The Ziggurat Model
Designing Behavioral Interventions for Students with Autism Spectrum Disorders

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Ziggurat

(zig·gu·rat) from Assyrian ziggurat, height, pinnacle

1. a temple having the form of a terraced pyramid of successively receding stories, erected by the ancient Assyrians and Babylonians

2. a framework for designing comprehensive interventions for individuals with autism spectrum disorders

Intervention Ziggurat

Skills to Teach
Task Demands
Structure and Visual Supports
Reinforcement
Sensory Differences and Biological Needs

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Two pathways to intervention using the Ziggurat Model

- General
- Specific
Specific Behavior Plan

- UCC
- ABC-Iceberg
- Intervention Ziggurat (Ziggurat Worksheet)

Specific Behavior Plan

- UCC
- ABC-Iceberg
- Intervention Ziggurat (Ziggurat Worksheet)
- CAPS

Components of the Ziggurat Model

- Assessment Tools
  - Underlying Characteristics Checklist (UCC)
  - ABC-Iceberg
  - Intervention Ziggurat (Ziggurat Worksheet)
  - Implement interventions at five levels and three points
  - Evaluate outcomes and adjust
Underlying Characteristics Checklist

**UCC-HF and UCC-AU**

- Provides a "snapshot" of how autism is expressed for an individual
- A descriptive instrument
- Can be completed by multiple respondents
- Provides a tool for assessing progress/change

### UCC-HF for HFA and AS

<table>
<thead>
<tr>
<th>UNDERLYING CHARACTERISTICS CHECKLIST (H)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Date</strong></td>
<td></td>
</tr>
</tbody>
</table>

### UCC-AU for Autistic Disorder

<table>
<thead>
<tr>
<th>UNDERLYING CHARACTERISTICS CHECKLIST (A)</th>
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</tr>
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<tbody>
<tr>
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ABC Iceberg

- Assesses patterns of behavior with an understanding of the characteristics of HFA/AS
- Adapted from functional behavioral assessment and the iceberg metaphor
- Prevents a “band aid” approach to intervention
- Prevents punitive approaches

### ABC-Iceberg

**Antecedent(s)**
- Recess
- Low structure
- After lunch

**Behavior**
- "Loner" on playground
- Wandering the perimeter
- Flapping hands
- Shaking sticks in front of eyes
- Talking to self

**Consequence(s)**
- Isolated from peers
- Opportunity to engage in stereotypic behavior

### Underlying Characteristics

As determined through the Underlying Characteristics Checklist

### Specific Behaviors

- Rick

**Antecedent(s)**
- Recess
- Low structure
- After lunch

**Behavior**
- “Loner” on playground
- Wandering the perimeter
- Flapping hands
- Shaking sticks in front of eyes
- Talking to self

**Consequence(s)**
- Isolated from peers
- Opportunity to engage in stereotypic behavior

**Hypothesized Function:** Gain access to preferred activity

**Interventions based on FBA**
- Reinforce Rick for 3 minutes without flapping hands
- Remove sticks from Rick
- Reward for playing with peers
- Create a "play schedule" for Rick to structure his recess time
**Interventions Based on Underlying Characteristics**

<table>
<thead>
<tr>
<th>Underlying Characteristics</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoccupied with sensory exploration</td>
<td>Provide sensory diet</td>
</tr>
</tbody>
</table>
| Difficulty starting conversations    | • Provide written script for joining play and greetings  
|                                      | • Reinforce for using conversational skills        |
| Difficulty making friends           | • Train and assign peer buddy                      
|                                      | • Teach one or two playground games                |

**FBA Compared to ABC-I**

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<thead>
<tr>
<th>FBA Intervention</th>
<th>ABC-I Interventions</th>
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<td></td>
<td>• Teach one or two playground games</td>
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</table>
Sensory Differences and Biological Needs

“The last thing one knows in constructing a work is what to put first”
- Blaise Pascal

- Provide a sensory diet
- Monitor and address environmental stressors:
  - Sound, light, proximity/personal space, textures
  - Movement needs
- Monitor and address:
  - Appetite/hunger
  - Arousal/activity level (e.g., fatigue, hyper)
  - Posture and movement
  - Medical needs
Asperger Syndrome and Sensory Issues

Signs of Sensory Differences
- Avoid playing sports
- Often spins, jumps, or bounces
- Avoids touch
- Climbs on furniture
- Perching
- Sensitive to light
- Hums constantly
 Signs of Sensory Differences

- Stares at shadows or movement
- Covers ears
- Dropping objects
- Attention problems
- Hyperactivity
- Agitation
- Rough play

 Signs of Sensory Differences

- Easily distracted by noise
- Easily distracted by smell
- Touches others/leans on others
- Messy handwriting
- Difficulty making friends

