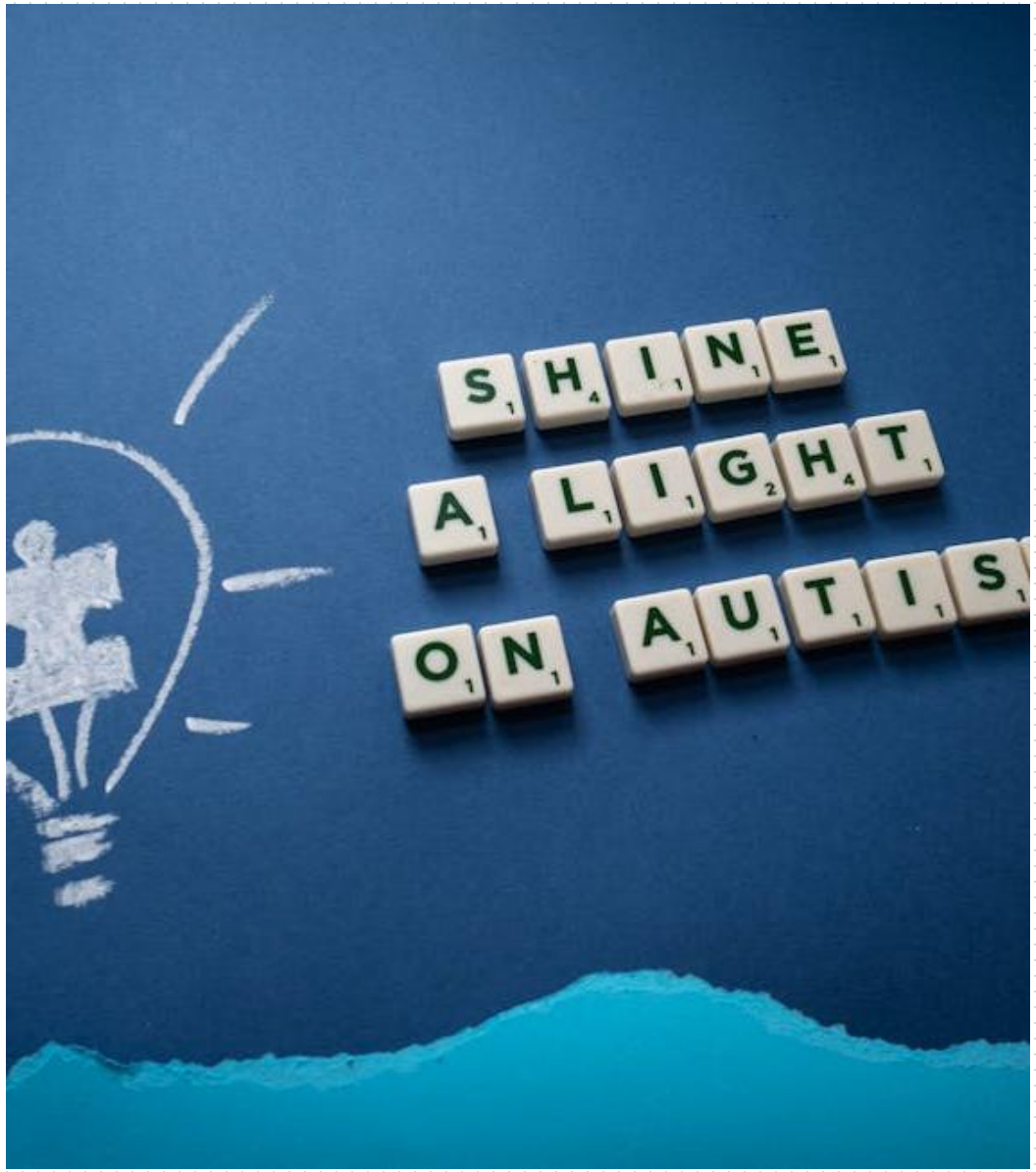
Innovations in Early Autism Screening and Diagnosis



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Disclosure of Conflict of Interest

I have no personal financial interest or conflicts to disclose.

