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Foundation Update Winter 2010



Gathering Aging Clues from Pet Dogs

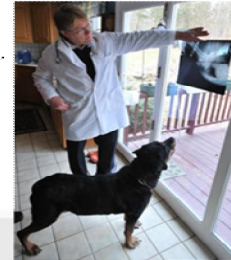


MONDAY, MARCH 15, 2010



"Now, we are recognizing that a special group of dogs may have something important to tell us about successful aging. This tour sends a simple message: We're prepared to listen."

Dr. David J. Waters, USA TODAY



The Old Grey Muzzle Tour

EXCEPTIONAL LONGEVITY

CENTER FOR EXCEPTIONAL LONGEVITY STUDIES
Gerald P. Murphy Cancer Foundation

www.oldgreymuzzletour.org



MARCH 11 – APRIL 3, 2010

- March 11, Harrisburg, Pennsylvania
- March 12, Holliston, Massachusetts
- March 13, Philadelphia, Pennsylvania
- March 15, Keysville, Virginia
- March 16, Columbia, Tennessee
- March 19, Cambridge, Wisconsin
- March 20, Riverside, Iowa
- March 21, Alma, Kansas
- March 24, Red Oak, Texas
- March 26, Castle Rock, Colorado
- March 27, Colorado Springs, Colorado
- March 28, Tijeras, New Mexico
- March 29, Waddell, Arizona
- March 30, San Diego, California
- April 1, Pacific Palisades, California
- April 3, Seattle, Washington



Gerald P. Murphy  Cancer Foundation

CENTER FOR EXCEPTIONAL LONGEVITY STUDIES



In March, Dr. Waters packed his bags and set out on a never-attempted-before scientific expedition. More than 4200 miles of driving and 3 plane rides later, he had visited 15 of the oldest-living Rottweiler dogs in the United States. **The Old Grey Muzzle Tour**, a 22 day trek from Boston to Seattle, enabled Dr. Waters to make detailed observations, collect DNA and other biological specimens. Going muzzle-to- muzzle with these exceptional creatures captured considerable media attention, including **Good Morning America, USA Today, AARP Bulletin, and SmartPlanet**. The scientific payoff was big as Murphy scientists established the **Biorepository at Murphy (BAM)**, the world's first collection of annotated specimens of DNA, serum, and blood cells from the longest-living dogs. On a personal level, the precious hours spent at each stop communing with those exceptional canine spirits and their owners were as they say, "Priceless". **Take Home Message:** The Old Grey Muzzle Tour is a vivid example of the Murphy Foundation's trailblazing ambition to develop a national resource for scientists trying to understand what it takes to age more successfully. These long-lived dogs are cancer resistant. Might they hold the key to the question: How can we make cancer non-lethal?

Inside This Issue

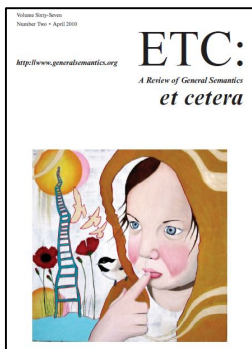
From the outside, research looks like orderly progress. But on the inside, research is a process filled with just a tad bit of permanence and a whole lot of flux. It's more like whitewater rafting than spending an afternoon on a calm, shimmering lake. As you read our stories, you'll get a glimpse at the ways we are exploring how to live longer and healthier. We hope you will get caught up in our brand of adventuring — the joy of discovery, the reward of learning, and all of the challenges that still lie ahead.

Updates

Continuing Research on the Health Benefits and Risks of Selenium

Supplementation — More than three decades of laboratory and animal studies indicate that selenium is a cancer-fighting nutrient. But in 2009, investigators published the disappointing results of SELECT — daily selenium supplementation did not reduce prostate cancer risk in this prevention trial of more than 32,000 men. Today, in a post-SELECT world, many scientists have abandoned their work on selenium as a dead end. We haven't because we believe the critical selenium-cancer question remains unanswered: Who will benefit from daily selenium supplementation? We think SELECT missed the target, enrolling too many men who were already replete with the cancer-fighting nutrient. Our paper published in September 2010 in the scientific journal *Dose Response* takes a bold, important step toward nailing down the optimal selenium level for cancer risk reduction. Teaming up with **Dr. Gerald F. Combs, Jr. at the USDA's Grand Forks Health Nutrition Research Center**, we continue to probe for markers in the blood that might assist in identifying who would benefit from additional selenium and those at risk for adverse effects of oversupplementation, such as diabetes. The collaborative work with Dr. Combs entitled, "Predicting Dietary Selenium Needs to Achieve Target Blood Selenium Levels," has been submitted for publication in the *American Journal of Clinical Nutrition*. **Take Home Message:** More of a good thing is not necessarily better. The temptation to "Pop selenium" must yield to a more nuanced maxim: "It pays to get your selenium level right." **Cheri Suckow, R.N.** at the Murphy Foundation will help you get it right with the SeleniumHealth™ toenail test. www.seleniumhealthtest.org

To Get Health Messages Right, Language Matters – Scientists are continuously seeking to better understand the world. Murphy scientists have learned something: **Language is not only the gateway to better communication, it is the gateway to better thinking.**

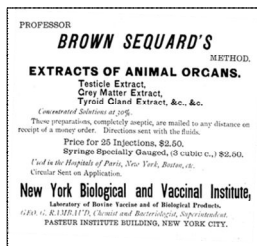


The year 2010 witnessed a growing appreciation by Murphy scientists for the importance of using precise language in our scientific work. In April 2010 we published the paper, "It's a U-Shaped World: A Batesonian Prescription for Promoting Public Health" in *ETC, The Journal of the Institute for General Semantics*. "It's safe to say that we are the first cancer scientists to publish in this language journal. It just shows how serious we are about getting health messages right," said **Emily Chiang, Research Scientist and co-author of the manuscript**. In June 2010, the Murphy Foundation organized and sponsored a symposium at the **11th Annual Convention of the Media Ecology Association**, which convened at the University of Maine. The symposium entitled, "Media Ecology and Health Promotion in a U-Shaped World"

offered perspectives from scientists, science writers, and the media on the accuracy of health messages.

