

Early Relational Health

A Review of
Research, Principles,
and Perspectives

SEPTEMBER 2023





Early Relational Health: A Review of Research, Principles, and Perspectives

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SUGGESTED CITATION:

Li, J., & Ramirez, T. (2023). *Early Relational Health: A Review of Research, Principles, and Perspectives*. The Burke Foundation.

Foreword

Dear Colleagues,

An increasing body of evidence makes it clear that human beings' earliest years have the most profound impact on health and well-being for the rest of their lives.

Dr. T. Berry Brazelton (1918-2018), the noted pediatrician and influential thinker whose wisdom guides the Burke Foundation's work, reflected:

"When we strengthen families, we ultimately strengthen the community. Our goal is that parents everywhere work with supportive providers, feel confident in their parenting role, and form strong, resilient attachments with their children. To help achieve this, providers must be responsive to parents, knowledgeable about child development, and eager to see every parent succeed."

This powerful truth, backed by science, intuition, and experience, drives the Foundation's quest to make sure every family — regardless of where they live, their race, ethnicity, financial situation, or education — can provide the safe, stable, and nurturing relationships that are the foundation of every child's healthy development.

That quest led us in 2018 to produce [Investing Early: Recommendations for Funding in Early Childhood](#), which summarized the scientific and economic case for a broad range of early investments in young children. Since then, we have funded a portfolio of work aimed at improving maternal and infant health and strengthening healthy parent-child relationships.

The follow-up report you are about to read has two purposes: to extract and articulate the science behind *why* and *how* Early Relational Health-focused programs work; and to offer lessons learned to benefit parents and caregivers — while continuing to put meat on the bones of Early Relational Health as a field.

The Burke Foundation is grateful to have had this report researched and written by a team led by Dr. Junlei Li of the Harvard Graduate School of Education, where he is the Saul Zaentz Senior Lecturer in Early Childhood Education and Co-Chair of the Human Development and Education Program. His research and practice involve understanding and supporting the work of people who serve children on the front lines of education and social services. Dr. Li is a frequent keynote presenter at national and international conferences on improving practices, programs, and policies for children, families, and professionals, with an emphasis on early childhood development. He developed the practice-based, strengths-focused, and community-driven "Simple Interactions" approach to support helpers who serve children, youth, and families and promote positive system change.

At its core, Early Relational Health derives from moment-to-moment interactions between parents and caregivers with infants and toddlers. Much of this interaction is seemingly simple and ordinary: holding, feeding, diapering, singing, reading, playing, and just being together.

Science affirms that, for children, positive relational experiences do more than promote healthy physical development and avoid future health problems. The flip side is that children whose parents lack the necessary support structure to care for and nurture them can suffer long-term harm to their immune system, elevating the risk of asthma, respiratory infections, and cardiovascular disease, while also threatening behavioral and emotional well-being.

But Early Relational Health is not just about children's development. Remarkably, for caregivers, emerging neuroscience research shows the potential of the adult brain to change and grow in anticipation and response to caregiving experiences before and during early parenthood. Responsive caregiving experiences have been associated with maternal-infant bonding and empathy, as well as adjustments in hormone levels that can

potentially lead to decreased symptoms of maternal anxiety and depression and increased stress resilience and cardiac health.

Achieving these impacts requires investment across early childhood systems to weave together the *early relational experiences* of the child, the *early relational supports* for the family, and a *transformed community system of healthcare and developmental resources*.

The report also points out the imperative of embedding equity in all aspects of Early Relational Health: participation, resources, supports, and opportunities. The promise of Early Relational Health is that its practice and the ensuing benefits are universal, even as — operationally — there is no uniform, one-size-fits-all approach. For all communities, and especially those facing longstanding and present systems of inequity, relational support systems strengthen resilience in the face of adversity.

The Burke Foundation will continue to identify opportunities to advance Early Relational Health and health equity as part of our [First 1,000 Days](#) initiative to support healthier families, homes, and neighborhoods by focusing on four vital initiatives aimed at revolutionizing the continuum of care for children and families:

- [Community doulas](#)
- [Universal newborn home visiting](#)
- [CenteringPregnancy and CenteringParenting](#)
- [HealthySteps](#)

Our vision is to create intergenerational impact in economic mobility, health, and well-being by transforming health systems to deliver better care, prevention, and community connections during the First 1,000 Days for babies, mothers, fathers, and families. This includes growing and diversifying New Jersey's perinatal workforce by building the pipeline for community doulas, public health nurses, and midwives.

We are eager to help grow the field — and the community — that is Early Relational Health, including outlining a family-friendly policy agenda and finding the most effective ways to communicate about the work and measure its impact. We are energized to dive into what comes next and seize opportunities for deeper impact.

Sincerely,



JAMES BURKE

President of the Burke Foundation



ATIYA WEISS

Executive Director of the Burke Foundation

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Executive Summary

Renewing the Foundation for Early Relational Health

Early Relational Health is an emerging vision that organizes the science and practice of human relationships during the early years of life. At its core, Early Relational Health derives from the moment-to-moment interactions between parents and caregivers with their infants and toddlers. These simple and ordinary interactions take place in the daily routines of caregiving, play, and being together. For children, these positive relational experiences support physical, emotional, and cognitive development while buffering the toxic effects of extreme childhood adversity. For caregivers, these intimate caregiving experiences enrich maternal-infant bonding, decrease symptoms of maternal anxiety and depression, and improve stress resilience and physical health. Between adults and children, these interactions enhance and are enhanced by the “relationship-ready” neurological, co-regulation, and auto-immune processes.

The cumulative findings from the fields of infant and early childhood mental health, child development, social-emotional development, neurobiology, and physiology (see [Figure 1](#)) affirm what many practitioners and parents have long understood — the capacity for and impact of early relationships are reciprocal. To strengthen relational health, supports and resources must be in place for *both* caregivers and children. We need to weave together early childhood systems to improve *early relational experiences* around the child, *early relational supports* for the family, and *early relational ecosystem* in communities. In all communities and especially communities overcoming historical legacies and present conditions of inequity, the support systems and resources available to support such positive childhood experiences are the essential foundation for connection, physical, behavioral, and mental health, resilience, and well-being.



FIGURE 1

The Impact of Early Relational Health at a Glance



YOUNG CHILDREN

who experience consistent and responsive interactions with caregivers have shown improved outcomes, including:



CAREGIVERS

who engage in responsive caregiving interactions with their young children have shown improved outcomes, including:



Social & Emotional Well-Being

- Easier management and regulation of emotions
- Increased displays of positive emotions and decreased anxiety
- Increased ability to identify more complex emotions
- Increased ability to empathize with others

- Easier regulation of feelings of pleasure, satisfaction, and love
- Increased social understanding
- Decreased symptoms of maternal anxiety
- Decreased symptoms of depression



Physical & Behavioral Health

- Strengthened immune system
- Decreased risk for asthma, respiratory infections, and cardiovascular disease
- More consistent physical exercise
- Healthier eating and sleep habits

- Increased cardiac health
- Increased stress resilience
- Quicker response to infant cues
- Heightened levels of oxytocin, serotonin, and dopamine

This expansive vision of Early Relational Health is already incorporated in such intervention strategies as infant mental health, maternal health, and home visitation programs. These overlapping fields have a renewed opportunity to develop an integrated, balanced, inclusive, and strengths-focused framework to understand, communicate, and promote Early Relational Health during the prenatal-to-three developmental period.

Through this report, we summarize both the why and the how of Early Relational Health for children, adults, and society, and propose a set of core principles and opportunities for strengthening Early Relational Health in our communities.

The report has been developed through:



A selective **literature review** of the science, impact, and framing of Early Relational Health.



Interviews with Early Relational Health experts, including academic researchers, practitioners, funders, and local community members.



A **synthesis of principles** underlying promising and impactful interventions and initiatives.

Early Relational Health: Principles and Applications

Our review explores how Early Relational Health is embedded at practice, program, and policy levels. We seek to understand and synthesize a set of foundational operational principles seen across a broad landscape of programmatic approaches. In our conversations with families and professionals, we find that it is possible to identify principles that are universally applicable while not prescribing one-size-fits-all solutions for families and communities. Here is a summary.

OVERARCHING PRINCIPLE

Embedding Equity within Early Relational Health

Equity of participation, resources, supports, and opportunities is both a goal and process for Early Relational Health initiatives.

Applications to Practice and Program:

- Engage, recognize, and compensate families for their knowledge, participation, and leadership in developing initiatives, improving programs, and deciding investments.
- Balance evidence-based interventions with community-based strategies to adapt to and meet the diverse needs of families and communities.



PRINCIPLE 1

Trust Parents

Effective Early Relational Health interventions trust that all parents want to, are capable of, and strive to provide the care their children need.

Applications to Practice and Program:

- Reframe communication and messages away from family and community deficits to strengths and assets.
- Focus professional practice and programming on identifying, affirming, and strengthening the knowledge, skills, and capacities families already have.



PRINCIPLE 2

Focus on Simple, Everyday Interactions

Simple, everyday human interactions are the essential building blocks of Early Relational Health.

Applications to Practice and Program:

- Help parents recognize the impact of simple, ordinary moments with children.
- Create opportunities for trusted professionals to observe and affirm families' everyday, routine interactions.



PRINCIPLE 3

It Takes a Village to Raise a Child

All families and children need and benefit from familial, community, and professional supports and resources.

Applications to Practice and Program:

- Develop messaging and communication approaches to normalize all families' need for social and relational supports.
- Cultivate and invest in formal and informal networks of support among parents and community members.
- Recognize and support parent and community leaders who serve as important connectors and hubs for families.



PRINCIPLE 4
Meet Families Where They Are

A robust system to promote Early Relational Health must identify and meet families across a range of geographical, logistical, and developmental touchpoints.

Applications to Practice and Program:

- Locate and integrate services in places where families already visit and trust.
- Adapt flexibly to families' evolving needs rather than imposing one-size-fits-all interventions.



PRINCIPLE 5
Build Parallel Relationships

A child needs trusted, reciprocal, and responsive relationships to grow in a healthy way, as do the parent and caregiver and the professionals who support them.

Applications to Practice and Program:

- Develop and integrate relational principles into professional practice – whether in direct service, professional development and supervision, program management, or grantmaking – that are congruent with the broad vision of relational health.
- Build communities of practice with professionals across service sectors, roles, and credentials.

The Inclusive Vision of Early Relational Health

The return for our collective and continuous investment in promoting Early Relational Health will be measured in the learning, development, health, and resilience of children, families, professionals, and communities. The vision of Early Relational Health recognizes both the universal needs of children and families and the unique practices and partnerships essential in each community.

This report highlights a set of common principles shared by the growing list of programs with extensive research validation and the innovations of practitioners, parent advocates, and grassroots community programs. As practitioners, parents, researchers, and funders, we are all part of this growing community of practice. Our individual work — whether in a primary care office, at a neighborhood child care facility, on a parent advisory council, or on the pages of reports and grant proposals — ripples out to touch many relationships that weave together the hopes and strengths of our communities.



Introduction

The concept of Early Relational Health is both universal and unique. It is a universal need in every infant and young child for the caregiving environment surrounding them, even if the environment falls short of their expectations. It is also a universal desire and capacity in every caregiver, even if internal and external stressors make it difficult for caregivers to fully express such desires and exercise such capacity. The concrete forms of how a family or community meet such relational needs or manifest such relational capacities can be unique to their particular practices, cultures, and traditions. There is no single prescribed way to care for, listen to, play with, comfort and soothe, or teach and guide a child.

While the term Early Relational Health was introduced relatively recently in the professional fields of healthcare, child development, and early learning, the underlying concepts and practices have been part of human development throughout our evolutionary and cultural histories. Consequently, the physical, psychological, and neuro-physiological mechanisms that prepare for and respond to relational interactions have long been part of our makeup. It is not surprising that many existing interventions, programs, and community efforts already embody key understandings of Early Relational Health, well ahead of the introduction of the concept itself.

In this report, we summarize the interventions and research that contribute to our current understanding of Early Relational Health, sketch out a vision for what Early Relational Health-aligned programs and practices might look like from the vantage points of children, families, and communities, and share a set of actionable principles that emerge from our review of the research evidence and in-depth interviews with academics, practitioners, parents, funders, and policymakers.

There are many entry points and strategies for promoting Early Relational Health. Some fall within well-researched interventions, some emerge from clinical practices in pediatric and other settings, and some expand in grassroots parent-led community efforts. For this review, we selected a representative — though not exhaustive — set of programs and interventions aligned with Early Relational Health goals. They do not all start at the same place or take the same approach, just as children and families do not. Our effort is to develop a flexible, multifaceted set of principles that underlie Early Relational Health as it is understood and practiced today.

We hope this report contributes to the development and use of Early Relational Health as an inclusive framework that helps us understand why and how existing programs and practices work, identify where needs and gaps remain, design future programs and systems that embody important Early Relational Health goals and engagement processes, and communicate about Early Relational Health in ways that respect and empower practitioners and families.

How to Read this Report



QUOTES FROM FIELD PROFESSIONALS

Features attributed direct quotes from academics, researchers, practitioners, funders, and other professionals interviewed for this report. A list of interviewees can be found in [Appendix D](#).



QUOTES FROM FAMILIES & OTHER COMMUNITY MEMBERS

Features attributed and unattributed direct quotes from parents, caregivers, and parent advocates.



ADDITIONAL RESOURCES & INDUSTRY INSIGHTS

Features additional information about policies, practices, programs, and other efforts addressing or supporting Early Relational Health.

Part I.

Early Relational Health: What it is and Why it Matters

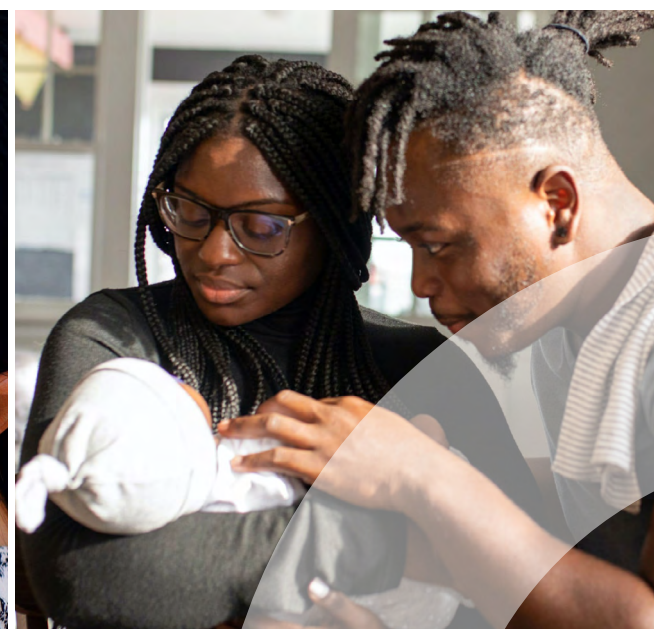
Defining Early Relational Health

The American Academy of Pediatrics (AAP) describes **relational health** as the capacity to develop and sustain safe, stable, and nurturing relationships, which in turn buffer the harmful effects of early stress and allow for healthier brain development as well as better long-term physical and mental health.¹ Such relationships are “biological necessities” for all children because they help to mitigate the effects of exposure to childhood adversity and proactively build resilience by fostering the adaptive skills children need to cope with future adversity in a healthy manner.²

Early Relational Health is about development that gives children the start they need for lifelong well-being, from the very first interactions an infant has with parents and other caregivers. Its building blocks are the responsive, protective, supportive, and nurturing early interactions that help children feel safe, connected, and competent — and set up a lifetime of health, educational achievement, and social integration.³ These ordinary, yet powerful, interactions can range from a mutual gaze between parent and infant, to subtle variations in vocal tone as parents talk or sing or play with their baby, to verbal or physical expressions of joy and closeness between caregivers and children.

Opportunities for such connections are found all the time, whether in times of play or rest, or during everyday transitions, routines, and caregiving. They are the essential foundation not only of children’s healthy neurological, psychological, and physiological development, but also the physical and mental well-being of caregiving adults.⁴

Early Relational Health can be enriched by a broad range of interactions and relationships among infants, toddlers, and their direct caregivers (such as parents, family members, and child care providers) and the helping professionals who support families (such as doulas, pediatricians, home visitors, early childhood mental health specialists, and more).





What Does Early Relational Health Look Like?

It is the way a parent or family member relates to an infant during the daily caregiving routines of feeding, diapering, bathing, and playing. It is how a doula or a home visitor prepares a pregnant parent for the birth of a child and supports the whole family in the days and months that follow. It is how a pediatrician attends to a child, listens to the worries of new parents, and affirms the big and little things that parents are already doing so well for their growing family. It is how a child care provider comforts a newly-arrived toddler not quite ready to say goodbye to parents heading to work. It is the way a mental health specialist helps parents and care providers understand what a child is trying to communicate through difficult and challenging behaviors.

Decades of interdisciplinary research from the fields of infant and early childhood mental health, child development, social-emotional development, resilience and trauma, neurobiology, and physiology support the concept of Early Relational Health. These diverse research disciplines converge to enhance our understanding of the power of human relationships in promoting the development, resilience, and well-being of all children.⁵ A number of formal and informal associations — including the American Academy of Pediatrics, the National Early Relational Health Advisory Panel convened by the Center for the Study of Social Policy, and the Early Relational Health Funders Community — have led recent endeavors to better understand, communicate, and support efforts that promote relational health.

Elevating the importance of Early Relational Health does not require creating and branding new and siloed interventions. Rather, the concept can serve as a powerful rallying point — a North Star — for the many efforts already under way. Numerous existing and emerging practices, programs, and policies align with the goals of promoting Early Relational Health. Some focus mainly on parent-child dyads, like Family Nurture Intervention (FNI), which reestablishes emotional connection between mothers and preterm infants, or Family Check-Up (FCU), which improves parent-child interactions for high-needs families.



Others focus on strengthening the parent-child-provider triad, like Reach Out and Read (ROR), which builds partnerships between pediatricians and parents, or the broader Infant and Early Childhood Mental Health Consultation approach (IECMHC), which builds partnerships among parents, child care, early intervention, and others. Some focus on building systems that effectively connect resources to a wide range of child and adult needs, like HealthySteps, which uses an integrated pediatric primary care model to address the physical, mental, and social determinants of health for children and parents, or the larger Strengthening Families Protective Factors Framework, which engages communities to build protective factors and reduce child abuse and neglect.

In addition to these well-documented and well-researched programs (a selective list of these programs and approaches is in [Appendix A](#)), there are even more community-based efforts organized by practitioners and parent advocates that embody similar intervention principles and align with the shared goals. While they are beyond the scope of this report, these grassroots efforts deserve recognition, investment, and systemic efforts to understand their innovation and contribution.

Beyond Trauma and Adversity: Focusing on Health and Resilience

The concept of Early Relational Health includes a wide range of practices, programs, and policies that support children, families, and practitioners at various levels. Efforts across this diverse spectrum have in common a focus on promoting health and resilience, not just understanding the impact of trauma and adversity.

Early relational experiences form the foundation for resilience in young children. Positive relational experiences do not only promote healthy development. They also play important roles in mitigating the effects of exposures to childhood adversity. **Early relational experiences — within families, schools, and communities — support children’s brain development, social-emotional growth, and academic development, and can promote long-term physical, behavioral, and mental health.**^{6,7} The emerging research documenting the importance of these early relational experiences has expanded the field’s focus from risk factors and deficits to protective supports and ecological solutions that contribute to **Early Relational Health**. For early childhood practitioners, researchers, funders, and policymakers, Early Relational Health presents an important opportunity to build on our understanding of and investments in addressing adverse childhood experiences and explicitly and intentionally promote positive childhood experiences.

This fundamental pivot away from the more conventional deficit-focused narrative about children, families, and communities to a hopeful, strengths-focused framework is arguably the most important contribution and promise of the Early Relational Health approach (a more detailed analysis of reframing early childhood investment as Early Relational Health is in [Appendix C](#)).



