“Validation of a Salivary RNA Test for Childhood Autism Spectrum Disorder” was funded by National Institutes of Mental Health and published in 2018. The test is reported to have 90% accuracy and just now became available to the public.

(Hicks, Steven D., et al., 2019)

The primary goal is “to identify children at risk for autism as early as possible because the research is clear—The earlier effective intervention begins, the better the outcome!”

(Hicks, Steven D., et al., 2019)
We have a window of opportunity, because the brain is malleable for just so long, and that window of opportunity happens in the first three years of life. It’s not that that window closes. It doesn't. But it diminishes considerably. And yet, the median age of diagnosis in this country is still about five years, and in disadvantaged populations, the populations that don’t have access to clinical services, rural populations, minorities, the age of diagnosis is later still — which is almost as if I were to tell you that we are condemning those communities to have individuals with “autism whose condition is going to be more severe.”

—Ami Klin
The overwhelming research indicates that the problems are existing during brain development, probably as an embryo or fetus. The symptoms of autism may not be obvious until a child is a toddler, but the disorder appears to begin well before birth.

(Stoner, R., Chow, M. L., Boyle, M. P., Sunkin, S. M., Mouton, P. R., Roy, S., ... & Courchesne, E., 2014)
Traditional Definition...

Autism spectrum disorder (ASD) and autism are both general terms for a group of complex disorders of brain development. These disorders are characterized, in varying degrees, by difficulties in:

- social interaction
- verbal and nonverbal communication
- repetitive behaviors

New Definition...

Autism is a disorder defined by altered engagement with the social world; the core diagnostic features are deficits in social interaction and communication and the presence of repetitive behaviors and restricted interests lacking in social exchange value.

~Ami Klin
The Research...

Brain Function

Decreased Internal Reward from Social Interaction

Babies are naturally drawn to people and faces, and their brains show greater responses when they look at a face, compared to an object or a toy. But in young and even older children with autism, the opposite happens. The part of the brain that should be responding to a face or social activity doesn’t light up, but the part of the brain that responds to objects is more active.

**Eye Tracking**

Pierce K, Conant D, Hazin R, Stoner R, Desmond J, 2010
Eye Tracking

Attention to Eyes is Present but in Decline in 2-6-Month-old Infants Later Diagnosed with Autism

(Jones W. & Klin A, 2013)

"Autism Creates Autism"

Ami Klin, Ph.D.
Chief of Autism and Related Disorders, Marcus Autism Center
Department of Pediatrics, Emory University School of Medicine
Bottom line—
Failure to orient to social stimuli represents one of the earliest and most basic social impairments in autism and may contribute to the later-emerging social and communicative impairments.

Paradigm Shift...

So—
Autism specific early intervention that addresses the core deficits of early social attunement will change the way a child tunes in and interacts with the social environment! This can alter the child’s brain development toward a more typical learning and developmental trajectory and diminish autism symptoms!
Statistical information from the Centers for Disease Control (CDC) 2018 indicates that the rate of autism is 1 in 59 children (1 in 37 boys). A 15% increase over 2012.

SITUATION/Problem...

- Gender Gap
- Ethnic Gap
- Age of Diagnosis

"The sooner a child can get into services, the better the outcomes for the child and more likely to achieve their developmental potential. We need to do more work to get children diagnosed earlier. We should be identifying children closer to age 2."

Stuart K. Shapira, MD, Ph.D.
Chief Medical Officer
Associate Director for Science
National Center on Birth Defects and Developmental Disabilities
The American Academy of Pediatrics recommends that all children be screened for autism by their family pediatrician twice by the age of 2, at 18 months and again at 24 months.

Most children identified with ASD had concerns about their development noted in their records by age 3, yet, fewer than ½ received a comprehensive developmental evaluation by this same age.
Scientists at University of California San Diego School of Medicine report diagnoses of autism spectrum disorder (ASD) in children as young as 14 months are remarkably stable, suggesting that accurate screening and earlier treatment is feasible.

(Pierce, Karen, 2019)

Much of the research that continues to guide decision making and recommendations was not done on our toddlers...it was done on older children and young adults.

The National Research Council report “Educating Children with Autism” was released in 2001 well before we even identified Toddlers.
Goal...

To make affordable, effective, evidence-based intervention available to all toddlers suspected of or diagnosed with autism!
The service delivery model for treatment for toddlers with ASD needs to be different from the service delivery model for older children.

(Schertz et al., 2013; Wallace KS, Rogers S, 2010)

Intervention for toddlers with ASD differs from the general developmental intervention that is effective for other groups of children.

(Wallace KS, Rogers S, 2010; Rollins PR, 2016.)
NDBI
Naturalistic Developmental Behavioral Intervention—Empirically supported, autism interventions that represent the merging of applied behavioral analysis and developmental sciences and are delivered in natural settings.


Parent-Training Program
A Naturalistic Developmental Behavioral Intervention

Pathways
Innovation!!

• Practice to Research. Developed to fit the principles and service delivery model of IDEA Part C ECI programs.
• Parent coaching on an innovative protocol that works directly on socially engaged eye contact.
Pathways

• Developed especially for IDEA Part C programs
• Fits all criteria of an NDBI
• Empowers parents and reduces parent stress
• Addresses attunement—the core deficit of autism
• An established training and support system for interventionists
• Evidence-based with supporting research

Pathways

Five articles have been published in peer-reviewed journals. Three studies have been completed including an independent two-year randomized large scale study. Another large scale study is currently underway. Results are consistent.

(Rollins PR, 2015, 2016, 2017, 2018.)

Pathways

Research found the Pathways Parent Training Program model to be “effective for developing the early foundational social communication skills of eye contact, social engagement, and verbal reciprocity in toddlers enrolled in an IDEA part C program. In addition, parents perceived the intervention as beneficial, easy to learn, and easy to incorporate into daily life.”

(Rollins PR, 2015, 2016, 2017, 2018.)