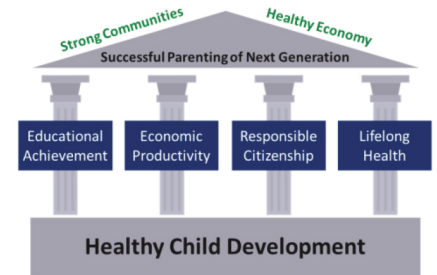


Building Strong Brains works to change the culture of Tennessee so that the state's overarching philosophy, policies, programs and practices for children, youth and young adults utilize the latest brain science to prevent and mitigate the impact of adverse childhood experiences.



Healthy child development is the foundation for educational achievement, economic productivity, responsible citizenship and lifelong health. These are the pillars for successful parenting of the next generation and ultimately result in strong communities and a healthy economy.



What are ACEs?

Adverse childhood experiences, or ACEs, are stressful or traumatic experiences, such as abuse, neglect and family dysfunction that disrupt the safe, stable, nurturing environments that children need to thrive.



Brain Architecture and Serve & Return

- Brain architecture is established early in life and supports lifelong learning, behavior and health.
- Brains are built over time, starting in the earliest years of life. A child's brain develops 1,000,000 neural connections per second during the first 3 years.
- A strong foundation in the early years improves the odds for positive outcomes, and a weak foundation increases the odds of later difficulties.
- Positive experiences with caregivers help to build fundamental brain architecture in young children.
- Young children naturally reach out for interaction through babbling, facial expressions and gestures, and adults should respond in kind.
- These "serve and return" interactions are essential for the development of healthy brain circuits.



Air Traffic Control and Toxic Stress

- Stress can be positive, tolerable or toxic. Positive stress is a normal and essential part of healthy development and occurs during events like meeting new people. Tolerable stress results from unavoidable, more severe events, such as the death of a loved one or a natural disaster. Toxic stress results from prolonged exposure to adversity without adequate caregiver support.
- Toxic stress impacts brain architecture, biology and gene expression.
- Executive functioning, or the air traffic control system of the brain, is a group of skills that help us focus on multiple streams of information simultaneously, such as inhibitory control, working memory and cognitive flexibility.
- Exposure to toxic stress may disrupt brain architecture and impair the development of executive function.



Resilience

- Resilience can be built through serve and return relationships, improving self-regulation and executive functioning.
- When positive experiences outweigh negative experiences, a child's "scale" tips towards positive outcomes.
- Over time, the cumulative impact of positive experiences and coping skills make it easier to achieve positive outcomes.



ADVERSE CHILDHOOD EXPERIENCES

- The original ACEs study identified 10 types of childhood adversity:
 - Physical, emotional and sexual abuse;
 - Physical and emotional neglect;
 - Household dysfunction - mental illness, incarcerated relatives, mother treated violently, substance abuse and divorce;
 - "New" ACEs include poverty, racism and bullying.



ECONOMIC AND HEALTH COSTS

- The Center for Disease Control and Prevention (CDC) conservatively estimated the lifetime costs for all new cases of child maltreatment in 2008 at \$124 billion in 2010 dollars for child and adult medical, child welfare, special education and criminal justice costs and productivity losses (Fang et al., 2012).
- Productivity loss, such as absence from the work force or missed days due to sickness or mental health or substance abuse issues, is the greatest economic toll.
- ACEs can have lasting effects on adulthood disease, disability and social functioning.
- The more ACEs individuals have, the more likely they are to experience over 40 negative health outcomes identified to date, including cancer, heart disease and early death.



WHAT CAN BE DONE?

- Build strong foundations through investment in high-quality, evidence-based early intervention programs.
- Studies show a \$7 return for each \$1 spent on programs targeting the earliest years of development.
- Provide safe, stable, nurturing relationships and environments for every child.
- Create community infrastructure that promotes social cohesion and supports two-generation programs to build executive functioning across the lifespan and help break the intergenerational cycle of ACEs.



ACES IN TENNESSEE

- A 2016 study on adverse childhood experiences in Tennessee found 61% of participants had at least one ACE and 27% had three or more – more than one in four Tennesseans.
- Emotional abuse, separation/divorce and substance abuse were most commonly reported.
- Governor Haslam recommended, and the General Assembly appropriated, \$1.25 million to address ACEs in fiscal years 2017 and 2018.
- Funds support ACEs Innovation Grants across Tennessee in a wide range of sectors, including medical, education, mental health, justice/courts and early childhood programs.
- This is a good start; increased and recurring funding is imperative for the future prosperity of Tennessee.