

The Family-First Initiative: An Approach to Early Identification and Intervention for Infants and Children with Special Needs, Including Autistic Spectrum Disorders (ASD)

Stanley I. Greenspan, M.D.

Parents, family members, and other primary caregivers are often in the best position to know their infants and young children. Together with pediatricians and other primary health care providers, as well as early childhood educators, parents and family members have intimate knowledge of their child's development. This knowledge can be used to help a child at the first signs of emerging challenges—the earlier, the better.

What's been missing are clear guidelines for parents and other primary caregivers that will enable them to enjoy and facilitate their infant and young child's healthy development and identify the first signs of challenges. What's even more important are guidelines about what parents and other family members can do as soon as they have a question about a challenge.

Typically, once a challenge becomes severe enough to warrant attention, there's a long wait for screening and a comprehensive evaluation. There is even a longer wait for services. Parents and families, however, can begin helping a child immediately, even while they're trying to figure out if there is a challenge and/or waiting for a comprehensive evaluation and appropriate services.

A “wait and see” attitude is often fueled by the understandable concern about parents unnecessarily worrying. An approach to enjoying and monitoring a child's progress and engaging in learning interactions that facilitate healthy development and, at the same time, help a child begin overcoming emerging challenges, however, can harness parents concerns in a constructive manner. Even if no challenges are identified, such a constructive approach will enhance both the child's and family's competencies.

If a child evidences substantial challenges and an evaluation suggests the need for a comprehensive intervention program, these initial steps that a family can carry out on their own can then be further refined with the help of an intervention team. The learning interactions parents have initiated while waiting for a formal evaluation, will need to be continued, perhaps even more intensively, as part of a formal intervention program.

The advantage of a Family First approach is that a child is helped at the earliest possible time when the child's nervous system is growing most rapidly. If a formal intervention program is required, the family and the professional team are ready to work together as full collaborators in orchestrating a comprehensive program to enhance the child's development.

Children with special needs, such as autistic spectrum disorders (ASD), make the most progress when they are engaged in healthy learning interactions tailored to their unique developmental needs most of their waking hours. Families, therefore, need to be at the center of any intervention program. As full partners with the intervention team, a Family First approach begins this process from the outset.

Often signs of difficulties may not be identified until early or middle childhood. A Family-First approach can be helpful at any age. It enables the child's family to begin and continue the essential work of facilitating relating, communicating, and thinking at home as educational and therapeutic programs are being organized.

The concept of a Family-First approach is supported by mounting evidence that there are formative developmental processes (child-caregiver interactions) that are essential for healthy social, emotional, and intellectual development. There is also growing evidence that, when mobilized, these same formative interactive processes serve a protective role for infants and young children at risk for or already evidencing developmental challenges, including autistic spectrum disorders—i.e., these protective interactions prevent or lessen the degree of the developmental challenges and mobilize progress.¹

Attached are a series of guidelines that can contribute to a Family-First initiative.

Guideline #1 provides descriptions that parents and other family members, as well as primary healthcare providers and educators, may find useful in following and facilitating an infant and young child's early development. As will be noticed, for each age, there is a primary milestone that is an essential building block for healthy relating, communicating, and thinking (basic emotional, social, and intellectual capacities). The primary milestone is followed by a few specific social, language, cognitive, or sensorimotor skills that support it. The primary milestone is especially important to observe. If it is not present or if it doesn't appear to be emerging, it's important to initiate a Family-First approach, which includes working with a child to strengthen the particular primary capacity, and initiating a consultation for screening and possible follow-up evaluation with a primary healthcare provider or appropriate educational program.

Guideline #2 provides information that may be helpful if the primary developmental milestones are not being mastered and/or parents or other caregivers and professionals observe developmental challenges emerging. It provides a brief introduction on the importance of early identification and outlines the progression of healthy developmental milestones and the emergence of developmental challenges observed in children at risk for ASD. It also provides a graphic illustration of health and at-risk development. Focusing on healthy development and the emergence of the earliest signs of difficulties puts caregivers and professionals in a position to begin helping a child at the earliest possible time.

¹ Greenspan, S. I. & Shanker, S. (2005). Identifying the formative and protective developmental processes that lead to language, intelligence, and social capacities. Submitted for publication, Available on request.

Greenspan, S. I. & Shanker, S. (2004). *The first idea: How symbols, language and intelligence evolved from our primate ancestors to modern humans*. Reading, MA: Perseus Books.

Mundy, P., Sigman, M., & Kasari, C. (1990). A longitudinal study of joint attention and language development in autistic children. *Journal of Autism and Developmental Disorders*, 20, 115-128.

Siller M. & Sigman, M. (2002). The behaviors of parents of children with autism predict the subsequent development of their children's communication. *Journal of Autism and Developmental Disorders*, 32, 77-89.

Guideline #3 outlines suggestions for strengthening the building blocks of relating, thinking, and communicating that can be part of a Family-First home program for infants or young children beginning to show challenges. These suggestions can also be helpful for all infants and young children.

Guideline #4 describes the signs of ASD at any age.

Guideline #5 describes activities to facilitate relating, communicating, and thinking at any age.

Guideline #6 describes principles to make sure early identification and intervention approaches for infants and young children at risk for ASD are safe and effective. Working with infants and children to help them learn to relate, communicate, and think is an important responsibility. When we identify challenges, it's important to recognize that in addition to helping children overcome their challenges, it's vital to simultaneously encourage healthy development. Healthy capacities for relating, communicating, and thinking, however, depend on the formation of warm, nurturing relationships, opportunities for spontaneous interaction and communication, and enjoyable activities that facilitate reasoning and thinking.