I am employed by Easterseals, which uses EarliPoint™ technology in clinical care.

Agenda

1. Introduction and Overview of Autism Spectrum Disorder (ASD)
2. Importance of Early Detection and Barriers
3. Pediatricians' and Parents' Perspectives
4. Current and Emerging Diagnostic Tools
5. Social Visual Engagement and Introduction to EarliPoint™
6. Benefits and Validation of EarliPoint™
7. Evaluation Pathway at Easterseals
8. Collaboration for Early Care and Summary

Reflection

Age of Diagnosis

When are children typically diagnosed in your practice?

How does this compare to national benchmarks?

Impact of Early Diagnosis

How does early identification influence treatment access and developmental outcomes?

Challenges to Early Detection

What are the key barriers to early ASD detection in your setting?

ASD Overview

Prevalence

ASD affects about 1 in 36 U.S. children, significantly impacting families and communities.

Diagnosis by Gender

Boys are four times more likely to be diagnosed with ASD, possibly due to presentation differences or bias.

Age & Symptoms

ASD symptoms typically appear by age two, often including social challenges and limited eye contact.

Median Diagnosis Age

In the U.S., ASD diagnosis usually occurs after four years old, delaying early intervention.

What is Autism

Definition

Autism Spectrum Disorder is a neurodevelopmental condition that affects how individuals communicate, interact, and behave.

Causes & Risk Factors

Genetic predispositions, environmental factors, and differences in brain connectivity contribute to ASD onset.

Common Symptoms

Symptoms include challenges in social interaction, communication difficulties, and repetitive behaviors.

The Importance of Early Detection

Better Outcomes

Early autism interventions improve communication and reduce social interaction challenges.

Consequences of Delay

Delayed screening misses critical therapy windows, limiting skill growth and social development.

Significance of Early Detection

Early detection enables timely interventions, improving quality of life and supporting skill development.

Barriers to Diagnosis

Limited Access to Specialists
Shortages of specialists and long wait times delay diagnosis and access to services.

Lack of Awareness
Limited awareness and understanding of early ASD signs among parents, educators, and healthcare providers can hinder identification.

Socioeconomic Factors
Cost, transportation, and insurance barriers may prevent families from accessing diagnostic services.

Pediatricians' Perspectives on ASD

- Recognize importance of early identification and referral
- Support routine screening but face time and resource barriers
- Vary in comfort discussing ASD concerns with families
- Need more training on screening tools and referral pathways
- Concerned about long wait times and fragmented care systems

Parents' Attitudes

Value of Early Intervention

Parents value early autism intervention as it enhances developmental outcomes and provides vital support for effective communication and social skills.

Concerns About Stigma

Parents worry that early autism labeling might lead to social stigma, impacting family interactions and causing undue stress and isolation.

Interest in Predictive Testing

High parent interest in predictive autism testing exists, especially among families familiar with ASD, due to its potential to inform early interventions.

Diagnostic Criteria (DSM-5-TR)

- Symptomatic deficits in social communication and interaction
- Presence of restricted and repetitive behaviors
- Symptoms must be present in early developmental period
- Symptoms must cause functional impairment

Current & Emerging Screening & Diagnostic Measures for ASD

Traditional Screening Tools

- Developmental monitoring at well-child visits
- Autism-specific screening at 18 & 24 months (AAP)
- Common tools: M-CHAT-R/F, CSBS DP, STAT

Gold Standard Diagnostics

- Comprehensive developmental assessment
- ADOS-2, ADI-R
- Cognitive, language, adaptive functioning testing

Emerging Techniques

- Eye-tracking (e.g., EarliPoint™)
- Machine learning / digital behavioral markers
- Computer-based adaptive screeners

Social Visual Engagement

Early Social Markers

Atypical eye gaze patterns in children with ASD reflect early differences in social engagement.

Identifying these patterns supports earlier intervention and improved developmental outcomes.

Impact on Social Development

Reduced attention to eyes and social scenes limits children's ability to interpret social cues, which is critical for developing effective communication skills, building relationships, and supporting overall social development.