Take Home Message: When it comes to your health, Murphy scientists are taking a leadership role in helping you find news you can use.

Pet Dogs : Gerontology's Emerging Workhorse – In January 2010, Dr. Waters was invited by the **National Academies of Sciences** to write a paper on the value of pet dogs for studying human aging, as part of a special compilation of articles on animal models of human aging. Thirteen years ago in 1997, the last time the compilation was crafted by scientists in the aging field, dogs were missing in action; dogs were not perceived as able workhorses in this field of science. Today, thanks largely to our pioneering work in Rottweilers, that has all changed. **Move over worms and files, make room for man's best friend**



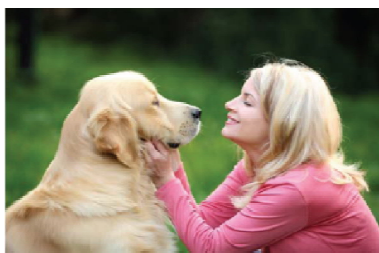
Advertisement from 1893

to teach us about the aging process. Take Home Message: When it comes to how dogs might help to promote healthy human aging, scientific thinking has come a long way from 100 years ago when followers of **Professor Brown-Sequard** were injecting people with extracts of dog testicles, a practice touted for its rejuvenating effects. Today, researchers at the Murphy Foundation are harnessing pet dogs for serious, systematic study of the secrets behind successful aging.

Shorts

The PSA Test: Can An Old Dog Do New Tricks? – More than 30 years ago, Dr. Gerald Murphy led the scientific team that discovered the protein called **prostate-specific antigen (PSA)**. During the last 15 years, the PSA test has developed into the most widely used blood test for early detection of cancer. An elevated PSA is often a sign of prostate cancer and up until recently a PSA of 4.0 was considered a clean cut-point, separating normal from abnormal values. In 2004, **Dr. Ian Thompson and colleagues** published intriguing results from a large group of men that really muddied the waters. Thompson found that *lots of men with PSA less than 4.0 were harboring prostate cancer*. No longer could patients and urologists hang their hats or their decisions to biopsy on the 4.0 value. The old dog – the PSA test – seemed to be sinking deeper into the mud. But new findings published this year, raised an exciting new possibility – the PSA test might have **new value if used as part of a more individualized strategy to assess prostate cancer risk**. The research, published in the *British Medical Journal* by **Hans Lilja and colleagues**, suggests that a single PSA test at 60 years of age or younger might be able to stratify men into high risk and low risk categories. Men in the high risk category should be followed closely for signs of prostate cancer. Men in the low risk category might not ever require another PSA test again. Now that's a new trick! **The American Cancer Society** recommends that all men be given the opportunity to make an informed decision about engaging in early prostate cancer detection. Moving forward, the Murphy Foundation will be exploring the prospect of personalizing risk assessment using the PSA test, because it fits precisely within our vision of personalizing cancer prevention. If you want to learn more about how this new thinking might affect how you use the PSA test, please contact us.

When it Comes to Successful Aging, Ovaries Matter – Results of a study of 29,000 women by **Dr. William Parker and colleagues** suggest keeping ovaries longer may provide health advantages for women. The dividends attributed to keeping ovaries, rather than losing them at the time of hysterectomy surgery, include protection from cancer and heart disease, and greater life expectancy. Our research findings from pet dogs parallel the findings in women and appeared in the December 2009 issue of *Aging Cell*, the world's highest impact publication in the fields of gerontology and geriatrics. We showed that female dogs that keep their ovaries longer, live longer. Of course, this flies in the face of 40 years of the routine practice of early spaying as a health promoting procedure in pet dogs. This summer, new research on rodents reported by **Dr. Sherman Silber and colleagues** indicated that transplanting young ovaries into old females can push longevity. This raises the intriguing possibility that frozen ovary slices might someday be used to rejuvenate women at critical periods during the aging process. **Take Home Message:** Work from women, dogs, and mice are pointing to a new research need – **defining the window of ovary exposure that optimizes healthy longevity**. When it comes to ovaries and longevity, timing might be everything. The ovary – longevity connection figures to be a fertile area of research. Stay tuned for what pops out next.



Murphy Foundation Selects Parke County, Indiana as Training Site – This summer the Murphy Foundation established the **Parke County Cancer Prevention Fund honoring Drs. Joseph and Richard Bloomer**, the two physicians who served this rural community for more than a half-century. "In an important way, the Murphy Foundation is helping us work toward a real solution to the cancer problem, orchestrating a county-wide effort to promote healthy lifestyle," said **Marjorie Hays**, who is coordinating education and communication volunteers. The Murphy Foundation has made