As can be seen, a Family-First initiative provides parents and other caregivers information to begin helping a child as early as possible. By focusing on supporting healthy development, as well as overcoming challenges, a Family-First program can be helpful for all children.

Guideline #1: Healthy Development: The Milestones for Relating, Communicating, and Thinking

Stanley I. Greenspan, M.D.

By the end of three months, my child should be able to show ***Shared Attention and Regulation***—calm interest in and purposeful responses to sights, sound, touch, movement and other sensory experiences (e.g., looking, turning to sounds).

Also should:

- Hold head upright on own
- Follow my face or a light as I move it side to side or up and down
- Make at least one type of sound
- Hold hands open most of the time

By the end of six months, my child should be able to show ***Engagement and Relating*** – growing feeling of intimacy and relatedness (e.g., has a gleam in the eye and initiates and sustains joyful smiles). Also should

Also should:

- Turn head when name is called
- Smile back at me
- Respond to sound with sounds
- Enjoy social play (such as peek-a-boo)

By the end of 1 year (12 months), my child should be able to engage in ***Purposeful Emotional Interactions***—for example, engaging in a range of back-and-forth interactions with emotional expressions, sounds, hand gestures, etc., to convey intentions.

Also should:

- Use simple gestures (such as shaking head for “no”)
- Use exclamations such as “uh oh”
- Imitate people in his or her play (clap when another person claps)
- Respond when told “no.”

By the end of 1½ years (18 months), my child should be able to engage in ***Social Problem-Solving***, where many social and emotional interactions in a row are used for problem solving and joint attention (showing Dad a toy).

Also should:

- Walk on own or by holding onto furniture
- Imitate gestures, such as “bye-bye”
- Understand and purposefully use a few words
- Find a toy under my hand or under a napkin

By the end of 2 years (24 months), my child should be able to ***Create Ideas***—using words or phrases meaningfully and in interactive pretend play with me and other caregivers or peers.

- Also should:
- Use 2- to 4-word phrases
 - Follow simple instructions
 - Begin make-believe play (“talk” on a toy phone)
 - Become more excited about other children

By the end of 3 years (36 months), my child should be able to ***Connect Ideas Together***—answering, for example, what, where, and who type questions.

- Also should:
- Show affection for playmates
 - Use 4- to 5-word sentences
 - Imitate adults and playmates (run when other children run)
 - Play make-believe with dolls, animals, and people (“cook” with toy food)

By the end of 4 years (48 months), my child should be able to ***Put A Number Of Ideas Together Logically***—for example, answering why-type questions (e.g., “I happy because I like to play”)

- Also should:
- Speak clearly so that strangers understand
 - Follow 3-step commands (“Get dressed, comb your hair, and wash you face.”)
 - Tell stories
 - Cooperate with other children

**Guideline #2:
The Early Identification of Autistic Spectrum Disorders (ASD)**

Stanley I. Greenspan, M.D.

Autistic spectrum disorders are complex neurodevelopmental disorders involving the well-known symptoms of social and language dysfunction coupled with self-stimulatory and perseverative behaviors, and narrow or overly focused interests. While many children first become diagnosed with ASD between ages two and four, the disorder is believed to have its origin prenatally and/or early in infancy, and be related to genetic influences.

New observations on the developmental pathway leading to the symptoms of ASD suggest that the core deficits of ASD express themselves gradually beginning in early infancy. Furthermore, the core deficits – in forming relationships, engaging in reciprocal social and emotional interactions, and using ideas creatively and meaningfully – represent compromises in the fundamental capacities needed for healthy relating, communicating, and thinking. These compromises, i.e., the gradual expression of these core deficits in turn lead to the typical symptoms of ASD.

Growing evidence suggests that it's best to identify these compromises early before the core deficits become fixed, longer periods of healthy development are missed, and symptoms become more intense. Therefore, a "wait-and-see" attitude may compromise the opportunity for early intervention when the human brain is growing most rapidly and opportunities for favorable influences appear to be the greater.

Not all early interventions, however, are the same. Appropriate early interventions need to strengthen the core building blocks of relating, thinking and communicating, i.e., work on the emerging core deficits. For example, it has been shown that caregivers who work on reciprocal social interactions tend to have children with better language development than children who don't. The capacity for joint attention is also associated with improved language, cognitive and social functioning in children with ASD.

Therefore, infants and young children require a comprehensive developmental approach that works on the core deficits and strengthens the foundation for relating, communicating, and thinking. This type of approach has been recommended by the National Academies of Science in their report on educating children with ASD (Committee on Educational Interventions for Children with Autism, N. R. C. 2001. Educating children with autism Washington, DC: National Academies Press).

Attached is a table outlining the early signs leading to ASD (the emergence of the core deficits) and the healthy foundation for relating, communicating, and thinking that need to be encouraged, as well as references that provide more information for professionals and parents.

