

# The Scientific Connection Between ACEs and Resilience

Have you ever noticed that children can learn new things with exceptional ease? That is because their brains are in constant, rapid development. The human brain continues developing late into adult life, but **the great majority of brain development takes place during the first 5 years of life.** Nerve arrangements in the brain are much more easily changed during childhood, and they develop in a “use it or lose it” fashion dependent on the child’s sensory experiences. **It is possible to “rewire” the brain at any age, but it is easiest in childhood.**

Each time a child has a sensory experience, a connection in the brain is formed to process it. Deeper, long-lasting connections are made when a particular experience happens over and over. The younger a child is when they have an experience, the larger the area of the brain designated to process those experiences. For example, children who learn instruments at an early age will have a larger area of their brain devoted to playing that instrument than someone who starts playing during adolescence, even if the adolescent spends more time practicing.

Studies that highlight childhood sensory experience and

development conclude that enriching experiences can enhance development, while adverse experiences can deter it, and lead to long term health problems. Fortunately, there is a way that children and even adults can heal from adverse experiences, and that is where **resilience** comes in.

When talking about resilience, it’s important to understand the variety of stresses individuals experience and the context in which they experience them. How the body handles stress is similar to how the body handles sickness. When the immune system encounters small colds and illnesses it builds antibodies and defenses so that next time it encounters similar germs it can attack them faster, and the body won’t even get sick.

Similarly, some exposure to **stress can promote resilience**, but if stress exceeds a person’s ability to manage stress it can be toxic and lead to negative health outcomes. Resilience raises the stress threshold, allowing individuals to handle a greater amount of stress before it becomes toxic, therefore further building resilience, and the cycle continues. Anyone can learn simple skills and tools to deal with stress as part of becoming more resilient.

## SUPPORTIVE RELATIONSHIPS ARE VITAL TO BREAKING THE CYCLE

80% of brain growth happens in the first three years of life, and a child’s brain develops best through social interaction.

Research shows that supportive relationships increase a person’s ability to thrive and allow for normal, healthy brain development.

Healthy brain development establishes a good foundation for future health, intellect, and resilience, allowing a child to reach their full potential.

Healthy brains are better able to form caring relationships.

Caring relationships connect a community. Better connected communities have lower levels of crime, violence and trauma, and community members have a better sense of well-being.

Communities can promote healthy brain development through building relationships.

A community built on caring relationships protects children from the effects of tough times.

# CONNECTION Between ACEs and Resilience

## WHAT IS RESILIENCE?

Resilience is how well an individual or group can withstand and recover from significant changes that threaten their stability, capability, or development.

## WHAT ARE ACEs?

ACEs are defined as ongoing traumatic events that occur during childhood—everything from abuse or neglect, to growing up with a family member who is incarcerated in the household. ACEs cause toxic stress, which can affect a child’s brain development.

## WHY DOES IT MATTER?

Resilience is a major factor in the growth and development of children and adolescents. Building strong resilience counters the harmful health effects of Adverse Childhood Experiences (ACEs).



Learn more at:  
[www.skp-resilience.mappofskp.net](http://www.skp-resilience.mappofskp.net)  
[skp.resilience@gmail.com](mailto:skp.resilience@gmail.com)

