

---

# A Research Synthesis of Evidence-Based Practices for Young Children with Autism



Sandra Hess Robbins, M.Ed.

Leah Gongola, Ph.D.

---

# Agenda



- Why do we need evidence-based practice?
- What is the difference between *scientific evidence* and *evidence-based practice*?
- What are some approaches/therapies that are out there for young children with autism?
- Case examples/video

---

# Why evidence-based practice?

- No Child Left Behind mandates practitioners to utilize services deriving from scientifically-based research (Conroy, Dunlap, Clarke, & Alter, 2005).
  - National policy is challenging for school districts due to a lack of knowledge of evidence-based practice (National Research Council, 2001; Simpson, 2005).
  - Initiatives pose need for nurturing scientific culture of educational research (Feuer, Towne, & Shavelston, 2002).
-

---

# Why evidence-based practice?

- Since 2000, autism prevalence has increased from 6.7 in 1,000 to 1 in 150 (Centers for Disease Control, 2007).
  - An average increase of 800% since 1992 (Stahmer, Collings, & Palinkas, 2005).
  - The increase in autism places pressure on service providers to implement evidence-based practice (Odom et al., 2003; Horner, Carr, Halle, Odom, & Wolery, 2005).
-

# Evidence-based practice



## What *WAS* evidence based?

- Previous practices had relied on anecdotal testimonials to determine interventions for children with autism (Jensen & Sinclair, 2002).
- Anecdotal information can be opinionated.

## What *IS* evidence based now?

- Obtained from child-centered, performance based data in collaboration with characteristics and preferences of the child (Kimball, 2002; Odom et al., 2003).
- Age of accountability.

---

# Where does evidence-based practice come from?



- **Origins in medicine** (Buysse, Wesley, Snider, & Winton, 2006).
  - **Medical concern that professionals weren't using most effective treatments** (Green, 2008).
  - **Intended to bridge research to practice gap** (Gersten, Horner, Thompson, & Harris, 2005).
-

---

# Evidence-based **process** from medical field



- Pose the question
  - Seek out the best available research evidence
  - Consider the quality and pertinence of the evidence
  - Integrate research with professional values and background knowledge
  - Evaluate
-

---

# Evidence-Based Practice

A decision making process that integrates scientifically-based research with family and professional preferences, values, and expertise to inform decisions about how to deliver services or instruction for individual children and their families

(Buysse et al., 2006; Green, 2008; Sackett et al., 2000; Sandall et al., 2005; Snyder, 2006; Whitehurst, 2002)

---



---

# Proactive Process

- Recognizes that knowledge can be obtained from a variety of sources (Coleman, Buysse, & Neitzel, 2006).
- Recognizes that scientific research has examined the relationship between an intervention and its effects (National Research Council, 2001).

