



## Living to 100 may depend on your mother

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The chances of living to 100 are double for people born to mothers younger than 25, a new study has found.

As the average life expectancy of Americans grows, so does the number of centenarians, or people who live past age of 100. And although advances in medicine and a more health-conscious culture are largely responsible for this trend, the study, done at the University of Chicago's Center on Aging, indicates there may be much more coming into play.

The study, funded by the U.S. National Institute on Aging, began as a spin-off of a previous finding that first-born children often outlive younger siblings and have greater odds of living to 100.

Study authors Leonid Gavrilov and Natalia Gavrilova, a husband-and-wife team, found that birth order became insignificant when a mother's age was taken into account.

"It was really wild because you work in science for 20 to 30 years and you usually become accustomed that the effect sizes you study are usually small -- about 20 to 30 percent," Gavrilov said. "We were surprised to find an almost 100 percent increase in chances to live to 100 for those born to young mothers, and we were glad that there is something new and interesting that we can discuss."

The three-year study included data on 198 U.S. centenarians born between 1890 and 1893. Family histories were reconstructed using the U.S. Census, the Social Security Administration data and genealogy records. The study considered several factors, including the father's age, rural versus urban upbringing and the month of birth, but the statistics on mothers' ages was the most striking.

At first the Gavrilovs figured the longevity results may have been affected by high childhood mortality rates in the late 19th and early 20th centuries. But when they looked only at siblings who lived through adulthood, the statistics remained steady.

"Even at age 75 it is still important to be born to a young mother in order to survive to 100 years because the odds of exceptional survival are 1.9 times higher," Gavrilov said.

Also surprising to the Gavrilovs was that a person born to a mother who was 30 had no greater odds of living to 100 than if he or she were born to a 40-year-old mother. Considering that more women now postpone pregnancy to first pursue careers, the Gavrilovs said their findings may have social impact.

"We've known for a long time that for women it is better to have a child sooner than later," Gavrilov said. "What is new here is that we found it is not about mothers who are 45. Something is happening earlier in life, before age 25, when many women believe they are too young to have a child."

Dr. Abraham Shashoua, an obstetrician-gynecologist and chairman of the Women's Hospital at Weiss Memorial Hospital, said the study may reflect the fact

that the health of women's eggs declines with age. He said women who try to micromanage their lives by delaying pregnancy may be playing a dangerous game based on risks of infertility and genetic disorders.

"As opposed to a man, who is producing new sperm every day, a woman is born with the eggs that she keeps for the rest of her life," Shashoua said. "I'll tell patients that when it wouldn't necessarily be bad to have a baby, that is when you should start trying to conceive."

He added that fertility peaks for women at age 18 and rapidly declines after age 30.

But Dr. Randy Zimmerman, an obstetrician-gynecologist at Good Shepherd Hospital, said social and economic factors can be just as important to a child's overall health and life expectancy as the mother's age.

"There are other issues that are going to be more important in how long a child lives than how old their mother is when she conceives," he said.

He said a 35-year-old mother in a stable relationship who has financial security and who lives a healthy lifestyle may raise a healthier child than a 22-year-old mother who is not in a relationship, has no financial security and has unhealthy habits.

Zimmerman said the ideal age range for childbirth from a medical perspective is between ages 20 and 30. After age 30, he said, the risks to the mother include diabetes and hypertension and risks to the child include genetic disorders, such as Down syndrome.

Although children born to teen mothers in the study had the highest odds of living to 100, physicians argue that teen mothers are neither physically nor psychologically prepared for children.

Shashoua said the pelvis of a 12- or 13-year-old is often not mature enough for vaginal birth, and Zimmerman said the bones, muscles and ligaments of a 15- to 17-year-old are not yet ready to handle the stress of pregnancy.

"There are so many other factors that come into it," Zimmerman said, "including the environment the child is brought into."

Although the Gavrilovs can only speculate about why being born to a young mother helps prolong life expectancy, they each have theories.

Gavrilov said it's possible the "most vigorous maternal ova cells" are released early in life, while Gavrilova said young women may have less exposure to disease and infection that can interfere with fetal development.

Possible social explanations for the study's results include more years with a mother before her death, Gavrilov added. He said another possibility is that children born to young mothers tend to have more younger siblings who will eventually take care of them in old age.

The Gavrilovs said more studies are needed to explore both the social and biological possibilities.

"This is an understudied area that demands more attention and more studies of maternal age and long-term consequences," Gavrilova said. "When people postpone motherhood we need to know more about the consequences of that."

Regardless of the underlying reasons, the number of centenarians is steadily growing. According to the U.S. Census Bureau there were 70,104 U.S. centenarians in 2005, a 96 percent increase from 1990.

"It's becoming more realistic, and we are seeing more and more people reaching that age, and more and more believe it is possible," said Joan Hurwitz, director of communications for the national Alliance for Aging Research.

Hurwitz said although the quality of life for seniors has advanced along with health research, there are still risks that come with a longer lifespan.

"We are looking at increased longevity, but individuals who are 65-plus face an increased risk for chronic disease," such as diabetes, heart disease and neurological disorders, she said. With disease comes an increase in medical expenses, she said, and often more reliance on others.

According to the national Centers for Disease Control and Prevention, the average life expectancy is now 77, an approximately 60 percent increase from when the centenarians in the study were born.