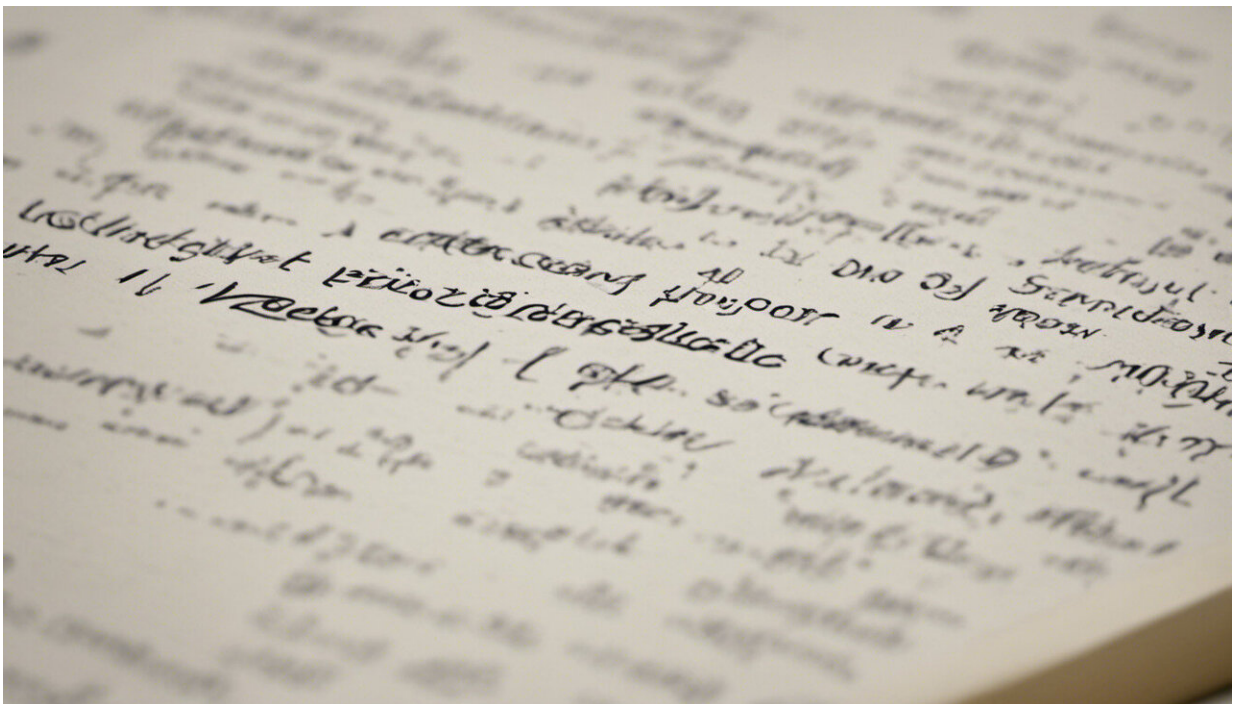


We examined the research evidence on 111 autism early intervention approaches. Here's what we found

November 17 2020, by David Trembath, Andrew Whitehouse, Hannah Waddington, Kandice Varcin



Credit: AI-generated image ([disclaimer](#))

Every parent wants the best for their child on the autism spectrum, but navigating the maze of interventions can be tiring, costly and confusing.

The challenge became a lot easier, we hope, with the release of our new [landmark report](#) summarizing the best evidence for some 111 different intervention approaches.

Prepared by a diverse team of researchers and published by the Cooperative Research Center for Living with Autism ([Autism CRC](#)), the report explains the different types of interventions, which are organized into nine categories.

It also outlines which interventions are well supported by evidence and which are not.

Autism affects the way people understand other people and the world around them. It is a neurodevelopmental condition that can have a major impact on children's ability to learn and participate in everyday situations. But, most importantly, [autism](#) affects different children in different ways.

Early intervention matters. For children on the [autism spectrum](#), effective intervention during childhood is important for promoting their learning and participation in everyday activities.

A bewildering array of interventions

There is a huge variety of autism interventions to choose from, including many with a sound evidence base.

However, the range can be overwhelming, and families risk inadvertently accessing a non-evidence-based, ineffective or harmful intervention if not properly supported to make informed decisions.

Many parents and researchers have likened the bewildering range of interventions to a maze that's nearly impossible to navigate.

Our report is like a compass that can help guide parents through this confusing labyrinth.

What we did

We organized the dizzying range of interventions out there into nine categories. Categorizing them this way can help parents, clinicians and policy makers find a common language.

The nine categories are:

1. behavioral interventions (such as Early Intensive Behavioral Intervention)
2. developmental interventions (such as Pediatric Autism Communication Therapy)
3. naturalistic developmental and behavioral interventions (such as Early Start Denver Model)
4. sensory-based interventions (such as Ayres Sensory Integration, or sensory "diets")
5. technology-based interventions (such as apps or gaming-style interventions);
6. animal-assisted interventions
7. cognitive behavior therapy
8. Treatment and Education of Autistic and related Communication-handicapped Children (the TEACCH program) and
9. other interventions that do not fit in these categories.

Across these intervention categories, we looked at the evidence on at least 111 intervention practices.

We conducted an umbrella [review](#), otherwise known as a "review of reviews," which summarizes the findings of a decade of non-pharmacological intervention (meaning no medications were used)

research involving children on the autism spectrum and their families.

