

Geriatrics Division, Department of Medicine
Boston Medical Center, Boston, Massachusetts, USA

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Happy New Year!

All of us at the New England Centenarian Study want to wish particularly our study subjects and their families a wonderful 2008!

2007 was a very productive year for the Study with the enrollment of many new subjects, lots of data collection, numerous papers and chapters being written and accepted for publication and wonderful collaborations with other scientists from within and outside of Boston University Medical Center.

Our Growing Study:

With the recruitment effort of one of our studies, the Long Life Family Study, in full swing, our Study staff has grown by leaps and bounds. We are so very pleased to welcome Lori Feldman BA, Dorothy Shanahan BA, Maureen Frederick BA, and Timea Schranz BA.

In February of 2007, the NECS bid farewell to longtime staff member JaeMi Pennington. JaeMi left to pursue a career in public relations at a firm here in the Boston area.

Please go to the end of our newsletter for a complete listing of our research staff along with their contact information. You should always feel free to contact any one of us for anything that we might be able to assist you with.

Study Updates:



The New England Centenarian Study

Our parent study, the New England Centenarian Study (NECS) continues to be the largest study of centenarians and their families in the world. Approximately 1,200 centenarians have been enrolled since 1996. An additional 800 children of centenarians and control subjects round out the total sample size of 2,000 subjects! We are continuously blessed with our frequent interactions with our study participants who are inspirational treasures.

The primary goal of the Study is to understand the genetic-biological and environmental-behavioral factors that are important to exceptional aging. Over the past year, working with Paola Sebastiani PhD (Biostatistics), Monty Montano (Genetics) and Clint Baldwin (genetics), we have collected a great deal of data and like several other centenarian studies, we anticipate that the coming year is going to yield some very exciting and important findings.

You can learn much more about the Study and centenarians in general, at our website: <http://www.bumc.bu.edu/centenarian>.



The Long Life Family Study:

2006 saw the launch of the Long Life Family Study which is a multi-site study of familial longevity. We are collaborating with researchers at

Columbia University, the University of Pittsburgh, Washington University School of Medicine, the University of Southern Denmark and the National Institute on Aging on this important research endeavor.

These study centers are recruiting families with multiple members achieving very old age (for example, two living siblings over the age of 88 years old). Participation entails an in-home interview, a brief physical examination, and collection of a small blood sample.

If your family is already enrolled in our study and there are additional family members who are willing to participate, please have them call to find out if they are eligible. Large families are great!

If you, or a family you know, is interested, please contact the Study at 888-333-6327 or email Stacy Andersen at Stacy@bu.edu. You can also find out more about the Long Life Family Study by visiting this website: <http://longlifefamilystudy.wustl.edu/>.



New England Supercentenarian Study

Centenarians are actually amongst the fastest growing segments of our population at about 6% growth per year. In the 1980's there was about 1 centenarian per 10,000 people in the population and now it is more like 7 per 10,000 in industrialized countries. Centenarians are likely rare not because of any single very rare factor but because getting the right combination of relatively common factors, like the lottery, is rare. Centenarians are becoming more and more common because some of those numbers are no longer being left to chance. For example, as a society we are smoking less, we do a better job of screening for and treating high blood pressure and certain cancers, surgeries

have come a long way and compared to the early 1900s, our public health, such as the water supply, socioeconomic status and years of education are much better. There are approximately 50,000 centenarians in the USA.

Even more rare are supercentenarians, people who live to age 110 years and older. These individuals occur in the population at the rate of about 1 per 7 million and because they are so rare we recruit and enroll them world-wide. Our efforts, primarily because of two researchers, Kirsten McLaughlin and Robert Young, have gone far beyond our wildest dreams and we are fast approaching our 100th enrolled supercentenarian! Within the past 18 months, we have published the first-ever description of the medical and functional characteristics of supercentenarians and another article describing how strongly exceptional longevity runs in the families of these incredible human beings.

Very soon, we will be performing the first-ever search for longevity enabling genes in these individuals.



Dr. Perls visits with Ms. Marques. An accomplished crotchetier, at the age of 110 years, no less.

Visit our supercentenarian study website at:
<http://www.bumc.bu.edu/supercentenarian>

Neuropsychological- Neuropathological Correlations Study



In our previous published work, we noted in a series of 14 centenarian autopsies, 4 subjects who were cognitively intact very close to the times of their deaths and on pathological examination of their brains, they were found to have no evidence of disease. These individuals were gold standards of disease-free aging.

An additional 6 subjects were also cognitively intact and yet at autopsy, were found to have pathological evidence (neurofibrillary tangles and neuritic plaques) of Alzheimer's disease (AD). We are very interested in what allowed these to remain cognitively intact despite evidence that they had AD. For example, could more years of education or learning a musical instrument provide additional functional reserve that would provide resistance to clinical expression of AD?

Working with the HOPE Study which is based at Boston University's Alzheimer's Disease Center and neuropathologist Anne McKee, the New England Centenarian Study recruits centenarians in the New England area for detailed neuropsychological testing while they are alive and then autopsy after they have passed away. If you are at all interested in this study, please contact Stacy Andersen BA at 617-638-6679 or stacy@bu.edu.

