

Using A Developmental Approach to Address Anxiety in Children with ASD

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Using A Developmental Approach to Address Anxiety in Children with ASD

- Introduction to Developmental Models
- DIR/Floortime Model Components
- The ABC's of Anxiety
- How to approach anxiety from a developmental perspective
- How does this affect treatment and outcome for children with ASD?

Why a developmental approach for children with ASD?

- Most similar to pediatric medicine
- Long history and well researched in pediatrics and child psychiatry
- Pediatricians are always aware of a child's developmental progress and base suggestions on child's individual growth
- No two children develop exactly alike (in wellness or disease)
- We all have individual differences
- For a child with social emotional developmental delays as the core issue, developmental approaches make the most sense

Developmental Models

- DIR/Floortime
- RDI
- Son-Rise
- SCERTS
- Hanen
- Denver Model

Similarities in Developmental Models

- Parents and families are at the heart of their child's treatment
- Children are unique — each should have an individualized treatment program
- Since ASD is a disorder of relating and communicating, fostering relationships is the basis to making developmental progress
- The warmth and pleasure of relationships stimulates a child's internal motivation and becomes a natural reinforcement encouraging even more spontaneous interactions and learning

SCERTS

Similarities in Developmental Models

- Treatment is based on a child's interests, his developmental levels and unique profile
- Treatment is play-based in naturalistic settings to promote child's self motivation
- Treatment is intensive — emphasizing initiation, spontaneity, social interaction, attention, engagement, reciprocal interaction, pretend play, communication and language

**Behavioral Approaches in ASD:
ABI or ABA**

- Discrete trial training
- Incidental training
- Pivotal response training
- Focus on motivation and response to information that impact overall behavior
- Teaches appropriate behaviors by breaking tasks down into steps and using DTT to help children learn – often using external reinforcement to help motivation

**Development Approach in ASD:
*DIR®/Floortime™ Model***

- Broad-based framework for comprehensive multidisciplinary assessment and intervention program
- Tailored to the unique challenges and strengths of each child and family
- The objective is to build healthy foundations for social emotional and intellectual capacities
- Based on the work of Piaget, Erickson, Brazelton, Greenspan, Wieder and others
- Emerging research base

DIR®/Floortime™ Model

D = A child's developmental abilities emphasizing social emotional growth

I = A child's individual differences

- Sensory responsiveness & processing (auditory, visual-spatial)
- Motor functioning
- Language
- Cognitive
- Medical concerns

R = Engaging in learning relationships tailored to child's unique profile

DIR®/Floortime™

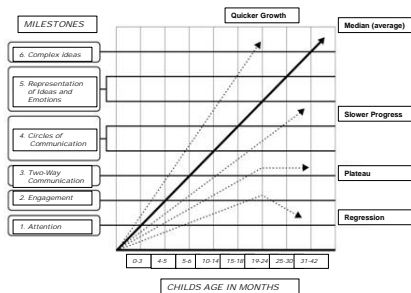


Greenspan, S.I. and Wieder, S. *Engaging Autism*. Da Capo Press, 2006

D Social Emotional Developmental Growth

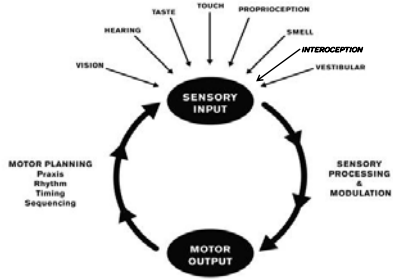
Stage	Milestone	Age
One	Attention: Regulation and Interest in the world	0 – 3 Months
Two	Engaging and Relating	2 - 5 Months
Three	Two-Way Intentional Communication	4 - 10 Months
Four	Circles of Communication: Shared (often non-verbal) Problem-Solving	10 – 18 Months
Five	Representation: Creating Symbols – Using Words to Express Ideas	18 – 30 Months
Six	Complex Ideas: Emotional Thinking, Logic and Sense of Reality	30 – 42 Months
Advanced Social-Emotional Stages		
Seven	Multi-Causal and Triangular Thinking	
Eight	Gray Area Thinking	
Nine	Reflective Thinking	