 Sensory Interventions

- Sensory diets
- Alert program
- Breaks
Common Sensory Strategies

- Headphones
- Walking
- Extra gym time
- Deep pressure
- Being left alone

SENSORY DYSFUNCTION

SIGNS OF DYSFUNCTION

Amy Bixler
Ohio Center for Low Incidence

Types of Dysfunction

- Tactile (touch)
- Vestibular (balance)
- Proprioceptive (body awareness)
- Auditory (hearing)
- Oral tactile (taste)
- Olfactory (smell)
- Visual (sight)
Definitions

- **Sensory Processing** - When our sensory system constantly and efficiently processes information from our environment and our body.
- **Modulation** - The ability of the brain to balance our need to enhance or inhibit sensations and/or activities.
- **Hypersensitivity** - Over-reaction to stimuli. May trigger a stress response (fight or flight).
- **Hyposensitivity** - Under-reaction to stimuli. Intense input is desired.

Facts to Remember

1. The child with a dysfunction does not exhibit every characteristic.
2. The child usually has difficulties in more than one area but a concentration with a specific sense.
3. The child may be over responsive and under responsive in one sensory area - context makes a HUGE difference.
4. Categories of sensory dysfunction are not always clear-cut and often overlap.
5. The child may exhibit characteristics of a sensory disorder but may have a different disorder altogether.
6. Everyone has some sensory processing difficulties now and then.

Tactile Dysfunction

Input from the skin receptors about touch, pressure, temperature, pain, and movement of the hairs on the skin.
### Hypersensitivity - Tactile

<table>
<thead>
<tr>
<th>Becomes fearful or anxious when touched with light touch.</th>
<th>Avoids group situations for fear of the unexpected touch.</th>
<th>Avoids using hands for play.</th>
<th>Distressed about having face washed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not like to be held, cuddled. May arch back, cry, and pull away.</td>
<td>Doesn’t leave, will “wipe off” place where kissed.</td>
<td>Avoids/denies “messy play”, i.e., sand, mud, water, glue, shaving cream, etc.</td>
<td>Distressed about having hair, eyebrows, or fingernails cut.</td>
</tr>
<tr>
<td>Distressed when diaper is being changed or needs to be changed.</td>
<td>Prefers hugs.</td>
<td>Distressed by dirty hands and want to wipe or wash them frequently.</td>
<td>Resists brushing teeth and is extremely fearful of the dentist.</td>
</tr>
<tr>
<td>Becomes frightened when touched by something they cannot see.</td>
<td>Feels pain from a raindrop, water from the shower, wind blowing.</td>
<td>Excessively ticklish.</td>
<td>Is a picky eater, only eating certain tastes and textures.</td>
</tr>
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<td>Distressed about having face washed.</td>
<td>Avoids/dislikes “messy play”, i.e., sand, mud, water, glue, shaving cream, etc.</td>
<td>distressed by having clothes rubbed on skin; may want to wear shorts and short sleeves year round; toddlers may prefer to be naked.</td>
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<td>Distressed by clothes rubbing on skin; may want to wear shorts and short sleeves year round; toddlers may prefer to be naked.</td>
<td>Distressed by seams in socks and may refuse to wear them.</td>
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### Hyposensitivity - Tactile

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<tr>
<th>Complains about having hair, toenails, or fingernails cut.</th>
<th>May become very picky about using a particular brush.</th>
<th>May require to wear long sleeve shirts and long pants year round to avoid having skin exposed.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Bothered by rough bed sheets.</td>
<td>Avoids touching certain textures of material (blankets, rugs, stuffed animals).</td>
<td>Distressed by clothing rubbing on skin; may want to wear shorts and short sleeves year round; toddlers may prefer to be naked.</td>
<td>May become very picky about using a particular brush.</td>
</tr>
<tr>
<td>Avoids group situations for fear of the unexpected touch.</td>
<td>Refuses to wear new or stiff clothes, clothes with rough textures, jeans, turtlenecks, etc.</td>
<td>May want to wear long sleeve shirts and long pants year round to avoid having skin exposed.</td>
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### Hypersensitivity - Tactile

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<th>Compares the seeking of tactile stimulation.</th>
<th>Seeks out surfaces that provide strong tactile feedback.</th>
<th>Frequently hurts other children or pets while playing.</th>
<th>Seeks out surfaces that provide strong tactile feedback.</th>
</tr>
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<tbody>
<tr>
<td>Avoids group situations for fear of the unexpected touch.</td>
<td>Repeatedly touches surfaces or objects that are soothing (blankets).</td>
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<td>Seeks out surfaces that provide strong tactile feedback.</td>
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<td>Seeks out and explores surfaces that provide strong tactile feedback.</td>
<td>Mouths objects frequently. May be self-abusive; pinching, biting, or banging head.</td>
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<td>Seeks out surfaces that provide strong tactile feedback.</td>
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<td>Thoroughly enjoys and seeks out messy play.</td>
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Poor Tactile Perception & Discrimination

- Has difficulty with fine motor tasks such as buttoning, zipping, and threading clothes.
- May not be able to identify objects by touch, even after age two.
- May not be able to identify which part of their body was touched if they were not looking.
- Has difficulty using scissors, crayons, or silverware.
- May be unable to identify objects by feel, using vision to help.
- Has difficulty determining physical characteristics of objects.
- May not be able to identify which part of their body was touched if they were not looking.
- Continues to touch objects to explore them even after age two.

