



# Designing and Evaluating Autism Spectrum Disorders Risk Alert (ASDRA): A New Educational Tool to Facilitate the Early Detection of Autism Spectrum Disorders.

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## OBJECTIVE

To evaluate the effectiveness of Autism Spectrum Disorders Risk Alert (ASDRA), a new educational tool designed to teach pediatricians to recognize precursors of ASD in infants and toddlers through the use of narrated videos.

To survey awareness and experience in ASD in a representative group of pediatric residents.

## BACKGROUND

Research from prospective studies of children suggest that behavioral signs of ASD may be recognizable as early as 12 months.<sup>1</sup>

Studies demonstrate that early intervention in ASD significantly improves outcome, particularly if initiated before age three.<sup>2</sup>

It has been shown that fewer than 30% of primary care pediatricians in the United States conduct standardized screening tests for ASD.<sup>3</sup>

It is thus clear that educating pediatricians on ASD and its warning signs is an important start in encouraging referrals for early intervention in children at risk for ASD.

## METHODS

ASDRA was shown to a group of pediatric residents and medical students at Mount Sinai Hospital, introducing 12 different warning signs of ASD (Table 1).

Demographic data was collected to determine their education and experiences pertaining to ASD, and to gauge the general impression of ASD awareness among primary care pediatricians.

In the second session a week later, we provided the group with two outcome assessments using a video of a child with ASD.

The first outcome measured ability to judge a child's risk for ASD, and the second measured ability to differentiate specific warning signs of ASD.

We also had the participants rate the value and effectiveness of the educational sessions and collected feedback in a focus group setting.

Table 1

### 12 Risk Alerts for ASD based on DSM-IV Criteria

Eye Contact	Response to Voice
Joint Attention (Pointing, Bringing and Showing, Responding to Adult Point/Glance)	Development of Expressive Language
Mastery Motivation	Receptive Language Skills
Emotional Tone/Affection	Imitation
Interest in Other Children	Pretend Play
Restricted or Unusual Sensory Interests	Motor Stereotypy

## RESULTS

Total sample included 46 participants

27 pediatric residents and 4 medical students attended both the first and second sessions.

**61% on average were able to accurately judge a child's risk for ASD**  
**73% on average were able to differentiate specific warning signs**

65% of participants have seen *less* than 6 children with autism  
 93% have received *less* than 5 didactic sessions on autism.

The extent of experience with ASD or level of training did not significantly impact performance on either assessment measure.

97% of participants indicated that ASDRA enhanced their understanding of ASD (Figure 2)

100% of participants indicated that ASDRA would be of great value to medical students and pediatricians (Figure 3).

Figure 2

### Satisfaction, Measure A

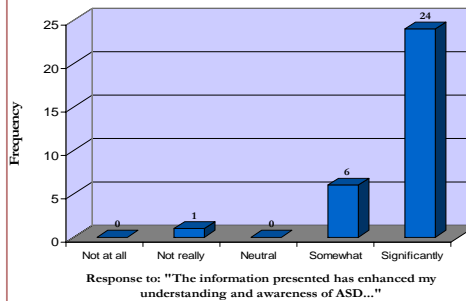


Figure 3

### Satisfaction, Measure B

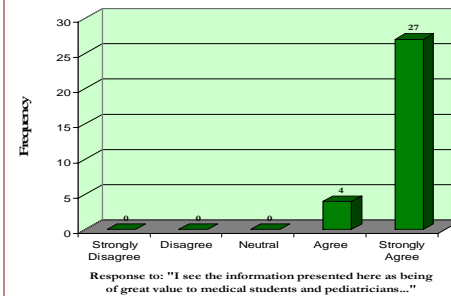
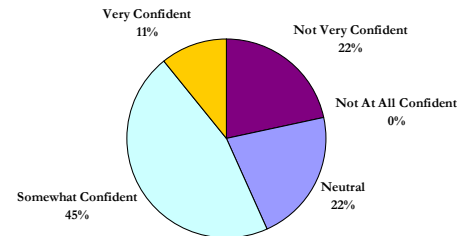


Figure 1

### Pediatrician Confidence in Own Ability to Recognize Early Signs of ASD in Children Under 3



## FEEDBACK

"The video during the first session was fantastic"

"Video clips as teaching tool are necessary"

"The video the second week allowed you to reinforce what you learned the first week"

"I really liked it!!"

"There may be more focus on a threshold for referral – a practical tool for pediatricians"

## CONCLUSIONS

ASDRA may be a valuable teaching tool to help pediatricians recognize the early risk factors for ASD.

Controlled trials are needed to further evaluate efficacy.

Additional studies are also needed to determine if knowledge gained through ASDRA improves the rate of referrals for early intervention in children at risk for ASD.

Our results emphasize the need to intervene early with pediatric trainees to help them incorporate evidence-based screening into their practice.

## REFERENCES

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