D Social Emotional Developmental Growth Chart



1

Sensory Motor Feedback Loop



1

Sensory Responsiveness

	Over-Responsive	Under-Responsive	Sensory Seeking
Tactile	Dislikes being touched or hugged, hair washed, teeth brushed, nails clipped; avoids touching messy substances; dislikes feeling of clothing (tags, seams)	A hard fall causes no reaction. Not always aware of touch	Bumps into people or furniture to get physical contact / sensation; seeks out messy substances such as finger paints
Auditory	Puts hands over ears to block sound; shows extreme fear of sounds like vacuum, sirens, toilet flushing, coffee grinder, etc.	Difficult to get child's attention; seems oblivious when spoken to; doesn't look around for source of sounds	Craves loud noise or music; likes to talk, hum or make noise
Movement / Motor planning	Afraid of heights; dislikes spinning, swinging or sliding; needs continuous physical support from an adult	Does not object to being moved but doesn't initiate much movement. Once movement starts can continue for long time. Doesn't realize he's falling and makes no attempt to break fall	Needs to keep moving as much as possible; may repeatedly shake head, rock back and forth or jump up and down; craves intense movement experiences such as bouncing on furniture; likes action (tester-otter, swinging)
Visual	Overwhelmed by moving objects or people; avoids direct eye contact; complains of sunlight or of too-bright lights; may squint in ordinary light	Unaware of light/dark contrast reflections; unaware of movement; bumps into moving objects; responds late to visual information such as obstacles in path	Seeks bright lights, even direct sunlight; seeks visual stimulation such as finger flicking or spinning

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Sensory Responsiveness (cont'd)

	Over-Responsive	Under-Responsive	Sensory Seeking
Olfactory	Complains of strong odors or smells	No response to typically offensive odors	Seeks strong smells; sniffs everything including hair, clothing
Food taste or Texture	Aversion to certain tastes/textures of foods; gags often; is a picky eater	Eats most foods	Licks; seeks objects to put in his mouth
Pain	Reacts to smallest physical insults	Doesn't notice pain	Skin picking, scratching; self-injurious behavior
Proprioception, Vestibular (orientation in space, balance)	Prefers not to move; avoids weight-bearing activities such as jumping, running	Awkward motor movement, abilities; fatigues easily; appears weak, floppy, loose-limbed; poor grip; Has low tone	Bumps or crashes into things; rubs hands on tables; craves active movement – pushing/pulling, lunging into things and people; likes being squeezed or swaddled
Interception (Internal body Stimuli)	Tantrums easily when hungry or thirsty; prefers wearing as little clothing as possible	Unaware of hunger, thirst, toileting needs; no sense of satiation-will keep eating; oblivious to body temperature	Craves strong taste such as very spicy or very sour; may prefer foods (or bath water) to be either very hot or very cold.

R

Affect = Emotional Connection

- The “glue” that organizes all of the jobs of the brain
- Coordinates the nervous system from the brain outward
- Lends purpose and meaning to the information we take in through our senses
- Emotional based learning experiences become an internal reinforcement that motivates interaction and spontaneity

R

Floortime

“It’s all about the interaction!”

- Technique used to support developmental growth – being mindful of child’s “I” to capture the “R”
- Spontaneous, semi structured or sensory motor play that follows the child’s interests
- Goal: continuous flow of reciprocal interaction
- Begin at a child’s social emotional developmental level
- Match interactions to child’s sensory motor profile
- Use emotional gestures and facial expressions to sustain interactions
- Match movements to his rhythm and timing
- Look for the gleam in his eye and yours
- Opportunities occur all day long