“While toxic stress helps us understand what the problem is, it does not point us to solutions. Relational health helps us to define the solution.

Early Relational Health is universally important. All children need positive, healthy experiences to thrive. The capacity of families and communities to support and maintain safe, stable, nurturing relationships are biological necessities. Kids must feel safe and connected not only to buffer adversity but also to build the skills needed to be resilient.”

– ANDREW GARNER, M.D., PH.D., FAAP

Primary Care Pediatrician, Clinical Professor | Case Western Reserve University



From Adversity to Resilience: Understanding ACEs and PCEs

During the prenatal to age three period, a child's brain undergoes rapid growth to lay the foundation for the complex set of subsequent developments. Close caregiving relationships surrounding the child do much to shape the brain's architecture. The absence or rupture of these relationships can disrupt healthy development of the brain and the body's stress response system.^{8,9}

ADVERSE CHILDHOOD EXPERIENCES

For the past several decades, research has highlighted the risks and long-term impacts of **Adverse Childhood Experiences (ACEs)**. Childhood exposure to traumatic early experiences such as abuse, neglect, and living in households beset by addiction, incarceration, and mental illnesses significantly increases long-term physical and mental health risks.¹⁰ In a 2012 policy statement, *Early Childhood Adversity, Toxic Stress, and the Role of the Pediatrician*, the American Academy of Pediatrics sounded an alarm about the damaging psychological, neurobiological, and physical impacts of ACEs.¹¹ Numerous public education and awareness efforts on childhood adversity spurred national and local efforts to prevent the conditions that give rise to such adverse experiences and mitigate their impact on children's development.

Policy Statement
Early Childhood Adversity, Toxic Stress, and the Role of the Pediatrician: Translating Developmental Science Into Lifelong Health

Abstract
 Advances in a wide range of biological, behavioral, and social sciences are expanding our understanding of how early environmental influences shape the brain and the body's stress response system. This report reviews the emerging science of early childhood adversity, toxic stress, and the role of the pediatrician in addressing these issues. It highlights the importance of a systems approach to care, emphasizing the need for a paradigm shift from focusing narrowly on risk and deficits to a hopeful and inclusive approach of identifying and building on strengths and assets among families and communities.

Keywords: Adversity, Toxic Stress, Resilience, Pediatrician, Childhood Experiences, Developmental Science, Lifelong Health.

POSITIVE CHILDHOOD EXPERIENCES

Recent evidence and practice have increasingly focused on the other side of the coin: the potential for **Positive Childhood Experiences (PCEs)** to drive development and serve as protective buffers to mitigate the effects of exposures to childhood adversity. In 2021, the Academy of American Pediatrics released the policy statement, *Preventing Childhood Toxic Stress: Partnering with Families and Communities to Promote Relational Health*, as a strengths-based and solution-focused update to its 2012 policy statement on childhood adversity and toxic stress.¹²

The 2021 statement documents the developmental, protective, and reparative power of human relationships on the health and well-being of children, families, and communities. Building on the science of childhood adversity, the synthesis incorporates new lessons learned about adults' capacity to care for infants and young children and the impact of positive and supportive relational experiences in buffering the effects of childhood adversity. The policy statement calls for a paradigm shift from focusing narrowly on risk and deficits to a hopeful and inclusive approach of identifying and building on strengths and assets among families and communities.

Policy Statement
Preventing Childhood Toxic Stress: Partnering with Families and Communities to Promote Relational Health

Abstract
 This report reviews the emerging science of early childhood adversity, toxic stress, and the role of the pediatrician in addressing these issues. It highlights the importance of a systems approach to care, emphasizing the need for a paradigm shift from focusing narrowly on risk and deficits to a hopeful and inclusive approach of identifying and building on strengths and assets among families and communities.

Keywords: Adversity, Toxic Stress, Resilience, Pediatrician, Childhood Experiences, Developmental Science, Lifelong Health.



TABLE 1

Comparing Questions Assessing both Adverse and Positive Childhood Experiences

QUESTIONS IDENTIFYING ADVERSE CHILDHOOD EXPERIENCES (ACES)^{13,14}



Abuse

As a child, did a parent or other adult in your home ever ...

- swear at you, insult you, or put you down?
- physically hurt you?
- touch you in a sexual way?



Household Challenges

As a child, were any parents or adults in the home ever ...

- slapped, hit, kicked, punched?
- an alcoholic or abused drugs or prescription medications?
- depressed or mentally ill or attempted suicide?
- separated or divorced?
- sent to prison?



Neglect

As a child, did you very often feel ...

- an adult in the household never or very seldom made you feel safe and protected?
- an adult in the household never tried hard to make sure your basic needs were met?

QUESTIONS IDENTIFYING POSITIVE CHILDHOOD EXPERIENCES (PCEs)^{15,16,17}



Positive Relationships

As a child, how often or how much have you ...

- felt your family stood by you during difficult times?
- had at least two nonparent adults who took genuine interest in you?
- felt supported by friends?
- felt able to talk to your family about feelings?



Safe, Equitable, Stable Environments

As a child, how often or how much have you ...

- felt safe and supported by an adult at home?
- felt a sense of belonging in high school?*



Social and Civic Engagement

As a child, how often or how much have you ...

- enjoyed participating in community traditions?

In contrast to the extraordinary threats posed by ACEs, these seemingly ordinary PCEs are powerful protective factors in children's development ([Table 1](#)). A great source of hope is that these experiences are not exclusive to communities with privilege and abundant resources. The presence of PCEs is strong across diverse populations and their effects are particularly potent for adults who have experienced high levels of ACEs as children. **This emerging research on PCEs is one of the clearest demonstrations of positive experiences tilting the balance of human development from risk and adversity toward health and resilience.**

*While the original survey for adults asked about high school, we interpret this question to apply more generally to a sense of belonging in schools from early childhood onward.

Early Relational Health offers a hopeful, inclusive, and strengths-focused framework to advance how we understand, communicate, and take action to reduce risk and strengthen resilience for children and families during the prenatal-to-three developmental period.

Beyond helping us to better understand the processes and impacts of relationships on individuals, this collective body of research emphasizes the importance of systemic and structural conditions that hinder or support such relationships. These factors range from policies that affect economic stability and caregiving capacity for families to such services and programs as child care, home visiting, and maternal and pediatric care. Healthy and responsive relationships between parents and young children are best supported and sustained when we collectively build safe and connected communities.¹⁸



“Safe, stable, and nurturing relationships are promoted in safe, stable, and nurturing families that have access to safe, stable, and nurturing communities with a wide range of resources and services.”

– ANDREW GARNER AND MICHAEL YOGMAN
2021 American Academy of Pediatrics Policy Statement¹⁹

Investing in Early Relational Health does not ask practitioners, funders, or policymakers to chase a new fad or reinvent strategies and approaches. Instead, it affirms and connects the many dots of our existing efforts and puts us on a focused and coordinated path. As we collectively develop an understanding of and vision for Early Relational Health, we can identify opportunities for everyday experiences for young children wherever they are, expand equitable relational supports for families wherever they go, and build an inclusive ecosystem with abundant and interconnected resources and assets across all communities.



Part II.

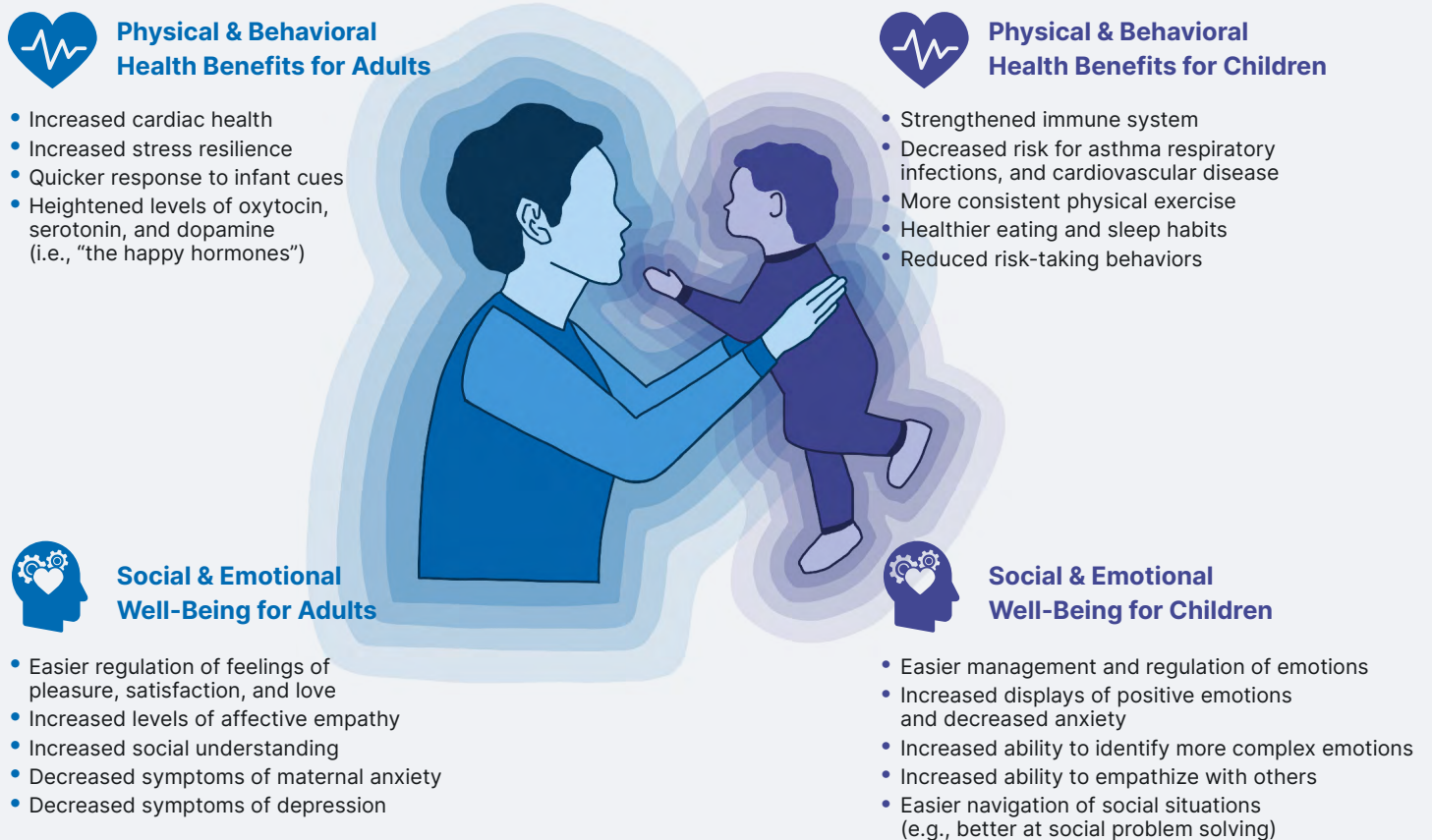
Understanding the Impact of Early Relational Health

The Emerging Science

Considerable research shows Early Relational Health to have a meaningful long-term impact on children, adults, and society at large. In this section, we briefly summarize evidence that demonstrates the benefits of positive early relational experiences across a wide range of outcomes ([Figure 2](#)).

FIGURE 2

The Reciprocal Benefits of Early Relational Health for Children and Adults



In healthy early relationships, the mutually-reinforcing connection promotes children’s development and caregivers’ intimacy with their children, and helps to lower parenting stress and improve caregivers’ mental health and satisfaction.

Benefits to Children

For children, Early Relational Health “can affect lifelong outcomes in emotional health, regulation of stress response systems, immune system competence, and the early establishment of health-related behaviors.”^{20,21} Having consistent and reliable relational experiences helps children develop such foundational capabilities as social skills, emotional regulation, and language, and such executive functions as impulse control, working memory, cognitive flexibility, abstract thought, planning, and problem solving.^{22,23} These skills and capabilities are essential for academic achievement and other meaningful engagements that extend from preschool to college. While the following evidence is grouped by domains of development, we recognize that these domains depend on and reinforce each other in integrated human development.

Children’s Brain Development

During their first years of life, children need empathic attention and attuned social interaction to develop and organize their brains.^{24,25} Much of brain development that occurs postnatally is experience-dependent: The environment plays a critical role in fostering development and the interactions between genetics and experiences account for most developmental outcomes.²⁶

Starting from a baby’s earliest days, the brain begins to build crucial structures and pathways of emotional functioning. The emerging neural architecture serves as the base for attachment and emotional, social, language, and intellectual development later in life.^{27,28} Such caregiving experiences as gaze, touch, affect, and vocal cues bring parents’ and babies’ brains into synchrony.²⁹ As parents speak to, play with, and care for their children, they support healthy development of the body, brain, and the physiological systems that connect both. For example, as caregivers speak, read, and sing to their children during their first year of life, their children’s brains are prepared to discriminate among sounds specific to the language they are exposed to, helping them become most tuned to their native language.^{30,31}

As caregivers respond sensitively to their children’s needs, they also create around their children’s brains a protective buffer from such typical stressors as hunger, fear, and feeling alone. These early relational experiences also reciprocally affect the adult caregivers’ brains, as described later.



“As providers, we know to address all the medical concerns we need to with our patients, but Early Relational Health helps us understand the importance of weaving in the science of early development and early relationships.

As a pediatrician, I want every single one of the parents I see to know that over a million nerve connections are made every second in their baby’s brain at this age and that it is actually their back-and-forth interactions that build their baby’s brain. I remind them that they are their baby’s favorite toy. It is their voice, their face, their touch, and their smell that literally builds their baby’s brain.”

– BLAIR HAMMOND, M.D.

Pediatrician, Co-Founding Director, Director of Medical Education | Mount Sinai Parenting Center

Children’s Social-Emotional Development

Early relational experiences can influence such aspects of children’s social-emotional development as emotion regulation, emotion knowledge and expression, and prosocial behavior. The higher the quality of adult-child relationships, the better young children manage their responses to stress.^{32,33,34,35} Children who experience consistent and responsive interactions with caregivers show more positive emotion and less anxiety in early childhood.^{36,37} The positive and negative effects of relational experiences with caregivers on emotion regulation have been observed behaviorally and neurobiologically from infancy through adolescence.^{38,39,40}

The quality of early relationships can also partially predict relational success through childhood, adolescence, and even into adulthood.^{41,42} Children who maintain nurturing and stable relationships with caring adults early in life are more proficient at identifying complex emotions and empathizing with others.⁴³ Early and secure attachments contribute to the growth of such other social cognitive skills as social problem solving and meeting social expectations, which help children more easily build relationships with teachers and peers.^{44,45,46,47} These prosocial capacities help children maintain friendships, belong in social groups, and regulate emotions and manage behaviors in social settings.^{48,49,50}



“After my son was diagnosed with Tourette’s, it seemed like he was frozen stiff, traumatized from previous interactions at school and his vocal tics. A wonderful moment through the trauma was my son’s interaction with his doctors. I remember his neurologist being so gentle and kind. She sat and talked to him and wanted to hear what he had to say. She heard his voice, supported him, and encouraged him.

Every month we went to see his doctors, my son’s attitude changed; he started to feel confident in himself. Being asked, ‘how are you doing?’ by this pediatrician made him feel so sure about himself. His doctors actually took the time to listen to him when others around him had not been hearing him.”

– PARENT LEADER AND MOTHER OF THREE | NEW JERSEY

Children’s Academic Development

Student-teacher and parent-child relationships, quality of caregiving interactions between parents and children in infancy, and, more specifically, a secure attachment with at least one caregiver early in life are all associated with better academic performance and engagement.^{51,52,53,54}

For children who are exposed to childhood adversity, consistent, high-quality relationships — that include warm, sensitive, and emotionally connective interactions — with a parent, second caregiver, teacher, or extended kin can reduce behavioral challenges at school entry, promote stronger academic performance through elementary school, and result in higher educational attainment.^{55,56,57} This pattern of association between relational quality and school success continues from preschool through secondary school, often through development of executive functions,^{58,59,60} and consistently predicts higher levels of academic engagement, school adjustment, and academic achievement.^{61,62,63,64}



“When my 6-year-old started school, she had a hard time adjusting to the new schedule and routines and this was very difficult. My daughter had been in early intervention before because she wouldn’t speak, so her speech delay may have made the transition more difficult.

Her interactions with the school staff made a world of difference for her. Her teachers worked with her to learn classroom transitions and even understand home routines like bath time and play time. They weren’t only addressing school concerns but were also thinking about her home life.”

– MOTHER OF FIVE | NEW JERSEY

Children’s Physical Health

Maternal warmth in early childhood and early parent-child attachment are associated with physical health in childhood and adulthood.^{65,66,67} Young children who experience responsive care with nurturing adults develop well-functioning immune systems equipped to fend off diseases, including inflammation-related illnesses.^{68,69} Parental capacity to provide such care can be strengthened with external supports. For example, lactation specialists support new mothers with breastfeeding practices that further enhance parent-child social bonding and strengthen the child’s immune system.⁷⁰ In contrast, for parents lacking such supports from both informal and formal support systems, early experiences of diminished caregiving and limited nurturing can do long-term harm to the child’s immune system and elevate the risk for asthma, respiratory infections, and cardiovascular disease.^{71,72}

Children’s Behavioral Health

Caregiving practices that occur between infants or toddlers and their caregivers support development of a wide range of pro-health biological processes and behaviors, including the aforementioned emotion and stress regulation, regular sleep-wake patterns, regular teeth-brushing routines, moderation in television viewing, consistent physical exercise, healthy eating habits, and reduced risk-taking behaviors.^{73,74} Quality relationships both early in and throughout the lifespan are protective factors against an array of behaviors that jeopardize health.⁷⁵

Children’s Mental Health

Positive parental relationships, perceived parental care, and consistent, high-quality interactions with other caregivers during childhood are all linked to adult resilience toward psychopathology.

Among maltreated children, higher levels of parental sensitivity and more consistent, higher-quality interactions with second caregivers or extended kin lead to lower levels of psychopathology into adulthood.^{76,77,78} Positive relational experiences in childhood are also associated with long-term mental health, including prenatal and postnatal maternal health. One study of pregnant women from households with low income found that higher numbers of favorable childhood influences, such as having positive parental relationships and being hugged or complimented often by a caregiver, predicted lower levels of depression during pregnancy.⁷⁹ Another study linked these experiences to fewer prenatal trauma symptoms and reduced exposure to stressful or traumatic experiences during pregnancy among pregnant parents with their own histories of childhood maltreatment and other adversities.⁸⁰

Benefits to Adults

Parents and caregivers, too, benefit from healthy early relationships with children. Research over recent decades helps us understand the capacity for and impact of early relational interactions from the adult's perspective and experience.

Adults' Brain Development

During the first few years of childhood, it is not only the child's brain that undergoes structural change and development. Emerging neuroscience research reveals the potential in the adult brain to change and grow in response to experiences before and during early parenthood. Biological connections (for birth parents) and nurturing interactions (for all parents) contribute to the reciprocal change mechanisms among caregiving experiences, hormonal changes, and neurobiological "remodeling." **Brain changes help prepare adults to become caregivers — and caregiving experiences reinforce such brain changes and strengthen parental capacity.**



Remodeling the Adult Brain

The Center on the Developing Child uses the metaphor of "brain architecture" to compare the rapidly-growing connections in a young child's brain to building a house. To paraphrase that metaphor, we can refer to the corresponding changes in the adult brain during early caregiving years as "house remodeling."

