

The Long Reach of Early Childhood Poverty: Pathways and Impacts
Q&A with Drs. Greg Duncan, Katherine Magnuson, Tom Boyce, and Jack Shonkoff

What do you mean by “the long reach of early childhood poverty?”

New data assessing the long-run consequences of economic adversity in childhood show that *when* children experience poverty matters for later-life outcomes. Duncan et al. (2010) show that children’s eventual labor market success appears to be compromised much more by poverty experienced *early*, rather than later, in childhood. The study finds that a \$3,000-per-year lower family income in early childhood is associated with 17% lower productivity in adulthood, whereas lower income later in childhood appears to have little bearing on later productivity. Ameliorating the impacts of poverty early in life can therefore have far-reaching effects on our national prosperity. These results complement emerging neuroscience and developmental research, which tell us that serious adversity early in life can weaken the architecture of the developing brain, generating consequences that reach well into adulthood.

What exactly is it about poverty that causes problems?

Poverty is important because economic disadvantage may have cascading effects on many aspects of family life. It constrains parents’ ability to provide rich learning opportunities for their children and often forces parents to choose among lower-quality child care, which we know can compromise the relationships children need for healthy development. It can mean growing up in a neighborhood that’s more dangerous and lacks the kind of community resources to which more affluent families have access. It can mean the burden of overtime work, multiple jobs, or a split-shift job that limits parents’ interaction time with their children. It can lead parents to be one event or one sick child away from losing a job.

These kinds of conditions can lead to high levels of stress in families’ everyday environments, and such adversity can affect children’s development. Psychological distress, including symptoms of depression and feelings of anger, can spill over into marital and co-parenting relationships as couples struggle to make ends meet, experience more conflict in their interactions, and tend to withdraw from each other. Parents’ psychological distress and conflict, in turn, are often associated with parenting practices that tend to be more punitive, harsh, inconsistent, and detached as well as less nurturing, stimulating, and responsive to children’s needs. Such lower quality parenting can be harmful to children’s development. Thus, solutions that address the sources of family adversity have the potential to promote long-run positive outcomes for children.

How can poverty affect the developing brain?

Past research has identified three factors in brain development – the child’s relationships, learning resources, and stress – that can be affected by poverty. Children develop in an environment of relationships that includes their immediate and extended families, non-family caregivers, neighbors, and community – and poverty can compromise those

relationships. We know that brains are built from the bottom up, with simple skills and circuits forming a foundation in early childhood for more complex circuits and skills that are built later. The active ingredients that are necessary to construct a strong architecture of brain circuitry are abundant, safe opportunities to learn and active, reciprocal relationships with adults that can be described as “serve and return” interactions.

When children receive few opportunities for positive serve-and-return interactions—when the responses from adults are sporadic, inappropriate, or missing entirely—they are not getting the stimulation their brains need to develop in a healthy way. Parents who are struggling to make ends meet are often less able than more affluent families to provide those experiences for their children, whether through having the choice to stay at home or by having access to high-quality child care. They are also less able to afford books, educational excursions, and other learning-related resources, which can compromise their children’s cognitive development.

Science also shows that exposure to excessive adversity, or “toxic stress,” can disrupt the development of brain architecture, and children raised in poverty are more likely to experience toxic stress than non-poor children. It is important to distinguish among three kinds of stress. Positive stress (which is short-lived, like the stress experienced on the first day of school) actually helps a child develop coping skills and a healthy stress response system. Tolerable stress is more serious, like that experienced when a loved one dies, but is not damaging if a child has the buffering support of protective, adult relationships. But toxic stress lasts longer, occurs in the absence of consistent supportive relationships, and can lead to lifelong problems in learning, behavior, and both physical and mental health. Excessively stressful conditions early in childhood have been linked to a number of changes in the brain that compromise healthy development. That is why interventions that address early sources of toxic stress are likely to lead to more positive life trajectories.

What innovative solutions can help?

Inadequate income is one of several circumstances that can lead to toxic stress for young children. Science directs us to consider a range of possible solutions for these varied conditions. In the case of poverty, an array of interventions—some that address family poverty directly and others that focus on a combination of child and parent needs—have proven effective in boosting children’s later achievement. Success in school, in turn, predicts a wide range of benefits to individuals and society, including increased lifetime earnings and decreased dependency on public services.