Vestibular Dysfunction

- Input from the inner ear about equilibrium, gravitational changes, movement experiences, and position in space.
- Hypersensitivity (over-responsiveness)
- Hyposensitivity (under-responsiveness)
- Poor muscle tone and/or coordination (limp or "floppy" body)

Hypersensitivity - Vestibular

- Avoids/dislikes playground equipment.
- Prefers sedentary tasks, moves sedentarily, avoids taking risks.
- Avoids/dislikes elevators and escalators.
- May physically cling to an adult they trust.
- May appear terrified of falling even when there is no real risk.
- Afraid of heights, even the height of a curb or step.
- Fearful of feet leaving the ground.
- Fearful of going up or down stairs or walking on uneven surfaces.
- May be fearful of, and have difficulty riding a bike, balancing on one foot (especially if eyes are closed).
- May physically cling to an adult they trust.
- May have disliked being placed on stomach as an infant.
- Likes balance easily and may appear clumsy.
- Fearful of activities which require good balance.
- Avoids rapid or rotating movements.
Hyposensitivity - Vestibular

- In constant motion; can't seem to sit still.
- Craves fast, spinning, and/or intense movement experiences.
- Enjoys being tossed in the air.
- Could spin for hours and never appears dizzy.
- Loves fast, intense, and/or scary rides at amusement parks.
- Always runs, jumps, hops etc., instead of walking.
- Loves to swing as high as possible and for long periods of time.
- Rocks body, shakes leg, or head while sitting.
- Is a 'thrill-seeker'; dangerous at times.
- Always jumps on furniture, trampolines, spinning in a swivel chair, or getting into upside down positions.
- Loves to swing as high as possible and for long periods of time.
- In constant motion, can't seem to sit still.

Poor Tone/Coordination - Vestibular

- Frequently stumps, lies down, and/or leans head on hand or arm while working.
- Difficulty lifting head, arms, and legs off the floor simultaneously while lying on stomach.
- Often sits in a 'W' position on the floor to stabilize body.
- Fatigue easily.
- Compensates for 'looseness' by grasping objects tightly.
- Difficulty turning, dressing, bending, opening and closing doors.
- Difficulty catching self if falling.
- Difficulty getting dressed and doing zippers, and buttons.
- May have never crawled.
- Has difficulty biting an ice-cream cone.
- Seems unsure about how to move body during activities.
- Difficulty learning exercise or dance steps.

Proprioceptive Dysfunction

- Input from the muscles and joints about body position, weight, pressure, stretch, movement, and changes in position in space.
- Sensory seeking
- Difficulty with grading of movement (how much force, movement, change is needed)
**Sensory Seeking - Proprioceptive**

<table>
<thead>
<tr>
<th>Sensory Seeking - Proprioceptive</th>
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<tbody>
<tr>
<td>Seeks out jumping, bouncing, and crashing activities.</td>
</tr>
<tr>
<td>Loves to be tightly strapped in many or weighted blankets.</td>
</tr>
<tr>
<td>Loves jumping off furniture or from high places.</td>
</tr>
<tr>
<td>Loves pushing/pulling/drags objects.</td>
</tr>
<tr>
<td>Grinds teeth throughout the day.</td>
</tr>
<tr>
<td>Would jump on a trampoline for hours on end.</td>
</tr>
<tr>
<td>Frequently falls on floor intentionally.</td>
</tr>
<tr>
<td>Loves roughhousing and tackling/wrestling games.</td>
</tr>
<tr>
<td>Excessive banging on/toys and objects.</td>
</tr>
<tr>
<td>Bites or sucks on fingers and/or frequently cracks knuckles. Chews on pens, straws, etc.</td>
</tr>
<tr>
<td>Kicks feet on floor or chair while sitting at desk/table.</td>
</tr>
<tr>
<td>Stomps feet when walking.</td>
</tr>
<tr>
<td>Seeks out jumping, bumping, and crashing activities.</td>
</tr>
<tr>
<td>Prefers clothes (belts, hoods, shoelaces) to be as tight as possible.</td>
</tr>
<tr>
<td>Loves to be tightly wrapped in many or weighted blankets.</td>
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<td>Loves/pushing/pulling/dragging objects.</td>
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**Grading of Movement - Proprioceptive**