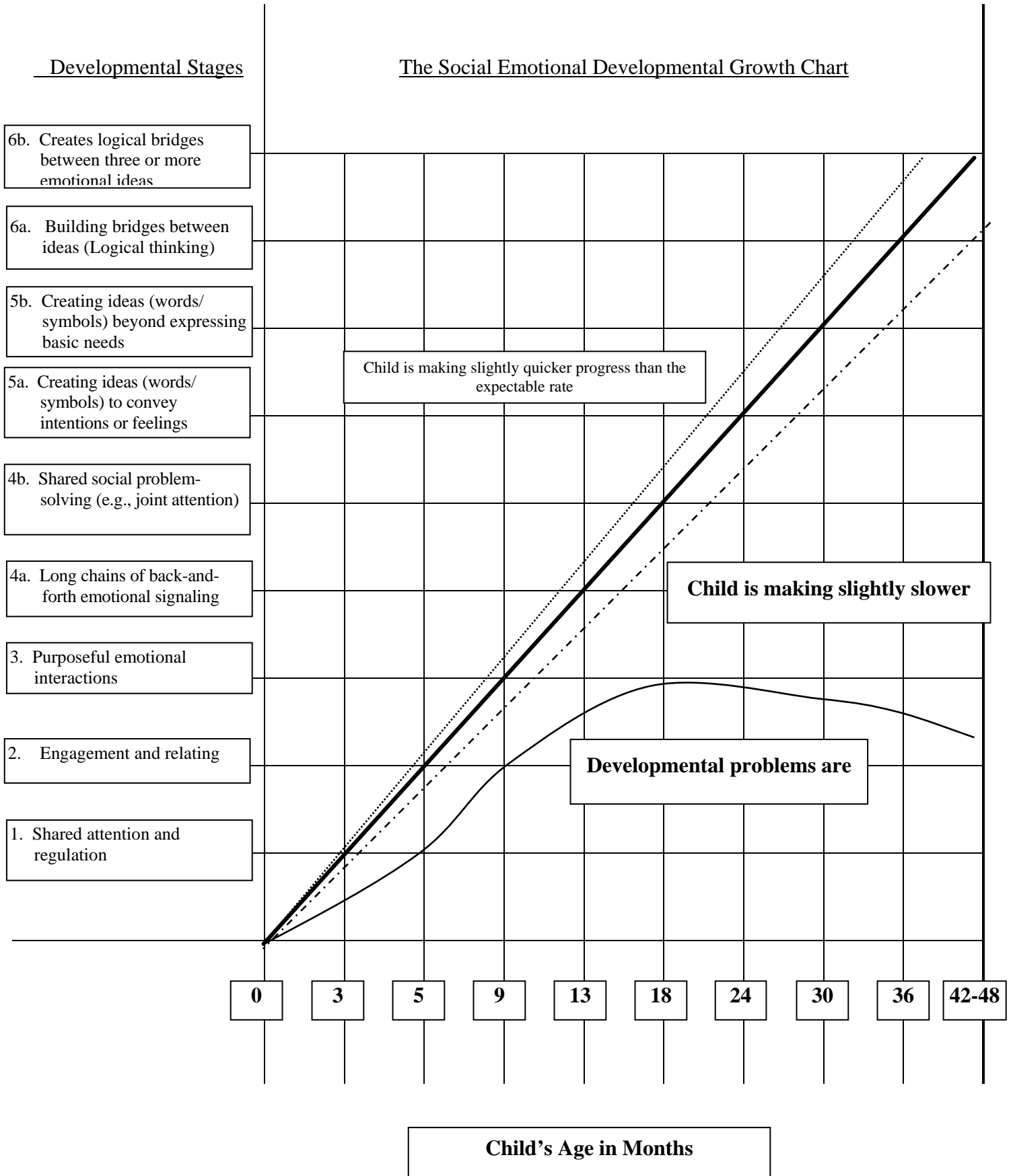
The Earliest Signs of Autistic Spectrum and Related Developmental Disorders*

By Stanley I. Greenspan, M.D.

<p>What to Encourage: Healthy Foundations for Relating, Communicating, and Thinking</p>	<p>Early Signs Leading to ASD</p>	<p><u>Associated Symptoms</u></p>
<p>Shared attention and regulation (begins at 0-3 months)</p> <p>Calm interest in and purposeful responses to sights, sound, touch, movement and other sensory experiences (e.g., looking, turning to sounds).</p>	<p>Lack of sustained attention to different sights or sounds.</p>	<p>Aimless or self-stimulatory behavior</p>
<p>Engagement and relating (begins at 2 to 5 months)</p> <p>Growing feelings of intimacy and relatedness (e.g., has a gleam in her eye and initiates and sustains joyful smiles).</p>	<p>No engagement or only fleeting, expressions of joy, rather than robust, sustained, engagement</p>	<p>Self-absorption or withdrawal</p>
<p>Purposeful emotional interactions (begins at 4 to 10 months)</p> <p>A range of back-and-forth interactions with emotional expressions, sounds, hand gestures, etc., to convey intentions.</p>	<p>No interactions or only brief back-and-forth interactions with little initiative-taking (i.e., mostly responding).</p>	<p>Unpredictable (random and/or impulsive) behavior</p>
<p>Long chains of back-and-forth emotional signaling and shared social problem-solving (e.g., joint attention) (begins at 10 to 18 months)</p> <p>Many social and emotional interactions in a row are used for joint attention and problem solving (showing Dad a toy).</p>	<p>Unable to initiate and sustain many back-and-forth social interactions in a row.</p>	<p>Repetitive or perseverative behaviors</p>
<p>Creating ideas (begins at 18 to 30 months)</p> <p>Meaningful use of words or phrases and interactive pretend play with caregivers or peers.</p>	<p>No words or scripted use of words (e.g., mostly repeats what is heard).</p>	<p>Echolalia and other forms of repetition of what's heard or seen.</p>
<p>Building bridges between ideas: Logical thinking (begins at 30 to 42 months)</p> <p>Creates logical connections between meaningful ideas ("Want to go outside <u>because</u> I want to play.")</p>	<p>No words or memorized scripts, coupled with random, rather than logical, use of ideas.</p>	<p>Illogical or unrealistic use of behaviors and/or ideas.</p>

*A reliable, validated screening questionnaire for parents, *The Greenspan Social-Emotional Growth Chart* (Psychological Corporation-Harcourt Assessment, Inc., 2004, <http://www.harcourt.com>), which was standardized on a representative population, is now available to determine an infant and young child's capacity to master the healthy foundations of relating, communicating, and thinking. The Growth Chart distinguishes healthy functioning from a variety of developmental disorders, including autistic spectrum disorders. Research on the questionnaire is included in the Growth Chart manual. Additional research studies are available on request.