Scientific evidence *contributes*  
to evidence-based practice

---

---

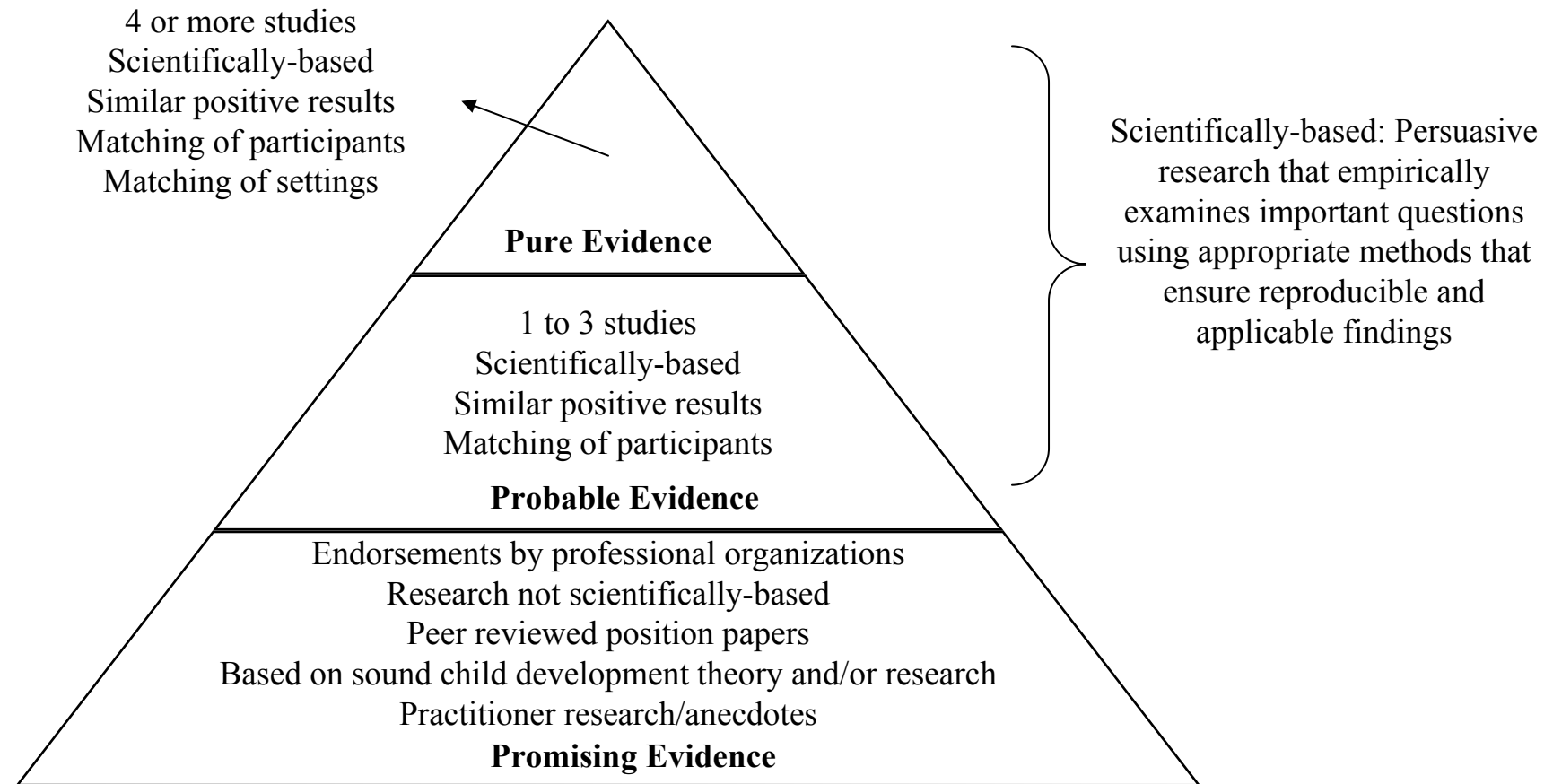
# Scientific Evidence



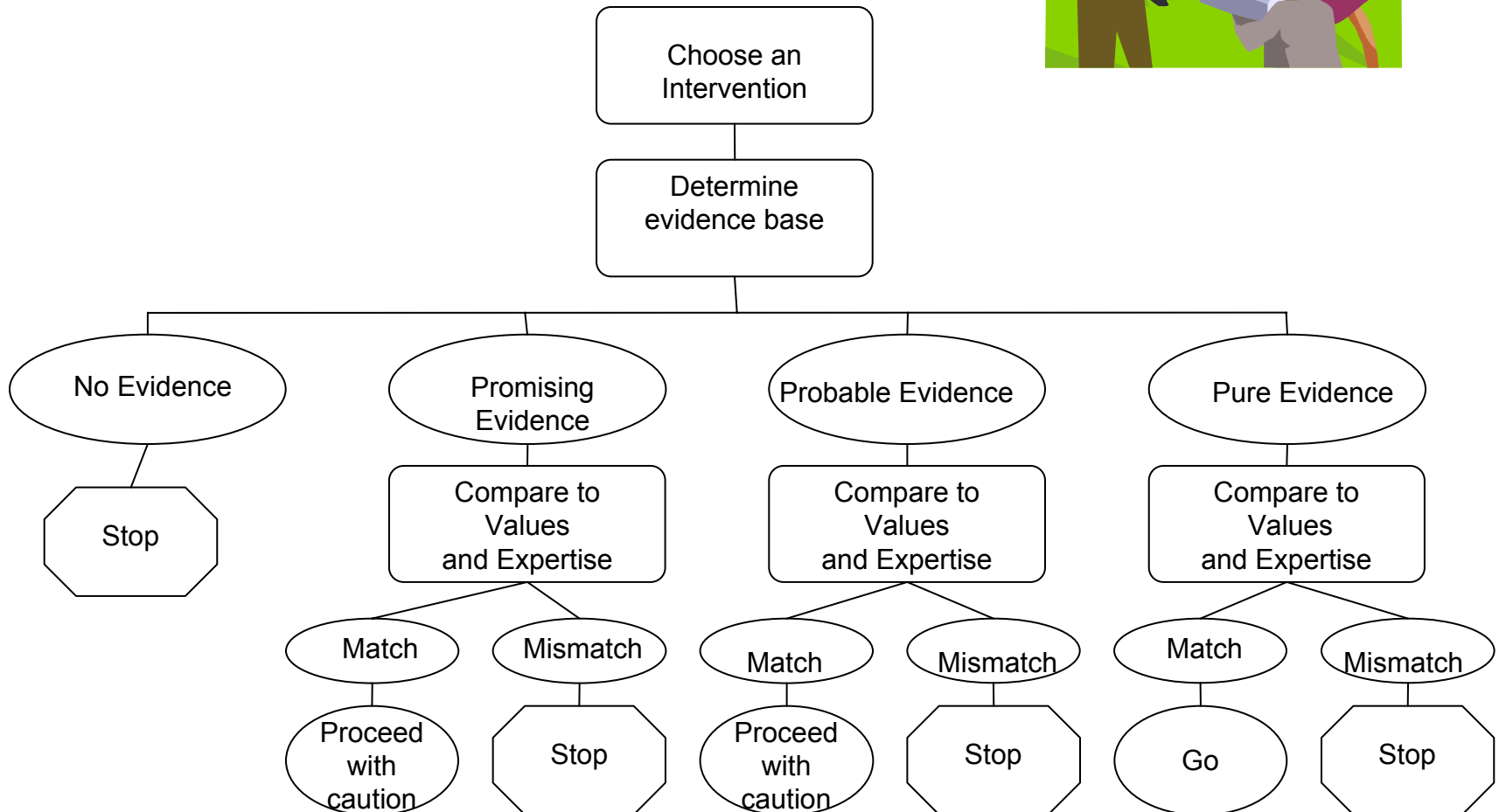
*Persuasive* research that *empirically* examines *important questions* using *appropriate methods* that ensure *reproducible* and *applicable* findings

