

# Birth during a recession raises risk of fatal cardiovascular disease at advanced age

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People who suffer from cardiovascular diseases at advanced ages may have reason to suspect that the cause of their illness lies far away... around the date of their birth. A team of European researchers reports that if economic conditions at the time of birth were bad, then this leads to a higher risk of cardiovascular mortality much later in life.

A recent study published by the Institute for the Study of Labor (IZA) in Bonn, Germany, finds that individuals born in a recession on average live 15 months shorter than those born under better conditions, and that this difference can be mostly attributed to cardiovascular health risks. Extrapolating this, early-life differences in economic household conditions go some way towards explaining why some individuals are hit by cardiovascular diseases at high ages and others are not.

"What is surprising is that such effects may pop up seventy or eighty years after birth," said co-author Gerard van den Berg, who is Economics Professor at VU University Amsterdam and Program Director at IZA. In the intervening years, nothing extraordinary may happen in terms of health, but then suddenly the dead hand of the past can reach out and create fatal cardiovascular problems. The authors do not find such long-run effects on cancer in general, although certain types of cancer have been linked to low birth weight, which is another marker of early-life conditions.

The researchers use data on individuals born around 1900. Such old cohorts are necessary to study long-run effects on mortality. Moreover,

in order to observe the death cause as well, the researchers had to resort to twins from Denmark, for whom death causes have been systematically collected for many years. The twin data come with an added bonus. They make it possible to check whether a twin pair's health outcomes are more similar later in life if they were born under adverse conditions than if they were born under good conditions. It turns out that, indeed, they are more similar later in life if the starting position was bad. Conversely, if an individual is born under better conditions, then individual-specific factors dominate more. In short, individual-specific qualities come more to fruition if the starting position in life is better.

As to the explanation of why bad economic conditions lead to long-run damage to the cardiovascular system, Van den Berg points to analyses his team carried out for specific parts of Denmark. These analyses suggest that long-run effects are particularly triggered by the combination of suboptimal nutrition and a suboptimal health infrastructure early in life. Low household income is less harmful for the baby's future if the environment has good health care and hygiene facilities. On top of this, it cannot be ruled out that stress is a major factor. Parents who are stressed due to economic hardship may produce offspring with features that make them more susceptible to cardiovascular diseases at advanced ages.

One may wonder whether the results are of significance for present-day birth conditions. Of course, we need another eighty years to know this for sure. But there are signs that long-run effects are as important as ever. For example, birth weight studies among recent cohorts show effects on health and adult height that are as strong as ever. And with the advent of the fast food society, nutritional habits among segments of society may not be as good as they used to be.

From this point of view, it may be worthwhile to screen young individuals born under adverse conditions for cardiovascular markers

and predictors, and to expose those who have unfavorable test values to preventive interventions. Moreover, the results support investments in nutritional quality and health infrastructure in countries with a high degree of deprivation, as a means to reduce the cardiovascular mortality rate in future years.

Source: Institute for the Study of Labor, Germany

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