Just as an actual remodeling might involve installing new electrical wires and repositioning plumbing pipes, neurological changes take place in specific caregiving regions of the adult brain before and during early phases of parenting to prewire adults for caregiving behaviors. Just like an infant's brain is changed by their interactions with the external world, the changes in the adult's brain also are reinforced by caregiving interactions with infants to become more permanently wired.⁸¹



As adults ready themselves for parenthood, important neurobiological changes take place in their brains' caregiving network. This neural network extends to structures deep within the adult brain that help parents emotionally register their infants' verbal and nonverbal cues (e.g., gestures of excitement or giggles of delight) and heighten parents' vigilance about infant safety (e.g., their infants' cries of distress).⁸² The network also includes structures along the outermost folds of the brain that serve the functions of social understanding, empathy, and inferences about others' internal states.^{83,84} Neurological changes in these regions begin for birth parents during pregnancy, along with perinatal hormonal changes. After childbirth, these changes link to mothers' nurturing behaviors to meet infants' needs, such as holding, comforting, paying attention, and spending time together.^{85,86}

Adults' Social-Emotional Development and Mental Health

In addition to the parental brain preparing for caregiving, the actual experience of responsive caregiving has the potential to favorably change the adult brain. During the first few months after the birth of a child, breastfeeding behaviors are linked with greater activation of the regions of a mother's brain associated with responsiveness to infant cues, maternal-infant bonding, and empathy.⁸⁷ These change mechanisms are not just observed in parents who give birth. When fathers increase physical closeness with their infants through the use of a baby carrier, researchers identified increases in their neural responsiveness compared with fathers not instructed to use the carriers.⁸⁸

Studies involving both adoptive and biological fathers show that the amount of time fathers spend caring for their infants predicts the changes in neural connections in their own caregiving brain regions.⁸⁹ During early parenthood, fathers and foster parents, like birth mothers, also experience heightened levels of oxytocin, serotonin, and dopamine (collectively known as the “happy hormones”) that help regulate feelings of pleasure, satisfaction, and love.^{90,91,92}



“Becoming a parent changed me in so many ways, not just physically, but mentally and emotionally as well. It helped me grow in so many ways continuously, every time I had a child. My mindset changed. I became more positive and now try to take care of myself. I prioritize my health and well-being more because I want to live a long life for my children. And emotionally, I am more aware of the feelings of others, more empathic. It is almost as if I began to feel emotions more deeply.”

– MOTHER OF TWO | NEW JERSEY

Adults' Physiological Development and Physical Health

During caregiving interactions, biobehavioral synchrony ([Figure 3](#)) coordinates the biological and behavioral processes between adults and infants.⁹³ This mechanism has been identified as the underlying process of social bond formation and human attachment. For example, when an infant cries in distress, the infant's heart rate increases, and the infant's body releases elevated levels of such “stress hormones” as cortisol. A parent, alarmed by the cry and unsure of the causes, also experiences heart rate increases and higher stress levels. But as the parent holds, touches, and soothes the child and discovers that the child may simply need feeding or attention, the heart rates and stress hormone levels of the adult and child gradually ease back into a normal state.

In this example, both concern and relief become synchronized between parents and infants, not just emotionally, but through the physiological systems. This autonomic co-regulation — the process by which caregiver's and child's nervous systems synchronize with and calm each other — happens through responsive caregiving interactions such as skin-to-skin contact, comfort touch, and emotional expression. It facilitates the physiological improvements, developmental gains, and emotional and mental well-being for child *and* caregiver, potentially leading to decreased symptoms of maternal anxiety and depression and increased stress resilience and cardiac health.⁹⁴ For more on the impact of early relational supports on adults, see [Appendix B](#).



Family Nurture Intervention in the NICU

Martha Welch, founding director of the Nurture Science Program at Columbia University Medical Center, studies how to help mothers and premature infants bond in neonatal intensive care units (NICUs). Mothers are supported by trained specialists via repeated “calming sessions” to connect with their infants through close sensory contacts (e.g., skin-to-skin contact or vocal soothing) and emotional expressions (e.g., speaking to the baby about the story of their pregnancy) through an approach called Family Nurture Intervention.

These interactions were shown to lead to better physiological regulation for the infant, an important outcome for infants with high medical risk. They also reduced symptoms of depression and anxiety common to parents with high-risk infants. Over the long term, as far as five years, there are measurable positive effects on neurological, cognitive, and health outcomes.⁹⁵ This research and intervention work has contributed significantly to understanding the connection between physical and sensory contacts, emotional communication, and how adults’ and infants’ bodies respond to and regulate stress.



FIGURE 3

Biobehavioral Synchrony in Parent-Child Attachment



BEHAVIORAL SYNCHRONY

- Synchronized behavior in gaze, affect, vocal, and touch
- Mother-specific, father-specific



HEART RATE COUPLING

- Synchronized heart rate during synchronized interactions



ENDOCRINE FIT

- Coordinated oxytocin response following contact
- Coordinated cortisol response to stress



BRAIN-TO-BRAIN SYNCHRONY

- Coordinated brain oscillations in alpha and gamma rhythms

Adapted from: Feldman. (2016). The Neurobiology of Human Attachments. *Trends in Cognitive Sciences*, 21(2), 80–99.

Benefits to Society

Investment in early childhood, whether in maternal health, relational health, or early education, can play a key role in determining later-in-life outcomes, with significant benefits to society as a whole.

As outlined in the Burke Foundation's 2018 [Investing Early](#) report, studies show that for every dollar spent on early childhood programs for children from low-income households there is a return on investment of \$4 to \$9.⁹⁶ This is because policies that provide early childhood educational resources to the most disadvantaged children go far beyond academic outcomes. These investments create a more equitable economic and social playing field for all and help to reduce the educational achievement gap, reduce the need for special education, increase the likelihood of healthier lifestyles, lower the crime rate, and reduce overall social costs.⁹⁷

Similarly, responsive and nurturing early relationships between parents and children are linked to a wide range of outcomes associated with health, resilience, and overall well-being.⁹⁸ Any assessment effort must cast a wide net because **the processes and outcomes of relational health, whether cognitive, social-emotional, neurological, or physiological, are braided together inside the developing child and their parents.**

Because the concept of Early Relational Health has emerged only over the past five years, there are no decades-long studies written with the specific “relational health” language to offer estimates of systemwide return on investments (as there are for early childhood education, for example). The field is still in the process of defining a plethora of programs and interventions that may fall under the emerging definition of Early Relational Health, including (but not exclusively) pre- and postnatal family support, home visitation, pediatric support, early care and education, and community-building efforts among families. However, a growing global evidence base suggests that investing in a wide range of early childhood programs — including those that target Early Relational Health — can produce substantial benefits in the short, medium, and long term.^{99,100} A proposed set of approaches for understanding and documenting the quality and impact of the early relational ecosystem at the societal level, developed as part of this report, is in [Appendix B](#).



Part III.

Investing in an Ecosystem of Early Relational Health

How do we realize the promise of Early Relational Health not just through individual programs or interventions, but in a sustained and coordinated approach across communities?

What does success look like not just in numbers, but in the everyday experiences of children, families, and the professionals who serve them?

In this section, we sketch out a vision of Early Relational Health from **three vantage points**:



early relational experiences of the child



early relational supports for the family



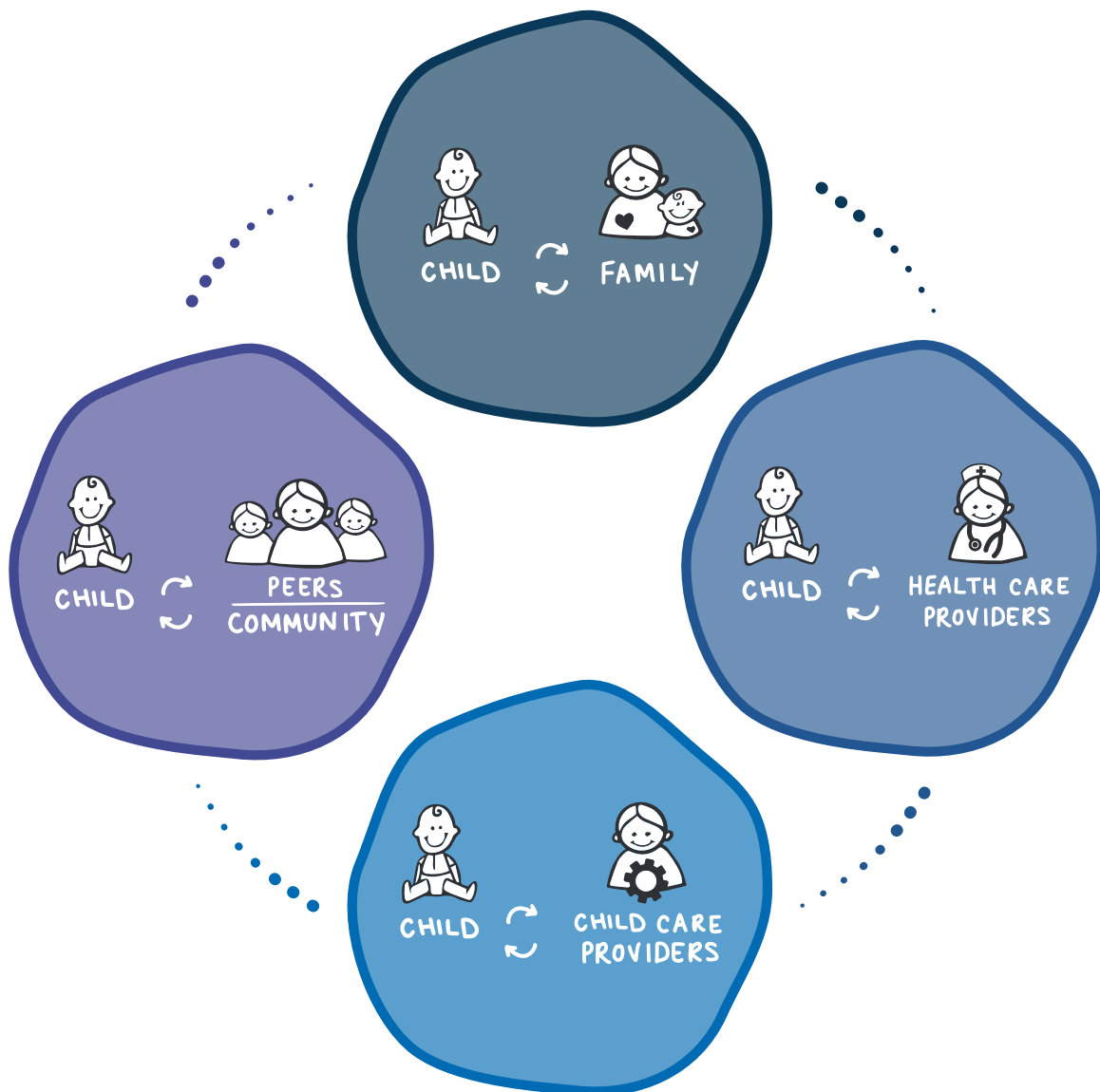
early relational ecosystem in communities



Building Blocks of Early Relational Health

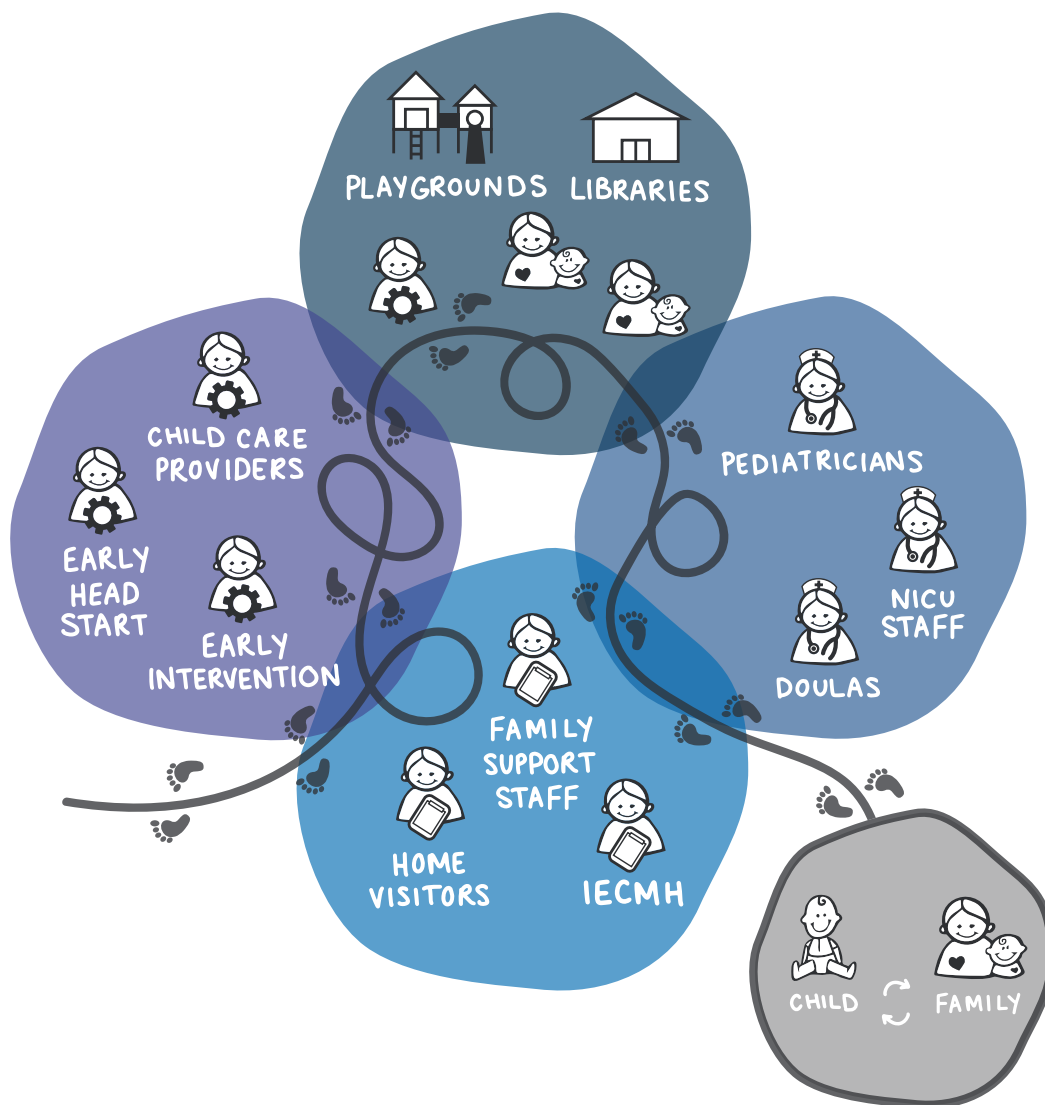
Starting in infancy, children learn and grow from their interactions with other human beings. These **early relational experiences** (Figure 4) are essential to every aspect of the infant’s development, including the social-emotional, cognitive, physical, and physiological. Infants learn to trust and rely on these relational experiences, starting from their most immediate and intimate connections with parents and other caregivers within the family. Beyond their immediate environment, children are also nourished by interactions with other children and caring adults in their extended families and communities. In the company of their families, they may also begin to encounter other trusted adults who support and partner with families, including healthcare providers, family support professionals, and child care professionals who become a regular part of their care arrangement.

FIGURE 4 Early Relational Experiences



While immediate families provide the primary relational experiences for young children, they are not alone and should not be isolated from the rich and diverse **early relational supports** (Figure 5) in their neighborhoods and communities. As families navigate and balance their child-rearing responsibilities with work and life, they lean on people and resources around them. Doulas, NICU nurses, and maternal health professionals support pregnant parents before, during, and after the birth of their babies. Pediatricians and home visitors continue that support through and long past infancy. Early childhood professionals, including child care providers, early intervention specialists, and early childhood mental health consultants, also are important partners to families when such needs arise. Outside of professional services, families find and connect with other families through such safe and accessible community spaces as playgrounds, libraries, places of worship, and community centers. Looking across these relational supports, connections are developed based on the needs and choices of each family. Some supports serve a purpose during a moment in time (e.g., doula and lactation consultants) and others extend through early childhood and beyond (e.g., pediatricians, child care providers, and other families). Whether short-term or extended, personal and professional relationships among adults become vital supports and resources for families with infants and toddlers.

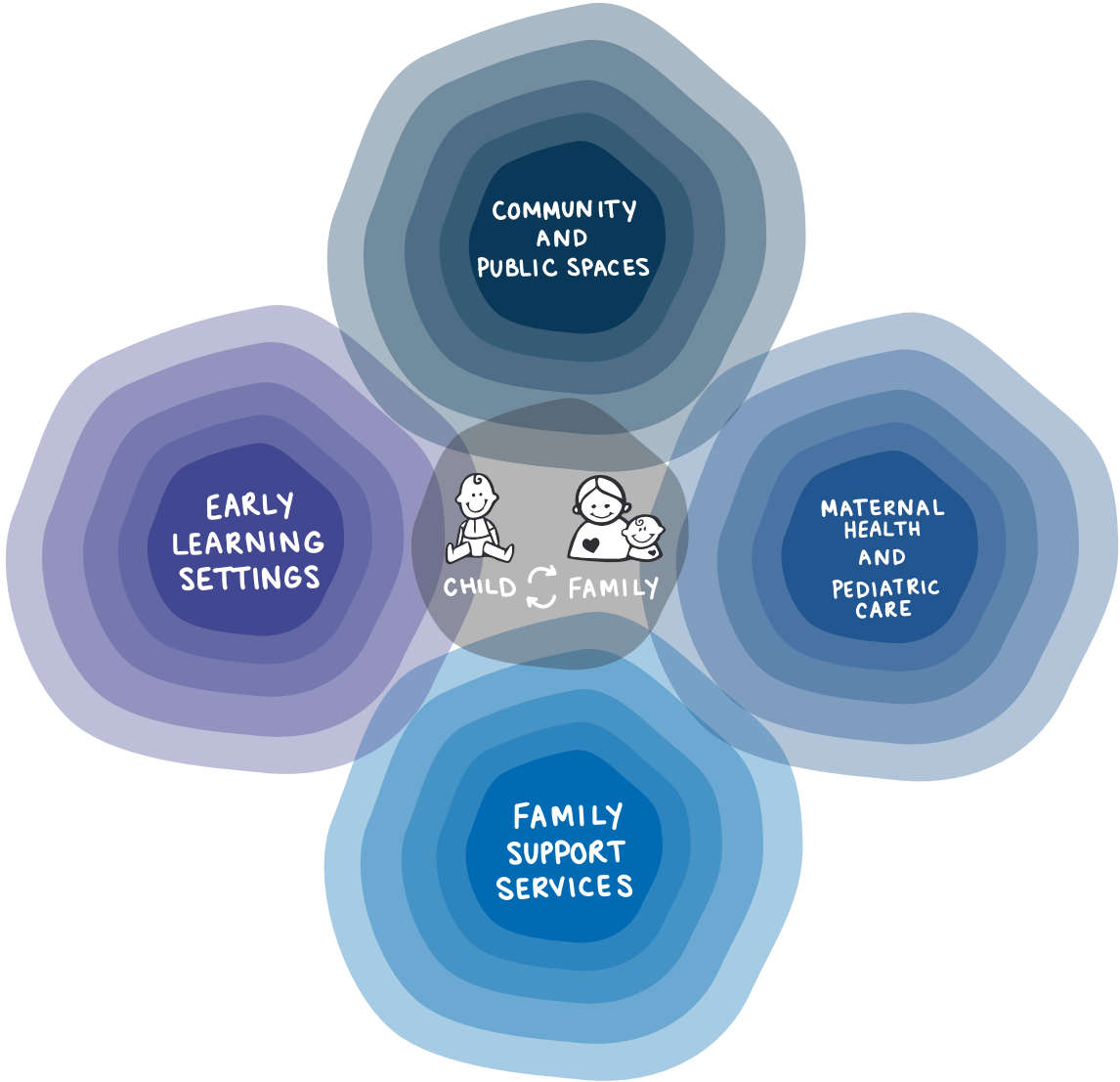
FIGURE 5 Early Relational Supports



At the community level, children and families are embedded within a dynamic and evolving **early relational ecosystem** (Figure 6) — an array of resources intentionally designed and placed to meet the accessibility and affordability needs of families with young children. From healthcare and child care to family support services and community spaces, these resources intersect and overlap with each other. Family support services can connect families with safe community spaces. Healthcare providers can partner with early learning settings to provide services where children are. These important assets and institutions strengthen the fabric of the community by weaving together trusted, consistent, and reliable human relationships.

