

Unlocking the Brain:

*Key Behavioral Strategies
for Students with Autism*

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TCASE

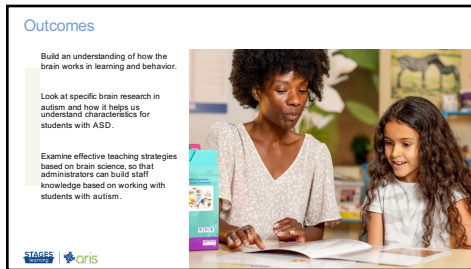
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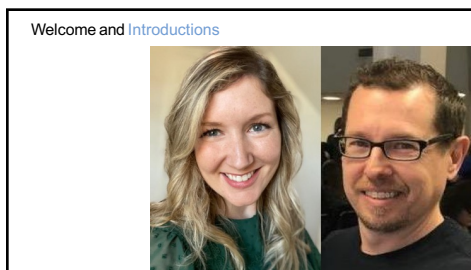
you are our people



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Some Quick Facts about Learning and Behavior


200-300 vs 30-50

All learning is active and must be done in 3D before 2D methods can be used.
- Especially with ASD

Social Skills are only learned by the brain when we are being social with others who can be our role models.

Behavior and social emotional skills must be taught, not trained.

Behavior change is difficult and takes time
- 5,000+ (10,000+ for some brains)




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How do you teach **Social and Behavioral skills**?

1. Identify a Teaching Tool
2. Designate a Time
3. Model it
4. Practice it
5. Reinforce it




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Brain Research and Autism: Areas of Focus

- Brain development in early years/Sensory Processing
- Executive Functioning
- Social and Emotional Development



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Brain Development in Early Years / Sensory Processing



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Brain Development in Early Years / Sensory Processing

Abnormal brain development beginning in the 1st month of life

Rapid brain growth during 6 and 14 months and again around age 2.

The faster the growth, the greater the impairments.

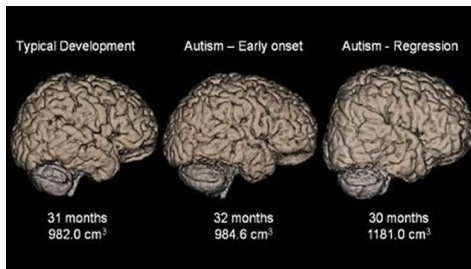
Knowledge and skill organization

Sensory input and organization

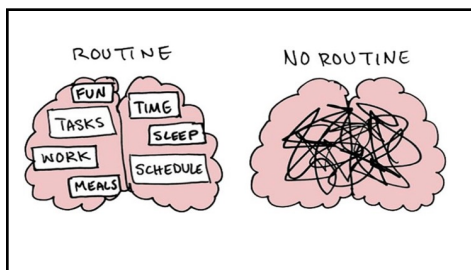


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Processing and Autism

Processing is delayed in one or more areas on average from 20 seconds to 2 minutes.
How well would you do?
- Spelling test




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Classroom Strategies

Structure and routine.
Schedules should be individualized
Visuals need to be real pictures or as realistic as possible to help the brain transfer understanding.
Sensory tracking, intervention, and support.
Classroom organization and layout.
Teach the room, teach the school.




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Classroom Strategies

Sensory Seekers
- Seating
- Access to sensory materials
- Scheduled sensory breaks
- Increased cardio exercise time




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Administrative Look Fors

- Sensory items are individualized
- Scheduled sensory breaks included prescribed diet
- Access to items
- OT collaboration
- Evidence of structure and routine
 - Include: schedules, etc



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Autism, the Brain, and Executive Functioning



ORGANIZE, PRIORITIZE, ACTIVATE WORK
MONITOR AND SELF-REGULATE ACTIONS
UTILIZE WORKING MEMORY & SHORT TERM RECALL
MANAGE FRUSTRATIONS AND MODULATE EMOTIONS
REGULATE ALERTNESS, SUSTAIN EFFORT AND SPEED
FOCUS, SUSTAIN AND ABILITY TO SHIFT TASK ATTENTION

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Autism and Executive Function

Three Main Components

Working Memory – the capacity to hold and work with more than one piece of information at one time

Cognitive Flexibility – the capacity to change behavior(s) to fit the situation or to see a situation from another's point of view or perspective

Inhibitory Control – the ability to control one's own body and resist impulsive reactions to distractions



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Classroom Strategies

- Visual supports
 - Color coding
 - Highlighting
 - Chunking
- Work systems
- Game Play
- Play Scripts
- 5 point scales
- Video modeling
- Meta-cognition modeling

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Activity Ideas for Infant - 6

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Supporting High Level Imaginary Play

Read books and go on fieldtrips.

Provide a varied set of props and toys to encourage this type of play. Younger preschoolers may need more realistic props to get the play started (e.g., by medical kit), while older children can re-purpose other things to turn them into play props.

Using familiar objects in a new way also practices cognitive flexibility.

Allow children to make their own play props. Children must determine what is needed, hold this information in mind, and then follow through without getting distracted. They also exercise selective attention, working memory, and planning. If the original plans don't work out, children need to adjust their ideas and try again, challenging their cognitive flexibility.

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Supporting High Level Imaginary Play

Play plans can be a good way to organize play and build self-regulation. Children decide who they are going to be and what they are going to do before they start playing, and then draw their plan on paper.

Planning means that children think first and then act, thus practicing inhibitory control. Planning play in a group also encourages children to plan together, hold these plans in mind, and apply them during the activity. It encourages social problem solving, as well as oral language.

