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Genetic Epidemiology Research on Adult Health and Aging (GERA) Study

In the largest and most diverse study of aging to date, telomere length is being analyzed as a marker for age-related conditions. This genomic project, Genetic Epidemiology Research on Adult Health and Aging (GERA), aims to increase understanding of the genetic basis for a host of problems.

Funded by the National Institutes of Health, the project includes a wide scale genotyping project incorporating longitudinal clinical and health data. After adjusting for the range of demographic and behavioral factors that influence telomere length (age, sex, race, education, physical activity, BMI, smoking, and alcohol consumption), there was a significant relationship between individuals with the shortest telomere length and increased mortality.

“We found that individuals whose telomeres were in the shortest 10 percent were about 23 percent more likely to die in the three years following measurement of their telomeres, when compared with individuals whose telomeres were longer,” said lead study author Catherine Schaefer, director of the Kaiser Permanente research program on genes, environment and health.

The initial phase of the Kaiser Permanente/UCSF GERA study measured telomere length from saliva samples of more than 100,000 individuals in California, whose average age was 63 years old, and analyzed their historical health-related information from health surveys and electronic medical records.

The large cohort of 100,000 individuals demonstrated the importance of telomere length and health, and provides the foundation for continued studies on the pathways linking telomere biology and longevity.