DIR/Floortime Research

- **Social Emotional Growth Chart – in Bayley Scales of Infant and Toddler Development**
Bayley, N. (2005) ‘Bayley Scales of Infant and Toddler Development, 3rd ed. (Bayley III).’ Buverde, TX: Psychological Corporation
- **Greenspan Wieder 200 cases**
Greenspan, S.I. and Wieder, S. (1997) ‘Developmental patterns and outcomes in infants and children with disorders in relating and communication: a chart review of 200 cases of children with autistic spectrum disorders.’ *Journal of Developmental and Learning Disorders* 1(1):87-141.
- **Greenspan Wieder follow-up study**
Greenspan, S.I. and Wieder, S. (2005) ‘Can children with autism master the core deficits and become empathetic, creative, and reflective? A ten to fifteen year follow-up of a subgroup of children with autism spectrum disorders (ASD) who received a comprehensive developmental, individual-difference, relationship-based (DIR) approach.’ *Journal of Developmental and Learning Disorders* 9:1-29.
- **Play Project**
Soloman, R., Necheles, J. Ferch, C. and Bruckman, D. (2007) ‘Pilot study of a parent training program for young children with autism: The PLAY project home consultation program.’ *SAGE Publications and The National Autistic Society* 11(3):205-224; 076843 1362-3613 (200705)11:3
- **York Studies**
York University DIR/FT RCT in progress

Physiology of Anxiety

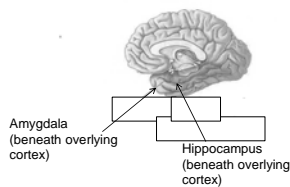
- Anxiety can be:
 - **Normal** - protects us from harm by warning us of threats or makes us perform at a high level
 - **Abnormal** - causes us distress, harm, interferes with our lives, often not protecting us and depressing our performance levels
 - Triggered by perceived threats of harm (real or imaginary) ∴ which results in "fight or flight" response



"Fight or Flight" Response

- Perceived harm occurs in the amygdala of the brain (also regulates memory and other emotions)
- Amygdala triggers chain reaction that produces a physical response to stressful events through the autonomic nervous system
- Pituitary secretes hormone that stimulates epinephrine and cortisol release from the adrenal gland

Amygdala and Hippocampus



Bear, *Neuroscience: Exploring the Brain* 3rd ed. Lippincott Williams & Wilkins, 2007

Autonomic Nervous System

Two components

- **Sympathetic** – activates “fight or flight” response and “revs” us up
- **Parasympathetic** – restores our body to normal; puts the breaks on

Physical Symptoms of Anxiety

Area of Body	Emergency Response System (Sympathetic Nervous System)	Recovery System (Parasympathetic Nervous System)
Heart	Beats faster & stronger	Beats slower & normally
Lungs	Breathe faster & more shallow	Breathe slower & deeper
Muscles	Tighter, more tense	Moore loose & relaxed
Stomach	Decreases digestion (“butterflies in stomach”, vomiting, diarrhea, etc.)	Increases digestion
Sweat glands	Increase perspiration	Decrease perspiration
Adrenal gland	Increase adrenaline	Decrease adrenaline
Immune system	Becomes suppressed	Functions normally
Eyes	Dilate	Constrict

Mental Symptoms of Anxiety

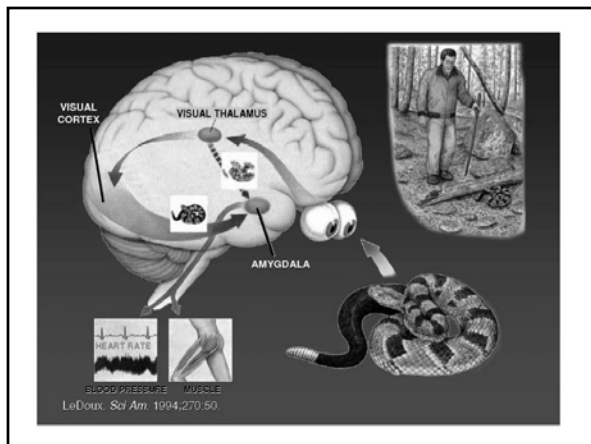
- Decreased attention & engagement
- Decreased problem solving
- Confusion
- Hyper-reactivity
- Hyper-sensitivity
- Hyper-vigilance
- Poor concentration
- Poor judgment
- Poor memory

