thyroid disorders, and quality of health care delivery.



The NHLBI recognizes CHS’s priceless contributions to understanding health concerns critical to older adults and their care. We are proud to sponsor CHS and greatly appreciate the commitment, dedication, and generosity you have shown for almost 25 years. Thank you for your important role in this ongoing success story. CHS couldn’t have become – and continue to be – the national treasure it is without you! 

The CHS investigators have been meeting annually since 1988 to plan and collaborate on this landmark research project. They took advantage of the June 12, 2012 meeting in Chicago Illinois to recognize 24 years of CHS by posing for a group photograph. The original four study field centers in Winston Salem NC, Sacramento CA, Hagerstown MD, and Pittsburgh PA along with the Vermont laboratory, Seattle WA coordinating center, NIH in Bethesda MD were all represented as well as new investigators and reading centers from around the country.



“Why are you Calling Me?” The Importance of Proxy Information in CHS

Diane Ives MPH, University of Pittsburgh

An important part of the Cardiovascular Health Study’s success has been maintaining regular contact with participants over the last 24 years. This is done by calling each participant every 6 months to ask about changes in physical function, memory, and health status. Many participants have moved from their homes where they lived at the time CHS



started, others have changed their names or phone numbers, and others have become unable to answer the questions because of poor health or hearing problems. That is why the interviewers ask you at every phone call to update a list of up to 3 people who could be contacted if we are unable to reach you. This person is known as a **proxy, contact** or **designee**. It may be a family member, neighbor, friend, clergy, caregiver, or anyone else that would know about your health status and where you are.

If you are not a CHS participant, and you received this newsletter, then you likely have been named as a **proxy** by someone in the study. You may be called by a CHS staff member and asked to complete a short phone interview to provide updated health status information on a CHS partici-

pant. Keep in mind that almost 25 years ago, the CHS participants volunteered to contribute their time to this important study, and as a **proxy**, you are helping them fulfill their commitment to help learn more about vascular health and aging. Please feel confident that all the information you provide about the participant is kept strictly confidential. If you report that the CHS participant was in the hospital since the last phone contact, you will be asked the hospital name, dates of stay, and reason for admission. If you are the participant’s legal representative, you may be asked to sign a release allowing the CHS to get copies of the medical records, so we may learn more about the health changes that are the focus of this research.

It is very important to the CHS that we are able to keep up to date with how each and every participant is doing. The CHS participants are all approaching or exceeding 90 years old, and this special group of survivors is exceptional in so many ways. We still have so much to learn. Many thanks to both participants and proxies for your time and contribution to CHS.



The CHS Cohort, Then and Now

Alice Arnold PhD, CHS Coordinating Center, University of Washington

When the CHS began in 1989-90, 5201 men and women aged 65 and older enrolled at 4 field centers in Pennsylvania, North Carolina, Maryland and California. Three years later, an additional 687 participants enrolled, bringing the total to 5888. Throughout the years, you have filled in hundreds of questionnaires, contributed blood samples, and shared your medical history. Nearly 1,000 papers have been published using the data you have contributed. We could not have done this without each and every one of you.

The data collected provide a rich resource for studying the aging process. In fact, our ongoing CHS All Stars study was funded by the National Institute of Aging in recognition of the valuable resource that CHS is for studying aging. We are currently exploring changes in blood chemistry and how they relate to survival, health, and maintaining an active lifestyle. We are charting years of active life over the lifespan and identifying traits that predict who will remain active into old age.

Of the original 5888 participants, many have died, and we want you to know that their contribution will not be forgotten. The wealth of data each person has provided will be put to good use to help men and women lead healthy, active lives into old age. Currently 1046 participants are alive and 909 participated in the most recent follow-up phone call, either individually or with the assistance of a family member, neighbor or friend. We are grateful to you for your continued

participation and for the individuals who assist you by communicating with us on your behalf.

You have undergone many changes in the past 2 decades or more. Originally, 58% of CHS participants were women, now women make up 72% of the survivors. At enrollment, 66% of you were married and 25% widowed; currently, 23% are married and 71% widowed. And of course, you have aged. At enrollment the average age was 72 and ranged from 65 to 100; now the average age is 91, ranging from 83 to 107.

You have also undergone changes in your health status. Among participants with no history of a given condition at enrollment, the most common cardiovascular diagnoses were heart failure and atrial fibrillation. More participants suffered a first stroke than a first heart attack during the study. And you have become more challenged by the activities of daily living. The table shows the proportion with difficulty on various tasks at enrollment and currently.

We thank you for sharing your journey with us and hope that you will continue to communicate with us when we call every 6 months. Your participation is vital to developing a complete picture of health and well-being into older age.



Table: Proportion of participants with difficulties at enrollment and now

Any difficulty with...	Had at enrollment	Have now
Walking ½ mile	21%	70%
Climbing 10 steps	14%	56%
Carrying a bag of groceries	15%	52%
Bathing or dressing yourself	3%	31%

Beyond Cardiovascular Disease: Making the most of CHS

David Siscovick MD MPH,
University of Washington

While the long-term goal of CHS remains the promotion of cardiovascular health, CHS has made important contributions to our understanding of other health conditions common in older adults, such as kidney disease and diabetes,



bone and lung health, and frailty. You may recall responding to questions about your medical history, performing lung function tests, and tests of strength,

and some of you had bone density scans. In order to make the most of this information, we have enlisted the support of many investigators new to CHS. The “new” CHS scientists who joined the CHS team over the past decade participated in workshops introducing them to the study, and joined working groups related to their specific research interests. Senior investigators have provided the new investigators with insights into the study’s history, structure, design, and data, to make their transition into CHS smooth and rapid.

Currently, working groups are actively publishing in the research areas of diabetes, lung function,

bone health, diseases of the brain, heart failure, arrhythmia, aging and health care outcomes. Our newest area of interest is genetics. CHS DNA samples, used only according to your wishes and only in pursuit of general medical questions, have proven critically important in large studies of the influence of genes on health and disease. This work is accelerating and we anticipate that CHS will continue to play a pivotal role for quite some time.

The CHS approach to expanding our network of investigators and forming working groups with the mentorship of senior investigators and statistical analysts was both timely and unique. We demonstrated how to merge a number of bright, young investigators from many institutions and clinical areas into a large national study to broaden the science and enhance the project’s impact. While the return on this investment continues to grow, there now is strong evidence to demonstrate that this unique approach resulted in a win for 1) NHLBI, 2) CHS, 3) the senior investigators, 4) the new investigators, and 5) most importantly, the health of the public.

While this story reflects both the successful evolution of research and the impact of CHS on multiple health conditions common in older



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adults, it would not have happened without the long-term commitment made by the CHS participants. For the CHS, the working groups,

the senior investigators, the new investigators, the next generation of investigators, and the public, we appreciate your contributions to this success.



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