Figure 1



Recommended Reading

Building Healthy Minds: The Six Experiences that Create Intelligence and Emotional Growth in Babies and Young Children, 1999. Cambridge, MA: Perseus Publishing.

The Child With Special Needs: Encouraging Intellectual and Emotional Growth. 1997, by Stanley I. Greenspan, M.D. & Serena Wieder, Ph.D. Cambridge, MA: Perseus Publishing.

The First Idea: How Symbols, Language and Intelligence Evolved in Early Primates and Humans. Stanley I. Greenspan, M.D. and Stuart G. Shanker, D.Phil., 2004. Reading, MA: DaCapo Press/Perseus Books

Engaging Autism. 2005, by Stanley I. Greenspan, M.D. DaCapo Press/Perseus Books.

For more information on these subjects, please visit the following websites:

Interdisciplinary Council for Developmental and Learning Disorders at <http://www.icdl.com>

Floortime Foundation at <http://www.floortime.org>

**Guideline #3:
Strengthening the Primary Developmental Milestones**

Stanley I. Greenspan, M.D.

Below are some guidelines that describe the types of activities parents, family members, and other types of primary caregivers can engage in with infants and young children to strengthen the primary milestones that are the building blocks for healthy relating, communicating, and thinking. Importantly, these same activities help children begin to work on emerging difficulties. These activities are best carried out by building on the infant's or young child's natural interests and "wooing" her into the activity. The key is to have fun together. Always look for signs of pleasure, such as a big smile, happy sounds, and a gleam in the child's eyes. These activities are most helpful when done for 15 to 20 minutes or more many times a day when the baby or child is most alert and available. Below, a series of illustrative activities are described for each of the primary developmental milestones. Many families will come up with their own interactions that meet the same goals.

(I) To facilitate shared attention and regulation:

Observe the baby's unique style of hearing, seeing, touching, smelling, and moving. For example, notice what types of sounds (high or low pitched, slow or fast rhythms) help the baby look and listen. See what types of touch (gentle and feathery or gentle and firm) help the baby be calm, comfortable, and happy. Harness all his senses in enjoyable ways that simultaneously involve his hearing, vision, touch, smell, and movement. Entice him into the world. Keep paying attention to the baby's unique ways of enjoying the world as he or she masters the next developmental milestones as well.

- *The "Look and Listen" Game:* Enjoy face-to-face games with the baby in which you smile and talk to him about his beautiful lips, sparkly eyes, and button nose. As you slowly move your animated face to the right or left, try to capture the baby's attention for a few seconds. This game can be played while holding the baby in your arms, or you can hover near him when he's reclining in an infant seat or lying in another person's arms.
- *The "Soothe me" Game:* Settle into a comfortable rocking chair and enjoy slow, rhythmic rocking with the baby when he's fussy or tired, or during other times when you simply want to cuddle. As you soothingly touch the baby's arms, legs, tummy, back, feet and hands and relax into the lulling back-and-forth rocking rhythm, try to gently move his little fingers and toes in a "This Little Piggy" type of game. You can move his arms, legs, fingers and toes as you change his diaper, too.

(II) To facilitate engagement and relating:

Observe what kinds of interactions – silly sounds, kisses, tickles, or favorite games – bring the baby or child pleasure and joy. Peek-a-boo and hiding-the-toy-under-the-box are visual games that delight most babies, and rhythmic clapping games like pat-a-cake will especially

intrigue babies with auditory strengths. Moving trucks will delight toddlers, and imaginative dramas will bring joy to most preschoolers.

Make the most of those “magic moments” of availability and relaxed alertness. Interact with the baby for 15- or 20-minute blocks of time at various points during the day. Tune in to the baby’s or child’s rhythms, to how she feels emotionally and uses her senses and movements. Follow her interests, even if this just involves making silly noises, and you will foster pleasure and closeness. Become a part of an object the child likes, instead of competing with it; for example, put a block she especially likes on your head, and make a funny face.

- *The Smiling Game:* Enjoy using words and funny faces to entice the baby into breaking into a big smile or producing other pleased facial expressions, such as sparkling or widened eyes. You can chatter about the spoon you’ve stuck in your mouth, or the rattle you’ve placed on your head, or simply about how “bee-you-ti-ful” her hair is.
- *The “Dance with Me” Sound and Movement Game:* Try to inspire the baby to make sounds and move her arms, legs, or torso in rhythm with your voice and head movements. You might say, “Are you going to dance with me, sweetheart? Oh, I bet you can—I know you can!” while looking for a gleam of delight in her eyes.

(III) To facilitate purposeful emotional interactions:

Be very animated as you exchange subtle facial expressions, sounds, and other gestures as well as words and pretend dramas with the child. Go for the gleam in the child’s eye that lets you know he is alert and aware and enjoying this exchange. Help the child open and close circles of communication.

