

Can Prenatal Care Influence Adulthood Diseases?

Alexa Asch



In the United States, one person [dies](#) every 37 seconds from cardiovascular disease. However, the disease's prevalence is not limited to the United States. Scientists and doctors all over the world continuously study cardiovascular diseases. In Sweden, for example, at the Karolinska Institutet—a research university in Solna—a group of researchers recently published a study in the Journal of the American Heart Association on how such diseases might stem from a neonatal origin, bringing the ethical issues of neonatal care to light in the context of adulthood diseases.

The Karolinska group knew that prematurely delivered babies with low birth weights (LBW) often [struggle](#) with cardiorespiratory fitness later in life. They studied 280,000 males who were born 37-41 weeks after conception from the time they were born until they were in the age range of 17 years old to 24 years old. It was at that time that the men would perform a physical exam on a bike ergometer.

The researchers [found](#) that for every pound of birth weight the men had a 13% decrease in the risk of premature death and a 15% decrease in the risk of developing cardiovascular disease, based on their metabolic equivalents from the bike ergometer. Daniel Berglind, one of the researchers remarked, “the magnitude of the difference we observed is alarming.”

With the results of their study, the researchers [call](#) on clinicians to consider whether the origin of an adult patient's cardiorespiratory disease could be neonatal. They also emphasize the importance of prenatal care in reducing the chance that a baby could be born with LBW.

Dr. Amna Umer, a researcher from West Virginia University who was involved in a separate study, recently [reported](#) seeing cardiovascular risk within children as young as 10 years old who were LBW babies. She saw higher levels of bad cholesterol and higher triglyceride levels in these children, which are

risks for developing heart attacks, strokes, peripheral artery disease, and atherosclerosis later in life—some of the leading causes of morbidity and mortality in the United States.

Other studies have shown that LBW babies also have a higher chance of developing other types of diseases as adults. In a 2019 study led by the University of Melbourne, researchers found that babies born weighing less than 3.3 lbs are four times more likely to have respiratory difficulty by adulthood. The lead researcher from that study, Professor Lex Doyle, similarly [asks](#) for doctors to consider the neonatal origins of disease. "Physicians should obtain a perinatal history, including gestational age at birth, birth weight, and bronchopulmonary dysplasia, when assessing adults with airway disease," said Doyle.

In addition to respiratory and cardiovascular diseases, a study from the American Psychological Association reported an increased risk of LBW babies developing [mental](#) health problems later in life. The researchers concluded that LBW babies were at an increased risk of developing attention deficits, anxiety, and social problems compared to normal birth weight babies. They believe that this is due to biological responses of LBW babies on account of insufficient prenatal conditions and postnatal stressors. Dr. Karen Mathewson, a lead researcher in this study, commented, "The consistency of the findings across geographical regions suggests that these attentional, behavioral and social outcomes may be contributed to by developmentally programmed, biological factors."

Researchers in Turku, Finland saw similar findings when looking at children with reactive attachment disorder (RAD). RAD is a disorder where infants do not form healthy, emotional bonds with caretakers and grow up to feel unsafe and have [difficulty](#) managing their emotions and handling social interactions. In this study, it was found that a child had double the risk of being [diagnosed](#) with RAD if his or her birth weight was less than 5.5 lbs. Dr. Andre Sourander, one of the researchers, suggested, "[This] indicates that family-centered support of early parent-infant interactions and need for care should be taken into account when treating premature babies."

LBW can often be [attributed](#) to prematurity, which is one of the leading causes of death in children under 5 years of age. 15 million babies are born preterm every year and 1 million of them die from complications due to their prematurity. If we consider deaths from cardiovascular disease, respiratory disease, or mental health conditions that are related to preterm birth, this number could be much higher.

Preterm births are more common in low-income countries, where 90% of premature babies die within the first few days of life due to [limited](#) access to obstetric care and the high monetary costs of such care. This lack of access to obstetric care is not only observed in low-income countries. In the United States, many rural areas lack access to care. From 2004 -2014, 179 rural counties lost hospital obstetric care services in the United States, decreasing rural-based obstetric [care](#) from 55% to 46%.