Behavioural

Behavioral Parent Training; Behavioural early intervention programmes; Discrete Trial Training with Motor Vocal Imitation Assessment; Early Intensive Behavioral Treatment; Functional Behavior Skills Training Home-based behavioral treatment; Home-based Early Intensive Behavioral Intervention (EIBI); Intensive ABA; Intensive Early Intervention; Low Intensity Behavioral Treatment; Managing Repetitive Behaviors; Peer-Mediated Intervention; Picture Exchange Communication System (PECS); Rapid Motor Imitation Antecedent; Regular Intensive Learning for Young Children with Autism; Schedules, Tools, and Activities for Transitions (STAT); Social Skills Group; Stepping Stones Triple P Positive Parenting Program; Strategies for Teaching Based on Autism Research (STAR).

Developmental

Child Talk; Developmental Individual-Difference Relationship-Based (DIR)/Floortime; Hanen More Than Words; Joint Attention Mediated Learning (JAML); Milton and Ethel Harris Research Initiative Treatment (MEHRIT)-DIR based; Parent-Mediated Communication Focused Treatment; Parent-mediated intervention for autism spectrum disorder in South Asia (PASS); Pediatric Autism and Communication Therapy (PACT); Play and Language for Autistic Youngsters (PLAY) project - DIR based; Scottish Early Intervention Program; Social Communication Intervention for Children with Autism and Pervasive Developmental Disorder; Social communication, emotion regulation, transactional support (SCERTS); Video-feedback Intervention to Promote Positive Parenting adapted to autism (VIPP-AUTI).

Naturalistic developmental behavioural interventions

Advancing Social-Communication and Play (ASAP); Caregiver-based intervention program in community day-care centers; Denver Model; Early Social Interaction Project (ESI); Early Social Interaction Project (SCERTS); Early Start Denver Model (ESDM); Focus parent training program; Home-based Building Blocks Program; ImPACT Online; Interpersonal Synchrony; Joint Attention, Symbolic Play, Engagement, and Regulation (JASPER); Joint Engagement Intervention with Creative Movement Therapy; Joint Engagement Intervention; Learning Experiences Alternative Program (LEAP); Parent-Early Start Denver Model (P-ESDM); Pivotal Response Treatment (PRT); Reciprocal Imitation Training (RIT); Social ABCs.

Sensory-based

Alternative seating; Blanket or "body sock"; Brushing with a bristle or a feather; Chewing on a rubber tube; Developmental Speech and Language Training through Music; Family-Centered Music Therapy; Joint compression or stretching; Jumping or bouncing; Music Therapy; Playing with a water and sand sensory table; Playing with specially textured toys; Qigong (QST) Massage Treatment; Rhythm Intervention Sensorimotor Enrichment; Sensory Enrichment; Swinging or rocking stimulation; Thai Traditional Massage; Tomatis Sound Therapy; Weighted vests.

Technology-based

ABRACADABRA; Apps; Computer-based interventions; FaceSay; Gaming Open Library for Intervention in Autism at Home (GOLIAH); Gaze-contingent attention training; Robot-based interventions; Serious games; Social Skills Training using a robotic behavioral intervention system; The Transporters animated series; Therapy Outcomes By You (TOBY) App; Transporters DVD; Transporters Program for Children with Autism; Videoconferencing; Virtual environment with playable games; Web-based cognitive behavioural therapy (CBT) intervention.

Animal-assisted

Not specified

TEACCH

Not specified

Cognitive behaviour therapy

Building Confidence Family Cognitive behaviour therapy (FCBT); Cool Kids; Coping Cat CBT program; Facing your fears; Group Cognitive Behaviour Therapy (CBT); Social Skills Training for Children and Adolescents with Asperger Syndrome and Social-Communications Problems; Thinking about you, thinking about me.

Combined practices for each category. Credit: [Autism CRC](#)

The umbrella review included 58 systematic reviews, drawing on 1,787 unique scholarly articles.

The full list of interventions covered in our "review of reviews" is summarized in the image below, which also shows which of the nine categories each intervention falls under.

What we found

We found evidence for a number of interventions, and for a range of child and family outcomes. For example, behavioral interventions, developmental interventions, and naturalistic developmental and behavioral interventions all have evidence for improving social

communication outcomes in children. These are key skills that help children initiate and maintain conversations with other people.

But for some interventions, the evidence was not strong. For example, TEACH and certain sensory-based interventions (sensory "diets") had no supporting evidence that they have a positive effect on child development.

Many assume providing a child with *more* intervention is better. However, the report found little evidence to support this assumption. It is likely there is a minimum and maximum amount of intervention at which a positive effect is observed (but we don't know for sure).

We also noted interventions focused almost entirely on skill development, whereas quality of life outcomes were rarely assessed. This should be an issue of major concern for families, researchers and policy makers alike, because, clearly, if an intervention has negative long-term consequences on the child's quality of life, it's not something families would want their child to experience.

We have published plain language summary of our findings [here](#).

You can see a table [here](#) showing:

which interventions were supported by evidence from a high quality review which had evidence from a moderate quality review which had evidence from a low quality review and which had no evidence at all from the reviews we looked at.

There are no easy answers. At this stage, the research evidence can't tell parents and clinicians exactly the right amount of [intervention](#), whether should be delivered one-on-one or where it should happen.

However, we did find evidence programs are often as effective, if not more, when parents are directly involved.

It's not just about research evidence

Our report examined the evidence (or lack thereof) behind certain interventions, but applying it to individual children and families requires a tailored approach.

To find what's most effective for your child and family, you'll need to combine the best available research evidence with the experience and training of the clinician, and the preferences and priorities of the child and their family.

This where [clinical guidelines](#) come in, such as those recently [published](#) for how to conduct diagnostic assessments for individuals on the autism spectrum in Australia.

Guidelines take the best available evidence, and combine this with the perspectives of all relevant stakeholders—most importantly, people on the spectrum themselves.

The report provides the research evidence, but finding our way out of the maze for good relies on bringing together a range of views.

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