Treat all of a child’s behaviors – even the seemingly random ones – as purposeful. For instance, if he flaps his hands in excitement, you could use this behavior as a basis for an interactive “flap your hands” dance step. If his play seems a little aimless as he idly pushes a car back and forth, you might announce that your doll has a special delivery letter that needs to be carried straightaway to one of his favorite television characters. See if he takes the bait!

Help the child go in the direction he wants to by first making his goal easier to achieve. For instance, you could move a bright new ball closer to him after he points his finger and indicates that he wants it.

Then, encourage the child’s initiative by avoiding doing things for him or to him. When it’s time for him to go to bed, for example, see if he can put his favorite teddy bear to bed at the same time, rather than rely on you to do it for him.

Challenge the child to do things to you. For example, when the two of you are roughhousing, entice him to playfully jump on you or climb up onto your shoulders, rather than simply picking him up and swinging him yourself.

- *The Funny Sound, Face, and Feeling Game:* Notice the sounds and facial expressions the baby naturally uses when he's expressing joy, annoyance, surprise, or any other feeling, and mirror these sounds and facial expressions back to him in a playful way. See if you can get a back-and-forth going.
- *The Circle of Communication Game:* Try to see how many back-and-forths you can get going each time the baby touches a shiny red ball or pats your nose and you make a funny squeal or squawk in response. Or see how many times he will try to open your hand when you've hidden an intriguing object inside. Each time the baby follows his interests and takes your bait, he is closing a circle of communication.

(IV) To facilitate social problem-solving:

Create extra steps in pretend play plots. For example, try announcing, "This car won't move. What shall we do?" Create interesting barriers or obstacles to the child's goals. Work up to a continuous flow of circles of communication.

Many toddlers can string together 30, 40, and even 50 circles with your help. Be animated and show your feelings through your voice and facial expressions to help the child clarify her intentions. If the child vaguely points to a toy and grunts, you might sometimes feign confusion, put on a puzzled expression, and fetch the "wrong" toy. The child's gestures and vocalizations will become more elaborate and perhaps heated as she works harder to make her wishes understood.

Increase the child's ability to plan her movements and use her senses and imitative skills in different circumstances, such as hide-and-seek and treasure hunt games.

- *The Working Together Game:* Note the toddler's natural interest in various toys, such as dolls, stuffed animals, trucks, balls, etc., and create a problem that she needs your help to solve that involves that favorite toy.
- *The Copycat Game:* Copy the toddler's sounds and gestures and see if you can entice her to mirror all of your funny faces, sounds, movements, and dance steps. Eventually, add words to the game and then use the words in a purposeful manner to help her meet a need, for example by saying "Juice" or "Open!"

(V) To facilitate creating ideas:

Support the child's use of ideas with meaning, intent, or affect, rather than by labeling objects or pictures. Challenge the preschooler to express his needs, desires, or interests. Encourage the child to use ideas both in imaginative play and in realistic verbal interactions. Help the toddler use ideas by fostering situations in which he wants to express his feelings or intentions.

Remember WAA (Words, Action, Affect): Always combine your words or ideas with your affect (expression of feelings) and actions. Encourage the use of all types of ideas; be open to all emotions or themes the child is inclined to explore. Don't forget to incorporate ideas in the form of pictures, signs, and complex spatial designs, as well as words.

- *Let's Chitchat.* Using the child's natural interests, see how many back-and-forth circles of communication you can get going using words, phrases, or short sentences. You can even turn a child's sing-word response into a long chat. For instance, when he points to the door and says, "Open," you might reply, "Who should open it?" He's likely to say, "'Mommy do it," and you could shake your head from side to side and say, "Mommy can't now. Who else?" He'll probably turn to his father and ask, "Daddy do it?" Daddy might reply, "Do What?" When the child once again points to the door and says, "Open, open!" Daddy can walk toward him saying, "Okay, can you help me push the door open?" With his eager head nod, the child will be closing this long sequence of back-and-forth words and gestures.
- *Let's Pretend:* Initially, encourage the preschooler's imagination by helping him stage familiar interactions during pretend play. Then, entice him into introducing new plot twists. Become a dog or cat or superhero in a drama of the child's own choosing. Jump into the drama he has begun by assuming the role of a character, ham it up, and see how long you can keep it going. Challenge his dolls or teddy bears to feed each other, hug, kiss, cook, or go off to the park and play. From time to time, switch from becoming a character in one of the child's dramas to taking on the role of a narrator or sideline commentator. Your comments will thicken the plot. Periodically summarize the action and encourage the child to move the drama along.

(VI and VII) To facilitate building bridges between ideas and logical thinking:

Challenge the child to close all her circles of communication using ideas, both during pretend play and in reality-based conversations. Challenge her to link different ideas or subplots in a drama. In this way, you will help her build bridges between various ideas. Pull her back on track by acting confused if her thinking becomes a little piecemeal or fragmented. For instance, if her conversation about a neighbor suddenly shifts to a discussion about peanut butter and jelly sandwiches, challenge her to fill in the missing pieces of her thoughts: "Hold on a minute – I thought you were talking about our neighbor, but now you're talking about sandwiches. I'm lost! Which thing do you want to talk about?" Challenge the child with open-ended questions, i.e., those beginning with who, what, where, when, why, and how. Your questions will help the child refocus in a logical way on her meandering thoughts.

Provide multiple-choice possible answers if the child ignores or avoids responding to your open-ended questions. Throw out some silly possibilities for her to consider: "Did the elephant or the iguana visit your classroom today?"