---

# Levels of evidence for early childhood interventions

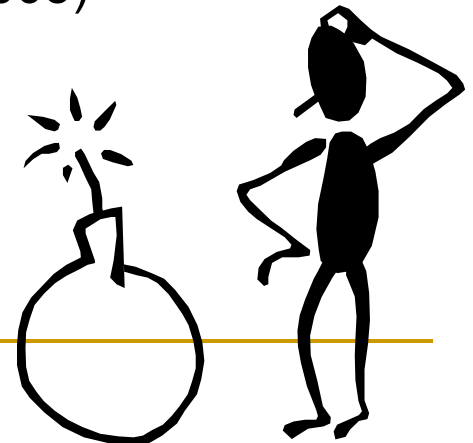


# Evidence-based practice decision making model



# Problems

- Evidence-based and scientific evidence have become part of our everyday vocabulary  
(Buysse, Wesley, Snyder, & Winton, 2006)
- Do we really know what this is??
- Special education community is working on developing guidelines to specify the types and levels of evidence (Gersten et al., 2005)
- At an early stage of development





# Considerations

- There are numerous autism interventions, however, popularity can be deceiving...
- Enthusiasm is not a replacement for evidence (Green, 2008).
- Popularity should not be taken as proof (Green).
- Research minimizes speculations while providing support for interventions.

---

# What are some available approaches/therapies?

## **Sensory Integration Therapy**

(Dawson & Watling, 2000)

## **Holding Therapy**

(Herbert, Sharp, & Gaudiano, 2002)

## **Gluten and Casein Free Diets**

(Knivsberg, Reichelt, Høien, & Nodland, 2003)

## **Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH)**

(Panerai, Ferrante, & Zingale, 2002)

## **Applied Behavior Analysis (ABA)**

(Dillenburger, Keenan, Gallagher, & McElhinney, 2002)

---

---

# Overview of TEACCH

- Eric Schopler began project in 1964
  - TEACCH established through Department of Psychiatry at UNC- Chapel Hill
  - Developmental hierarchy based on individualized assessment of strengths, learning style, interests, and needs
  - Structured with visual supports, routine, and predictability
-