Emotional Symptoms of Anxiety

- Agitation
- Anger
- Confusion
- Fear about specific things
e.g. parties, health problems, spiders, memories
- General fears for self and loved ones
e.g. safety, health, financial security

Behavioral Symptoms of Anxiety

- Avoidance of performance
- Avoidance of the feared thing
- Drink excessively
- Excessive attention to control or details in order to prevent mistakes
- Indulge in promiscuity or reckless sex
- Other reckless behaviors such as excessive spending
- Social avoidance
- Some people will avoid responsibility in order to decrease their anxiety
- Take drugs



Types of Anxiety Disorders

- Separation anxiety disorder
- Generalized anxiety disorder (GAD)
- Panic disorder (PD)
- Social phobia or social anxiety disorder (SAD)
- Obsessive compulsive disorder (OCD)

Fear: Central Component of Anxiety Disorders

- **Panic Attack** – Sudden onset of intense apprehension, fearfulness or terror
- **Agoraphobia** – Anxiety about/avoidance of places or situations from which escape would be difficult
- **Specific phobia** – Clinically significant anxiety provoked by exposure to a specific feared object/situation often leading to avoidance behavior
- **Social phobia** – Clinically significant anxiety provoked by exposure to social or performance situations often leading to avoidance behavior

(CONT'D)

Diagnostic & Statistical Manual of Mental Disorders (2000)

Fear: Central Component of Anxiety Disorders

- **Obsessive-compulsive disorder** – Obsessions (which cause marked anxiety) and/or compulsions (which serve to neutralize anxiety)
- **Post-traumatic stress disorder** – Re-experiencing of an extremely traumatic event accompanied by symptoms of increased arousal and by avoidance of stimuli associated with the trauma
- **Generalized anxiety disorder** – At least 6 months of persistent and excessive anxiety and worry

Diagnostic & Statistical Manual of Mental Disorders (2000)

Neurotransmitters Implicated in Anxiety

- Serotonin
- GABA
- Norepinephrine
- Other modulating factors
 - Epinephrine
 - Cortisol

Effect of Anxiety in the Modern World

- Perceived threats, worries, concerns are everywhere
- Constant perception of threat=live in heightened state of arousal or anxiety
- Constant anxiety = living in state of fear
e.g. interferes with career, relationships;
becomes hyper-cautious, hyper-vigilant

Normative Anxiety and Fears in Childhood and Adolescence

Age	Development Conditioned Periods of fear & anxiety	Psychopathological Relevant Symptoms	Corresponding DSM-IV Anxiety Disorder
Early infancy	Within first weeks	Fear of loss, eg. Physical contact to caregivers	--
	0-6 mos	Salient sensoric stimuli	--
Late infancy	6-8 mos	Shyness/anxiety with stranger	separation anxiety disorder
Toddler-hood	12-18 mos	Separation anxiety	Separation anxiety disorder, panic attacks
	2-3 yrs	Fears of thunder & lightning, fire, water, darkness, nightmares	Specific phobias (environmental subtype), panic disorder
Early Childhood	4-5 yrs	Fear of death or of dead people	Generalized anxiety disorder, panic attacks
Primary /elementary school age	5-7 yrs	Fear of specific objects (animals, monsters, ghosts)	Specific phobias
		Fear of germs or getting a serious illness	Obsessive compulsive disorder
		Fear of natural disasters, fear of traumatic events (eg. getting burned, being hit by a car or truck)	Specific phobias (environmental subtype), acute stress disorder, posttraumatic stress disorder, generalized anxiety disorder
		School anxiety, performance anxiety	Social anxiety disorder
Adolescence	12-18 yrs	Rejection from peers	Social anxiety disorder

