

Supporting Neurodiverse Students in Music Learning

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Key Concepts

- Strengths-based vs. deficit model
- Concept of neurodiversity
- Goal with ALL students: to provide support where needed, while building on student strengths
- Do NOT rely on diagnosis
 - Parents may not disclose
 - Personal choice to not pursue diagnosis
 - May not meet diagnostic criteria but still require support

The Importance of Multimodality

- Three learning modalities
 - Kinaesthetic
 - Visual
 - Aural
- Everyone has preferred learning modality
- Each involves different parts of the brain and different neural pathways
- Including all three allows for maximal learning (and helps us reach students if we're not sure of their learning style)



What is a learning disability?



Neurodevelopmental disorder that significantly and persistently impacts ability to learn and use academic and other skills



Affects ability to perceive or process verbal or non-verbal information in an effective and accurate manner



Results in academic achievement inconsistent with IQ (in average range) and/or academic achievement can only be maintained with extremely high levels of effort and support



Results in difficulties in the development and use of skills in one or more of the following areas: reading, writing, math, and work habits/learning skills

Adaptations for Music Reading

- ALWAYS use multimodal approach. Manipulatives, singing note names, etc.
- Use colour!
 - Colour coded notes
 - Colour overlays or coloured sheets
 - Colour staff
- Isolate elements (single line of staff, expression marks, etc.)
- Use icons or alternative notation
- Allow writing in note names
- Don't require sight reading
- Mnemonic devices are very helpful!



Symptoms of ADHD

Symptoms of ADHD

Symptom	How a child with this symptom may behave
Inattention	Often has a hard time paying attention, daydreams
	Often does not seem to listen
	Is easily distracted from work or play
	Often does not seem to care about details, makes careless mistakes
	Frequently does not follow through on instructions or finish tasks
	Is disorganized
	Frequently loses a lot of important things
	Often forgets things
Hyperactivity	Frequently avoids doing things that require ongoing mental effort
	Is in constant motion, as if "driven by a motor"
	Cannot stay seated
	Frequently squirms and fidgets
	Talks too much
	Often runs, jumps, and climbs when this is not permitted
Impulsivity	Cannot play quietly
	Frequently acts and speaks without thinking
	May run into the street without looking for traffic first
	Frequently has trouble taking turns
	Cannot wait for things
	Often calls out answers before the question is complete
Frequently interrupts others	

Explaining ADHD to Teachers

Share this infographic, created by Chris A. Zeigler Dendy and Alex Zeigler, with your teacher (artwork adapted by ADDitude magazine).

The Tip of the Iceberg:

The Obvious ADHD Behaviors

Hyperactivity

- > Can't sit still
- > Fidgets
- > Talks a lot
- > Runs or climbs a lot
- > Always on the go

Impulsivity

- > Lacks self control
- > Difficulty awaiting turn
- > Blurts out
- > Interrupts
- > Intrudes

- > Talks back
- > Loses temper

Inattention

- > Disorganized
- > Doesn't follow through

- > Doesn't pay attention
- > Is forgetful
- > Doesn't seem to listen
- > Loses things
- > Late homework

Hidden Beneath the Surface:

The Not-So-Obvious Behaviors (2/3 have at least one other condition)

Neurotransmitter Deficits Impact Behavior

- > Insufficient levels of neurotransmitters, dopamine and norepinephrine, results in reduced brain activity.

Weak Executive Functioning

- > Working memory and recall
- > Getting started, effort
- > Internalizing language
- > Controlling emotions
- > Problem solving

Impaired Sense of Time

- > Doesn't judge passage of time accurately
- > Loses track of time
- > Often late
- > Forgets long-term

- projects or is late
- > Difficulty planning for future
- > Impatient
- > Hates waiting
- > Time creeps
- > Avoids doing homework

Sleep Disturbance (56%)

- > Impacts memory
- > Doesn't get restful sleep
- > Can't fall asleep
- > Can't wake up
- > Late for school
- > Irritable
- > Morning battles

3-Year Delayed Brain Maturation

- > Less mature
- > Less responsible
- > 18-year-old acts like 15

Not Learning Easily from Rewards and Punishment

- > Repeats misbehavior
- > May be difficult to discipline

THE ADHD ICEBERG

Only 1/8 of an iceberg is visible. Most of it is hidden beneath the surface.