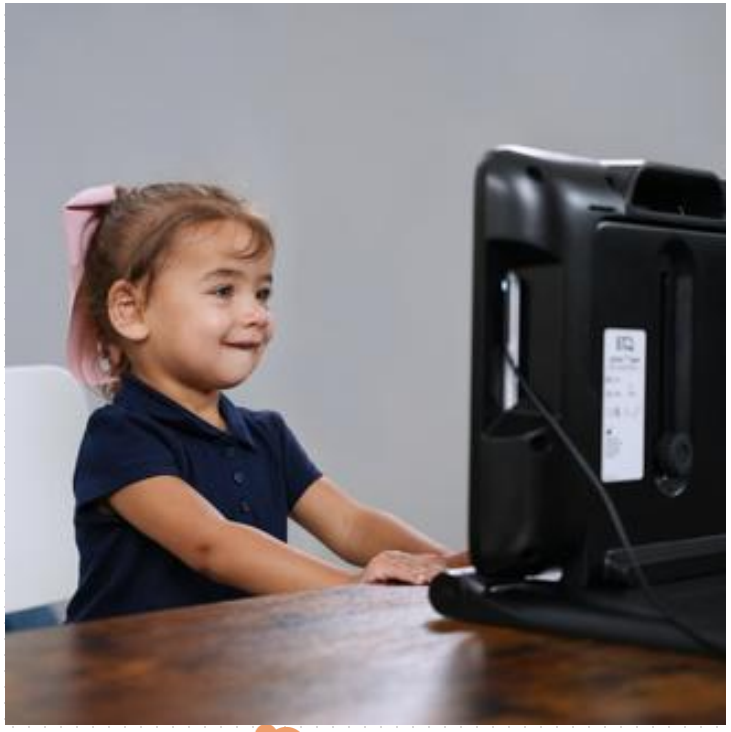
EarliPoint™:
A New Tool for Early ASD Identification

FDA Authorization

- FDA-authorized for ASD screening in children aged **16–30 months**

How It Works

- Uses eye-tracking technology to analyze gaze patterns while children watch short videos
- Measures how a child attends to faces, social cues, and non-social information
- Tracks eye movements to detect markers indicative of ASD
- Compares individual patterns to normative data to support accurate screening results



earlipoint™

EarliPoint™ Benefits

Fast & Objective

- Provides quick, objective insights using eye-tracking
- Generates reliable data to aid clinical decision-making