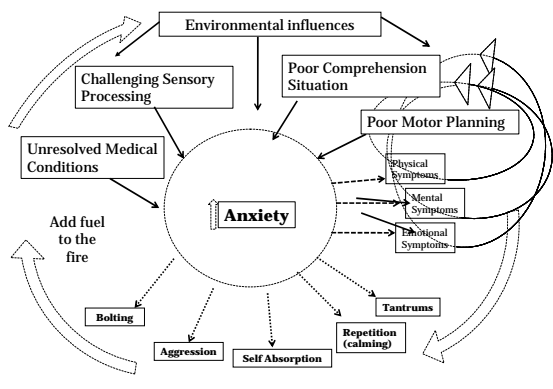
Data from Morris RJ, Kratochwill TR. Childhood fears and phobias. In Kratochwill TR, Morris RJ, eds. The practice of child therapy, 2nd ed. NY: Pergamon; 1991. p.76-114; and Morris P et al. Common fears and their relationship to anxiety disorders symptomatology in normal children. Pers Indiv Diff 1998;24(4):575-8.

AUTISM ANXIETY

Anxiety and Autism: The Perfect Storm

- Physiologic response difficulties in ASD
 - Under-connectivity: amygdala and hippocampus
 - Potential abnormal stress responses
 - Constant state of arousal
 - Confusion over physiologic symptoms
 - Possible compromise of brain neurotransmitters
- Social Emotional Developmental Delays
- Individual Differences
- Co-morbid psychiatric conditions (e.g. GAD, OCD)
- Behaviors = fight or flight response

Autism – Anxiety Feedback Loop



Developmental Approach to Diagnosing Anxiety in ASD

Look beyond the Anxiety - Search for potential causes

- Sensory processing issues
 - Don't forget visual spatial concerns
- Motor planning challenges
- Social Emotional Developmental Delays
 - Unresolved fears
 - Poor comprehension
- Undiagnosed medical issues
- Environmental triggers and responses
- Family influences
- Community influences

Developmental Approach to Treating Anxiety in ASD

- Stop the anxiety feedback loop
- Recognize child's challenges and pattern of response
- Understand and modulate environmental responses
- Address sensory motor concerns (sensory rescue package)
- Work with the child at his developmental level
- Help child understand what is happening

Developmental Approach to Treating Anxiety in ASD

- : Consider DIR/FT methods to regulate and assure working at appropriate developmental levels
- : Using FT techniques helps to solidify a child's functional capacities which eventually support his comprehension and help him achieve mastery
 - Decreasing his fears
 - Normalizing physiologic responses
 - Increasing his ability to be comfortable
- : Hopefully untoward behaviors will diminish
- : Consider medication treatment when necessary

Medication for Anxiety

Medication	Brand Examples	Comments
SSRIs	Prozac, Zoloft, Luvox, Paxil, Celexa, Lexapro	1 st line of defense Observe for irritability
Benzodiazepines	Klonopin, Xanax, Halcion, Ativan, Serax, Valium, Tranxene	Preferred for short-term treatment. Discouraged for long-term care
Atypical Anxiety Breaking Agent	Buspirone	Gives short and long-term relief. 2 nd line of defense.
SNRIs / Atypical Antidepressants	Effexor, Desyrel, Serzone, Wellbutrin, Remeron	Especially good for panic disorder, GAD and SAD
Tricyclic Antidepressants	Anafranil, Tofranil, Elavil	2 nd or 3 rd line use in patients with PD, GAD, SAD. Clompiramine effective in OCD.
Beta Blockers	Inderal	May provide symptomatic relief from sympathetic stimulation

LIAM

- 6 year old diagnosed with ASD at 18 mos
- Problem:
 - ✦ Increasing stims and repetitive behaviors
 - ✦ Crying for no apparent reason
 - ✦ Refusal to try anything new
 - ✦ Increasing tension in the family
 - ✦ Symptoms increased over summer