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Storytelling

Encourage children to tell you stories and write them down to read with the child. Children can also make pictures and create their own books. Revisiting the story, either by reviewing pictures or words, supports more intentional organization and greater elaboration.

Tell group stories: One child starts the story, and each person in the group adds something to it. Children need to pay attention to each other, reflect on possible plot twists, and talk their additions to fit the plot, thereby challenging their attention, working memory, and self-control.

Have children act out stories they have written. The story provides a structure that guides children's actions and requires them to attend to the story and follow it, while inhibiting their impulse to create a new plot.

Bilingual families can tell stories in their home language. Research indicates that bilingualism can benefit a variety of executive function skills in children of all ages, so fostering fluency in a second language is valuable.

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Movement, Songs, and Games

Provide many opportunities for children to test themselves physically through access to materials such as climbing structures, balance beams, seesaws, etc.

Setting challenges for children—such as obstacle courses and games that encourage complex motions (skipping, balancing, etc.)—can also be fun. When children are trying new and difficult activities, they need to focus attention, monitor and adjust their actions, and persist to achieve a goal.

Encourage attention control through quieter activities that require children to reduce stimulation and focus attention—such as using a balance beam or yoga poses that include slow breathing.

Play some music and have children dance fast, then slowly. Freeze dance is also fun, and it can be made more difficult by asking children to freeze in particular positions. (Took of the Mind uses stick-figure pictures to direct children.) When the music stops, children must inhibit action and shift their attention to the picture to imitate the shape depicted.

Songs that repeat and add on to earlier sections (either through words or motions) are a great challenge to working memory, such as the motions, backward-counting songs, and songs repeating a long list.

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Quieter Games and Other Activities

Matching and sorting activities are still fun, but some children can be asked to sort by different rules, promoting cognitive flexibility. Children can first sort or match by one rule (such as by color), and then immediately switch to a new rule (such as by shape).

For a more challenging version, play a matching game, but change the rule for each pair (Quirkle and 3-Match are commercially available games that challenge cognitive flexibility in this way).

Play a bingo or I-ingo game, in which children mark a card with the variations of what is called out by the leader (apples, different formations to get bingo, etc.). Children must inhibit the tendency to mark the picture that matches or follow traditional rules, while also remembering the game's new rules.

Increasingly complicated puzzles can engage children this age, exercising their visual working memory and planning skills.

Cooking is also a lot of fun for young children. They practice inhibition when waiting for instructions, working memory while holding complicated directions in mind, and focused attention when measuring and counting.


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Activities for 7 through Adolescents



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Card Games and Board Games




Card games in which children must track playing cards exercise working memory and promote mental flexibility in the service of planning and strategy.

Games that require monitoring and fast responses are great for challenging attention and quick decision-making (requires attending to your own play as well as your opponents' progress).

For younger children, card games requiring matching by either suit or number continue to test cognitive flexibility.

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Brain Teasers and Puzzles

Crossword puzzles and word searches are available for all skill levels and draw on manipulation of letters and words in working memory as well as cognitive flexibility.

Sudoku provides a similar challenge but works with numbers and equations rather than letters and words.

Classic spatial puzzles like Rubik's Cube require children to be mentally flexible and consider spatial information in devising potential solutions.

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Sports - The focused attention and skill development inherent in competitive sports draw on the ability to monitor one's own and others' actions, make quick decisions, and respond flexibly to play. Engaging challenging aerobic activity can also improve executive function.


Yoga and meditation - Activities that support a state of mindfulness, or a nonjudgmental awareness of moment-to-moment experiences, may help teens develop sustained attention, reduce stress, and promote less reactive, more reflective decision-making and behavior.

Music - Working memory, selective attention, cognitive flexibility, and inhibition are challenged while developing skills in playing a musical instrument, singing, or dancing, particularly when dealing with complicated pieces that involve multiple parts, sophisticated rhythms, and improvisation.

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Administrative Look Fors

- Mnemonics
- Graphic organizers
- Visual supports for multi-step directions
- Behavioral supports
 - Timers
 - Size of my problem/reaction
 - 5 point scales
 - Pre-teaching expectations for possible outcomes




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Social and Emotional

Processing issue - Greeting Activity

Social motivation

The SIS analyzes biological motion cues, including eye, hand, and other body movements and predicts the actions and intention of others (non-verbal communication)

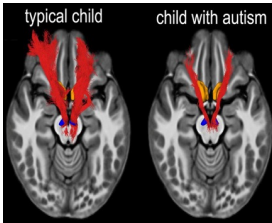


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Social Motivation Research

Children with ASD have deficits in a brain pathway that normally makes social interaction feel rewarding.

Nerve fibers along the pathway, in red, are less dense in children with ASD than in typically developing children.



typical child child with autism

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Classroom Strategies

Explicit instruction on hidden curriculum:

- Pairing
- Incorporating interests
- Visual supports
- Consequence/Contingency mapping
- Video modeling
- Peer modeling
- Role play
- Scripted or canned responses

Contingency Map




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Administrative Look Fors

- Replacement behavior identified
- Staff can communicate behavioral plan
- Multiple staff members interacting with each student
- Peer interaction/involvement – meaningful inclusion
- Scheduled times for explicit instruction
- Data collection across settings and individuals
- Student can articulate behavioral expectations and their plan
- The more involved the families are, the better the outcomes.



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Which Brain-Based Strategies Will You Use?

-  STOP
-  START
-  CONTINUE

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