Clinically Backed

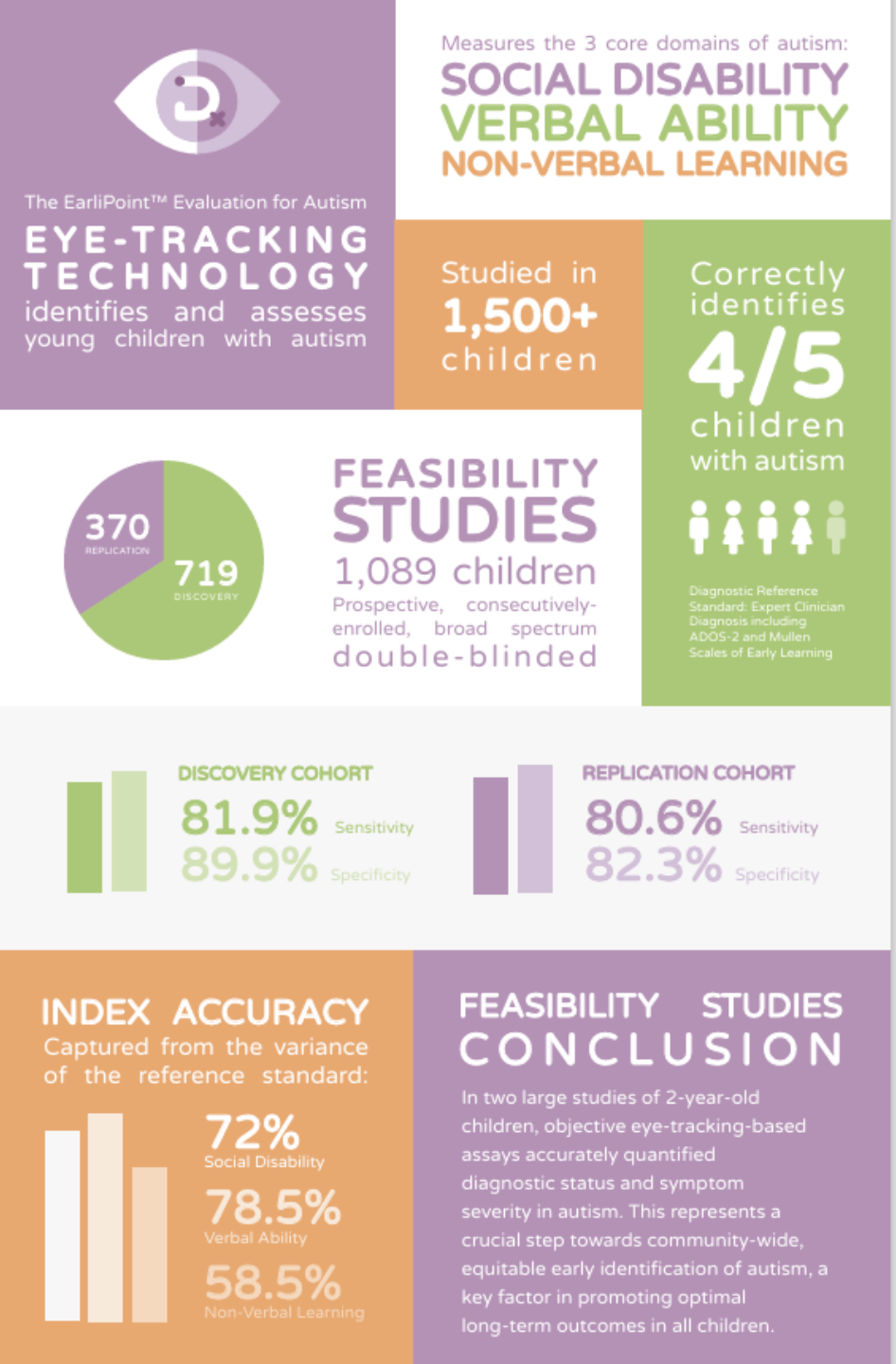
- Validated through comprehensive clinical studies
- Shown to accurately support early autism identification

Tech-Driven Innovation

- Applies cutting-edge technology to enhance autism screening and diagnosis
- Provides a method that complements traditional clinical observation and caregiver report

The EarliPoint™ Evaluation for Autism

EarliPoint™ Validation



Study Results

Studies have shown balanced accuracy with approximately 81% sensitivity and 83–90% specificity for ASD diagnosis.

Eye-Tracking Insights

Eye-tracking explained significant variance in social disability, verbal ability, and nonverbal cognitive ability.