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<tbody>
<tr>
<td>Milosphere too much to flex and extend muscles; during tasks activities (i.e., pulling arms into leaves or climbing).</td>
</tr>
<tr>
<td>Written work is messy and the paper is often ripped from erasing.</td>
</tr>
<tr>
<td>Milosphere the weight of an object, such as a glass of juice, picking it up with too much force sending it flying or spilling, or with too little force and complaining about objects being too heavy.</td>
</tr>
<tr>
<td>Seems to do everything with too much force; walking, slamming doors, pressing things too hard, slamming objects down.</td>
</tr>
</tbody>
</table>

**Auditory Dysfunction**

- No diagnosed hearing problem
- Hypersensitivity to sounds (auditory defensiveness)
- Hyposensitivity to sounds (under-registers)
Hypersensitivity - Auditory

- Distracted by sounds not normally noticed by others (humming lights or refrigerators, fans, heaters, or ticking clock).
- Startled with or distracted by loud or unexpected sounds.
- Frequently asks people to be quiet (i.e., stop making noise, talking, or singing).
- May refuse to go to movie theaters, parades, skating rinks, musical concerts.

- Fearful of the sound of a flushing toilet (especially in public bathrooms), vacuum, hairdryer, squeaky toys, or a dog barking.
- Frequently asks people to be quiet (i.e., stop making noise, talking, or singing).
- Runs away, cries, and/or covers ears with loud or unexpected sounds.

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- May decide whether they like certain people by the sound of their voice.

Hyposensitivity - Auditory

- Often does not respond to verbal cues or to name being called. Appears to “make noise for noise’s sake.”
- Appears oblivious to certain sounds.
- Appears confused about where a sound is coming from.

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Oral Dysfunction

- Hypersensitivity to oral input (oral defensiveness)
Hypersensitivity - Oral

- Picky eater, often with extreme food preferences, limited repertoire of foods, picky about brands, resistant to trying new foods or restaurants, and may not eat at other people’s houses.
- May only eat “safe” or puréed foods past 24 months of age.
- Refuses to lick envelopes, stamps, or stickers because of their taste.
- Dislikes or complains about toothpaste and mouthwash.
- May only eat hot or cold foods.
- Has difficulty with sucking, chewing, and swallowing; may choke or have a fear of choking.
- Refuses/refuses/emits fearful of going to the dentist or having dental work done.
- Difficulty or complains about toothpaste and mouthwash.
- Chokes or refuses to eat textured foods.
- May gag with textured foods.
- May only eat “soft” or pureed foods past 24 months of age.
- Picky eater, often with extreme food preferences (limited repertoire of foods, picky about brands, resistant to trying new foods or restaurants, and may not eat at other people’s houses).
- Avoids seasoned, spicy, sweet, sour, or salty foods; prefers bland foods.

Hyposensitivity - Oral

- Loves vibrating toothbrushes and even trips to the dentist.
- Can never get enough condiments or seasonings on food.
- Prefers foods with intense flavor; i.e., excessively spicy, sweet, sour, or salty.
- Frequently chews on hair, shirt, or fingers.
- Acts as if all food tastes the same.
- Lacks interest in condiments or seasonings on food.
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Olfactory Dysfunction

- Hypersensitivity (over-responsive to smells).
- Hyposensitivity (under-reactive to smells).
Hypersensitivity - Olfactory

- Reacts negatively to, or dislikes smells which do not usually bother, or get noticed, by other people.
- Refuses to eat certain foods because of their smell.
- Bothered by smell of perfume or cologne.
- May refuse to play at someone’s house because of the way it smells.
- Tells other people (or talks about) how bad or funny they smell.
- Offended and/or nauseated by bathroom odors or personal hygiene smells.
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- Refuses to eat certain foods because of their smell.
- Tells other people (or talks about) how bad or funny they smell.
- Reacts negatively to, or dislikes smells which do not usually bother, or get noticed, by other people.

Hyposensitivity - Olfactory

- Has difficulty discriminating unpleasant odors.
- Uses smell to interact with objects.
- May drink or eat things that are poisonous because they do not notice the noxious smell.
- Unable to notice odors that others usually complain about.
- Uses smell to interact with objects.
- Unable to notice odors that others usually complain about.
- Uses excessive use of smelling when introduced to objects, people, or places.
- Fails to notice or ignores unpleasant odors.
- Unable to notice odors that others usually complain about.
- Uses smell to interact with objects.

Visual Dysfunction

- No diagnosed visual deficit
- Hypersensitivity (over-responsiveness to visual input)
- Hyposensitivity (under-responsive or difficulty with tracking, discrimination, or perception)
Hypersensitivity - Visual

- Sensitive to bright lights, will squint, cover eyes, cry and/or get headaches from bright light.
- Has difficulty keeping eyes focused on task/activity he/she is working on for an appropriate amount of time.
- Easily distracted by other visual stimuli in the room.
- Rubs eyes, has watery eyes, or gets headaches after reading/watching TV.
- Avoids eye contact.
- Has difficulty in bright colorful rooms or a dimly lit room. Enjoys playing in the dark.