Novel welfare reforms that have been implemented by some states and cities have supported families’ transitions from public assistance to work in ways that benefit children’s school achievement, especially for children making the transition into school. Increases in the value of the Earned Income Tax Credit in the mid-1990s appear to have boosted child achievement. Creative, focused programs of early childhood education have been shown to have lifelong benefits for children that persist up to 20, 30, even 40 years later. Intensive home visiting programs focused on high-risk, first-time mothers also have shown positive benefits. Nevertheless, while a range of interventions can

improve life trajectories, they do not eliminate the gaps that are associated with poverty. Thus, creative, new ideas are needed that are informed by our emerging understanding of the causal mechanisms that link poverty to poor outcomes in lifelong learning, behavior, and health. Stated simply, advances in both the biological and social sciences offer an opportunity to build a stronger foundation for future prosperity by stimulating fresh thinking and developing innovative solutions to mitigate the adverse impacts of poverty on young children.

Is poverty itself the problem that needs to be addressed, or is it all the other problems that typically accompany poverty?

Simple associations between childhood poverty and later achievement and well-being do not prove that low family income itself causes these differences. Nevertheless, several recent, sophisticated studies indicate that income may, in fact, be an active ingredient in improving younger children's later achievement and adult productivity. What's new in the research on income and child achievement is the importance of *early* income. We know from neuroscience and developmental psychology that the early years are the time when the foundations for cognitive development, emotional well-being, and health are built into the brain and other body organs. And we now have experimental evidence that various kinds of income-related programs can actually improve academic achievement. Therefore, we know that income does indeed matter, and we know that income early in life matters the most for achievement, because it establishes the foundation for healthy development throughout childhood and into adulthood.

Yet we also know that toxic stress can be triggered by an array of circumstances, perhaps including poverty but also through exposure to violence, parental substance abuse and mental illness, and serious child maltreatment. Thus, dramatic improvements in the long-term outcomes of children in poverty may also depend on treating other causes of toxic stress in their lives. Decades of neuroscience and developmental science, as well as new findings in genomics and molecular biology, point us toward this conclusion, yet innovative interventions to address these problems are still needed.

How big a problem is this?

About 1 in 5 children in the United States experience poverty in any given year. This translated into more than 14 million children in 2008, a number likely to grow by about two million in the current recession. Poverty rates are particularly high among the youngest children—the families of more than 22% of U.S. children under age 6 lived below the federal poverty index in 2008—because their parents do not earn as much as parents of older children and the higher cost of child care for young children reduces parents' employment opportunities and/or household income. Finally, although it is difficult to make international comparisons, studies suggest that the United States has one of the highest rates of poverty among Western industrialized nations.

The last 30 years have produced a large and growing gap between the economic circumstances of high-wage and low-wage workers. The premium for technological skills has driven up the wages of the high-skilled workforce, but the wages of low-skilled workers have stagnated. Minimum-wage workers cannot earn enough in 40 hours a week,

or even 60 hours a week, to support a family and provide what children need to develop in healthy ways, succeed in school, become productive adults, and ensure the prosperity of the next generation. Studies have shown that families need an income of about twice the federal poverty level to cover basic expenses—in 2009, that would be \$44,100 for a family of four—and 41% of children in the United States live in families whose household income falls below this standard.

What are the implications of this research for policies in the United States?

In every challenge there lies an opportunity. According to this research, one of the greatest opportunities to improve our nation's prosperity across generations may lie in supporting the healthy development of our youngest citizens. With a relatively modest investment targeting families with young children, the research indicates that significant gains in school success and lifetime earnings can be achieved.

In the case of welfare and work-support policies, these findings support the wisdom of increasing benefits for families with young children. Not only do young children appear to be most vulnerable to the consequences of deep poverty, but low-income parents with very young children also face considerable challenges in supporting themselves in the labor market. Child care subsidies and the availability of high-quality early care and education programs are important benefits that can enable low-income parents to participate in the workforce. In the case of income transfer policies, such as the child tax credit and Earned Income Tax Credit, research suggests consideration of setting tax credit levels so that greater income is provided to families with young children.

It is vital to consider a range of policies, including supporting families economically as well as providing interventions directed at the children themselves. By providing a scaffold of programs for both families and children, we can increase the likelihood that children will receive the benefits of both rich learning opportunities and responsive caregiving experiences that support the healthy brain development that will enable them to achieve in school and become productive contributors to society.