Encourage the child to give reasons for feelings in both pretend dramas and reality-based discussions. "Why are you so happy (or sad or angry)?" Challenge the child to give her opinion

rather than recite facts. Enjoy debating and negotiating with the child rather than simply stating rules. Of course, be firm when the rule is essential, such as “no hitting.”

Challenge the child during real-life conversations and pretend play to incorporate concepts about the past, present, and future. For instance, you could pose questions such as, “What are the cowboys going to do tomorrow?”

Encourage the understanding and use of quantity concepts. Negotiate with the child when she asks you for an extra cookie or an extra slice of pizza. When you two of you play make-believe, speculate on how many cups of tea should be served to each doll at the tea party.

- *The Director Game:* See how many plot shifts or new story lines the child can initiate as the two of you play make-believe games together. After the tea party play becomes a little repetitive or lacks direction, you can subtly challenge the child to thicken the plot by announcing something like, “I’m so full of tea my tummy’s sloshing! What can we do next?”
- *“Why Should I?” Game:* When the child wants you to do things for her, gently tease her with a response of “Why should I?” and see how many reasons she can give you. Then offer a compromise, such as “Let’s do it together, “ when she wants you to get her toy out of the closet or pick out a new outfit to wear, etc.

**Guideline #4:
Identifying the Signs of Autistic Spectrum Disorders at Any Age:
Initiating a Home Program**

Stanley I. Greenspan, M.D.

To identify the signs of autistic spectrum disorders (ASD), it is helpful to recognize the “core deficits” of autism, as well as related or secondary symptoms. The related or secondary symptoms are often not specific to ASD. Yet they are often focused on, rather than the more important core deficits. For example, a child repeating everything he hears (echolalia), lining up toys, flapping his hands, or staring at a fan may alarm caregivers. But any one of these symptoms can be a sign of a sensory processing challenge in a child who is well related, highly verbal, and creative and, therefore, not evidencing ASD.

The “core deficits” that are specific to ASD involve problems in the most basic foundations for relating, communicating, and thinking. These core deficits are the opposite side of the coin from the fundamental capacities that enable children to relate, communicate, and think. The table that follows outlines these fundamental capacities, the signs of ASD (core deficits), and associated or secondary symptoms.

As soon as parents or other caregivers observe that a child is not mastering these essential capacities or, conversely, is evidencing any of the core deficits of ASD, they should begin working with the child to strengthen these fundamental capacities. A home program can be initiated while waiting for a formal evaluation, diagnosis, and intervention plan.

Working with a child immediately can be especially helpful because children learn “during all of their waking hours.” By helping children learn to engage, interact, and think, caregivers can facilitate healthy learning at the earliest possible time. If children spend many of their valuable waking hours involved in self-absorbed, perseverative, or self-stimulatory activities, they’re spending their valuable “learning” time practicing their challenges, rather than the healthy capacities they need to master. Also, engaging children in the mastery of these core capacities at home will need to continue, even after a formal evaluation and intervention plan is implemented. The formal intervention plan will likely enhance and add to these basic learning activities.

The Signs of Autistic Spectrum and Related Developmental Disorders

What to Encourage: Healthy Foundations for Relating, Communicating, and Thinking	Signs of ASD (Core Deficits)	<u>Associated Symptoms</u>
<p>Attention, engagement, and interactions (usually established by 8 months of age)</p> <p>The ability to focus on another person warmly with pleasurable relating and initiate interactions.</p>	<p>Fleeting, intermittent, or no engagement and interaction.</p>	<p>Aimless or self-stimulatory behaviors. Self-absorption or withdrawal. Unpredictable or random behaviors</p>
<p>Continuous purposeful interactions and shared social problem-solving, including joint attention (usually established by 16 months of age)</p> <p>A combination of gestures and/or words can be employed as part of a continuous flow of back-and-forth social interaction to find something, negotiate, play together, or meet a new challenge. This includes what has been described as joint attention and reading the social and emotional intentions of others.</p>	<p>Only a few back-and-forth interactions—with little initiative-taking (i.e., mostly responding) or no interactions at all.</p>	<p>Impulsive or repetitive (perseverative) behaviors</p>
<p>Creative and logical use of ideas (usually established by 36 months)</p> <p>Ideas can be used to express and understand needs, wishes, intentions, or feelings. In a young child, this may be illustrated by shared pretend play and in an older child or adult by meaningful conversation. In addition, this capacity involves connecting ideas together logically so that pretend play or conversations make sense.</p>	<p>Unable to use ideas or ideas are used in a fragmented or piecemeal way (no logical connections).</p>	<p>Echolalia, scripted language, or other forms of repetition of what’s heard or seen, and/or illogical or unrealistic use of ideas</p>
<p>Abstract and reflective thinking (usually established by 10 years of age)</p> <p>The capacity to employ higher-level thinking skills, including giving multiple reasons for feelings or events, dealing with degrees of feelings or thoughts, and reflecting on one’s own and others’ feelings and thoughts (e.g., “I’m angrier than I should be.”), and making inferences (drawing new, reasoned conclusions).</p>	<p>Thinking is rigid and concrete, lacking subtlety or nuance</p>	<p>Exaggerated emotional reactions or avoidance of social and emotional situations (in part due to misperceptions or misreading of complex social interactions).</p>

Guideline #5: Outline of Activities to Facilitate Relating, Communicating, and Thinking at Any Age

Stanley I. Greenspan, M.D.

What follows is an outline of some types of activities families can be involved in to strengthen each of the core capacities.