Hyposensitivity - Visual

- Difficulty judging spatial relationships in the environment.
- Fatigues easily with schoolwork.
- Confuses left and right. Tends to write at a slant (up or down hill) on a page.
- Difficulty with jigsaw puzzles, copying shapes, and/or cutting/tracing along a line.
- Problems writing with consistent spacing and size of letters and/or lining up numbers in math problems.
- Difficulty finding differences in pictures, words, symbols, or objects.
- Complains about seeing double.
- Reverses words or letters when copying, or reads words backwards after 1st grade.
- Often loses place while reading or doing math.
- Has difficulty telling the difference between different colors, shapes, sizes.
- Difficulty controlling eye movement to track and follow moving objects.
- Often loses place when copying from a book or the chalkboard.
- Tends to write in a tilted up or down slant on a page.
- Confuses left and right.
- Enjoys activity with objects.
- Difficulty judging spatial relationships in the environment.

Interventions

<table>
<thead>
<tr>
<th>Vestibular</th>
<th>Proprioceptive</th>
<th>Tactile</th>
<th>Visual</th>
<th>Auditory</th>
</tr>
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<tr>
<td>Sit on ball chair or egg cart cushion.</td>
<td>Use a weighted bag or weighted vest (plain or T-shirt, shoe bag).</td>
<td>Give a hand fidget toy and vary items in sensory table.</td>
<td>Use a hand hugger toy and very firm items in sensory table.</td>
<td>Use headrubs or wrap.</td>
</tr>
<tr>
<td>Use a tennis ball or bags of cheerios (silver).</td>
<td>Take part in running, jumping, dancing, handstands.</td>
<td>Put larger patches on a lamp.</td>
<td>Use a smaller guide for reading and a different color for cutting.</td>
<td>Sensory language challenge.</td>
</tr>
<tr>
<td>Give movement breaks.</td>
<td>Sit in a bean bag.</td>
<td>Move legs before cutting.</td>
<td>Use a table assistant.</td>
<td>Work before test (if possible).</td>
</tr>
<tr>
<td>Take a break. It can also help to put in a fidget toy.</td>
<td>Give opportunities for heavy work (e.g., pushing, pulling, pushing).</td>
<td>Have someone to help with cutting.</td>
<td>Decrease need to copy from board.</td>
<td>Move chair to another area during loud sounds.</td>
</tr>
</tbody>
</table>
Interventions

Motor Planning
- Provide a significant time to practice fine motor tasks.
  - Play with preferred items to decrease sensory overload.
- Provide a large amount of time in a precisiongross motor tasks.
  - Use scented markers.
- Allow to use a skateboard.
  - Use vanilla or lavender scented soap or air fresheners.
- Enroll in gymnastics.
  - Make the child's awareness of smell from scents to be as possible.
- Provide chewing toys/activities.
  - Be mindful of taste and texture preferences. Change toys by title.

Tactile/Oral Tactile
- Taste/Oral Tactile
  - Chew gum/suck on hard candies to increase focus.
- Play with preferred items to decrease sensory overload.
  - Chew gum/suck on hard candies to increase focus.
- Provide chewing toys/activities.

Assessments

<table>
<thead>
<tr>
<th>TITLE</th>
<th>WHO CAN COMPLETE</th>
<th>WHO CAN SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensory Profile (ages 0-11)</td>
<td>Parents, teachers, others familiar with child.</td>
<td>OTs, professionals with a strong foundation in sensory processing and disorders.</td>
</tr>
<tr>
<td>Short Sensory Profile (ages 3-11)</td>
<td>Parents, teachers, others familiar with child.</td>
<td>OTs, professionals with a strong foundation in sensory processing and disorders.</td>
</tr>
<tr>
<td>Sensory Integration and Praxis Test (ages 2-11)</td>
<td>Professionals trained and certified through Sensory Integration Intervention or through Sensory Integration Services.</td>
<td>Test must be submitted to publisher for scoring or be scored in pre-paid self-score kit. Report is included with scores.</td>
</tr>
</tbody>
</table>

Sensory Disorders

SENSORY DISORDERS INFLUENCE:

- Reading
- Writing
- Mathematics
- Communication
- Socialization
- Memory
- Problem Solving
- Attention
- Coordination
- Play
- Emotional Status
- Personal Awareness
Review

- 7 types of sensory dysfunction
- Interventions need to occur in all of the child’s environments.
- Assessments must be completed and interventions must be supervised by a trained occupational therapist.
- Sensory dysfunction influences all aspects of a child’s life.

Medical Interventions

- Work with medical professional
- Be patient – investigate options
- Involve in planning/tracking medicine administration as developmentally appropriate

Medical Interventions

- Antidepressants
  - Social relations
  - Repetitive behaviors and movements
  - Aggression and tantrums
  - Depression and anxiety

All medications have potential serious side effects.
Medical Interventions

- Antipsychotics
  - Aggression
  - Impulsivity and hyperactivity
  - Repetitive behaviors
  - Communication

All medications have potential serious side effects.