Pull down pants \_\_\_\_\_



Pull down underwear \_\_\_\_\_



Sit on toilet \_\_\_\_\_



Use toilet paper \_\_\_\_\_



Pull up underwear \_\_\_\_\_



Pull up pants \_\_\_\_\_

**get your  
toothbrush**



© QuirkRoberts Publishing  
usevisualstrategies.com

**put  
toothpaste  
on**



© QuirkRoberts Publishing  
usevisualstrategies.com

**brush**



© QuirkRoberts Publishing  
usevisualstrategies.com

**spit**



© QuirkRoberts Publishing  
usevisualstrategies.com

**rinse**



© QuirkRoberts Publishing  
usevisualstrategies.com

**clean-up**



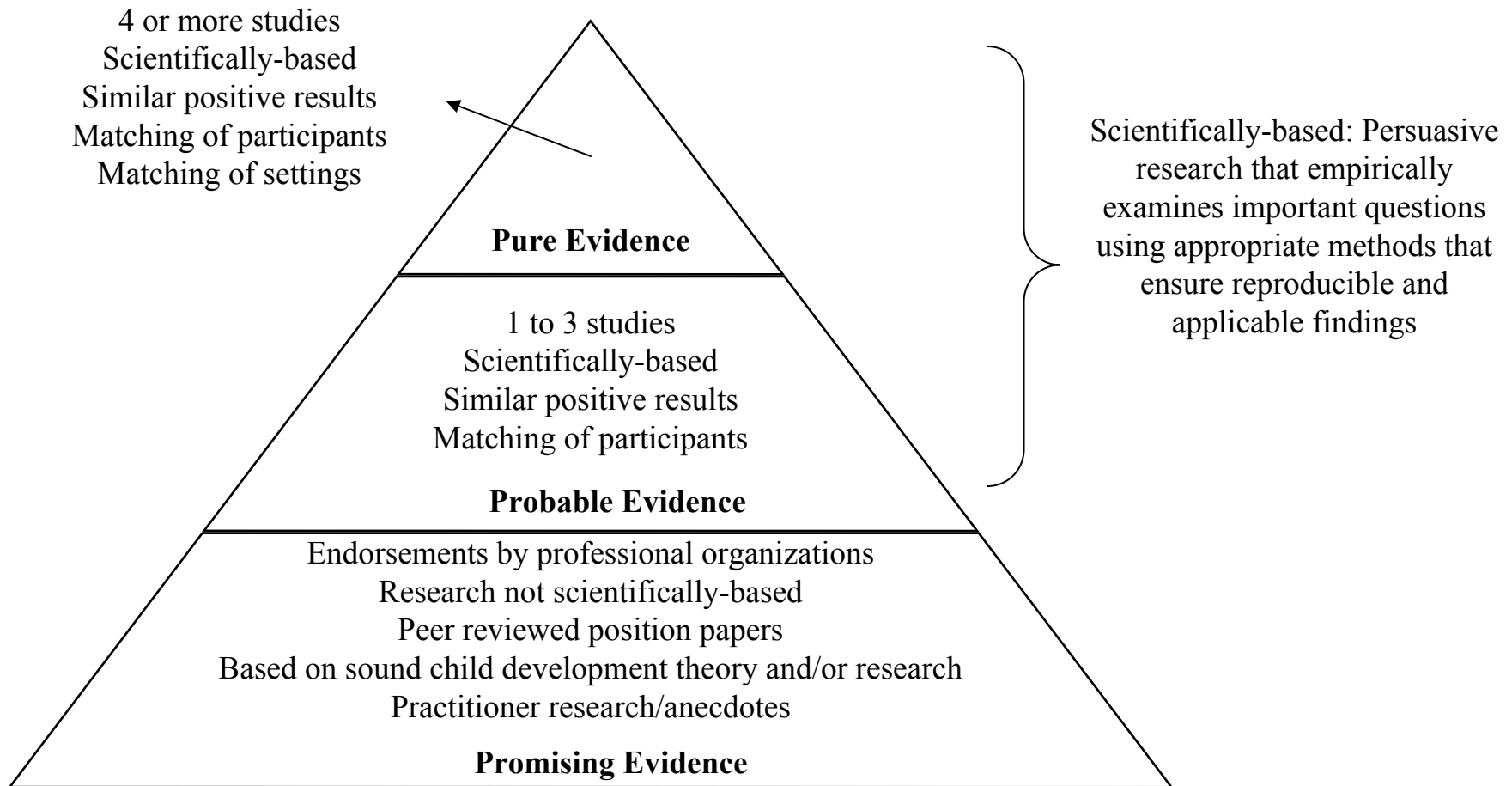
© QuirkRoberts Publishing  
usevisualstrategies.com

---

# Overview of TEACCH

- Grounded in behaviorist tradition, naturalistic teaching procedures
  - Comprehensive team involvement
  - Five hours per day, five days per week
  - Parents as co-therapists in generalist model
  - Lack of rigorous scientific research (Dillenburger et al., 2002).
-

# Levels of evidence for early childhood interventions



---

# Foundations of Applied Behavior

## Analysis (Baer, Wolf, & Risley, 1968)

- An applied science: Are the child's behaviors important to change?
  - Effective: Did the behavior change enough?
  - Behavioral technology: Is the intervention well described for future replication?
  - Generality: Did the behavior change maintain and transfer to different settings and people?
-