- > Less likely to follow rules
- > Difficulty managing his own behavior
- > Doesn't study past behavior
- > Acts without sense of hindsight
- > Must have immediate rewards
- > Long-term rewards don't work
- > Doesn't examine his own behavior
- > Difficulty changing his behavior

Co-Existing Conditions

- > Anxiety (34%)
- > Depression (29%)

- > Bipolar (12%)
- > Tourette Syndrome (11%)
- > Obsessive Compulsive Disorder (4%)
- > Oppositional Defiant Disorder (54-67%)

Serious Learning Problems

- > Specific Learning Disability (25-50%)
- > Poor working memory
- > Can't memorize easily
- > Forgets teacher and parent requests
- > Slow math calculation
- > Spelling problems
- > Poor written expression
- > Difficulty writing essays
- > Slow retrieval of information

- > Poor listening and reading comprehension
- > Difficulty describing the world in words
- > Disorganization
- > Slow cognitive processing speed
- > Poor handwriting
- > Inattention
- > Impulsive learning style

Low Frustration Tolerance

- > Difficulty controlling emotions
- > Short fuse
- > Emotionally reactive
- > Loses temper easily
- > May give up more easily
- > Doesn't stick with things
- > Speaks or acts before thinking
- > Difficulty seeing others' perspective
- > May be self-centered

ADHD is often more complex than most people realize! Like icebergs, many problems related to ADHD are not visible. ADHD may be mild, moderate, or severe, is likely to coexist with other conditions, and may be a disability for some students.

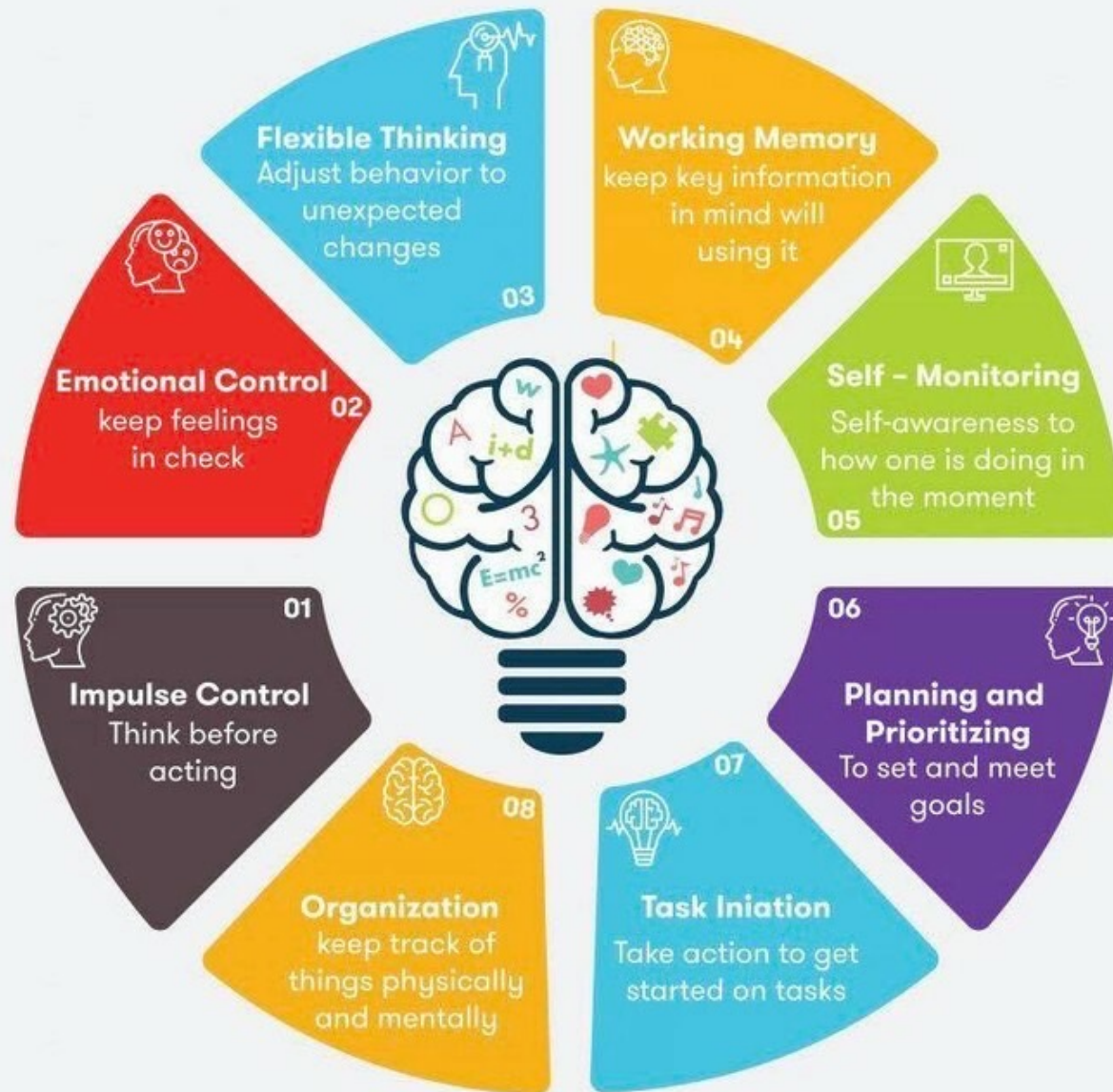
What is Executive Function?