LIAM'S Developmental Profile

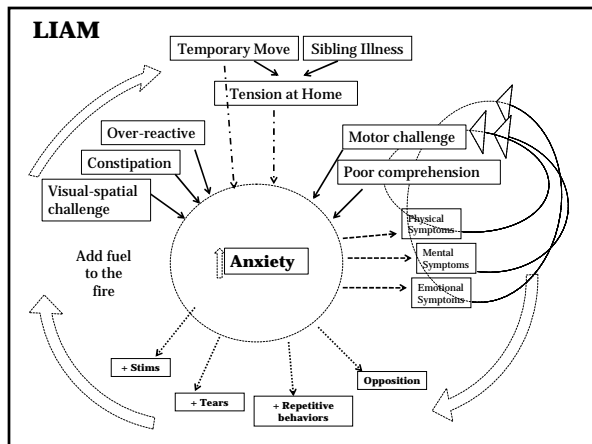
- D**
- Early stage 5 (30-35 months)
 - Sustained continuous flow of reciprocal interactions
 - Uses 500 words spontaneously in simple phrases
 - Beginning to build bridges between ideas
- I**
- Over-reactive sensory responsiveness
 - Motor planning challenges
 - Auditory processing delays
 - Comprehension appropriate for his developmental level
 - Possible visual spatial challenges
- R**
- Floortime requires low tone of voice and movement; slowing down rhythm to match his and use of gentle challenges to foster thinking and problem solving

LIAM'S Medical Concerns

- Petit mal seizures
 - Rx = Depakote
 - Under control
- Anxiety
 - Rx:
 - Sensory/motor "rescue" package
 - Appropriate Floortime interactions to problem solve anxiety-provoking situations
 - SSRI (Lexapro)

Liam: Important Historical Findings

- Temporary move over the summer
- Toileting behavior had changed
- Sibling diagnosed with a streptococcal throat infection
- Doctor visit observations
 - ✦ Liam's increasing behaviors recognized
 - ✦ FT interactions greatly impacted by behaviors
 - ✦ Highly anxious
 - ✦ Physical Exam within normal limits except for potential abdominal fullness
- Laboratory findings
 - ✦ Normal blood work
 - ✦ Abdominal x-ray positive for severe constipation



Liam's Treatment

• **Short-term**

- Sensory motor
 - Increased interactions to improve Liam's regulation
 - DIR/FT interactions geared towards Liam's fears
- Environmental / Family Recommendations
 - Moving home calendar
 - Parent counseling
- Medical
 - Constipation management
 - Anxiety medication

• **Long-term**

- Addressing unresolved challenges
 - Visual-spatial

Children With Visual Spatial Challenges

- "Lost in space"
- Unable to direct vision in purposeful way (wander, repetitive, line up items)
- World becomes rigid
- Bound by what he knows – relies on this memory
- Especially difficult when things are moving in the environment
- Extremely anxious and frustrated
- May tantrum, become aggressive or shut down

Children With Visual Spatial Challenges

- May be locked in developmentally delayed visual patterns
 - Poor eye contact
 - Use of peripheral or central vision
 - Visually sweeping the room rather than looking at or finding specific items
 - Looking past rather than at people and objects
- Evaluation with a developmental optometrist
- Treatment: visual spatial exercised
 - Good book: *Thinking Goes to School* (see references)

CONCLUSION

- **Anxiety** - Must always be considered and treated in children with ASD
- **Developmental Approaches** – look beyond the symptoms to help diagnosis and treatment planning in children with ASD



Autism Solutions
How to Create a Healthy and Meaningful Life for Your Child

Foreword by Stanley I. Greenspan, M.D.

Part I: Is it Autism?

- 1 Ryan
- 2 What Is Autism?
- 3 What Causes Autism?

Part II: Before Your Child Is Evaluated

- 4 Understanding Social and Emotional Development
- 5 How Your Child Experiences the World around Him: The Sensory-Motor System in Action
- 6 A Comprehensive Evaluation and Treatment Approach—DIR/Floortime

Part III: Determining Whether Your Child has Autism—and Knowing What to Do

- 7 The Evaluation Process
- 8 Treatment Plans
- 9 Staying on Track
- 10 ASD and the Family

Part IV: Your Child's Communication Issues

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- Epilogue



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