To facilitate attention, engagement, and interaction:

- Observe how the child responds to touch, sound, sight, and movement and use these observations to create soothing engagement and relating. For example, the child may like the airplane game where father picks him up and swings him around fast or slow. Another child may enjoy the jumping game, where he and mother jump on a mattress together.
- Observe what brings the child pleasure, such as a particular toy or activity, and join him in it, even if it's jumping or hand-waving together.
- Follow the child's lead (i.e., his interests), join him, and then try to facilitate interactions, for example, putting your hand slowly over his toy with a big smile so that he might move your hand off of it with a grin.
- As needed, use lots of rhythmic activity, like dancing, rhythm clapping games, and just moving back and forth together to the beat of music.
- Use sensory pleasures to help the child enjoy relating and interacting.
- If the child is very sensory craving, active, and avoidant, combine being playfully obstructive, such as getting in his way with the "moving fence" game (i.e., caregivers' arms become a moving fence that the child ducks under or moves up), with your pleasurable interactions. If needed, hold the child's hands gently and move his arms to the rhythm of your voice in order to encourage him to use synchronous head and facial gestures, vocalizations, and, if possible, words.
- Engage in these types of activities, following the child's lead and interests four to eight times or more per day for 20 minutes or more each time.

To facilitate continuous purposeful interactions and shared social problem-solving, including joint attention:

- Focus on extending the interactions (i.e., circles of communication) by keeping any interaction going for as long as possible. For example, if the child wants to go out the door, play "dumb" so he has to show mother where the doorknob is, rather than just opening the door. Extend the circles further by having the child go get father or another person to help open the door, since mother can't quite do it. Father can play "dumb" and has to be shown, too. Then the child can help him pull the door himself to get it open, etc.

- Attempt to broaden the range of emotions the child can express during these interactions by being very animated and expressive, for example, showing surprise, delight, concern, etc.
- Attempt to bring as many processing areas as possible into the pleasurable shared interactions. For example, in the play, an object can be hidden (visual-spatial), words or sounds can be used (auditory processing and language), and the child can be challenged to do more and more complex actions (motor planning and sequencing).
- Facilitate pretend play and the use of words. For example, talk for the dolly or stuffed animal and see if the dolly can get a hug or a kiss or some food. Initially, use familiar situations, like eating, sleeping, or taking a bath. Also, as part of the continuous flow of interaction, try to elicit words, in addition to gestures, as much as possible. This will be most likely in situations where you have created lots of pleasure, affect, and motivation.
- Engage in these types of activities, following the child's lead and interests four to eight times or more per day for 20 minutes or more each time.

To facilitate the creative and logical use of ideas

- Focus on engaging the child in interactive creative pretend play or conversations with you and with peers.
- Keep expanding emotional themes in the play or talk by challenging the child (not by leading him) For example, your dolly can become a little negative, challenging the child's dolly to become more assertive.
- Try to have longer and longer pretend play sequences or conversations and longer and longer verbal exchanges.
- Gradually challenge the child to make sense and be more logical in his pretend play and in his conversations and keep trying to get to higher and higher thinking levels (i.e., functional emotional developmental levels). For example, ask "why" questions, etc.
- Engage in these types of activities, following the child's lead and interests four to eight times or more per day for 20 minutes or more each time.

To facilitate abstract and reflective thinking

- Emphasize creative play.
- Work together to make up creative stories.
- Act out or draw stories the child creates.

- Work on reality based conversations about home, school, or friends. Ask for “opinions” not facts (e.g., “Why do you like Susie better?”).
- Work on giving many reasons for something and discuss degrees of feelings (multi-causal thinking and comparative, gray area thinking). Focus on fostering reflective thinking in conversations and academic work.
- Increase the range of emotional themes.
- Challenge the child to gradually deal with feelings of disappointment, as well as assertiveness and anger.
- Work on peer relationships as a sideline coach helping the child have lots of play dates and learn to negotiate the expectable range of feelings.
- Use the “Thinking About Tomorrow Game” to help the child deal with peer relationships, school, and the higher levels of thinking described above. In this game, the child is helped to anticipate fun and challenging events that will happen later or tomorrow. He is helped to picture the upcoming situation, describe it, describe his feelings when he’s in it, as well as the feelings of others, and anticipate how he usually feels in such a situation. Then he can consider alternatives to how he usually reacts. Try to employ higher and higher levels of abstract thinking.
- Engage in these types of activities, following the child’s lead and interests three to six times or more per day for 20 minutes or more each time.

Guideline #6:
**Guidelines for Safe and Effective Early Identification and Early Intervention Approaches
for Infants and Young Children at Risk for Autistic Spectrum Disorders (ASD)**

Stanley I. Greenspan, M.D.

As we learn more about the developmental pathways leading to ASD, we will have greater and greater opportunities for identifying infants and young children at risk early, and initiating intervention programs before severe symptoms and chronic patterns become established. The promise of early identification and intervention is therefore enormous. However, as with all opportunities, they must be used properly or they can lead to negative consequences. For example, focusing on the wrong early risk factors, or interventions that are geared to selected symptoms but undermine areas of healthy functioning, could create more problems than they solve. It's essential to outline some general guidelines in order to mobilize truly helpful early identification and early intervention efforts. These guidelines will be described below.