FIGURE 6

Early Relational Ecosystem



The rippling impact of such a cohesive and connected network of quality programs and services enhances children’s development, families’ well-being, and the health of the entire community.



“The Early Relational Health framework helps us see that it’s essential that organizations partner with others, whether city agencies or community-based organizations or health systems, to ensure that they’re creating a supportive ecosystem for the families they serve. We know that as an organization we do very specific work and we do not operate on a belief that everyone in our community is going to be healed through our program. We have to be part of an ecosystem.

And again, it goes back to our indigenous values, where everybody in the community was responsible for caring for the child; it wasn’t just the mother that was involved in caring and nurturing but the entire community was involved in that care and nurturing. So, we have to ask, what does that ecosystem look like nowadays? Sure, it’s immediate family, but it’s neighbors, it’s educators, it’s child care providers, it’s the pediatrician’s office. We must come together to create an ecosystem that has the same level of awareness and commitment to ensuring that we’re all engaging families in the same positive way.”

– ERASMA BERAS-MONTICCILOLO, MPA
Co-Founder, Executive Director | Power of Two

Overview of Programs Aligned with Early Relational Health

To gain a better understanding of existing practices, interventions, and programs that align with the emerging framework of Early Relational Health, our team conducted a review of the literature and led in-depth interviews with field experts in both academia and practice, funders, parents, and professionals from community-based organizations. Through this review, we selected a representative — though not exhaustive — set of programs and interventions ([Figure 7](#)) aligned with Early Relational Health approaches and goals. It became clear through our interviews with early childhood researchers and professionals that the emerging concept of Early Relational Health is helpful precisely because it serves as an umbrella term for a broad set of activities, interventions, and programs.

Each activity, intervention, or program is developed and adapted to the needs and opportunities of its setting and context. These programs vary in strategy and focus, including who they serve, the content they cover, and their delivery systems and approaches ([Table 2](#)), yet they share the common objective of strengthening relationships between caregivers and young children. We consider each of these programs or approaches as evidence-informed demonstrations of effective strategies to promote early relationships. See [Appendix A](#) for descriptions of these programs and interventions.



“Early Relational Health is everyone’s business, in every sense. The Early Relational Health workforce includes every single professional that intersects with children and families, from pregnancy through age eight. It includes anyone within maternal and infant health — so physicians, doulas, early interventionists, community health workers, early care and education professionals, preschool teachers, home visitors, clinicians, pediatricians, and any family practitioners. In many ways, Early Relational Health lends a unifying workforce identity for people who work in the multidisciplinary field of early childhood. It is an open door that allows everyone a place to stand and a space to participate in and feel welcomed.”

– KAITLIN MULCAHY, PH.D., LPC, IMH-E
Director | Center for Autism and Early Childhood Mental Health, Montclair State University

TABLE 2

Key Dimensions of Early Relational Health Programs and Interventions

APPROACHES	<p>Universal approach, making resources and support available to all families with young children. <i>Examples:</i> Vroom is a public outreach initiative that aims to empower all caregivers with strategies for supporting children’s brain development through daily activities and routines. Simple Interactions is a professional learning approach that helps professionals in early childhood contexts to focus on their interactions with children and families.</p>
	<p>Targeted approach, designed to support families with specific developmental or relational needs at the child, caregiver, or community level. <i>Example:</i> Family Check-Up serves families with young children demonstrating early signs of challenging behaviors or conduct.</p>
PARTICIPANT FOCUS	<p>The primary caregiver-child dyad, often focusing on mothers. <i>Example:</i> Promoting First Relationships primarily serves caregivers and children who are reunified following an out-of-home care placement (e.g., foster care), focusing on helping caregivers interpret and respond to their children’s behavioral cues.</p>
	<p>The whole family and extended caregivers. <i>Example:</i> Many early childhood programs with home visiting components, including the federally-funded Early Head Start and Head Start, have grown from an initial focus on mothers to include spouses, co-parenting partners, and other important caregiving adults within the family.</p>
	<p>The relational ecosystem. <i>Examples:</i> Infant & Early Childhood Mental Health Consultation focuses on observing, coaching, and supporting reflective practices with early care and education providers who, in turn, provide services to young children and parents. Mount Sinai Parenting Center trains and supports pediatric professionals to better communicate with families about early relational interactions.</p>
CONTENT	<p>Provide access and education to enhance prenatal care and maternal health. <i>Examples:</i> Nurse-Family Partnership, a decades-long, evidence-based home visiting program, and the African American Infant & Maternal Mortality Initiative Doula Initiative, a recently-launched and targeted intervention, connect young mothers with prenatal and maternal health resources to improve infant and maternal health.</p>
	<p>Build capacity for responsive caregiving. <i>Example:</i> Circle of Security enhances attachment security by helping parents and other caregivers, such as child care providers, understand and respond to their child’s cues and build their own capacities to pause, self-reflect, and regulate their own emotional states.</p>
DELIVERY STRATEGIES	<p>Flexible delivery locations. A variety of services may take place in the home, in clinics, in hospital settings, and in other community-based settings.</p>
	<p>Diverse service professionals. A variety of people, from pediatricians, nurses, therapists, doulas, and community family support staff, can all play a helpful role in promoting Early Relational Health.</p>

Multi-Generational Approaches to Strengthen Early Relational Health

Enduring findings and emerging frontiers in the science of early relationships demonstrate that parental capacity to provide nurturing and responsive relational experiences for their young children is strengthened by the supports that exist around the caregiver — like family, community, and services — and can be diminished by such unbuffered environmental stressors as insecurity of food and shelter, exposure to violence, and discrimination. This means efforts to improve Early Relational Health for young children require not only enhancing individual early relational experiences, but also developing early relational supports for families within a connected early relational ecosystem. In this way, many of the programs and interventions that aim to strengthen Early Relational Health become two-generational and multi-generational approaches.

Multi-generation interventions work simultaneously to provide both environmental and individual support to children and adults. The *environmental approach* is aimed at mitigating and buffering families from stressors brought on by poverty and other adversity. These interventions seek to change the social conditions by simultaneously making needed resources more accessible (e.g., child- or healthcare) and reducing the prevalence of external threats to family functioning (e.g., food and housing insecurity). The *individual approach* aims to improve outcomes by providing training and support to adults to help them develop such skills for managing existing stressors as increasing self-regulation and executive function skills or strengthening parenting capacity while also assessing and supporting children’s developmental needs (e.g., language development or social-emotional growth). These approaches are complementary and should be combined within multi-generation systems to improve Early Relational Health by reducing familial stress and strengthening parent-child relationships.^{101,102}



“Structural policy decisions like family leave and universal income directly impact Early Relational Health because families who are not safe or stable — due to economic barriers or otherwise — cannot offer safe, stable, or nurturing relationships. We need a dual approach because you have to reduce family stressors (e.g., issues related to poverty) and also build parent capacity.

From a policy perspective, a dual approach includes structural supports like healthcare, minimum wage, and tax credits as well as more targeted interventions like home visiting programs. It allows us to ensure families have their basic needs met in order to get the most out of these capacity-building programs. In fact, targeted interventions are only more impactful alongside broader economic supports.”

– CYNTHIA OSBORNE, PH.D.

Founder, Executive Director | The Prenatal-to-3 Policy Impact Center at Vanderbilt University

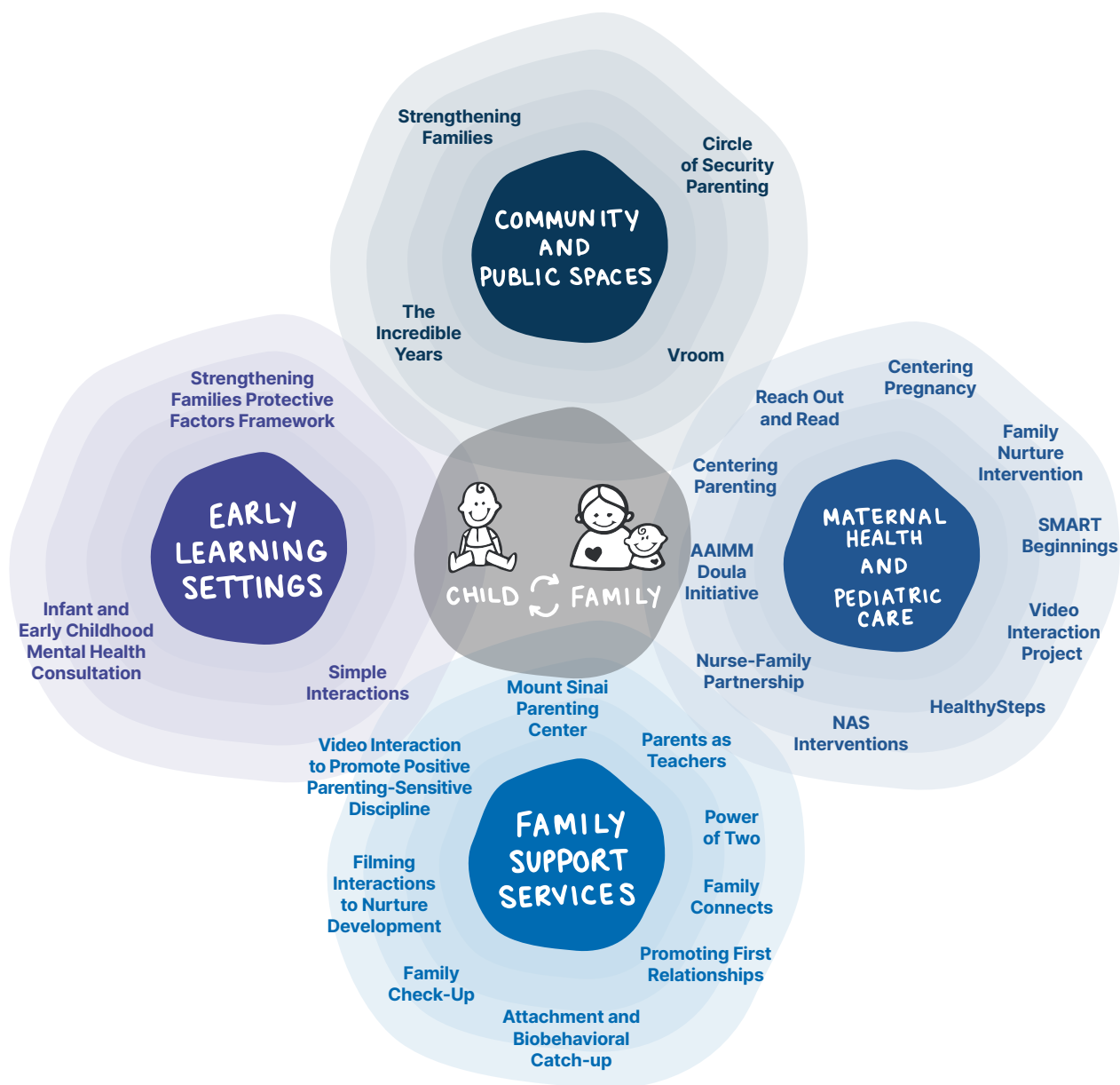


“You have to make sure that mom isn’t forgotten the second she gives birth. After childbirth, that’s when the real challenging moments start. During pregnancy, the baby is nice and secure in your stomach but once you have the baby you begin to worry about this small human that you have to care for. Who is going to take care of the necessary things in life? Who is going to care for you? You might feel depressed, you might feel sick, but you have to work and how can you do that without mental health support?”

– MOTHER OF FIVE | NEW JERSEY

Multi-generation interventions that aim to meet the needs of both adults and children can provide integrated supports for children and adults rather than functionally separate services offered by one or more service providers. None of the programs or interventions included in this review is designed to be a one-size-fits-all solution.¹⁰³ We need to develop community-based strategies to engage and support diverse populations of families and expand the definition of two-generation models to include other important adults in caregiving capacities, such as extended families and early childhood educators.¹⁰⁴ These programs can be part of an Early Relational Health ecosystem (Figure 7), each playing an important role in meeting the diverse needs of families. Rather than putting these programs in direct competition with each other to determine which has the most evidence or which is most effective, we learned from this diverse and representative set of program approaches as well as insights from parent and expert interviews to identify common principles for improving Early Relational Health.

FIGURE 7 Programs, Interventions, and Approaches Aligned with Early Relational Health



Part IV.

Principles of Action in Early Relational Health

Why Focus on Principles and Not a List of Programs?

As Early Relational Health moves the field of early childhood toward a more unifying and inclusive system of care, our learnings demonstrate there is room for a diverse range of programs and supports for practitioners and families. The Early Relational Health framework encourages flexible and adaptive designs and implementations to match individual and community needs across varying social and cultural contexts.

Traditionally, early childhood programs and services rely on an evidence-based funding model. Studies of well-known interventions, such as the [HighScope Perry Preschool Program](#), demonstrate long-term return on investment equivalent to a 7-10% annual rate.¹⁰⁵ Along with significant advances in our understanding of early neurological development under both optimal and deprived conditions, such evidence propelled early childhood to the foreground of public policies and philanthropic strategies.

The amount of time and resources needed to provide such research evidence typically means that only large programs with decades of experiences supported by universities or well-established nonprofit organizations are included. For example, government entities or foundation funders intending to provide home visiting services might choose among a list of evidence-based home visiting programs whose population targets, duration, and staffing requirements meet local needs and feasibility constraints. These select few programs (e.g., Nurse-Family Partnership and Parents as Teachers) often have had several decades of evaluative research studies for their individual models and for comparing to other models. Few local, grassroots, or community-based efforts of family support, engagement, and advocacy are included or could ever make it onto approved “evidence-based programs” lists. Investing in an ecosystem that strengthens Early Relational Health calls for a broader and more inclusive approach.



“Early Relational Health helps service providers in early childhood see themselves as part a larger system that has not existed in the past. For professionals who work across these programs who are delivering services, if you just keep asking them, ‘Why do you do that? And why do you do that?’ and you keep peeling that onion, you will get to the relationship. Early Relational Health helps us all connect under this common mission — we all play our parts. What each of us is doing is in the service of the relationship.”

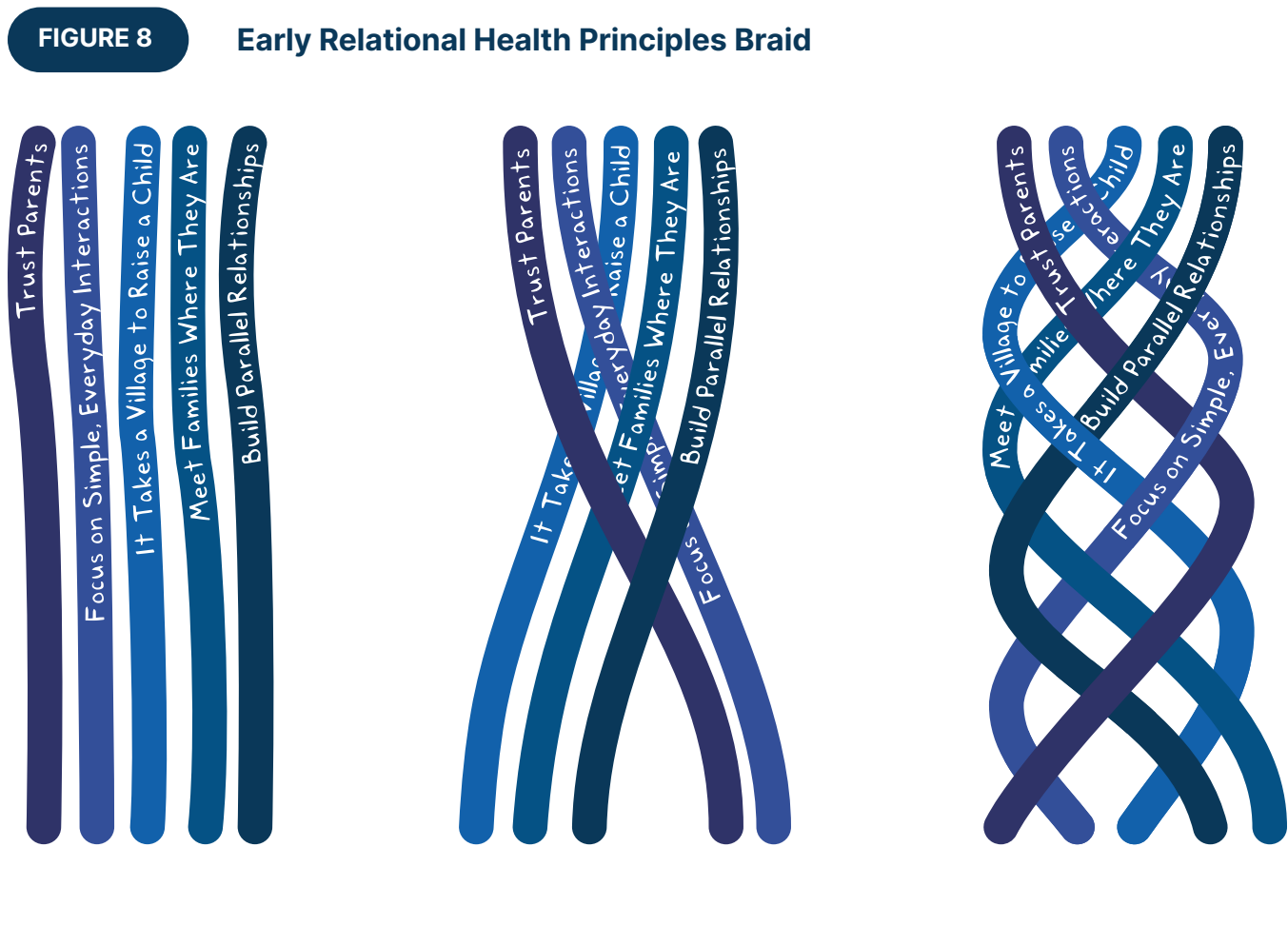
– GEOFF NAGLE, MSW, MPH, PH.D
Former President, CEO | Erikson Institute

First, Early Relational Health does not dictate one program type or delivery model. It is, rather, a framework encompassing many models for many purposes. It includes home visitation as well as pediatric check-up visits, hospital-based prenatal preventive care as well as community-based infant-toddler care, comprehensive citywide systems as well as neighborhood-based advocacy groups.

Second, Early Relational Health is a new and emerging concept that includes many different facets of intervention strategies that have been in existence in both research and practice for decades. Although most of these interventions are not officially labeled “Early Relational Health approaches,” an Early Relational Health framework can help to identify, affirm, and strengthen these programmatic approaches and outcomes. At this phase of Early Relational Health’s emergence as a rallying point, it is counterproductive to develop rigid and narrow research- or theory-based criteria that exclude programs from consideration.

Third, there are ways to learn from existing programs aligned with Early Relational Health to better **define** what constitutes Early Relational Health interventions and to better **align** existing programs to Early Relational Health approaches and goals.

Accordingly, through our research and findings, we seek to articulate a set of underlying principles that explain why and how Early Relational Health-focused programs work. We hope this initial set may serve as a starting point for the emerging Early Relational Health field to continuously refine, expand, and apply in program design, service implementation, and system building. While a list of programs can help facilitate decisions when choosing one program over another, a list of principles functions more like multi-colored threads that can be woven together into a braid (Figure 8).



Funders and practitioners need not choose one principle over another. Rather, they should consider how programmatic and policy decisions could embody various principles in ways that enable them to reinforce each other, creating a stronger and more integrated “braid” of supports and systems.

For program designers and implementers, these principles may enable a better balance between the traditional pursuit of program *fidelity* (i.e., carrying out a program exactly as prescribed) and the continuous improvement of program *integrity* (i.e., coherence and adherence to important principles while leaving room for programs to evolve, adapt, and innovate). For community programs lacking access to traditional academic research and evaluation resources, these principles may help to identify, affirm, and enhance locally-adaptive informal and formal practices. For all stakeholders invested in scaling quality program and practices, these principles may empower us to embrace “multiple meanings of scale”^{106,107} and explore how we adopt, adapt, and reinvent interventions and programs based on knowing and working with families and communities.