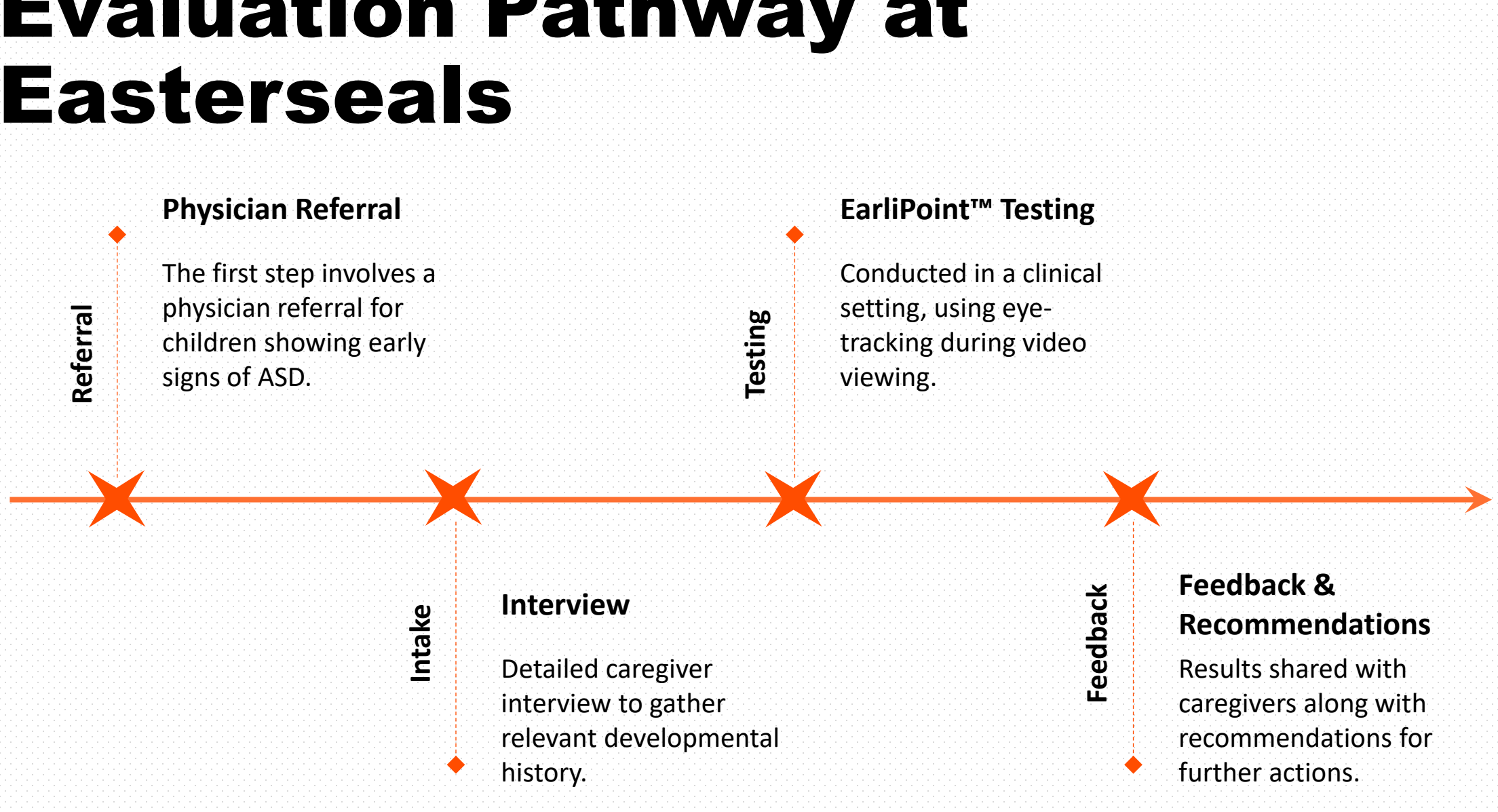
Independent Confirmations

Independent studies with blinded assessments confirmed accurate identification of ASD and predicted scores on ADOS-2, Mullen verbal and nonverbal tests.

Early Identification Tools

Supports scalable, objective tools for early identification and intervention in autism spectrum disorder.

Evaluation Pathway at Easterseals



How Providers Can Help

- **Prioritize Early Screening**
  Follow AAP guidelines and respond proactively to parent concerns.
- **Facilitate Timely Referrals**
  Refer early for comprehensive developmental evaluation and intervention.
- **Educate & Empower Families**
  Provide information about ASD and early signs; help families understand and navigate the process.
- **Communicate with Clarity & Compassion**
  Frame screening and referral as supportive; discuss results and next steps openly.
- **Collaborate Across Systems**
  Partner with specialists, early intervention, and community programs to ensure coordinated care.

Key Takeaways

- Detect early – improve outcomes.
- Screen, listen, refer — your role is critical.
- Innovations (EarliPoint™) enhance early identification.
- Partner with families and providers — coordinated care matters.
- Support families — empower with information and guidance.

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Selected references relevant to content presented

Thank You

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