---

# Applied Behavior Analysis (ABA)

- Arose in 1920's in behavioral psychology  
(Cooper, Heron, & Heward, 2007)
  - B.F. Skinner contributed in 1953 arguing that behaviors can be altered by punishers and reinforcers
  - Operant conditioning model; monitors antecedents and consequences of behavior  
(Jensen & Sinclair, 2002; Smith, 1999)
  - Currently considers ethics- reinforcement based
-

---

# Applied Behavior Analysis (ABA)

- ABA addresses behaviors to allow children with autism the opportunity to live fulfilled lives (Dillenburger et al., 2002).
  - Substantial scientific evidence of effectiveness (Green, 2008; Harris & Delmolino, 2002).
  - Consistently, ABA has been the most effective long term treatment for children with autism (Dillenburger, 2002).
-

---

# ABA methods are used...

- To increase behavior (e.g., on-task)
- To teach new skills (e.g., functional)
- To maintain behavior (e.g., toileting)
- To generalize behavior
- To decrease behaviors (e.g., aggression, screaming)



---

## An example...

- To decrease a behavior
  - DRO with token economy
  - Decreasing loud vocalizations, hair touching
  - Are the behaviors socially acceptable?
  - Are the teachers willing to use this intervention?
  - Are teachers willing to apply intervention with integrity?
-

---

# ABA Video Example (MW 1&2)

---

---

# Applied Behavior Analysis (ABA)

- Arrange for learner to have multiple opportunities to learn and practice skills (Green, 2008)
  - Clear expectations
  - Consistent
  - Measure progress frequently (Dunlap, Kern, & Worcester, 2001)
-

---

# How ABA works...

- Measure skills to be increased
- Measure behaviors to be decreased
- Results in individualized treatment guided by data
- Often combines many evidence-based practices into comprehensive package

[www.behavior.org/autism](http://www.behavior.org/autism)

---

---

# How ABA works...

- Instructions/Requests
  - Prompting: faded to build independence, decreases frustration
  - Corrective feedback: promotes accurate learning
  - Reinforcement
  - Shaping (e.g., athletes refining skills)
-

---

# Discrete Trial Video

---

---

# Overview of UCLA Young Autism Project

- Derives from Applied Behavior Analysis
  - Discrete trial learning with use of treatment manual
  - Direct teaching typically in home setting
  - Structured and distraction free
  - Systematic generalization
-

---

# Overview of UCLA Young Autism Project

- 40 hours per week dependent on child's needs
  - Parents trained to extend treatment hours and generalization
  - Team of trained therapists, project directors, supervisors, and parents
-



---

# Programming

- Individual differences among children with autism necessitate extended research to predict outcomes.
  - What program works best for different children? (e.g., IQ, age, verbal/nonverbal...)
  - TEACCH and Applied Behavior Analysis (ABA) are both treatments used for autism. Both programs share common characteristics (Jennett, Harris, & Mesibov, 2003; Dawson & Osterling, 1997; Smith, 1999; Ozonoff & Cathcart, 1998).
-

---

# Educator support

- Practitioner frustration may result in punitive procedures (ethical considerations).
  - Practitioners would benefit from formal instruction in evidence-based practices (Lerman, Vorndran, Addison, & Kuhn, 2004).
  - Continual training and supervision
  - Focus on reinforcement and proactive practices
-

---

# Educator support

- Have in-house expertise in autism and evidence-based practices.
  - Help minimize resistance to best practices (buy-in and feasibility).
  - Teach data collection to guide IEP development and programming.
  - In order to support children with autism, adult behavior change first needs to take place.
-

---

# Conclusion

- Popularized services are available for the treatment of autism
  - Seek out evidence-based treatment... ABA provides this
  - Continue to replicate and refine evidence-based interventions
-

---

# Additional resources

- [www.whatworks.ed.gov](http://www.whatworks.ed.gov)
  - [www.pbis.org](http://www.pbis.org)
  - [www.behavior.org/autism](http://www.behavior.org/autism)
  - [www.shapingbehavior.com/whatisaba.html](http://www.shapingbehavior.com/whatisaba.html)
  - [www.nationalautismcenter.org](http://www.nationalautismcenter.org)
  - [www.ed.gov/nclb/methods/whatworks/eb/edlit\\_e-slide001.html](http://www.ed.gov/nclb/methods/whatworks/eb/edlit_e-slide001.html)
  - <http://challengingbehavior.fmhi.usf.edu/handouts/Practitioner.pdf>
-