Brain's CEO—takes in information and decides what to do with it

Primary issue for people with ADHD

Common challenge in many diagnoses, including ASD, FASD, learning disabilities, and others

EXECUTIVE FUNCTIONING



Strategies to Support Executive Function

- Use explicit written instructions (with a checklist!)
- Reduce distractions in the environment
- Support working memory through visual aids
- Strategic seating
- Practice practicing
- Change activities or modality as often as needed to sustain attention
- Support emotional needs by reducing frustration and practicing empathy
- Help organize materials



The 3 Levels of Autism

Autism spectrum disorder (ASD)

- Developmental disorder characterized by atypical social development and communication challenges
- Levels 1, 2, 3 indicate level of support needs
- Communication challenges can include receptive (what they understand) and expressive (what they express)
- Often includes sensory processing difficulty and repetitive behaviours
- Frequently very strong music abilities, especially with perception



Level 1

Requiring support

- Trouble understanding and following social rules
- Rigid or inflexible behavior
- Some stress during transitions
- May benefit from therapy or life skills coaching



Level 2

Requiring substantial support

- Atypical social behavior, like walking away mid-conversation
- High interest in specific topics
- Noticeable distress when faced with change
- May need school accommodations like reading help or social skills support



Level 3

Requiring very substantial support

- Severe communication deficits, such as being nonspeaking
- Repetitive behaviors like rocking or spinning
- Extreme distress when asked to switch tasks
- May need one-on-one time with an education assistant and may use augmentative and alternative communication (AAC) tools, like picture symbols

Strategies to Support Communication

- Use gestures, facial expressions, tone to support your communication
- Provide a written schedule if possible
- Use visuals as needed
- Have a peer support to assist with ensuring comprehension
- Allow time at beginning or end of session for sharing
- Have clear boundaries around communication if necessary eg. “Right now, we’re doing x. We’ll have time to talk about that at the end of the rehearsal.”

What is sensory processing?

