

Researchers working to advance aging research

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Mayo Clinic, along with other members of the Geroscience Network, has published six manuscripts that map strategies for taking new drugs that target processes underlying aging into clinical trials. Researchers believe that these agents hold promise for treating multiple age-related diseases and disabilities. The articles appear today in *The Journals of Gerontology: Series A - Biological Sciences and Medical Sciences*.

The Geroscience Network, formed by James Kirkland, M.D., Ph.D., director of the Mayo Clinic Robert and Arlene Kogod Center on Aging; Steve Austad, Ph.D., University of Alabama at Birmingham; and Nir Barzilai, M.D., Albert Einstein College of Medicine, consists of 18 academic aging centers, along with the participation of more than 100 investigators from across the U.S. and Europe. The network is funded by the National Institutes of Health.

"Aging is the largest risk factor for most chronic diseases, including stroke, heart disease, cancer, dementias, osteoporosis, arthritis, diabetes, metabolic syndrome, blindness and frailty," says Dr. Kirkland. "Recent research suggests that aging may actually be a modifiable risk factor. The goal of our network's collaborative efforts is to accelerate the pace of discovery in developing interventions to delay, prevent or treat these conditions as a group, instead of one at a time."

Dr. Kirkland is senior author on manuscripts that explore the challenges of developing these interventions:

- "Barriers to the Preclinical Development of Therapeutics That Target Aging Mechanisms"
- "Frameworks for Proof-of-Concept Clinical Trials of Interventions That Target Fundamental Aging Processes"

The first manuscript summarizes discussions held at a 2014 Geroscience Network Retreat. While research efforts have successfully identified [new drugs](#) that extend lifespan in animals, the authors discuss the need to develop a consistent preclinical pipeline for drug development that focuses on best practices for drug discovery, development of lead compounds, translational preclinical biomarkers, funding and support for preclinical studies, and integration between researchers and clinicians.

In the second manuscript, Dr. Kirkland and others acknowledge that aging therapies may hold "great promise" for enhancing the health of a wide population, with [clinical trials](#) being a critical step for translating therapies from animals into humans. The manuscript is built on the outcomes of an international meeting funded through the National Institutes of Health R24 Geroscience Network.

The other manuscripts published are:

- "Strategies and Challenges in Clinical Trials Targeting Human Aging"
- "Resilience in Aging Mice"
- "Evaluating Health Span in Preclinical Models of Aging and Disease: Guidelines, Challenges, and Opportunities for Geroscience"
- "Moving Geroscience Into Uncharted Waters"

Felipe Sierra, Ph.D., of the National Institute on Aging and a member of the Geroscience Network, describes the potential impact of aging discoveries in his manuscript, "Moving Geroscience into Uncharted

Waters." Dr. Sierra says, "In addition to the direct health issues, it has been calculated that care for the elderly currently accounts for 43 percent of the total health care spending in the US, or approximately 1 trillion dollars a year, and this number is expected to rise as baby boomers reach retirement [age](#). Reducing these costs is critical for the survival of society as we know it, and a 2013 paper by Dana Goldman and colleagues calculated that a modest increase in lifespan and healthspan (2.2 years) could reduce those expenses by 7 trillion dollars by 2050."

"While significant work has already been accomplished, there is much more to be done as we focus on translating findings into practice," says Dr. Kirkland. "The Geroscience Network is a collaborative way to overcome barriers and move us closer to our shared goal of increasing healthspan - the healthy, independent years of life for the elderly."

Provided by Mayo Clinic

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