

Childhood health disparities can have life-long health effects

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Research indicates that physical and mental stress in childhood may have life-long adverse health effects and policy initiatives are needed to emphasize the importance of starting health promotion and disease prevention early in life, according to an article in the June 3 issue of *JAMA*, a theme issue on child and adolescent health.

Jack P. Shonkoff, M.D., of Harvard University, Cambridge, Mass., presented the article at a *JAMA* media briefing in New York.

"A scientific consensus is emerging that the origins of adult disease are often found among developmental and biological disruptions occurring during the early years of life," writes Dr. Shonkoff and colleagues. "In this article, we explore the scientific validity of the proposition that reducing significant disadvantage early in life may be a powerful strategy for reducing the population-level burden of chronic morbidity and premature death."

The authors assert that the promotion of health and prevention of disease in adults should begin in the early years of life. "Investigators have postulated that early experience can affect adult health in at least 2 ways—by accumulating damage over time or by the biological embedding of adversities during sensitive developmental periods. In both cases, there can be a lag of many years, even decades, before early adverse experiences are expressed in the form of illness."

If health damage occurs through a cumulative process, chronic diseases

can be seen as the products of repeated encounters with both psychologically and physically stressful experiences. "Strong associations have been shown between retrospective adult reports of increasing numbers of traumatic childhood events with greater prevalence of a wide array of health impairments including [coronary artery disease](#), chronic pulmonary disease, cancer, alcoholism, depression, and drug abuse, as well as overlapping mental health problems, teen pregnancies, and cardiovascular risk factors such as obesity, physical inactivity, and smoking."

In some cases, the cumulative burden of multiple risk factors early in life may limit the effectiveness of interventions later in life, thereby making it impossible to completely reverse the neurobiological and health consequences of certain risk factors, such as growing up in poverty, they write.

A considerable body of research also suggests that adult disease and risk factors for poor health can be embedded biologically during sensitive periods in which the developing brain is more receptive to a variety of environmental signals, whether positive or negative. "Early experiences of child maltreatment and poverty have been associated with heightened immune responses in adulthood that are known risk factors for the development of cardiovascular disease, diabetes, asthma, and chronic lung disease."

Despite increasing evidence of the long-term effects of early adversity on lifelong health, little attention has been paid to the development of health promotion and disease prevention strategies based on the reduction of significant stressors affecting everyday life for vulnerable young children and their parents.

The authors say areas worth consideration for health promotion and policy include the design and implementation of new approaches for

both the prevention and treatment of toxic stress (such as from extreme poverty, recurrent physical and/or emotional abuse) and its consequences, beginning in the early childhood years; using high-quality early childhood programs to address the stress-related roots of social class disparities in health; and having child welfare services implement health promotion practices.

"... a fundamental transformation in the circumstances of children who experience significant adversity early in life could not only affect their own individual well-being but also improve societal health and longevity," the authors conclude.

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