The set of Early Relational Health principles that follow are not intended to be definitive conclusions. Instead, they are conversation starters about the “how” of Early Relational Health programs and practices. **For each principle, we:**



Share perspectives
from academic, practitioner,
and parent experts



Showcase example programs
to illustrate connections between
principles and action



Offer implications
for practice

We hope this initial snapshot of the field can serve as a basis for refinement and more concise definition, as well as an invitation to extrapolate their applications to the practice, program, and policy of Early Relational Health.



OVERARCHING PRINCIPLE

Embed Equity within Early Relational Health

Equity is both the process and the aim of Early Relational Health work. While the need for and the desire to provide Early Relational Health is universal among children and families, the actual capacity to build Early Relational Health within families is constrained by the environment and system that surround them.¹⁰⁸ Accessibility, usability, and affordability of important resources — from pre- and postnatal care, to basic housing and food security, to family support, to early care and education, to safe community spaces to gather and play with other families — are not distributed equally across neighborhoods and regions. Even when services are physically accessible, their design and delivery may fall short of meeting the practical, developmental, and cultural needs of families. To achieve more equitable outcomes, we need to develop equitable processes of engagement where families and communities can help professional and governmental systems to understand existing strengths and needs, and ways programs can best support children and their caregivers. Equity — both as a process of learning and improvement and as the North Star of impact — can be embedded into how we build the field, develop professionals, implement policies and programs, and continue to learn. This section highlights the relationship between systemic inequity and Early Relational Health and proposes ways to embed equity across the five subsequent principles of action.

Systemic Inequity and Early Relational Health

Families' backgrounds can determine access to resources and supports which, in turn, can support or hinder Early Relational Health.

Conditions under which people are born, live, and work — including such factors as socioeconomic status, education, social support networks, employment, and neighborhood characteristics — have greater impact on their health and well-being than such factors as biology, behavior, and healthcare.¹⁰⁹ Poverty, structural racism, and discrimination are fundamental drivers of health inequities.^{110,111} The consequences of such inequity begin well before birth and follow children through early care and education systems into adulthood. Children's outcomes vary drastically based on what they look like, their ZIP code and neighborhood, and the languages they speak.¹¹²



“Parents already have so much on their plate. We are worrying about where the money for rent is going to come from. Where is the next box of diapers going to come from? And, on top of that, we may be dealing with postpartum depression and have no one to speak to. When all of this is happening at once, how can we be there for our family or our babies?”

– MOTHER OF TWINS | NEW JERSEY

The capacity that all parents and caregivers have to care for their children can be compromised when parents and caregivers are consumed by sudden or persistent concerns about how to meet such basic needs as food, housing, and medical care. All families should have adequate supports and resources to fully build and experience healthy relationships, but many do not. As a consequence, the weight of such difficult life situations as extreme poverty or mental health challenges can overload caregivers, making it challenging for them to engage with their children in responsive, supportive, and nurturing ways.

The path forward for Early Relational Health must include efforts to offload the stressors families experience due to social inequities out of their immediate control. We can lessen families' burdens by providing to parents supports and services that ultimately strengthen their capacity for the kind of responsive care they want to provide to their children. These supports contribute to the whole family's health and resilience, even when times are tough.



“Parents and families need their basic needs met in order to be good caregivers. You don’t need to give money to people directly, but helping parents in need with diapers, baby wipes, clothing — whatever it is that we need in that moment makes a big difference.”

– MOTHER OF FIVE | NEW JERSEY

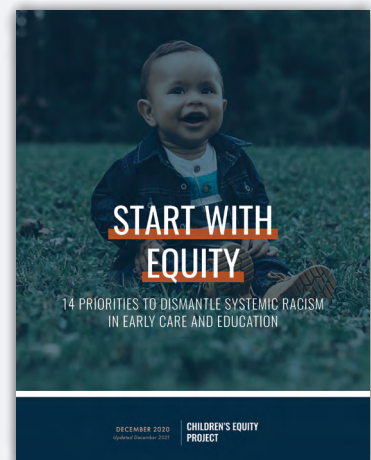
The Early Relational Health framework embodies principles and characteristics of equity and inclusion that can help to address some of the equity challenges described above. Early Relational Health can help providers build authentic relationships with families and communities, deepening their exposure to communities' ways of knowing and meeting families where they are. An early relational ecosystem can ensure that families with young children have access to the human supports and material and community resources they need.



Priorities and Strategies to Advance Equity in Early Care and Education

Policies that address inequities facilitate healthy relationships.

In 2020, the Children's Equity Project published [*Start with Equity: 14 Priorities to Dismantle Systemic Racism in Early Care and Education*](#), which outlines critical priorities and actionable policies that Congress, federal agencies, states, and tribes can use to advance equity in the early care and education system.¹¹³ Strategies presented include: equitably disseminating public funds, promoting workforce equity, embedding equity in monitoring systems, making high-quality curriculum and pedagogy accessible and culturally responsive, expanding family leadership and engagement efforts, and centering family child care.



Nothing About Us Without Us — Equitable Processes to Achieve Equitable Goals

To develop an equitable Early Relational Health system, we must pursue an intentionally equitable process that engages not just researchers and policymakers, but also caregivers to create a system that serves all families and communities.

Families are experts of their own lives. They are resilient and capable. They understand their needs and their children's needs better than anyone else. With opportunities to tell their stories and share their knowledge, families make key contributions to advancing quality and equity in education, healthcare, public safety, and beyond. As we work to advance Early Relational Health work, rooting the process in the phrase “nothing about us without us” reminds us of the paramount importance of meaningful engagement with the communities we aim to serve.

Early Relational Health interventions that embrace equity and diversity are informed by the specific strengths, needs, and experiences of the families and communities they aim to serve. This is best achieved when families and community members play a wide range of roles in designing and shaping the programs and policies that serve them.



“Even when I am the only dad attending these meetings or groups, I do it because I know what my son needs and I understand the importance of him seeing me involved. It’s my job to represent my child in all of his worlds, to be his voice.”

– PARENT LEADER AND FATHER OF TWO | NEW JERSEY



“Families are used to hearing what professionals have to say, but we have to remember that our work should be based on what the families share because they are the center of their world and their child’s world. Families are the experts on their child and what’s happening in their lives. No one else can tell them what’s happening.”

– MONTIA BROCK, LPC, NCC, IMH-E
Family Interventionist | Family Check-Up Program, Center for Parents and Children

Co-creation and co-ownership by the community a program is designed to serve are critical determinants of the program’s ultimate success and sustainable “scale.”^{114,115} Agencies and organizations working in the field of Early Relational Health can create a diverse range of opportunities for meaningful community engagement and influence. Going beyond such usual information-gathering roles as interviews and focus groups, programs can use participatory approaches in their design or evaluation, inviting community leaders and members served by the intervention to participate in the process of conducting research intended to create or shape the program.

For example, [Power of Two](#), a social justice organization that uses in-home parent coaching to address exposures to trauma and strengthen emotional bonds between caregivers and children, uses community asset mapping to identify existing resources that can be harnessed to meet families' needs. This approach can help community organizations expand their focus from needs or deficits to include assets and strengths.

Early Relational Health programs can attend to relational quality at many levels. Just as the child-parent and parent-provider relationship is built on trust and reciprocity, it is important for Early Relational Health programs to embody and nurture an environment of trust and reciprocity. Service providers and families need to feel welcomed and motivated to participate and share their voices. Programs cannot expect community engagement to thrive when there is no organizational history of respecting and including the voices of families and the providers — many of whom are part of the communities they serve.

Organizations that intentionally foster meaningful and equitable relationships at all levels — for families, professionals, and communities — have a far better chance at starting, growing, and sustaining impactful early relational practices.



“It can be helpful for organizations to spend time internally assessing, using a critical eye and an equity lens, to determine whether or not their policies and practices are responding to the real needs of the community they are engaging.

Organizations should think about their language, their recruitment strategy, and the avenues they can create for families to actively participate in their curriculum development or program delivery model. They need to find ways to create opportunities for families to share and reimagine programming in a way that is reflective and supportive of them. Lastly, organizations should ask themselves the really important question: ‘Who is benefiting from this? Is the organization benefiting from it or is the community benefiting from it?’ If you’re having a tough time answering that question, then that means you really need to just regroup.”

– ERASMA BERAS-MONTICCILO, MPA
Co-Founder, Executive Director | Power of Two



“Not only does the community need to drive their own success, but community members should be properly compensated for their contributions to these partnerships. We need to position people to take ownership of their own success, to be the very best, wherever they are. We want to do it in a way that allows the dignity and humility to shine through. We don’t believe that you engage with the community without offering compensation. So, we pay everyone, and we pay them fairly. If I am getting paid to be part of that conversation, so should they.”

– DAVE ELLIS
Former Executive Director | Office of Resilience, New Jersey Department of Children and Families

As community members become partners and collaborators, it is also essential for programs to keep in mind the importance of fairly compensating them for their time and contributions. Practically, it helps relieve the burden on parents and caregivers who struggle to make ends meet and often have little time to spare outside of home and work responsibilities. Equitable compensation honors the context expertise of community members, recognizes the value of lived experience, and brings in traditionally underrepresented people who may want to engage but cannot afford to spare uncompensated time.



***“We’re very mindful of the fact that a lot of our team members live in the communities in which we engage, and it is important that they also feel cared for and valued and appreciated.*”**

Every year, we do a compensation analysis because we want to make sure everyone is receiving compensation that is at market rate. And every year, everybody gets an increase across the board. That’s part of equity. If you’re going to do this work and you’re going to engage with families that are residing in historically-marginalized communities and you’re committed to equity, then equity has to be part of every single process and protocol and infrastructure within your organization and you have to live those values every day.”

– ERASMA BERAS-MONTICCILO, MPA
Co-Founder, Executive Director | Power of Two

Potential Applications to Practice and Program

Strong relationships among program and family partners ultimately strengthen relational health for families and communities. From program design, to evaluation, to funding and investment, families and parent leaders can play a broad range of relational roles, including:

- ✓ Consulting with families about programming needs and opportunities and major programmatic decisions that affect them
- ✓ Responding to and supporting efforts initiated by families and communities
- ✓ Sharing program and funding decision making and responsibilities with families and communities
- ✓ Supporting family and community leaders with recognition and appropriate compensation



PRACTICE PRINCIPLE #1
Trust Parents

Effective interventions operate on the assumption that all parents, including those who are exposed to significant external stress, want to provide, are capable of providing, and strive to improve the kind of positive, responsive early relationships their children need.

Emerging neuroscience research consistently affirms the reciprocal change mechanisms in human caregiving. Parents are neurologically, evolutionarily, and biologically prepared for responsive interactions with their young children and caregiving interactions can further enhance and shape their capacities through neurological changes and biobehavioral synchrony.



“My experience, over a lot of years, is that almost every parent and caregiver wants really good things to happen for their children, and they want them to be successful. When given the opportunity to really focus on those most critical years of development, they jump at the chance. Parents and caregivers are eager to partner to make their child’s life trajectory the very best it can be.”

– JESSIE RASMUSSEN
President | Buffett Early Childhood Fund



“One of the reasons that I connect so well with my child’s pediatrician is that she is always respectful and listens to what I have to say. When she asks me questions, I know that she really wants to hear what I have to say about my baby. The doctor tells me that, while she practices medicine, she can also go over home remedies because she wants to make sure she supports me as well as she can. I know I can go to her with all kinds of questions.”

– MOTHER OF TWINS | NEW JERSEY

Even prior to these new findings, many programs and interventions aligned with Early Relational Health approaches included intentionally-designed elements to identify and build on parents' caregiving strengths, confidence, and competence. Some programs do this via reflective coaching or feedback cycles. Such approaches highlight effective practices caregivers already bring to their interactions with their children and reinforce the markers of progress made by caregivers during the intervention period.

For example, in [Promoting First Relationships](#), a home visiting initiative focused on caregivers and families who are reunited with their children following separation, providers work with caregivers to identify positive moments between children and caregivers, as well as the strengths in caregivers' existing practices.

Such pediatric medical home enhancements as [Reach Out and Read](#) and home visiting models like [Parents as Teachers](#) strive to build caregiver capacity by integrating encouragement with guidance and skill development, affirming and expanding all caregivers' intuitive and intentional capabilities to engage with their children in playful learning activities.



“We need to shift our thinking that parents are not knowledgeable. They understand their circumstances better than anyone else and have knowledge and experiences they can share. Parents are knowledgeable and part of increasing their abilities to self-advocate and feel confident is allowing them to display the knowledge they have.”

– DAMALI CAMPBELL, M.D

Physician in Obstetrics and Gynecology and Addiction Medicine | University Hospital in Newark



“When it comes to my child, no one knows him better than my wife. I respect research and professionals as experts in their field, but I see my wife as the number one expert on our son and trust her wholeheartedly.”

– FATHER OF TWO | NEW JERSEY

A striking example of a relational support approach that builds on caregivers' strengths despite adversity is [rooming-in interventions](#) in hospital units caring for mothers with opioid addiction and newborns with opioid withdrawal. Instead of the traditional child welfare practice of separating struggling mothers from their medically-fragile newborns, these programs operate on a foundation of trust that mothers with high-risk factors *can* provide quality care to their infants. With professional and peer community support, these programs support the parent to grow from the experience of providing such care to their babies. Rooming-in interventions have been found to improve parental sense of competence among women suffering from mental health disorders and reduce overall length of hospitalization for the infants.¹¹⁶



Relational Caregiving as a Dynamic and Adaptive Capacity

Research clearly demonstrates that the ability to care for and bond with young children is not a fixed trait bestowed upon some people and not others. Rather, the state of early relationships is jointly created and continuously re-created between caregivers and infants. The implication for practice is that promoting Early Relational Health is as much about understanding and meeting children's universal needs for relationships as it is about understanding and strengthening adults' universal capacities to forge such relationships.

Adults are neurologically and physiologically prepared to engage in just the kinds of responsive caregiving interactions that children need. This capacity grows, based on the quality and quantity of interactions between parents with their babies rather than solely on sex- or biologically-specific innate predispositions.^{117,118,119,120} This understanding creates many opportunities for professionals who support families to affirm, encourage, and strengthen what parents and caregivers do in simple, everyday interactions with their infants and toddlers.



“The emotional connection between parent and child is not fixed. It is not a trait, but a bidirectional biological state. It can be fostered at any age with health-promoting benefits for both parents and children. This means there are moment-to-moment opportunities to support or repair connection, lifelong.”

– MARTHA WELCH, M.D., DFAPA
Director | Nurture Science Program, Columbia University Medical Center

Potential Applications to Practice and Program

More than just a feeling, trust is a set of concrete actions.

In Early Relational Health programs, trust for parents can manifest itself in such actions as:

- ✓ Reframing our communications away from the well-worn deficit lens (e.g., 30 million word gap) and toward strengths- and asset-based messages (e.g., positive childhood experiences)
- ✓ Designing family support programs that reflect understanding of what parents *already* know and *already* do, rather than operating solely with the assumptions about what parents *do not* know and *do not* do
- ✓ Helping professionals see that caregiving capacity within the family is directly shaped by community conditions (e.g., housing, healthcare, and food security) that sustain such capacity
- ✓ Reminding professionals that the foundation for the parent-professional partnership is built on understanding that all families love and care for their children and have deep knowledge and expertise about their children



PRACTICE PRINCIPLE #2

Focus on Simple, Everyday Interactions

Simple, everyday interactions between young children and their parents and caregivers are the essential building blocks of Early Relational Health. Parents, caregivers, and children share many ordinary — yet magical — moments that contribute meaningfully to the whole family’s development and well-being. When these interactions are consistent, responsive, and in tune with young children’s developing needs, the result is a safe, stable, and nurturing relational foundation that offers protective buffers against external and internal stressors, opportunities for learning and development, and a secure base from which children can explore their physical and social worlds.

The programs we reviewed draw on attachment theory, infant and early childhood mental health practices, and neurodevelopmental insights — all of which converge and build on the importance of high-quality moment-to-moment interactions between young children and adults. These programs help caregivers build strong and supportive relationships with their children by highlighting, and sometimes intentionally guiding, responsive and reciprocal interactions, which lay the foundation of early brain architecture as well as a healthy and adaptive stress-response system.^{121,122}

Such interactions can take diverse forms, including talking (infant-directed speech known as “parentese”) or singing to babies; explaining or “sportscasting” what one is doing during such caregiving routines as changing diapers and feeding; adjusting tone of voice and pace to match the child’s level; communicating with infants through such nonverbal signals as gestures, facial expressions, or body postures; and just being physically and emotional present and available. All these interactions serve the universal functions of understanding and responding to infants’ and toddlers’ signals and needs.¹²³ [Figure 9](#), adapted from the [Simple Interactions Tool](#), illustrates one way to describe the developmental and relational needs for connection, reciprocity, inclusion and belonging, and opportunities to grow.

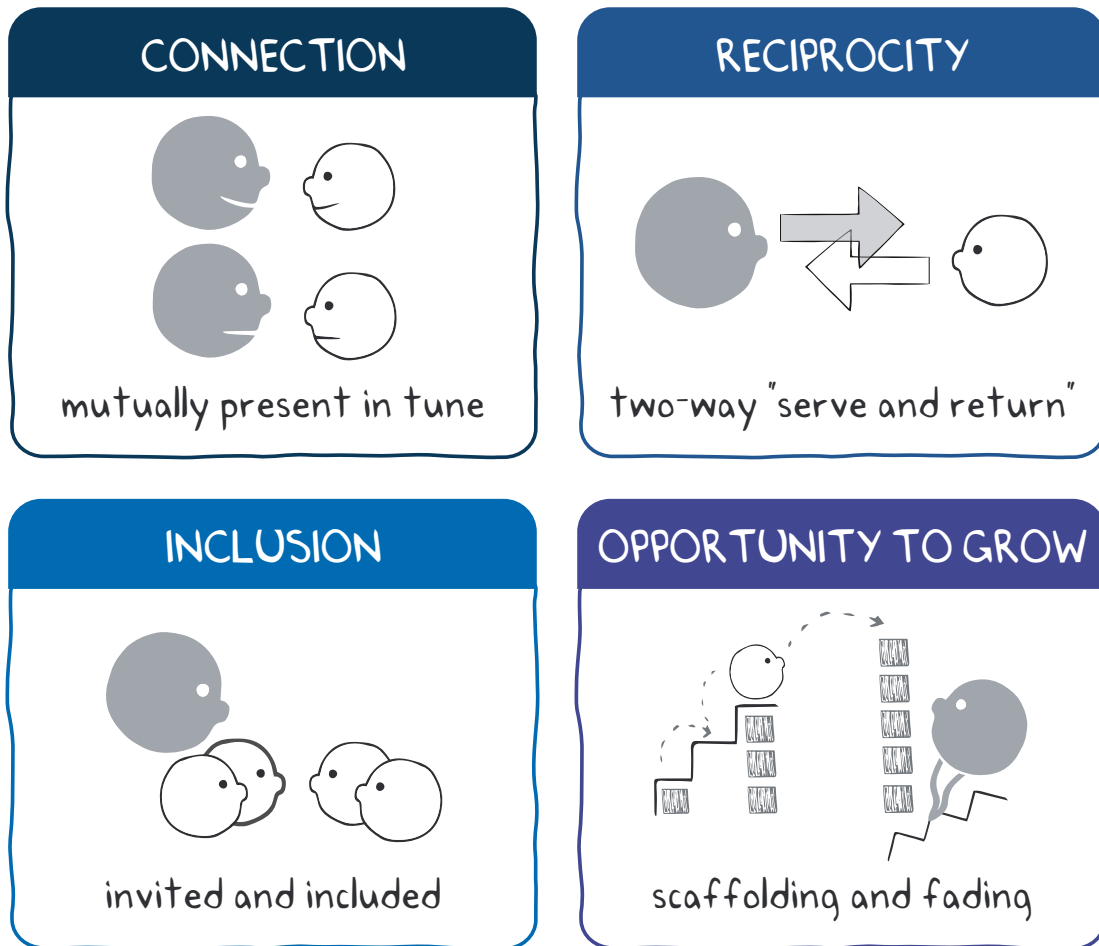


“Babies are very complex and engaged social partners and so they are capable of understanding and responding to a very broad range of social input. We can come in and support the caregiver to begin to reflect on what their baby needs in the moments they interact with their babies.”