Medical Interventions

- Stimulants
  - Impulsivity and hyperactivity
  - Repetitive movements
  - Oppositional behaviors and tantrums

All medications have potential serious side effects.

Coping Cards

- Take 2 deep breaths with your eyes closed
- Press hands together and count to 10 slowly

Amy Bider, 2006
“If there is no reinforcer, there is no lesson”
-Andrew Bondy

Reinforcement Reminders
Reinforcement increases the likelihood of a behavior
- “You may not have to look any further than your child's special interest to find the perfect reward”
  - Sakai, 2003, p. 52

Reinforcement Reminders
- Involve students in the process of selecting reinforcers
- Start with high rate of reinforcement for new skills
- Use variable rate of reinforcement for maintenance
- Reinforce practice
- Reinforce prompted behavior
- Reserve some reinforcers to maintain their effectiveness
## Reinforcement Menu

### My School Rewards
- 10 minutes of reviewing baseball statistics in personal magazines/books
- 15 minutes to research on the internet on baseball/sports statistics/events
- Time to browse books in the school library

---

## Home Reinforcement Menu

### My Home Rewards
- 30 minutes of time to browse the web
- Trip to local baseball card store
- 30 minutes of video games

---

## Common Reinforcement Strategies

- Giving more independence
- Computer time
- Token system
- First-then chart
- Permit self-selection of activity
- Favorite peer guides to new places in building
“And it is best if you know a good thing is going to happen, like an eclipse or getting a microscope... And it’s bad if you know a bad thing is going to happen like having a filling or going to France. But I think it is worst if you don’t know whether it is a good thing or bad thing which is going to happen.”
- From: The Curious Incident of the Dog in the Night Time, by Mark Haddon, 2003

“I like everything still. It gives you a full feeling. It gives you a full attention. With something quick, you don’t get the full idea of it. With something still, you take a look at it and you get to know the whole look and feeling”
- Warden from Rage for Order (BBC, 1996)

Visual Supports for Students

- Cartoening
- Social Stories™ (Gray, 1998)
- Power Cards
- Social Autopsies
- Calendar (paper or electronic)
- Lists/Checklists
- T-charts
- Video
- Visual mapping

Stress Thermometer

- Adult prompt:
  “What’s your stress temperature?”

Visual Thesaurus
http://www.visualthesaurus.com
Diagrams

Water

Solid
Liquid
Gas

Common Structure and Visual Supports

- Scheduled work system
- Prepare student in advance of changes
- Visual timer
- PECS
- Checklist schedule located on desk
- Individualized work station
- Social stories™ (Gray, 1998)
- Picture cards with activities
- Picture schedule
- Portable transition pictures


Task Demands

“Just imagine your most stressful day that you’ve ever, ever had... your worst day is his best day”

- Parent of child with Asperger's
Task Demands

Task Demands – Three Questions

1. Are you asking for performance of a skill that is too hard?
2. Are you asking for performance of a skill that has not been taught?
3. Are you asking for a task to be accomplished without the necessary supports?

Are you asking for performance of a skill that is too hard?

Prerequisite skills for playing with peers during recess
- Tolerate sensory input of playground
- Know how to seek assistance
- Know how to follow unwritten and written rules
- Know how to join or start activities and/or conversations
Are you asking for performance of a skill that has not been taught?

Component skills of a hug
- Put your arms around someone
- Squeeze gently
- Count to three and let go

Are you asking for a task to be accomplished without the necessary supports?

Supports in the lunchroom
- List of conversation topics
- Seating chart
- Shortened lunch time
- Coping cards
- Peer buddy
- Designated adult contact

Examples of Task Demand Interventions
- Provide copies of lecture notes
- Use of laptop to take notes
- Extra time for written work
- Personal Digital Assistant (PDA)
- Provide organizational skills support
- E-mail assignments
Examples of Task Demand Interventions

- Coping cards
- Assistance with organizational skills
- Circle of Friends
- Narrate
- Provide high interest activities to encourage social interaction

Examples of Task Demand Interventions

- Provide peer buddy
- Circle of friends
- Highlighted text
- Provide monitoring teacher/contact
- Provide “safe place”
- Allow for breaks
- Prepare for change
- Minimize transitions

Finding our Way

- Priming
- Predicting
- Countdown
- Wrap-Up
- Rewards
“The teacher who does not understand that it is necessary to teach autistic children seemingly obvious things will feel impatient and irritated”
-Hans Asperger

Skills to Teach

Seemingly Obvious

The Hidden Curriculum

Locker room rules
- If there are people taking showers or changing their clothes, do not stare at them or make comments about their bodies.
- It is not appropriate to touch others in the restroom or shower.
- Change into your P.E. clothes in the locker room, not the hallway.