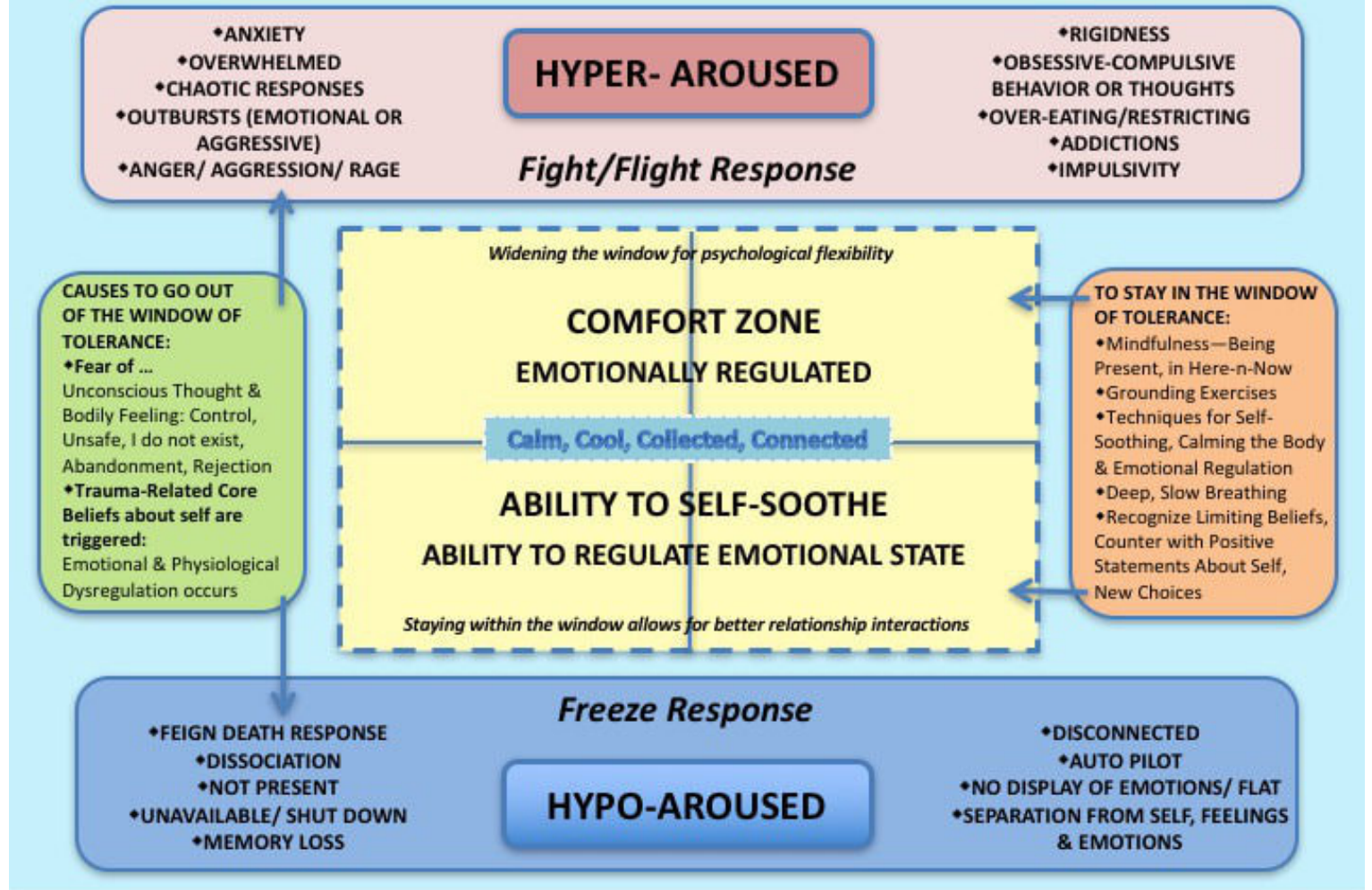
- The way our brain takes in and responds to sensory input
- 7 senses:
 - Touch
 - Smell
 - Taste
 - Sight
 - Hearing
 - Vestibular
 - Proprioception
 - Interoception

Optimal Zone of Arousal

Marie S. Dezelic, PhD © 2013

WINDOW OF TOLERANCE- TRAUMA/ANXIETY RELATED RESPONSES:

Widening the Comfort Zone for Increased Flexibility



A close-up photograph of a person's lower body sitting on a chair. The person is wearing a white shirt and a black skirt. They are sitting on a red, textured, wobble seat cushion. The chair is a simple metal frame. The background is white.

Strategies to Support Sensory Needs

- Observe, observe, observe!
- Incorporate kinaesthetic learning as much as possible
- Use sensory supports like a wobble seat or noise cancelling headphones if needed
- Include activities that have high sensory input balanced by low sensory activities:
 - Accompaniment or backing tracks
 - Percussion instruments (provides both strong auditory and touch stimulation)
 - Movement activities
 - Music with a strong or fast beat
- Allow breaks as rehearsals can be overstimulating (could have signal between student and teacher)

General Teaching Tips

- Don't abandon things if they don't go well
- Adapt as needed, not more
- Set your student up for success by only giving tasks they can achieve
- Maintain the structure as much as possible
- Move from less to more support





Questions?

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