– NEIL BORIS, M.D.
Leadership Team | Circle of Security International

FIGURE 9

Universal Dimensions of How Relationships Meet Children's Developmental Needs



To focus on caregivers' capacity to understand children's cues and respond appropriately to children's needs, many programs and interventions engage the practitioner and the parent to jointly observe and describe the dynamics within existing caregiving interactions. Such interventions as [Family Check-Up](#) and [Filming Interactions to Nurture Development \(FIND\)](#) incorporate a video-feedback approach. The practitioner briefly records parents and children in everyday, authentic, unscripted interactions and then engages parents in a joint observation and discovery process of the recording. Together, they identify what is already working well and potential learning opportunities for children and adults. Such strengths-based and reflective approaches, focused on daily interactions of families, help parents develop their confidence and competence, establish a solid starting point for growth, and set a course to continuously expand caregivers' reflective capacity and efficacy to engage in more intentional and responsive interactions with their children. The [Simple Interactions](#) approach to professional learning expands this concept and strategy to professional communities of caregivers and educators across early learning settings.



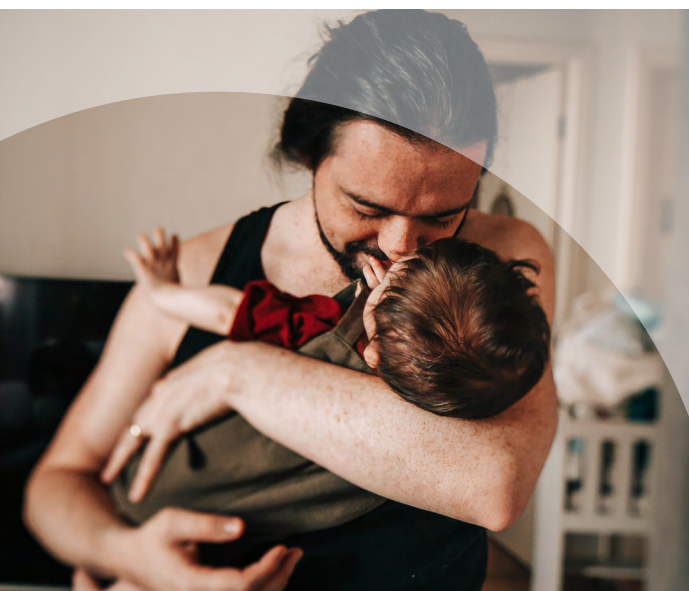
“The little things have been most meaningful and memorable. As a parent, I have taken so much pleasure in celebrating the small milestones. It sounds funny, but him putting two sounds together that sound like a word — that made me really excited and proud.”

– MOTHER OF TWO | NEW JERSEY

Potential Applications to Practice and Program

Simple interactions are the foundational building blocks of developmental and protective relationships between adult caregivers and young children. Programs can draw attention to these small moments in the following ways:

- ✓ Refocusing advocacy and training communications to emphasize daily, routine interactions that naturally take place between caregivers and children and go beyond photogenic moments (e.g., happy child, family playing together) to feature ordinary, mundane — but no less important — moments (e.g., caregiving, transitions) in the families’ lives
- ✓ Creating formal and informal opportunities for such trusted professionals as pediatricians and home visitors to recognize and affirm small but concrete moments of caregivers’ capacity caring for children
- ✓ Helping parents and parent-supporting professionals understand the extraordinary power of ordinary moments of interactions and highlight ways they can be “enough” for one another.





PRACTICE PRINCIPLE #3

It Takes a Village to Raise a Child

The popular adage, “it takes a village to raise a child,” captures the idea that *all* caregivers need and benefit from external help and support. To advance Early Relational Health, we need to debunk the rigid mindset that suggests some adults have “good parenting instincts” and have no need for supports while others have “poor parenting instincts” and need extra support. In reality, Early Relational Health is developed and built on the understanding that *all* children need relationships, *all* adults share the capacity to provide such relational care, and *all* caregivers need support in developing and sustaining such capacity. Normalizing the need for Early Relational Health programs, supports, and services helps to minimize the fear or stigma families feel in seeking such supports.



“How caregivers connect with and feel about their young children depends heavily on their circumstances, so it’s important to normalize their need for support. It is important to normalize that all caregivers are different and will feel different things when it comes to parenting and connecting with their children.

You might have a 16-year-old for whom giving birth was a tumultuous decision. It may not have started out as the happiest day of her life, so the ways she connects with her child may look very different than a 32-year-old who has been married for years and has been working toward achieving pregnancy. What is most important is that each of these mothers has the support she needs to connect with her baby.

– DAMALI CAMPBELL, M.D.

Physician in Obstetrics and Gynecology and Addiction Medicine | University Hospital in Newark



“Parents have to do a lot of juggling. Having the support of other people around you — uncles, aunts, grandparents, or a friend or neighbor — is critical. They have to do so much just to keep it all together, to keep food on the table. Luckily, we have always had a tight family circle. When my sister would have to work during the day, my mom or other sister would take care of the kids. If not them, then other people from other sides of the family pitched in.”

– CARL BOYD

Family Advocate, Uncle | New Jersey

This idea is at the heart of the [Strengthening Families Protective Factors Framework](#), a strengths-based, research-informed approach that helps families build key protective factors — such as social connections and concrete supports in times of need — that enable families to thrive. Programs that use the Strengthening Families Framework partner with parents and caregivers to develop the skills and tools they need to identify their families' specific needs and connect to concrete and social supports in their community. Parents learn how to get help when they need it by learning what resources are available in their community, identifying what their family needs to stay healthy and safe, getting comfortable advocating and asking others for help, and looking for opportunities to help others when possible.¹²⁴



“Family and child-serving programs must clearly communicate to parents that seeking help is not an indicator of weakness or failure as a parent. On the contrary, seeking help is a step toward improving one’s circumstances and learning to better manage stress and function well — even when faced with challenges, adversity, and trauma. When parents ask for help, it is a step toward building resilience.”

– CENTER FOR THE STUDY OF SOCIAL POLICY¹²⁵

Potential Applications to Practice and Program

Children thrive within strong families that are part of strong and connected communities. Programs that support children and families in traditional service-delivery approach can extend their scope to build communities around the families by the following actions:

- ✓ Cultivating formal and informal communities of support among parents and community members, in addition to providing targeted direct services to individual families
- ✓ Recognizing and supporting parent and community leaders who serve as important connectors and hubs for families, especially in under-resourced settings
- ✓ Weaving together strategies in program designs and funding that support the needs and strengthen the capacities of children, caregivers, and communities
- ✓ Normalizing (through intentional messaging and communication) that all families have needs for and can benefit from social and relational supports beyond their own home



PRACTICE PRINCIPLE #4

Meet Families Where They Are

Though universal, the needs of children and families are not uniform. Meeting families “where they are” means understanding and removing barriers that prevent them from seeking and using supports and resources. Sometimes it can literally be the geography of where they are and the inaccessibility of the services. Other times it can also be their readiness, level of trust, and confidence. Some parents may need intensive home visiting services or a multi-week skill-building program. Other parents can benefit from simple reminders and encouragement from trusted professionals about what they are doing well.



“How do I notice the parent-child relationships in small moments when I see families as a pediatrician? It really takes the effort to stop just a few seconds, with every single visit, to make a one-on-one connection with the family. Every family is doing many things right.

In our haste to fix things as doctors, we are failing to recognize all the right things that all the families are doing. It’s not an empathy or praise blanket. When you see that the kids are doing great, you really notice and you let the parents know that ‘when kids are doing great, this is YOU!’ In Reach Out and Read, we don’t tell parents to teach their children how to read. It’s about making beautiful memories in the magical moments, the warm, daily interactions. Learning to read is almost a byproduct.”

– **USHA RAMACHANDRAN, M.D., FAAP**
Pediatrician, Medical Director | Reach Out and Read NJ



Building these supports in places where families regularly visit helps convey that such supports are needed and beneficial to all families. [Reach Out and Read](#), for example, is an inclusive preventive intervention at the pediatrician's office that provides guidance and materials for all families to support relational practice and language development at home. A flexible, inclusive Early Relational Health system can provide many such access points for families to choose how and where to engage, suited to the varying levels and stages of their needs and capacity.

The relational components of flexible and tiered interventions enable service providers to integrate and prioritize relational health while addressing concurrent needs and capacity challenges at the time the intervention is delivered. Community-wide efforts to promote Early Relational Health can adopt a “front door universalism” where everyone is invited (e.g., through universal access points like well-child visits) because we can assume that all families have needs and challenges.

Once families are in the door, service providers can start to identify and address specific needs. The [Family Connects](#) model, an evidence-based approach that supports newborns and their families, is one such effort. Newborns' primary caregivers, including foster and adoptive parents, are offered a Family Connects visit shortly after the baby's birth. The model operates on the belief that every family needs support after bringing home a baby, while recognizing that each family's needs will be different — from help with feeding and safe sleep to getting information about child care and parenting groups — so the registered nurses that visit homes are trained to assess the family's strengths, risks, and needs, and then offer individualized guidance and supports.



“Being a parent can be very isolating. And there are so many things families are dealing with now. Some are looking for jobs. Others are trying to keep their children safe. You may want to give them a list of resources, but you have to take the time to listen to them and understand the implications of things like food or housing insecurity or lack of transportation. And when you give them resources, you need to follow up to see if they used those resources or not. Many parents do not know how to ask for help. It's important to show families how to do that and where to go. You have to meet families where they are.”

– LAVONIA ABAVANA
Community Advocate, Parent Leader, Mother of Three | New Jersey



“The targeted universalism approach can help us to communicate that Early Relational Health is a universal need for all children, but that different children will have different needs. Let's look at health for example. We want all kids to be born healthy and, so far, we are not there yet. For any race, for any socioeconomic group, we are not there yet.

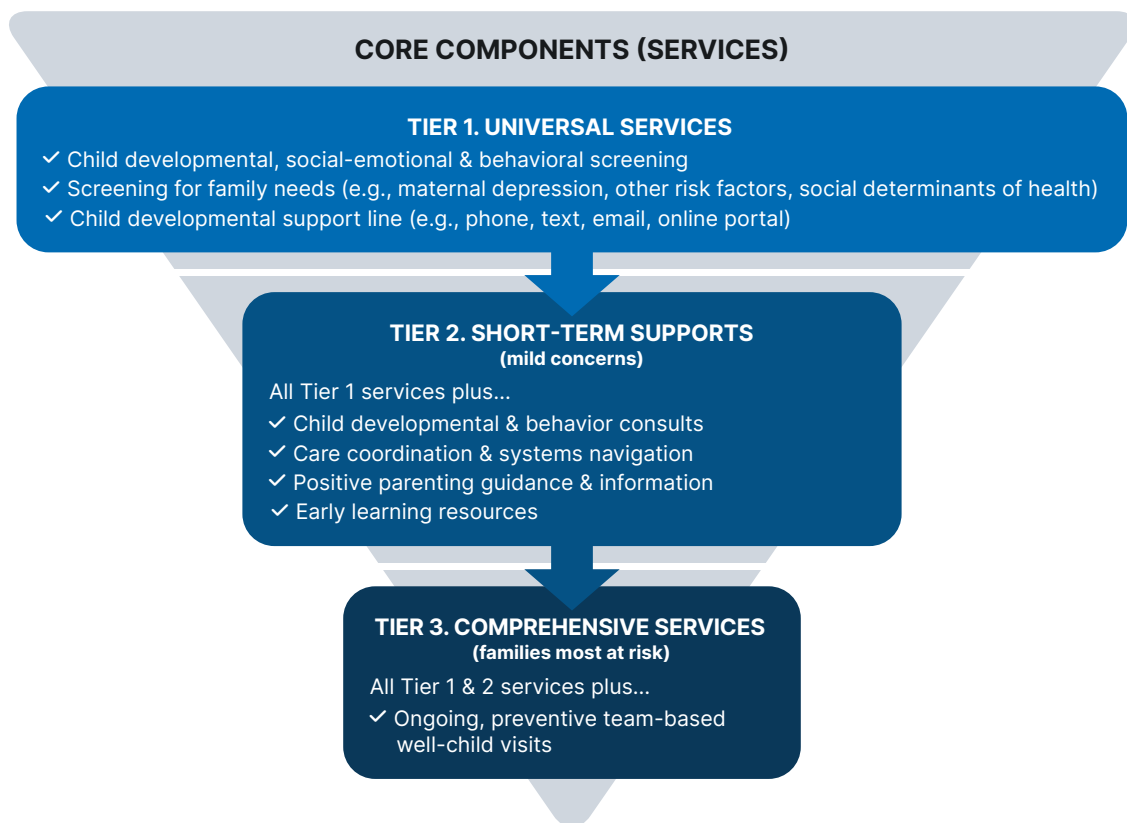
So, what needs to be done to get each group there? There are different places on that continuum of getting to be healthy and so the needs and the responses have to be different for each group. But when we say we are all working toward the fact that all our children are going to be healthy, all of our children are going to have strong relationships — this is universal. We want all communities to be thriving, but they each have their own needs, and they are in different places, and what will work in one community will not always work in another.”

– JESSIE RASMUSSEN
President | Buffet Early Childhood Fund

Other promising Early Relational Health programs and initiatives have had success doing this through universal screening followed by individualized supports that meet the identified needs of families. For example, [Figure 10](#) illustrates how the [HealthySteps](#) team-based pediatric healthcare model is organized into **three tiers of service**:



FIGURE 10 Tiers and Core Components of HealthySteps, a Risk-Stratified, Population-Based Model



Adapted from: ZERO TO THREE. (2021). *Tiers and Core Components: A Risk-Stratified, Population-Based Model* [digital image]. HealthySteps. <https://www.healthysteps.org/what-we-do/our-model/tiers-and-core-components/>

Smart Beginnings, an emerging comprehensive system of care, is another example of a tiered system that recognizes the importance of tailoring services to match families' diverse needs. Designed to address socioeconomic disparities in school readiness among young children, the intervention uses pediatric visits as the primary touchpoint for engaging with families.

Smart Beginnings includes the **Video Interaction Project**, which promotes positive parenting by providing caregivers with video-based coaching about their interactions with children. It also uses the **Family Check-Up** as a secondary intervention for families with greater demonstrated needs. The initial three-session phase focuses on identifying a family's overall needs and strengths before exploring opportunities in the family's relational interactions identified through joint viewings of video recordings. This menu-based approach enables caregivers and clinicians to determine next steps together.

Potential Applications to Practice and Program

Recognizing what families share in common (e.g., love, hope) and what is unique about each family's needs and opportunities helps us develop systems that meet families in such ways as:

- ✓ *Geographically*, by locating and moving services toward places that families already go to and trust
- ✓ *Developmentally*, by putting in place supports connected to families' immediate needs and then creating scaffolds to lift families to where they can reach
- ✓ *Relationally*, by prioritizing trust over information gathering and paperwork, and sustaining partnership over service delivery





PRACTICE PRINCIPLE #5

Build Parallel Relationships

Developmental theory and population-level public health research have long emphasized that child development is shaped not only by direct interactions between individuals and their immediate caregivers, but also by relationships and linkages among extended families, non-familial adults, institutions, and resilient communities.^{126,127}

Through the Early Relational Health lens, the quality of parent-child relationships requires parallel parent-professional relationships (e.g., support, affirmation, and encouragement) that, in turn, require parallel professional-professional partnerships (e.g., collaboration, supervision, and coaching).¹²⁸

Well-supported caregivers are better equipped to nurture their child's development, well-being, and learning. Because young children develop in an environment of relationships, their immediate and extended community of caregivers provides a vital relational ecosystem.¹²⁹ All parents and caregivers need constructive and supportive social connections with family members, friends, neighbors, co-workers, community members, and service providers. Creating communities of support by connecting caregivers with each other can help reduce social isolation, increase access to essential services, and improve overall well-being.



“As a parent who has navigated the system myself, I am packed with resources. Every time I see a family that is stressed out, that just needs someone to talk to, I pull out my resource kit. I talk with them about milestones and I share my experience as a parent to let them know that they are not alone. No parent should have to do this alone.”

– LAVONIA ABAVANA

Community Advocate, Parent Leader, Mother of Three | New Jersey

Recognizing the importance of linkages and relationships that extend beyond the child, many Early Relational Health interventions seek to cultivate trusting and positive relationships among caregivers. Several interventions build and rely on the collective capacity of a community of caregivers. [The Incredible Years](#) parenting programs are group behavioral training programs focused on strengthening parenting competencies and fostering parent involvement in children's school experiences. The programs' group sessions help caregivers build networks of peer support throughout the intervention. [CenteringParenting](#) is a group-based pediatric family healthcare model that promotes peer support and learning, emphasizing relationships among children's caregivers, other adults in their communities, and with the healthcare team. This is an extension of Principle 1, extending the focus from trusting parents to trusting the strengths of a community.

Parallel to supporting caregiver communities, other programs invest in the parent-professional relationship. In such home visiting models as [Parents as Teachers](#), a home visiting professional and caregiver work together directly through a coaching and emotional and instrumental support model. Strong relationships between home visitors and participating caregivers are consistently the key predictor of home visiting programs' impact.¹³⁰ Other efforts focus on professional-professional partnerships. [Infant and Early Childhood Mental Health Consultation](#) observes, coaches, and supports reflective practices with early care and education providers who, in turn, provide services to young children and parents. [Mount Sinai Parenting Center](#) trains and supports pediatric professionals to better communicate with families about early relational interactions.



“When I had my first child, I participated in a teen parenting program. Talking to other moms about daily struggles — like having to get homework done, getting help from your partner, all while taking care of a baby — helped a lot. It is always nice to connect with other parents and it can be even more helpful when you can connect with moms with babies that are around the same age as yours.”

– MOTHER OF THREE | NEW JERSEY



“We have to look at all the relationships around the child — the relationship between the caregiver and the child and the child and their siblings — but we also have to look at the relationships between the caregivers. We know that the relational health of the adults is really important for the relational health between caregivers and their children.

We also have to prioritize and emphasize the relationship of the provider and the caregiver because that relationship is often a model or an opportunity for parents to learn new things about themselves and to reflect, to feel cared about, and to bring that felt experience to their parenting relationship. It's really all about relationships; they provide a healing experience, they provide nurturing, they provide.”

– ANNE GILL, PH.D.
Co-Director | Family Check-Up Program, Center for Parents and Children

Potential Applications to Practice and Program

How do we support caregivers? By doing for caregivers what we imagine the best caregivers do for children. Nearly everything children need from their intimate relational circle has parallels in what adult caregivers need from their communities of support. We can create an inclusive ecosystem of healthy relationships by:

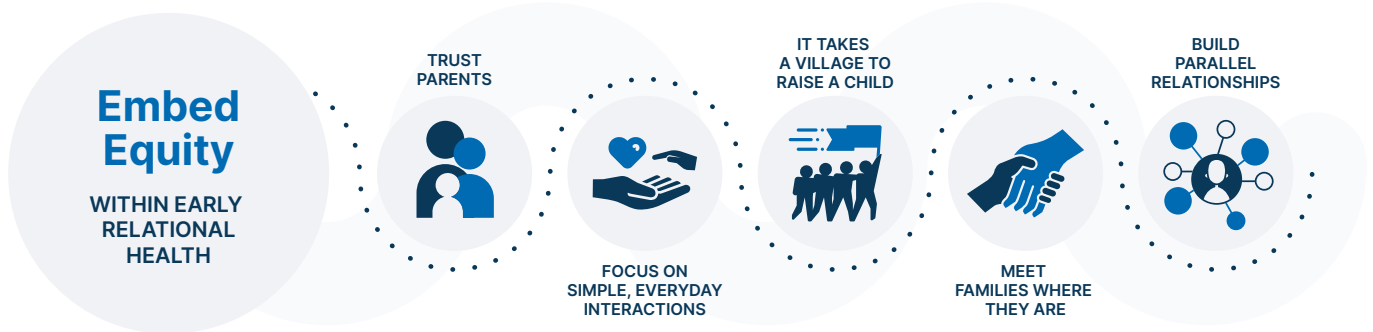
- ✓ Strengthening parent-to-parent relationships (e.g., through peer-to-peer learning, group programming, and programs that explicitly promote engagement of male caregivers and secondary caregivers, including extended family and close friends)
- ✓ Strengthening parent-professional relationships (e.g., by building a diverse workforce, recognizing parents' and community members' expertise, and supporting bidirectional learning through programs and policies)
- ✓ Strengthening professional-professional relationships (e.g., by building cross-sectoral communities of practice, convening professionals around a culture of Early Relational Health, and supporting professional growth through training and mentoring for practitioners)



Conclusion:

Braiding Together Principles of Early Relational Health Practice

Early Relational Health Principles



Psychologist John Bowlby, whose research and theoretical development on human attachment from the 1950s through 1980s laid much of the foundation and impetus for the science and practice of early relationships, concluded his seminal three-volume series on attachment with these sentences in the epilogue:

“From these intimate attachments a person draws strength and enjoyment of life and, through what they contribute, gives strength and enjoyment to others. These are matters about which current science and traditional wisdom are at one.”