Myles, Trautman, Schelvan, 2004, p.35
The Seemingly Obvious

- What is it about the situation that comes naturally to everyone else but is missing for this person? Why is it that others do not show the same behavior?
- What is it that has not occurred to me to teach?

*That* is the seemingly obvious. *That* is the thing to teach.

Skills to Teach

- Social
- Flexibility
- Communication
- Sensory
- Cognitive
- Motor
- Emotional regulation/expression

Mind Reading

[Book cover images]
Afraid

www.do2learn.com

Surprised

www.do2learn.com

Video

- Video modeling
  - Self
  - Peers
- Identify emotional states in others
- Predict reactions in others
- Video with feedback
Common Skills to Teach Strategies

- Social stories™ (Gray, 1998)
- Adult directed play routines
- PECS
- Modeling social/communication skills
- Scheduled work system to teach skills for independence

Penny

UCC-HF or UCC-AU

Not a fine line. When in doubt, select the UCC-HF
UCC-HF or UCC-AU

Complete the UCC

Two pathways to intervention using the Ziggurat Model
- General
- Specific
General Intervention Plan

UCC

Intervention Ziggurat (Ziggurat Worksheet)

Designing a Global Intervention

- Prioritize areas of concern
- Select UCC items to address
- Develop interventions for each level of the Ziggurat
- Ensure that intervention is complete

Specific Behavior Plan

UCC

ABC-Iceberg

Intervention Ziggurat (Ziggurat Worksheet)
The ABCs of Behavior

- **Antecedent**
- **Behavior**
- **Consequence**

**Antecedents**

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>Resulting Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written assignment</td>
<td>Wanders room</td>
</tr>
<tr>
<td>Class discussion</td>
<td>Insults peers</td>
</tr>
<tr>
<td>Transitions</td>
<td>Loud verbalizations</td>
</tr>
</tbody>
</table>

**Consequences**

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wanders room</td>
<td>Finish work at recess</td>
</tr>
<tr>
<td>Insults peers</td>
<td>Private conversation with teacher</td>
</tr>
<tr>
<td>Loud verbalizations</td>
<td>Attention</td>
</tr>
</tbody>
</table>
Common Functions for Behavior

- Escape/avoidance
- Adult/peer attention
- Tangible items
- Access to preferred activities
- Sensory stimulation

Function of Penny’s behavior

<table>
<thead>
<tr>
<th>Antecedent</th>
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</thead>
<tbody>
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<td>Written assignment</td>
<td>Wanders room</td>
<td>Finish work at recess</td>
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</table>

Function: Escape/Avoidance

Points of Intervention

<table>
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<tr>
<th>Antecedent</th>
<th>Behavior</th>
<th>Consequence</th>
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<td>Wanders room</td>
<td>Finish work at recess</td>
</tr>
</tbody>
</table>

- Modify Antecedent
- Teach new Behavior
- Modify Consequence

- Allow Penny to type
- Teach coping & relaxation skills
- Reward for starting and completing written work
Slim Starter Activity

Before Intervention
A → B → C

After Intervention
A → B → C

Slim Starter

Before Intervention
A → B → C

Asked for order → No answer → No breakfast
After Intervention

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asked for order</td>
<td>Touches nose</td>
<td>Gets waffles</td>
</tr>
</tbody>
</table>

Three Points of Intervention

**A**
- Changed task demand
- Prompted

**B**
- Taught alternative communication system

**C**
- Set up contingencies/reinforcers

ABC-Iceberg Penny

**Antecedent(s)**
- Transitions (e.g., mornings, Mondays, vacations)
- Class discussions
- Written assignments

**Consequence(s)**
- Peer rejection/isolation from peers
- Private conversation with teacher
- Loss of recess time
- Delay of task
- Attention/opportunity to participate

**Specific Behaviors**
- Has difficulty understanding the connection between behavior and consequences
- Resists transitions
- Has fragmentation of attention and tasks
- Difficulty understanding own and others' emotions
- Difficulty managing stress and anxiety
- Has difficulty understanding the connection between behavior and consequences
- Difficulty with transition and change
- Has difficulty understanding the connection between behavior and consequences

**Underlying Characteristics**
- #1. Mindblindness
- #6. Difficulty with transition and change
- #8. Difficulty understanding the connection between behavior and consequences
- #13. Low frustration tolerance
- #15. Difficulty understanding the connection between behavior and consequences
- #16. Unmotivated by customary rewards

*As determined through the Underlying Characteristics Checklist*  
© Ruth Aspy, Ph.D. and Barry G. Grossman, Ph.D.
Complete Intervention

- Addresses all five levels of the Ziggurat
- Several core underlying needs are addressed
- Intervenes at all three points A-B-C

Ziggurat Worksheet
### Intervention Ziggurat

<table>
<thead>
<tr>
<th>Sensory Differences and Biological Needs</th>
</tr>
</thead>
</table>