In such rural areas, there is a higher percentage of babies born preterm than in areas that have [access](#) to obstetric care. There are also higher rates in delayed prenatal care, LBW baby deliveries, and infant mortality. For pregnant women living in these areas, the only option is to travel to distant communities for care or visit clinics that are often unequipped at providing proper care or managing delivery and its

possible complications. Many of the women have out-of-hospital labor. These rural communities have a 5% increase in preterm birth from the lack of accessible care and obstetric services.

In Zimbabwe, researchers similarly found women in rural areas to have an 11% higher chance of having a LBW baby [compared](#) to women in urban areas. Additionally, in Zimbabwe, women who had less than four prenatal care visits with a doctor had a 34% higher chance of having a LBW baby and women who were uneducated had up to a 73% higher chance of having a LBW baby than educated women.

In Milwaukee, Wisconsin, researchers found that simply providing mentorship and safe communities for pregnant women helped [improve](#) birth outcomes. They specifically looked at African American women who have less access to prenatal and postnatal resources. The percentage of survival of African American infants is four decades behind that of White infants in Wisconsin. African American infants have a three times more likely chance of mortality. This can be attributed to a number of factors. In particular, Milwaukee is a very impoverished city with a poverty rate of 29.4%. There are high crime rates and pregnant women often have to deal with issues such as incarceration, gun violence, drugs, unemployment, and poor housing, which cause them environmental stress.

The lack of prenatal care fueled by disparities in wealth, educational [attainment](#), and residence is an ethical issue both in the United States and worldwide. Now, researchers are beginning to delve into some of the long-term effects that LBW babies have and are uncovering that there are medical risks for these babies at higher rates in adulthood.

The risk of LBW might not just be through labor and infancy; it could be a life-sentence and lead to mortality. In this sense, connecting LBW to adulthood diseases proves to be an even bigger ethical issue. Now, there is also the moral concern of allowing these babies to be born prematurely to grow up medically burdened with the risk of developing serious illness after not providing proper preventative care.

Prematurity and LBW are also ethical issues because they can often be prevented. Not all pregnant women can access obstetric services and hospitals on their own and yet, there are often limited efforts to help these women gain these necessary resources worldwide. Project Hope, a nonprofit organization tackling global health care challenges, claims that three out of four preterm baby deaths can be prevented with low-cost intervention. They [advocate](#) for Kangaroo Mother Care (the prolonged skin-to-skin contact of the mother and baby) and educating healthcare workers about infant resuscitation and methods to care for premature babies.

In 2009, it was reported that over \$13 billion are spent on infant birth hospitalization and re-hospitalization. 43.3% of those costs were attributed to LBW babies. LBW births are extremely expensive because of the babies' health complications and medical care. However, adulthood diseases are also extremely expensive to care for. For instance, the direct medical costs of cardiovascular diseases are [expected](#) to be upwards of \$818 billion within the next 10 years in the United States. If preventative measures are taken to reduce LBW births, not only will it help prevent the financial toll of the birth itself and the babies' immediate medical bills, but it could also help prevent the financial toll of adulthood

diseases. Not everyone can afford prenatal care, but many people also cannot afford the consequences of not getting prenatal care.

This connection to adulthood diseases also means that once an LBW baby is born it could need preventative measures against the onset of various, related diseases. Researchers are suggesting that it is important for their doctors to consider a patient's neonatal history in order to evaluate their risk of disease and provide proper care. However, the research has just started and scientists are just starting to see a correlation between LBW and adulthood diseases. More research needs to be done to corroborate these findings and to understand the causation and other possible long-term risks. The number of preterm babies born is only [increasing](#), so it is even more crucial to continue this research and to consider all of the multifaceted, interdisciplinary, and ethical issues concerning prematurity and how we provide care.

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