

# Living Longer and Loving it!

## Fall 2005



### Science in the Spotlight: Living to 100 and Beyond

First-born daughters are three times more likely to survive to age 100 than their latter-born sisters; and first-born sons are twice as likely to become centenarians as those sons born fourth, fifth, or sixth in the family, according to a new study prepared for the Society of Actuaries (SOA). The study, which looked at family data for nearly 1,000 centenarians, shows that birth order, place of birth, and even birth month may be linked to longevity.

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So what are those links? The connection between birth order and longevity seems to be influenced by living conditions during early childhood. “Family resources may become strained as the number of children increases,” said Dr. Natalia Gavrilova, a researcher at the University of Chicago’s National Opinion Research Center who conducted the centenarian study with Dr. Leonid Gavrilov. “Later-born children may have less access to parental attention and supervision, resulting in more childhood accidents. Also, later-born children may receive less medical care than their earlier-born siblings, putting them at greater risk for infections, malnutrition, and serious

diseases.”

The study also suggests a connection between place of birth and longevity, with children of farmers and those raised in the Western region of the U.S. potentially more likely to survive to age 100. “Without the type of food processing that’s currently available, living on a farm 100 years ago meant fresher food with more nutrient value,” said Thomas Edwalds, SOA Fellow and chairman of the project oversight committee. “This very well might correlate to prenatal and perinatal nutrition as factors of exceptional longevity.”

Life expectancy at age 80 also appears to be connected to the month of a person’s birth: individuals born in October or November live longer lives than persons born in other months - April, May, and June in particular. “This result indicates that there may be critical periods early in human life that are particularly sensitive to seasonal variations in living conditions in the past, such as vitamin supply and seasonal exposure to infectious diseases,” said Dr. Gavrilova.

With wide availability of year-round fresh food, vitamin supplements, and improved health care, factors such as birth month may play less of a role in determining the longevity of children born today. In fact, longevity for the future elderly may be a completely different story, with centenarians currently representing one of the fastest-growing age groups in the United States, increasing at a rate of about 4.1% each year.

“This research helps us better understand the predictors of longevity and quantify the implications on society and business,” said Mr. Edwalds. “This research also illustrates that studies on human longevity could be modernized and advanced further by using new computerized data resources such as genealogies.”

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For this study, Drs. Gavrilova and Gavrilov evaluated detailed family data for nearly 1,000 centenarians born in the U.S. between 1875 and 1899. They collected data from the computerized genealogies of 75 million individuals, and validated ages and birth dates by linking records to the Social Security Administration Death Master File, and reviewing U.S. census data for years 1900, 1910, and 1920.

To read the study, visit the SOA website at [www.soa.org/ccm/content/areas-of-practice/life-insurance/research/search-for-predictors-of-exceptional-human-longevity/](http://www.soa.org/ccm/content/areas-of-practice/life-insurance/research/search-for-predictors-of-exceptional-human-longevity/). ■

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