1. Early identification efforts, including screening, should involve the full range of the infant's emotional, social, intellectual, and related motor and sensory functioning. In this way, not only risks for ASD can be ascertained, but risks for other important developmental challenges can be determined as well. Even more importantly, such an approach guarantees that the field won't prematurely focus on a presumed "magic window." By "magic window" we mean a hypothesized marker, a specific behavior or physiologic response that presumably identifies the risks for a larger syndrome. While in general medicine we occasionally identify such "magic windows," we are nowhere near finding such a marker for ASD and related developmental problems. There is a tendency, however, to prematurely employ such markers before we have absolutely definitive research support for it. In addition, having appropriate screening practices, that look at the full range of expected functioning that's compromised in ASD and other developmental disorders, provides an important opportunity to identify a variety of related risks to healthy emotional, social, and intellectual development. Therefore, even should such a marker become available in the future, it should be employed together with a broad screening approach.
2. Screening approaches that are part of an early identification effort must be tied to a comprehensive approach to evaluation. With children at risk for ASD, such an approach must include emotional and social functioning, cognitive functioning, language functioning, and motor and sensory functioning. All these areas are functioning are influence by ASD and therefore require careful observation and study during a full evaluation. Often observations of infants or child-caregiver interaction patterns are surprisingly missing from developmental evaluations. In a survey of 200 cases, evaluated for ASD at major medical centers, less than 10 percent included more than 10 minutes of infant caregiver or childcare giver interaction as part of the evaluation, even though the capacity for relationships with caregivers is a vital part of ASD.

3. Early intervention programs have a special responsibility when working with infants and very young children. When risk factors or problems are detected early, the intervention program has two goals, to work with the identified risk or problems, but also to facilitate healthy areas of emotional, social, and intellectual functioning. If an early intervention program focuses on particular behaviors or symptoms in a way that draws attention from the types of healthy caregiver/infant or caregiver/child interactions that promote overall adaptive functioning, the early intervention program could create additional developmental challenges. For example, consider a 9-month old baby who is repetitively touching a toy. The focus of intervenors and caregivers are on methods of discouraging that particular type of touching. The approach takes attention away from the promotion of healthy 9-month old interactive capacities, such as exchanging smiles, vocalizations, and other gestures. We may then see problems stemming from the intervention itself.

As indicated, for healthy development, 9-month olds require lots of opportunities for back-and-forth interaction involving emotional signaling, vocalizations, and motor gestures. An approach which drew attention from these types of spontaneous foundation-building interactions would indeed be hazardous. On the other hand, an approach to the child's repetitive behavior that attempted to transform them into spontaneous back-and-forth interactions—for example, making an interactive game out of touching the toy and then the caregivers fingers covering the toy and so forth—would not only promote healthy development, but would help the 9-month old overcome the problematic behavior.

Therefore, early intervention approaches need to focus on supporting the healthy foundations for relating, communicating, and thinking, with an understanding that these healthy foundations are usually the opposite side of the coin of the “core deficits” associated with ASD. There is now considerable evidence that the healthy progression of social language and cognitive functioning depends on the ability of infants and young children to form relationships, engage in reciprocal social and emotional interactions, and expand these interactions to complex shared social problem-solving patterns, including those that have been described as joint attention, and reading the intention of others. It is also clear that the foundations for healthy development at slightly later ages include pretend play with caregivers and opportunities for the interactive and social use of language (pragmatic language). There is also considerable evidence that the core deficits of ASD involve compromises in these very same foundational capacities. Therefore, early intervention approaches to be safe and effective (not increase the risk of creating problems) must focus on facilitating the foundations for healthy relating, communicating, and thinking (i.e. reversing the core deficits).

4. Early intervention programs therefore need to embrace a number of characteristics. These characteristics are necessary for facilitating the healthy foundation for relating, communicating and thinking, and reversing or lessening emerging core deficits. They include the following:

- A. Strengthening the healthy foundations for relating, communicating and thinking.

- B. Working to strengthen the child’s unique processing capacities—ways of reacting to and comprehending sensations such as sights and sounds, as well as planning motor actions.
- C. By strengthening the healthy developmental foundations and the child’s unique processing capacities, reducing “problem” behaviors.
- D. Supporting families, caregivers, and educational programs to create healthy learning interactions during the child’s waking hours. The goal of these learning interactions should include facilitating warm, trusting relationships; emotional and social interactions that involve many back-and-forth exchanges of different types of gestures; shared social problem-solving; and the meaningful use of ideas and words.

Just as we must be cautious of looking at single markers or “magic windows” for early identification, we must similarly be cautious about “magic bullets” for early intervention.

In conclusion, guidelines for safe and effective early identification and early intervention are characterized by a comprehensive approach that attends to the healthy aspects of the child’s development as well as his or her emerging challenges. A comprehensive approach that always keeps healthy functioning at the forefront and its promotion as the main goal, will provide a framework for insights on early identification and intervention that are safe and effective.

Attachment #7 - Recommended Reading

Building Healthy Minds: The Six Experiences that Create Intelligence and Emotional Growth in Babies and Young Children, 1999. Cambridge, MA: Perseus Publishing.

The Child With Special Needs: Encouraging Intellectual and Emotional Growth, 1997, by Stanley I. Greenspan, M.D. & Serena Wieder, Ph.D. Cambridge, MA: Perseus Publishing.

The First Idea: How Symbols, Language and Intelligence Evolved in Early Primates and Humans, Stanley I. Greenspan, M.D. and Stuart G. Shanker, D.Phil., 2004. Reading, MA: DaCapo Press/Perseus Books

Engaging Autism, 2005, by Stanley I. Greenspan, M.D. DaCapo Press/Perseus Books.

For more information on these subjects, please visit the following websites:

Interdisciplinary Council for Developmental and Learning Disorders at <http://www.icdl.com>

Floortime Foundation at <http://www.floortime.org>