Gerontological Research Meetings:



The American Geriatrics Society Annual Scientific Meeting was held in Seattle, WA this year.

- Dellara Terry MD, MPH presented a poster titled: Disentangling the Roles of Disability and Morbidity in Survival to Exceptional Old Age.
- Stacy Andersen BS presented a paper called Neuropsychological Assessment of Centenarian Offspring.
- Stephanie Baldwin presented a poster titled Analyzing the Social Networks of Nonagenarians and Centenarians.



The Gerontological Society of America Annual Scientific Meeting was held November in San Francisco, CA.

- Thomas Perls MD, MPH participated in two symposia: Tipping the Balance the Other Way: Countering the Anti-Aging Marketing Machine and Sharing Science: Science Museums Partnering with Gerontological Researchers
- Stacy Andersen presented Dellara Terry's work on Advantageous Lipid Profiles in Centenarian Offspring and also presented a poster on Vascular Function and Cognition in an Elderly Cohort.
- Dr. Perls also led a symposium titled Genetics of Exceptional Longevity. The symposium included presentations by the following:
 - Paola Sebastiani PhD: Genetic findings from the New England Centenarian Study
 - Monty Montano PhD: Molecular pathways derived from genome wide studies (also from the New England Centenarian Study)

Recent Publications:

1. Perls T, Kohler I, Andersen S, Schoenhofen E, Pennington J, Young R, Terry D, Elo IT. Survival of Parents and Siblings of Supercentenarians. *J Gerontol Med Sci* 2007;62(9):1028-34.
2. Sebastiani P, Zhenming Z, Abad-Grau M, Riva A, Hartley S, Sedgewick A, Doria A, Montano M, Melista E, Terry D, Perls T, Steinberg M, Baldwin C. A Hierarchical and Modular Approach to the Discovery of Robust Associations in Genome-Wide Association Studies from Pooled DNA Samples. *BMC Genetics*, 2008; *in press*
3. Terry LA, Sebastiani P, Anderson S, Perls T. Disentangling the roles of disability and mortality in exceptional longevity. *Archives Internal Medicine*. 2008; *in press*.
4. Perls T. DHEA and testosterone in the elderly. *N Engl J Med*. 2007;356(6):636
Perls T. Human Models of Longevity in: *Handbook of Models for Human Aging*. Ed. PM Conn. NY: Elsevier 2006
5. Sebastiani P, Perls T. Complex Genetic Models to appear in "Bayesian Belief Networks: A Practical Guide to Applications Olivier Pourret, Patrick Naim and Bruce G. Marcot eds Wiley, New York (2008)
6. Poon LW, Perls TT. The trials and tribulations of studying the oldest old. In: *Annual Review of Gerontology And Geriatrics: Biopsychosocial Approaches to Longevity* Eds: Poon L and Perls T. Springer. 2007
7. Perls TT. The familiarity of exceptional longevity. In: *Annual Review of Gerontology And Geriatrics: Biopsychosocial Approaches to Longevity* Eds: Poon L and Perls T. Springer. 2007.
8. Perls T, Sebastiani P. Genetics of exceptional longevity. In: *Molecular Biology of Aging*, Eds: LP Guarente, L Partridge, DC Wallace. Cold Spring Harbor Monograph Series 51, Cold Spring Harbor Laboratory Press, 2007.

Articles are or will be made available online:

<http://www.bumc.bu.edu/centenarian>

Funding:

Funding of our research primarily comes from peer-reviewed competitive grants provided by the National Institute on Aging (NIA) and the National Heart Lung and Blood Institute (NHLBI), both of the National Institutes of Health (NIH).

There is much more the Study would like to do, but cannot without philanthropic assistance. If what we do inspires and interests you and you would like to discuss supporting our work, please call Dr. Thomas Perls at 617-638-6688 or email him at: thperls@bu.edu

Recruitment:

We are always looking for participants throughout North America for our studies. If you know of any centenarians, their siblings, or children of centenarians, and their spouses who may be interested, please call our study toll-free at **1-888-333-NECS (6327)** or email Stacy Andersen (stacy@bu.edu).

Send us your pictures!

We love getting your pictures! Please send us your photographs. We make regular submissions to various media and we love being able to include photographs of our amazing participants. If we decide to use your use your photo for any reason, we will contact your family to obtain permission.

If you wish, we will be happy to return any photographs to you.

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**Our contact information at Boston
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<http://www.bumc.bu.edu/centenarian>
<http://www.bumc.bu.edu/supercentenarian>
<http://www.longlifefamilystudy.org>

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Websites of Interest:

Our Studies:

www.bumc.bu.edu/centenarian
www.bumc.bu.edu/supercentenarian
<http://longlifefamilystudy.wustl.edu/>

**A website about anti-aging quackery
and growth hormone**

www.antiagingquackery.com

A Life Expectancy Calculator

www.livingto100.com