As the understanding of Early Relational Health research and practice matures, it becomes possible for the field to develop a theory of change integrating developmental sciences with practice principles underlying effective interventions and programs. Over time, a continuously-refined set of Early Relational Health principles can help the field identify Early Relational Health initiatives from established programs as well as under-recognized grassroots efforts and keep improving Early Relational Health practices that embody the principles while designing new programs and collaborations that integrate these principles in innovative ways.



Communicating the Importance of Early Relational Health

As we seek to integrate these principles into the Early Relational Health ecosystem, we must remember that “science does not speak for itself.”¹³¹ The ways in which we communicate our objectives, principles, and good practices have the potential to shift attention, funding, and political support. Along the way, a sustained collaboration between such communication researchers as the [Frameworks Institute](#) and such child development research entities as the [Harvard Center on the Developing Child](#), has shaped and framed public and policy discourse.

As Early Relational Health emerges as a concept that builds on and organizes intersecting disciplines of research and a broad range of interventions and programs, we have an opportunity to develop core stories and messages for a broad range of stakeholders. This calls for a strategic and principled approach to Early Relational Health communication. Our approaches and messages can both be grounded in best practices and lessons learned from strategic communication research and uphold the integrity of early relational principles informed by research and everyday experiences. In [Appendix C](#), we offer a brief review of lessons learned from past communication efforts in early childhood and a summary of future directions aligned with our proposed Early Relational Health principles.

The Burke Foundation’s [Investing Early](#)¹³² report reminds us that these models should be iterative and responsive to realities and feedback during implementation. We cannot treat existing effective programs as a panacea and assume outcomes are replicable without first understanding the communities being served. By relying exclusively on “evidence-based programs” — those programs with the resources and recognition to undergo extensive and expensive randomized controlled trials — we may well overlook local efforts and innovations, whether they take place in a pediatrician’s office or in a neighborhood initiative.

We can advance our collective understanding of Early Relational Health through the iterative refinement of principles informed by research evidence and community experience. The principles offered in this report are intended as a point of departure within a broader community conversation.

Whether we focus on the child, the parent, the caregivers in the extended ecosystem, or the professionals who serve them all, each of these principles apply as much to the person needing support as to the person providing support. Supporting the relational health of one requires us to be cognizant of the relational health of everyone in the community.

The work of Early Relational Health aspires to bring such integration of science and lived experience into our practices and programs. Through our review of research, programs, and interviews, we find that the impetus and overarching goal of Early Relational Health work is grounded in an authentic sense of hope.

The roots of that hope lie in a coherent understanding and aspiration that stems from respecting families and trusting communities — informed by science and evidence and driven by and toward a vision of equitable relational experiences for all children, relational supports for all families, and a relational ecosystem connecting all communities.

Appendix A:

Representative Examples of Early Relational Health Programs and Interventions

Selection Methodology

Our scan focused on the following interventions aimed at supporting development of early relationships between parents, caregivers, and children:

- Attachment and Biobehavioral Catch-up
- African American Infant and Maternal Mortality Doula Initiative
- CenteringParenting
- CenteringPregnancy
- Circle of Security Parenting
- Family Check-Up
- Family Connects
- Family Nurture Intervention
- Filming Interactions to Nurture Development
- HealthySteps
- The Incredible Years
- Mount Sinai Parenting Center
- Nurse–Family Partnership
- Parents as Teachers
- Power of Two
- Promoting First Relationships
- Simple Interactions
- SMART Beginnings
- Strengthening Families Program
- Strengthening Families Protective Factors Framework
- Reach Out and Read
- Mother and Infant–Focused Neonatal Abstinence Syndrome (NAS) Interventions
- Video Interaction Project
- Video Interaction to Promote Positive Parenting–Sensitive Discipline
- Vroom

We also looked more broadly at the following approaches:

- Infant and Early Childhood Mental Health Consultation
- Home Visiting
- Video Feedback
- Rooming-In

Although each of these programs or approaches is an evidence- or research-informed demonstration of effective strategies to promote early relationships, it is important to note that none is designed to be a one-size-fits-all solution. Many of these programs or approaches are designed to meet the unique needs of a particular population of adults (e.g., parents whose infants are in neonatal intensive care units) and then adapted to serve broader groups of caregivers (e.g., child care providers). Rather than viewing the list of selected programs, interventions, and approaches as exclusionary, it should be seen as a *representative* list of programs that align with Early Relational Health goals.

Program Descriptions

Attachment and Biobehavioral Catch-up (ABC)

ABC is a strengths-based program of 10 weekly, one-hour home visits focused on enhancing parental sensitivity. The active ingredient for parent behavior change is “in the moment” commentary, which highlights moments that parents are engaging in behaviors known to enhance child attachment and regulation during the session. The first intervention component helps caregivers reinterpret children’s behavioral signals so they can provide nurturance even when it is not elicited. The second intervention component helps caregivers provide a responsive, predictable, warm environment that enhances young children’s behavioral and regulatory capabilities. The third intervention component helps caregivers decrease behaviors that could be overwhelming or frightening to a young child.

For more information, visit <https://www.abcintervention.org>.

African American Infant and Maternal Mortality (AAIMM) Doula Initiative

This AAIMM Initiative addresses the disproportionately high rates of Black/African American infant and maternal mortality. It aims to increase awareness of the value of doula support in positive birth outcomes for Black individuals and their babies, connect pregnant Black individuals with birth doula services, and ensure Black doulas have access to workforce development opportunities and are paid a living wage.

For more information, visit <https://www.blackinfantsandfamilies.org>.

CenteringPregnancy

This 10-session model of group prenatal care assists women and support partners throughout their pregnancies. Each session brings 8–10 women due at the same time together with clinicians for 90–120 minutes, giving pregnant mothers more time with their healthcare providers and peers. Providers lead activities and facilitate discussion on such topics as relationships, breastfeeding, and depression to build community and support better health. Moms engage in their care by taking their own weight and blood pressure and recording their own health data and having private time with their provider for belly check.

For more information, visit <https://centeringhealthcare.org>.

CenteringParenting

Designed as a continuation of CenteringPregnancy, and also functioning as a standalone care delivery option, CenteringParenting is a dyadic model of group care during a child’s first two years of life. During nine sessions within 6-7 months, a clinician provides pediatric group care with individual well-baby health assessments, immunizations, and screenings. A clinical provider and co-facilitator guide group discussions on such topics as safe sleep, nutrition, and early language. Caregivers engage in their infants’ care and discuss questions and health or safety concerns in a supportive peer-learning community.

For more information, visit <https://centeringhealthcare.org>.

Circle of Security Parenting (COS-P)

COS-P is an attachment-based parent education program to improve caregiver-child relationships and enhance secure attachment. Trained facilitators use stock video clips of caregiver-child interactions, then pause at designated moments to add information, ask reflection or discussion questions, and engage participants in exercises. The program aims to help caregivers: (1) understand their child’s emotional world by learning to read emotional needs, (2) support their child’s ability to successfully manage emotions, (3) enhance the development of their child’s self-esteem, and (4) honor their own innate wisdom and desire for their child to be secure.

For more information, visit <https://www.circleofsecurityinternational.com>.

Family Check-Up (FCU)

FCU is a brief, strengths-based program tailored to families’ individual needs. It consists of a 3-session sequence grounded in motivational interviewing that includes: (1) an initial interview that involves rapport-building and motivational interviewing to explore parental strengths and challenges related to parenting and the family context; (2) a family assessment that includes parent and child questionnaires, a teacher questionnaire for children in school, and a videotaped observation of family interactions; and (3) tailored feedback that involves reviewing assessment results and discussing follow-up service options for the family. Caregivers and providers decide together which follow-up services can help the families reach their goals, which may involve engaging with a structured 12-module curriculum addressing the caregiving environment (e.g., positive behavior support, limit setting and monitoring, and relationship quality).

For more information, visit <https://fcu.uoregon.edu>.

Family Connects

This evidence-based model supports whole-person, integrated health for all families of newborns at a moment of life-changing transition. Newborns’ primary caregivers, including foster, adoptive, and bereaved parents, are offered a Family Connects visit shortly after the baby’s birth. Often, this invitation is extended in the hospital, but families of newborns learn of the program via other channels, including pediatricians, OB-GYNs, and community agencies. Family Connects nurses visit the homes of the newborns in their communities, providing health checks for both the infant and the birth mother. The nurse documents the visit — including physical assessments and community referrals — and relays the appropriate information to the family’s healthcare providers. In some cases, the nurse recommends longer-term programs, such as Healthy Families America and Early Head Start.

For more information, visit <https://familyconnects.org/>.

Family Nurture Intervention (FNI)

FNI helps mothers and their preterm infants reestablish emotional connection and autonomic co-regulation if they have been interrupted. During FNI, a trained Nurture Specialist works with the family to help facilitate emotional connection. Each facilitated session is a calming session, with mother and baby being together physically and emotionally until both are calm. With practice, calming-cycle interactions take less time for mother and infant to lower stress levels and calm each other.

For more information, visit <https://nurturescienceprogram.org>.

Filming Interactions to Nurture Development (FIND)

This 10-week video coaching intervention begins with videotaping caregivers and their children interacting in everyday activities. Coaches then use clips of adult-child interactions to highlight and reinforce serve-and-return interactions in a practical, strengths-based way. Within the context of FIND, five specific elements of serve-and-return are emphasized, with one element introduced in each coaching session. The elements are: (1) Sharing the Child's Focus, (2) Supporting and Encouraging, (3) Naming, (4) Back and Forth Interaction, and (5) Endings and Beginnings.

For more information, visit <https://www.thefindprogram.org>.

HealthySteps

A team-based pediatric primary care model, HealthySteps promotes the health, well-being, and school readiness of babies and toddlers, with an emphasis on families living in low-income communities. It integrates a child development expert, the HealthySteps Specialist, into the pediatric primary care team to support young children's social-emotional, cognitive, and behavioral development, all via a two-generation lens. The HealthySteps Specialist also supports caregivers by addressing parental depression, social determinants of health, and adapting to life with a baby or toddler. All children ages birth to three and their families receive a set of screenings and needed follow up. Follow-up can be short term for mild concerns or include co-managed well-child visits alongside the primary care provider for more intensive support.

For more information, visit <https://www.healthysteps.org>.

The Incredible Years Parent Training Program

The Incredible Years is a group-based behavioral training approach to improve parenting skills of caregivers of children with, or at risk of developing, conduct problems. Trained facilitators use video case analysis and role play to prompt discussion, problem-solving, and idea sharing on such subjects as setting limits, handling misbehavior, play skills, and praise and rewards. The parenting programs are grouped according to age: babies (up to 12 months), toddlers (1–3 years), preschoolers (3–6 years), and school age (6–12 years).

For more information, visit <https://www.incredibleyears.com>.

Mount Sinai Parenting Center

The Parenting Center supports parent-child relationships and early child development within everyday healthcare interactions. It trains staff to use everyday healthcare interactions and physical spaces to deliver information about early child development. Projects at the Parenting Center include: (1) keystones of Development, an online curriculum that demonstrates how providers can promote brain development and help strengthen parent-child relationships within routine well-child visits; (2) Sparks Parent Video Series, a free video curriculum for parents that blends social-emotional-cognitive development with medical, safety, sleep and nutrition topics, and promotes parenting behaviors that research has proven to help child health outcomes; and (3) Caring For Your Newborn, a 35-minute newborn education and discharge class that addresses routine infant care, common parent questions, and ways to promote brain development and parent-child connection.

For more information, visit <https://www.parenting.mountsinai.org>.

Nurse-Family Partnership (NFP)

In NFP, specially-educated nurses regularly visit young, first-time moms-to-be, starting early in the pregnancy and continuing through the child's second birthday. Expectant moms receive the care and support they need for a healthy pregnancy from a nurse who becomes a trusted resource they can rely on for advice on safely caring for their child and taking steps to provide a stable, secure future. Through the partnership, the nurse provides new moms with the confidence and the tools to support a healthy start for their babies and to envision a life of stability and opportunities for success for mom and child.

For more information, visit <https://www.nursefamilypartnership.org>.

Parents as Teachers (PAT)

PAT supports families by matching parents and caregivers with trained professionals who make regular personal home visits during a child's earliest years — from prenatal through kindergarten. This partnership supports early detection of developmental delays and health issues and helps parents understand their role in encouraging their child's development. PAT develops curricula that support a parent's role in promoting school readiness and healthy development, embracing learning experiences that are relevant and customized for the individual needs of each family and child.

For more information, visit <https://parentsasteachers.org>.

Power of Two

Power of Two helps families heal from the root causes of trauma, helps children thrive, and strengthens community cohesion. The program promotes healthy early childhood development for infants living in poverty and experiencing other ongoing, serious stressors. It implements Attachment and Biobehavioral Catch-Up (ABC), a home visiting program of targeted parent coaching sessions. In addition, Power of Two provides families with comprehensive referrals to resources offered by trusted partners in the community. Program graduates also can take part in community building and advocacy initiatives.

For more information, visit <https://powerof2.nyc/>.

Promoting First Relationships (PFR)

PFR trains providers to implement a 10-week strengths-based home visiting program based on infant mental health principles and attachment theory. Designed for caregivers and children aged 0–3 in the welfare system (e.g., during or after foster care placement), PFR videotapes caregiver-child interactions, then engages parents in conversations to build confidence and support caregivers to read nonverbal cues, comfort children when distressed, and understand social and emotional needs.

For more information, visit <https://pfrprogram.org>.

Simple Interactions (SI)

SI is a practice-based, strengths-focused, and community-driven approach to support practitioners who serve children, youth, and families. Using the Simple Interactions Tool, practitioners can identify, describe, and reflect back to caregivers and families moments that embody one or more underlying dynamics of a developmental interaction: connection, reciprocity, inclusion, and opportunity to grow. To develop the training, the SI team uses video to capture authentic and unscripted interactions between adults and children in everyday settings. The tool can be used with or without videos.

For more information, visit <https://www.simpleinteractions.org>.

SMART Beginnings

Starting shortly after birth, SMART Beginnings is a universal primary prevention strategy that promotes school readiness in low-income families by targeting positive parenting practices in pediatric primary care settings (e.g., pediatric clinics) during well-child visits through the Video Interaction Project (VIP). VIP involves recording and discussing play and interactions between the caregiver and child, the parent receiving a toy or book, and shared completion of a pamphlet with additional suggestions.

For more information, visit <https://steinhardt.nyu.edu/ihdsc/projects/smart>.

Strengthening Families Program (SFP)

SFP is a drug-prevention family skills-training program for high- and average-risk families. Sessions cover such topics as appropriate developmental expectations, positive family communication, and consistent and effective discipline. SFP includes time for caregivers and children to interact in family sessions to practice skills including positive interactions and communication.

For more information, visit <https://strengtheningfamiliesprogram.org>.

Strengthening Families Protective Factors Framework

The Strengthening Families Framework is a research-informed approach to increase family strengths, enhance child development, and reduce likelihood of child abuse and neglect. It is based on engaging families, programs, and communities in building five key Protective Factors: (1) parental resilience, (2) social connections, (3) knowledge of parenting and child development, (4) concrete support in times of need, and 5) social and emotional competence of children. Strengthening Families is implemented through small but significant changes in daily practice, supported by shifts at the program level that allow workers to make those changes. A number of tools are available to support those shifts in practice.

For more information, visit www.strengtheningfamilies.net or <https://cssp.org>.

Reach Out and Read (ROR)

ROR is a pediatric early literacy program that partners with pediatricians to prescribe books and encourage families to read together. It seeks to maximize the impact of primary pediatric care on positive early development by supporting daily, language-rich interactions with caregivers. Program components include education and guidance about reading aloud as part of routine preventive care, picture book gifts at check-ups between 6 months and 6 years of age, and volunteers in waiting rooms to read to children and model effective strategies.

For more information, visit <https://reachoutandread.org>.

Mother and Infant-Focused Neonatal Abstinence Syndrome (NAS) Interventions

NAS Interventions address the opioid epidemic by supporting enhanced care and treatment for mothers and infants affected by opioid use. NAS initiatives develop or enhance programs for opioid-exposed infants at risk of developing NAS and pregnant and postpartum women with opioid use disorder through a dyadic care model, providing rooming-in care for the mother and infant for the duration of the infant's inpatient stay. Many initiatives also offer integrated pre- and postnatal supports, including coordinated access to behavioral health care, medication-assisted treatment, education and support for breastfeeding, and early intervention programming for full family care both in the hospital and in the community after discharge.

For more information, visit <https://mass.gov/HPC>.

Video Interaction Project (VIP)

This evidence-based parenting program uses videotaping and developmentally-appropriate toys, books, and resources to help parents use pretend play, shared reading, and daily routines as opportunities to strengthen early development and literacy for their children. VIP sessions take place in pediatric clinics on days of routine well-child visits. At each session, families meet individually with an interventionist for approximately 25 minutes. VIP helps build parenting skills and self-efficacy in low-income families by using and building on the Reach Out and Read model using pediatric primary care as a platform for reaching high-risk families. VIP 0–3 is designed for parents of infants and toddlers and can be complemented by an additional component for families with children aged three to five.

For more information, visit <https://www.videointeractionproject.org>.

Video Feedback Intervention to Promote Positive Parenting-Sensitive Discipline (VIPP-SD)

VIPP-SD is a home visiting model that involves making video recordings of diverse parent-child interactions in everyday play situations and discussing them. The caregiver and certified intervener work together on increasing caregivers' (1) knowledge of child development, (2) skill in observing and responding to their children's signals, (3) capacity to empathize with their children, and (4) use of appropriate discipline strategies. VIPP-SD has been adapted for specific populations, including families with infants (VIPP), families with children who have autism (VIPP-AUTI), children in foster care (VIPP-FC), and second-generation Turkish families (VIPP-TM).

For more information, visit <https://www.universiteitleiden.nl/en/vipp>.

Vroom

Vroom is an online platform that shares early brain development tips, strategies, and knowledge with caregivers and communities. The tips bring attention to brain-building opportunities to promote language development, executive function skills, and serve-and-return interactions between children and the adults during such everyday moments as mealtime, bath time, and trips to the grocery store.

For more information, visit <https://www.vroom.org>.

