

# WWI babies whose fathers were killed in action have shortened adult life expectancies

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French children born between 1914 and 1916 whose fathers were killed or severely injured during the war lost approximately one year of adult life expectancy, according to research presented today at the 55th Annual Meeting of the European Society for Paediatric Endocrinology. The findings further our understanding of the long-term effects of maternal psychological stress on children.

Some hypotheses state that much of our susceptibility to diseases in adulthood may stem from very early life experiences. Of particular interest are negative early life experiences, usually called early life adversities (ELAs). These encompass both nutritional and psychological stresses; the effects of early life exposure to famine have been extensively studied through other natural experiments, such as the Dutch famine of 1944 or the Chinese famine of 1959. However, a lack of adequate historical data has so far made it difficult to assess the potential long-term consequences of psychological ELAs in natural experiments.

To investigate ELAs further, a team of French researchers from Inserm used newly-accessible historical databases to identify over 4,000 children born between 1914 and 1916 whose fathers were either killed or severely injured during World War One (WW1). Both of these groups are considered to have suffered ELAs. Of those children identified who had lost their father, the team also determined whether the death occurred after their birth, or whilst they were in the womb. Each individual was matched with a "control" of the same sex, age of mother, and date and district of birth.

The researchers found that all of those who experienced ELA suffered an increased mortality in adulthood, losing an average of one year of adult [life expectancy](#) compared to controls. The

decrease in [adult life](#) expectancy was greater for those whose father had been killed whilst their mother was pregnant - a median of 2.2 years shorter than controls.

"The next step in the study will be to determine the cause of death for those having suffered ELA. This will shed light on the mechanisms involved." said Nicolas Todd, lead researcher of the Inserm team from Hôpital du Kremlin-Bicêtre, France. "We know that deregulation of the stress response is commonly found on animal models of ELAs, so it will be interesting to see if any evidence of this can be seen in the causes of death in the French cohort. It may give us further insight into the [long-term effects](#) of ELA."

As inducing early life adversity in humans presents obvious ethical barriers, natural experiments such as WWI are crucial pieces of evidence. The study is the first of its kind, and serves to strengthen our insights into the effects maternal stress can have on unborn and newborn children.

**More information:** "In utero and postnatal consequences of psychological maternal stress have different effects on longevity: studies in World War 1 orphans" 55th Annual European Society for Paediatric Endocrinology Meeting, 2016.

Provided by European Society for Paediatric Endocrinology

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