## TYPES OF ACEs

### NEGLECT

- Emotional
- Physical

### ABUSE

- Physical
- Sexual
- Emotional

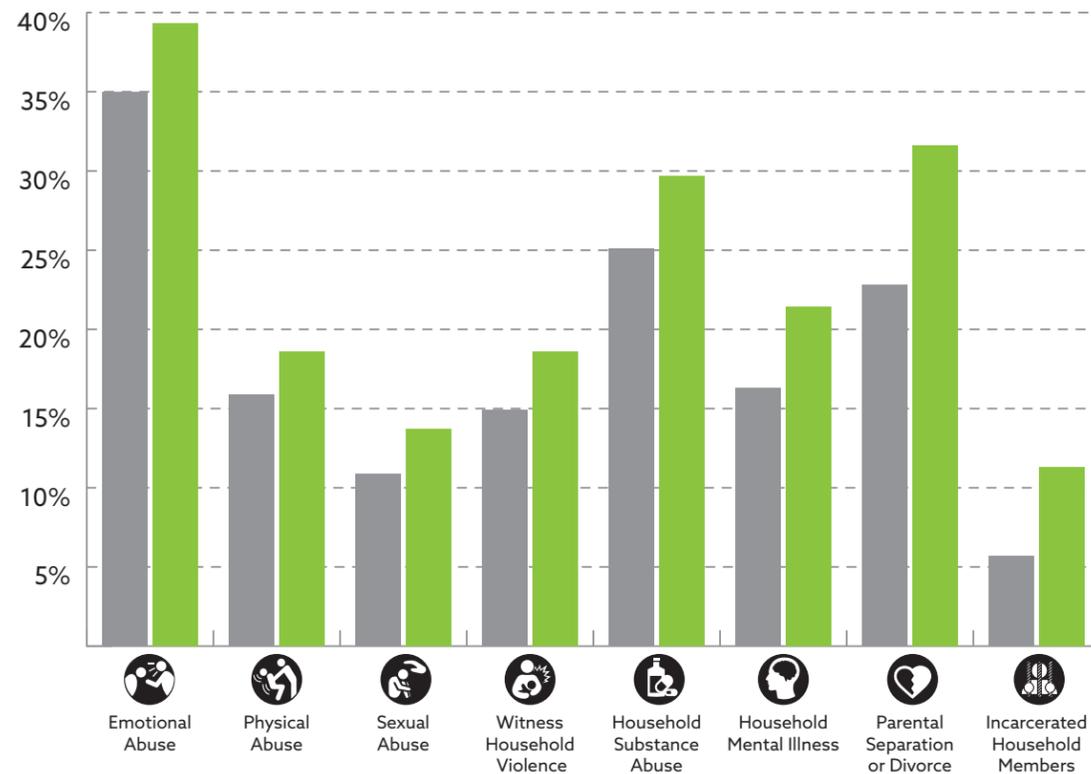
### HOUSEHOLD DYSFUNCTION

- Household Substance Abuse
- Parental Divorce
- Household Mental Illness
- Witness Household Violence
- Incarcerated Household Member

The most important thing an Educator can do is create a safe, stable, and nurturing environment for a child outside of their home.

PERCENTAGE OF ALASKA ADULTS' ADVERSE CHILDHOOD EXPERIENCES COMPARED TO A TEN STATE SAMPLE

Alaska  
Ten-State Sample



SOURCES: 2013-2015 Alaska BRFSS, Section of Chronic Disease and Prevention, Alaska Division of Public Health, Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System Survey ACE Module Data, 2010.

## Facts and Figures

**OVER 64% OF ALASKAN ADULTS** have had one or more adverse childhood experiences.

When comparing Alaska to average results from ten states, a greater percentage of adult Alaskans have had every type of adverse childhood experience (ACE) that was surveyed.

ACEs are typically passed down from generation to generation. A child of a parent who has experienced tough times is more likely to face tough times themselves.

People all deal with tough times differently depending on their experiences, relationships, and community. Experiencing too much trauma without relief can change the brain and body, leading to poor health and social outcomes.

Children ages 0-5 are especially affected by tough times as their brain is going through rapid development. The good news is they can also rapidly learn how to handle tough times when they have the example of a caring, supportive adult. Brains continue to develop throughout life, so everyone can learn new skills to handle tough times.

Ms. Ashley is teaching her 1st grade students to fill out single digit addition tables. It's been 15 minutes since they began the activity and most students have finished. A few students continue to work, she sees Cameron starting to get frustrated, and the next moment Cameron throws their pencil down to the floor and bursts out, "I'm never going to be able to do this!"

## WHAT CAN YOU DO?

**BUILD STRUCTURE:** Build Structure: Familiar routines and clear expectations will help students like Cameron thrive even when frustrated. Consider using restorative justice techniques in the classroom. Including students and peers in the discipline process shifts the focus from punishment to repairing relationships and building community. Restorative justice gives students a structured opportunity to resolve conflicts by encouraging reflection and empathy.

**HELP THE STUDENT KEEP PERSPECTIVE:** To Ms. Ashley, this worksheet is one small thing. To Cameron, it's the end of the world. Point out all the math problems that Cameron has completed already, or remind them of an activity from earlier that day that they did well on. Don't try to minimize the problem, understand that it is a big deal for them. Ask open-ended questions to help Cameron come up with personal strategies to deal with these stresses in the

future. Praise Cameron's effort, even when they feel frustrated.

**CREATE CONNECTIONS:** Build individual connections with each child; quality relationships with caring adults are key to building resilience. Make sure they have the chance to express their feelings and ask questions. Also create connections between children. The best way to learn how to deal with minor stresses is to see it modeled by peers. When possible, check in with parents to ensure that they feel supported by and connected to the school.

**GIVE THE STUDENT OPTIONS:** If Cameron seems too frustrated to finish the complete set of questions, maybe ask them to choose one more to do before they move on. Choices allow children to have self-determination and learn to deal with the consequences of their decisions, however minor. Giving children authentic choices does not have to be complex. For younger students

this could be the order in which they complete certain activities, and for older students this could be a discussion about different ways to approach a project.

**TEACH THE STUDENT HOW TO COOL DOWN:** Teach children cool down strategies before they get upset (e.g. counting to ten, taking deep breaths, listening) and have Cameron practice one of the strategies in the moment. Create a cool down corner, or some other comfortable space, with heavy pillows, calming music with headphones or books. When kids get upset have them go to that space and use their preferred cool down strategy. Teach coping skills by example. When children see you handle frustrating situations well they will try to follow suit.