© Ruth Aspy, Ph.D., and Barry G. Grossman, Ph.D.
Coping Cards

- Repeat to myself 3 times, “Breathe in, hold, breathe out”
- Ask for help

---

**Zigurat Worksheet**

<table>
<thead>
<tr>
<th>DEPARTMENT / COMPANY</th>
<th>INTERVENTIONS</th>
<th>Athletics - Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
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---

**Zigurat Worksheet**

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**Zigurat Worksheet**

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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Intervention Ziggurat

Reinforcement

What I want to work for:
Circle choice for this morning

- Insect book break
- Computer game with peer
- Wear baseball cap at recess
- Take bug net to recess
- Watch ant farm
- Chew gum
- Science lab assistant
- Other

Notes: Penny wrote 4 sentences today!
Great Job!
Morning Checklist

<table>
<thead>
<tr>
<th>Check</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>Put away backpack</td>
</tr>
<tr>
<td>✓</td>
<td>Make lunch selection</td>
</tr>
<tr>
<td></td>
<td>Complete helper chart</td>
</tr>
<tr>
<td></td>
<td>Turn in homework</td>
</tr>
<tr>
<td></td>
<td>Take out journal</td>
</tr>
<tr>
<td></td>
<td>Pick reward from your menu</td>
</tr>
</tbody>
</table>

Intervention Ziggurat

Structure and Visual Supports

Task Demands
Rules for Class Discussion

- No insults
- Make on-topic remarks
- Focus on speaker
- Quiet mouth
- Think about topic

Reinforce Penny for following cues on EITHER side of card

Intervention Ziggurat

Skills to Teach

Kind words  Rude words

- Good job!
- Great idea
- Nice job
- Awesome
- Yeah
- So what
- You're stupid
- That was dumb
- That stinks
- Duh!

© Ruth Aspy, Ph.D., Barry G. Grossman, Ph.D.
Evaluate Outcomes and Adjust Plan

- Seek help/work together
- Hang in there – sometimes things get worse before they get better
- Re-visit assessments
  - UCC
  - ABC-I

Signs That You Need to Revisit Sensory Differences and Biological Needs

- Distress in response to sensory stimuli
- Difficulty concentrating in noisy environments
- Cries
- Pain
- Sudden change in behavior
- Failure to attend to sensory stimuli (e.g., not responding to sounds)
- Low energy level
- Anxious and/or depressed
- Irritable
- Regression in behavior
### Signs That You Need to Revisit Reinforcement
- Failure to increase desired behavior
- Failure to "buy in" to the behavior plan
- Low self-esteem
- High frustration level
- Hopelessness
- Failure to frequently earn reinforcers
- Decrease in goal behaviors
- Escape behaviors

### Signs That You Need to Revisit Structure and Visual Supports
- Increased behavioral difficulties around periods of change (e.g., weather, substitute teacher)
- Repetitive questioning
- Increased anxiety
- Increased behavioral difficulties during transition (e.g., from one activity to another, weekend to weekdays)
- Failure to learn (e.g., skills, routines)
- Increased anger and rages

### Signs That You Need to Revisit Task Demands
- Failure at a task
- Quitting before the task is completed
- Expressing feelings that the task is overwhelming
- Meltdowns
- Increased isolation
- Rejection from peers
Signs That You Need to Revisit Skills to Teach

- Lack of progress on goals
- Lack of generalization of skills
- Overdependence on assistance
- Overdependence on modifications and accommodations
- Failure to identify level of skill development and specific skill deficits

The Purpose of Special Education (IDEA)

To ensure that all children with disabilities have available to them a free appropriate public education that emphasizes special education and related services designed to meet their unique need and prepare them for further education, employment, and independent living.

§ 300.1 (emphasis added)

The Ziggurat Model

- Sensory and Biological Needs
- Reinforcement
- Structure and Visual Supports
- Task Demands
- Skills to Teach
Strengths of the Ziggurat Model

1. Provides a process and framework for designing an intervention plan

"Make everything as simple as possible but not simpler"
- Albert Einstein

2. Addresses underlying characteristics of HFA/AS

Addresses surface needs

Give computer or Provide adult aide for dictation

Tantrums when given writing task

 Writes without tantrum

Addresses surface and underlying needs
Strengths of the Ziggurat Model

3. Emphasizes and enhances evidence-based strategies

Strengths of the Ziggurat Model

4. Facilitates comprehensive intervention design

Strengths of the Ziggurat Model

5. Incorporates assessment
   - Underlying Characteristics Checklist
   - ABC Iceberg
Strengths of the Ziggurat Model?
6. Emphasizes positive approach/reinforcement

Incorporating an Autism Perspective of Consequences
Consequences intended to punish:
- Send to principal’s office
- Hallway time out
- In school suspension

Consequences intended to reward:
- Pizza party
- Free time with peers

Advantages of the Ziggurat Model?
7. Facilitates the design of proactive interventions
8. Facilitates interdisciplinary interventions