Approaches

Infant and Early Childhood Mental Health Consultation (IECMHC)

IECMHC is a common approach to delivering mental health services and supports for young children, their families, and the early care and education community. Prevention-based, it pairs a mental health consultant with adults who work with infants and young children in the settings where they learn and grow, such as child care, preschool, home visiting, early intervention, and their home. IECMH consultants develop relationships with the adults and caregivers in young children’s lives to build adults’ capacity to strengthen and support the healthy social and emotional development of children — early and before formalized intervention is needed. IECMH consultants typically (1) work to support strong relationships and supportive environments for children; (2) focus on building the capacity of the adults in children’s lives to understand young children’s social emotional development; (3) are highly-trained licensed or license-eligible professionals with specialized knowledge in childhood development, the effects of stress and trauma on families, the importance of attachment for young children, and the impacts of adult mental health on developing children; and (4) use a strengths-based approach and consider all levels of influence to support young children and their caregivers.

For more information, visit the Center of Excellence for Infant & Early Childhood Mental Consultation’s website at <https://www.iecmhc.org> and the Alliance for the Advancement of Infant Mental Health’s website at <https://www.allianceaimh.org>.

Home Visiting

This model of service delivery involves trained providers such as public health nurses, social workers, and community health workers visiting the home of a caregiver and their child beginning as early as pregnancy. Based on specific needs, home visiting programs differ on a number of characteristics, including goals (e.g., providing parents with information, emotional support, skill-building), child age, curriculum content, and the role of the home visitor (e.g., parenting coaches, resource providers that connect families to supports, health and wellness assessments, developmental screenings). Several interventions described above have a home visiting component, including ABC, NFP, PAT, and PFR.

Video Feedback

Video feedback interventions typically involve recording interactions between a caregiver and child followed by a review of the interaction with a provider or coach to identify areas of strength and opportunities for growth. Several interventions described above incorporate video as a key component, including FIND, Smart Beginnings, VIP, and VIPP-SD.

Rooming-In

Studies show the practice of “rooming-in” infants born with neonatal abstinence syndrome (NAS) — a treatable condition that newborns experience after chronic exposure to substances, such as opioids, while in utero — with their mothers, rather than transferring them to the neonatal intensive care unit (NICU) may reduce the severity of withdrawal symptoms and hospital length of stay for both mother and child.^{133,134} Rooming-in under the care of supportive nursing and medical staff can also help new mothers bond with their infants and offers more opportunities for nonpharmacologic, supportive techniques.¹³⁵ See [Mother and Infant-Focused Neonatal Abstinence Syndrome Interventions](#) above to learn more about rooming-in interventions for NAS.

Appendix B:

A Framework for Measuring Dimensions of Impact of Early Relational Health

Using the three vantage points of Early Relational Health outlined in Part III of this report (Figures 4, 5, and 6), we have developed a proposed framework for measuring the various dimensions of impact of Early Relational Health.

This approach addresses the following **three areas of assessments:**



Quality of children's early relational experiences



Impact of early relational supports on the adults in the family



Progress of the early relational ecosystem

Measuring the Quality of Children's Early Relational Experiences

Of the three areas, efforts to understand and assess the quality of children's early relational experiences have the longest history in academic research, dating at least to attachment experiments, called Strange Situation, by Mary Ainsworth in the 1970s and the famous Still Face demonstrations by Edward Tronick during the same decade.

More recent efforts to assess the quality of early relationships between adults and children rely on live or video-recorded observations of naturally-occurring caregiving or play interactions. The [Early Childhood Precision, Innovation, and Shared Measurement \(EC PRISM\)](#)¹³⁶ project at University of Oregon evaluates Early Relational Health measures along the criteria of cost, usability, cultural relevance, and technical merit.



Strange Situation and Still Face Experiments

In the Strange Situation experiments, young children are briefly separated from their parents and left alone with an experimenter. The children's subsequent emotional expressions and behaviors during separation and reunion yielded attachment "types" (e.g., secure, insecure, anxious, and ambivalent), which could be associated with parenting style and children's future outcomes. In the Still Face experiments, parents were instructed to temporarily refrain from interacting with their babies as a way to observe the processes by which babies elicit parents' attention, express distress, and repair their connection after parents resume normal interactions. The YouTube recording of the demonstration has 15 million views and is widely used for training and education, making it perhaps the most "viral" psychological experiment online.

Each tool incorporates necessary tradeoffs among these criteria. There is no single “best measure.” The most important tradeoffs may be between cultural relevance and technical merit. The more prescribed a tool is about specific behaviors of interaction, the more precise it becomes — attaining high technical merit. Yet, such precision often comes at the expense of the tool’s flexibility and adaptability to diverse cultural and developmental settings. A valid concern from developmental and anthropological researchers who study childhood attachments across cultures is that many existing measures over-rely on specifying what responsive interactions must look like (e.g., whether the adult is smiling or making eye contact) rather than leaving room for a variety of culturally-specific and contextually-appropriate caregiving practices (e.g., a “matter-of-fact” demeanor, close physical contact without eye contact).¹³⁷

An assessment tool that illustrates some of these tradeoffs is the [Welch Emotional Connection Screen \(WECS\)](#),¹³⁸ developed for neonatal intensive care unit (NICU) clinicians to assess parent-child relational health within the NICU. Trained clinicians use 2–3 minutes of observation to assess four vital signs of parent-infant interactions: (1) mutual attraction, (2) vocal communication, (3) facial expressiveness, and (4) reciprocity. The WECS is a highly-precise and targeted tool in the early stages of being pilot tested in general pediatric well-visits settings outside NICU. A complementary approach is the [Simple Interactions Tool](#),¹³⁹ which incorporates four illustrated dimensions of interactions: (1) connection, (2) reciprocity, (3) inclusion, and (4) opportunity to grow. It requires less than an hour to understand, can be applied to interactions lasting from a few seconds to a few minutes, and is usable by parents, clinicians, and paraprofessionals with any level of education. The tool lacks the precision of the WECS and other research instruments but leaves much flexibility for interpretation to accommodate different ages, cultures, and settings. Consequently, its primary use is not for clinical or research measurement, but for helping parents and professionals learn to describe and reflect on interactions.

At present, it is reasonable to conclude that there are sufficient options among assessment tools and much consideration can be given to the fit between a tool and its intended users, purpose of use, and the intended cultural contexts and institutional settings.

Measuring the Impact of Early Relational Supports on the Adults in the Family

Safe, stable, and nurturing relationships are important for adults as well as for children because they provide emotional and tangible support and opportunities to develop core life skills. In healthy early relationships, the two-way reinforcing relationship promotes children’s development, caregiver’s mental health and satisfaction, caregiver’s intimacy with their baby, and helps to lower parenting stress.

The following are a few examples of bidirectional interactions and benefits:

- Maternal postpartum depression can be effectively targeted through dyadic-focused interventions for the parent and the child.¹⁴⁰
- Multifamily parenting interventions can improve mental health and parenting among high-risk mothers with young children.¹⁴¹
- Such parent-child interactions as shared book-reading can decrease parental stress while improving adult-child relationships.^{142,143}
- In education contexts, teacher-student relationships are linked to teacher resilience and purpose^{144,145} and are positively associated with teachers’ joy and negatively associated with their anxiety.¹⁴⁶

While research evidence consistently shows that Early Relational Health interventions benefit adult caregivers as well as their young children, early childhood research studies most often evaluate program effectiveness primarily in terms of child outcomes. Program impacts on adults are often viewed in terms of their “value as mediators of child outcomes rather than as desired objectives in their own right.”¹⁴⁷ Evidence from the types of relational health interventions above strongly suggests we can adopt a relationship-centered approach, rather than the child-centric approach, to understand and measure the impact of relationships on all parties (e.g., babies and parents, grandparents, and other caregivers).

For example, the [Early Relational Health Screen \(ERHS\)](#)¹⁴⁸ detects, monitors, and promotes relational health across settings to address the functional, emotional, behavioral, and psychosocial health of infants and toddlers and their primary caregivers. Such evaluation approaches for home visiting programs as the [Nurse Family Partnership](#) also offer models for assessing impact on adults and children over time.

Measuring the Progress of Early Relational Ecosystem

As described in Part I of this report, Early Relational Health adopts a strengths-focused lens to identify and build community assets that can support early relationships between young children and their families. In addition to evaluating these efforts at the level of individual impact on children and adults, the vision of an early relational ecosystem ([Figure 6](#) in Part III) calls for a multi-faceted approach to understand its incremental impact on the community as a whole.

The following is just a starting set of more immediate indicators of progress:

- Engagement of groups of stakeholders who can identify needs, gaps, and resources, including parents, families, service providers, and policymakers
- Sustainability of community-level capacity to support caregiving, education, health, well-being, and economic opportunity
- Equitable accessibility, availability, and affordability of early relational supports for families, no matter where they live or their life circumstances
- Quality of relationships and partnership among families, care providers, service providers, and community organizations and institutions

Though we are only at the beginning of envisioning Early Relational Health, no matter how we define the return on investment decades down the road — in terms of educational attainment, health and well-being, economic productivity, or a culture of care — we can begin to embrace the balanced approach that values the impact on both children and adults, values learning and caregiving, and values improvements in both the immediate experiences of relationships and long-term returns to community.

Appendix C:

Communicating a Hopeful Agenda for Early Relational Health

Lessons Learned from Early Childhood Communications

The success of any innovation depends in part on how effectively it is communicated. We can learn from the recent past in communicating early childhood concepts. [Table 3](#) briefly reviews the benefits and unintended consequences of four consequential early childhood concepts adjacent to Early Relational Health. For each, we identify where communicators can build and improve upon these findings to establish Early Relational Health as a new and enduring rallying point for early childhood advocates.

TABLE 3

Lessons Learned from Existing Early Childhood Messages

CORE IDEA	MESSAGE	WHAT WORKED AND WHAT FELL SHORT	OPPORTUNITY FOR EARLY RELATIONAL HEALTH
BRAIN SCIENCE	Translations of basic neuroscience research studies highlighted both the sensitive periods of early development and the lifelong consequences of early deprivation, making phrases like “the earliest years are the most important years of brain development” common among advocates and the general public.	<p>Introducing brain science into conversations about early childhood lent credibility and urgency to help propel public awareness and political support for increased investment.</p> <p>However, overly-simplistic translation of brain science contributes to such unintended misinterpretations as narrow focus on academic and cognitive development and the notion that, if we miss the early window, it is too late to intervene during adolescence.</p> <p>Over-emphasis on brain development may also create an unnecessary division among the body, the mind, and overall well-being.</p>	<p>The science of early relationships and early development is about closely-integrated development among the brain, body, health, and well-being. The impacts of early relationships are felt “at the neurological level, physiological level, and the molecular level.”¹⁴⁹</p> <p>Elevating the importance of human relationships enables us to advocate for “whole” development of children and adults, integrating many facets of development — from brain, to body, to the heart.</p> <p>In addition, we can champion the importance of early investment in ways that enhance, not diminish, the case for important supports that children and families need from early childhood through adolescence.</p>

cont. →

CORE IDEA	MESSAGE	WHAT WORKED AND WHAT FELL SHORT	OPPORTUNITY FOR EARLY RELATIONAL HEALTH
RETURN ON INVESTMENT	The long-term societal impacts of early childhood programs that began in the 1960s-1980s are well established by such economists as James Heckman, who estimated early childhood investment as producing a 7–10% annual return, well above the stock market itself.	<p>These economic formulations became part of the widely-accepted rationale for public investments and bipartisan support.</p> <p>However, the frame of long-term return on investment can also shift the focus of policy incentives from the present to the distant future, while children, families, and other caregivers have needs to be met in the present.</p>	<p>Heckman and others point out the vital importance of going beyond the question of “if/whether” early childhood investments yield returns to “how” such investments take place. The science and principles of Early Relational Health can help address the “how” to enhance and enrich everyday human experiences for children and families.</p> <p>Early Relational Health advocates can focus public investments on creating social conditions and systemic supports that enhance relational support for children and families in the “here and now” of their lives.</p>
WORD GAP	Of the many rich findings in the original study to understand similarities and differences in home environments across socioeconomic groups, one particular element became popularized as “children from low-income families have a 30-million-word gap compared to more affluent families by the age 3.” ¹⁵⁰	<p>The so-named “30-million-word gap” propelled much research focus on children’s language development, programs and technologies designed to understand and narrow such gaps, and public policy to support language and literacy development both at home and in early childhood care and education.</p> <p>However, the narrow focus on “word gap” oversimplified the complex, cultural, and relational process of language development. It unintentionally reinforces harmful stereotypes about low-income families. Its overuse falls into the communication trap of “blaming the parent” instead of focusing on the structural and systemic conditions in which they live.</p>	<p>The enduring driver of language and other important early development is not merely the <i>quantity</i> of words, but the <i>quality</i> of relational interactions between caregivers and young children. We can strive to make Early Relational Health universally applicable and avoid reducing it to over-simplified metrics or slogans.</p> <p>Early Relational Health advocates should be cautious about reinforcing stereotypes and prejudices that may counteract the goals of our message.</p>
ADVERSE CHILDHOOD EXPERIENCES (ACES)	The science of ACEs presents a somber reminder of the breadth and depth of children’s adversities that have the <i>potential</i> to result in lifelong consequences. <i>Toxic stress</i> is defined as prolonged exposure to stress in the absence of protective relationships. ¹⁵¹ These messages shifted the focus from “fixing the child” to “fixing the toxic environment.”	<p>The growing understanding of childhood adversity spurred renewed efforts to develop trauma-informed practices as well as community-wide initiatives to prevent the conditions of abuse, neglect, and dysfunction that constitute ACEs.</p> <p>However, misunderstanding of ACEs contributes to deterministic conceptions of “damaged children,” “broken families,” or “at-risk communities.” In focusing on “what has gone wrong,” past communications inadequately convey “what is going well” in the lives of children, families, and communities.</p>	<p>Early childhood and family advocates can build on the emerging and balanced Early Relational Health framework that centers human relationships in the work of risk reduction and resilience promotion.¹⁵²</p> <p>Early Relational Health advocates can affirm the protective power of relational supports and resources that already exist — both formally and informally — in under-resourced communities and expand access and connections among services and organizations that contribute to the relational health of children, families, and communities.</p>

Toward a Communication Framework for Early Relational Health Principles of Action

The Center for the Study of Social Policy (CSSP) and the Frameworks Institute interviewed national early childhood experts and parents to develop an initial set of communication recommendations for *Building Relationships: Framing Early Relational Health*.¹⁵³ We highlight here the convergence of communication strategies and the five Early Relational Health principles outlined in Part IV of this report. Additional resources and tools from CSSP and partners, including the core story of Early Relational Health and stakeholder specific messages, are now organized at [Nuture Connection](#).

OVERARCHING PRINCIPLE

Embed Equity within Early Relational Health

Don't do anything *about* us *without* us — engage families and communities to promote equity across family, community, and system levels.

• Communication Recommendations:

- Use the value of Inclusive Opportunity to talk about equity.
- Use the “Overloaded” metaphor to explain the impact of systemic inequalities on development of healthy relationships.
- Demonstrate how policies that address inequities facilitate healthy relationships.

• Alignment:

- Effective Early Relational Health advocacy is not just developed for families, but *with* families. We need to create conditions and supports so families and communities can play a range of roles — to lead, inform, provide, receive, and advocate — in shaping practices, programs, and policies that influence their lives and their relationships. The need and value for Early Relational Health is universal and the target of intervention is focused on the inequitable availability and access to supports and resources.

PRINCIPLE 1

Trust Parents

All parents want to provide, are capable of providing, and strive to improve their relationships with their children.

• Communication Recommendations:

- Always feature adult and child — not just the child.
- Show adults participating in, and benefitting from, relationships.

• Alignment:

- Early childhood communication print and media materials are child-centered.
- Early Relational Health is by definition relationship-centered. It represents an integration between the needs and impact on *both* children and adults. Practices are designed to affirm and highlight adults' capacity in caring for children.

PRINCIPLE 2

Focus on Simple, Everyday Interactions

as the basic building blocks of Early Relational Health.

• Communication Recommendations:

- Emphasize that relationships are intrinsically rewarding and gratifying.
- Focus on the positive early and often.
- Use images and videos to communicate joy and delight.

• Alignment:

- In early childhood as well as other developmental contexts, relationship-building is described as a “means to an end” (e.g., improving parent-child interactions to support language and literacy). The science and experience of Early Relational Health offers a holistic understanding that relationships are both the means to promote development and the end — the core component of well-being and development. For families, focusing on the inherent value of everyday interactions brings together the message and the principle.

PRINCIPLE 3

It Takes a Village to Raise a Child

All caregivers need and benefit from external help and support.

Communication Recommendations:

- Focus on external pressures that hamper parents’ capacity to care for their children.
- Do not simply name stressors in families’ lives, but also explain how they affect relationships.

Alignment:

- In emphasizing the importance of caregiving and responsive interactions, we need to debunk the myth that caregiving skills are a static trait that separates “good” and “bad” parents. By explaining the causal connection between stressors and relationships, we move beyond the artificial separation of parents “with needs” and parents “without needs” to highlight the universal value of support systems.

PRINCIPLE 4

Meet Families Where They Are

Recognize families share universal, but not uniform, needs.

Communication Recommendations:

- Avoid deterministic language and emphasize parents’ self-efficacy and resilience.
- Use a hopeful, efficacious tone.

Alignment:

- While it is critical to raise awareness of children’s exposure to adversity and toxic stress, we need to help parents, practitioners, and policymakers understand that sources of resilience already exist within families and communities. An overly deficit-focused portrayal of children can mislead the public into stereotypes of “damaged children” and invite blaming the parent. Lifting up the resilience and determination of families grounds hope in the self-efficacy of adults and the collective efficacy of communities.

PRINCIPLE 5

Build Parallel Relationships

Parent-child, parent-professional, and professional-professional.

Communication Recommendations:

- Use the term *foundational relationships* to communicate that relationships are central to future development, health, and well-being.
- Tell stories about what changes when relationships are central.
- Include all caregivers to expand people’s sense of the relationships that matter.

Alignment:

- Communication research on public understanding of relationships in early years and adolescence consistently reveals a gap: People recognize the importance of relationships in their own lives and others’ lives, but see relationships primarily as a personal process and do not see how systems and policies can help or hinder relationships. Early Relational Health messages should build on people’s intuitive recognition of the importance of relationships and expand to help them see that the health of any one relationship is dependent upon an ecosystem of supportive relationships all around us.

Ultimately, this alignment between Early Relational Health principles and communication strategies illustrates that the core story and message rest on a series of balanced perspectives:

- Balancing the specific and relational focus of Early Relational Health with its impact on holistic, integrated development for children and adults
- Balancing Early Relational Health’s long-term returns with its immediate impact on the lives and experiences of children and families
- Balancing the need for Early Relational Health for all children and families with the advocacy of the challenges faced by children and families deprived of equitable access to supports and resources
- Balancing the urgency of drawing attention to adverse conditions that disrupt early relationships with the incremental and hopeful agenda of creating a healthy relational ecosystem where all children and families can thrive

Appendix D:

Acknowledgments

Our team would like to thank everyone who made this work possible.

We are grateful to the team at the Burke Foundation, in particular **Atiya Weiss** and **Renée Nogales**, for their generous support and ongoing collaboration and feedback.

David Willis, Senior Fellow at the Center for the Study of Social Policy, offered invaluable insight, thoughtful feedback, and ongoing guidance. His extensive knowledge of Early Relational Health and pioneering efforts to help further define this growing body of knowledge and its application in early childhood systems have not only been important for this report, but for the field at large.

Teresa Wolverton, Senior Director of Operations at Sesame Workshop, and **Jon Shure**, Communications Consultant, provided critical and detailed reviews that were helpful in getting this report to its final form. Their practical suggestions and constructive advice helped make this report more concise and accessible.

Kelsey Armstrong, graphic designer and creative marketing professional, designed the layout for this report. Their contributions helped the text of this report come to life, creating a more engaging experience for our readers. Kelsey's patience throughout the report development process has been unmatched.

Finally, we would like to thank all those who shared their time and expertise with us. We especially appreciate the time, expertise, and enthusiasm of the Early Relational Health experts we interviewed, including the academics, researchers, practitioners, funders, families, and other community members. Their contributions helped us to develop a more holistic and multi-faceted understanding of Early Relational Health that we hope this report captures.

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PUBLISHED SEPTEMBER 2023

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