Neurotypical spectrum disorder:

Bridging the neurodivergent-neurotypical communication gap

Kim Neely, MM, MS, CCC-SLP

The Trauma-informed SLP

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Being "different" should be okay, but society and social systems make it hard

2

Difference is not disorder*

*as long as society sees the difference

- **Cultural differences in eye-contact:**
  - East Asian cultures find American levels of eye-contact socially inappropriate
  - "(a) friend from Lesotho, Africa says in her culture, they don't necessitate eye contact at all"
- **Evolutionary theories:**
  - Autistic tendencies to systemize things likely were advantageous in prehistoric societies
  - ADHD is likely beneficial to nomadic, hunter/gatherer societies (e.g., searching for food in new environment, highly alert to changes in environment re: predator/prey movement, etc.)

Alaechi et al., 2013; Armstrong, 2015

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The double empathy problem

Autistic Callum (He/Him)
@AutisticCallum_

Being autistic is bending 80% whilst others bend 0%, and then getting called rigid, difficult and demanding for not bending the other 20%.

People of the same neurotype interact and **exchange information just as effectively at neurotypical people** do with each other.

Communication breakdowns occur when mixing neurodivergents with neurotypicals (e.g., autistic and neurotypicals).

Crompton et al., 2020a&b; Rifai et al., 2022

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Different patterns of thinking

Divergent/convergent associations

- **Divergent thinking:** (ADHDers??) "Creative thinking in which an individual solves a problem or reaches a decision using strategies that deviate from commonly used or previously taught strategies."
- **Convergent thinking:** (Autistics??) "Critical thinking in which an individual uses linear, logical steps to analyze a number of already formulated solutions to a problem to determine the correct one or the one that is most likely to be successful."
- **Associative thinking**: (both) "a relatively uncontrolled cognitive activity in which the mind wanders without specific direction among elements, based on their connections (associations) with one another."

APA Dictionary of Psychology

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Different learning and pattern recognition

I.e., Sometimes, the abstract comes first

Gestalt language acquisition: Language development with predictable stages that begins with production of multi-word "gestalt forms" (e.g., echolalia, scripting) and ends with production of novel utterances.

1. Echolalia ["Iloveyouyouloveme"]
2. Mitigated echolalia ["Ilove Dad, Dad loveme"]
3. Isolated words and beginning word combinations ["love puppy"]
4. Grammar ["I love this"].

Analytic ("typical") language acquisition: Starts at the single word level and builds to phrases and eventually sentences.

- "Park" —> "play park" —> "Let's go to the park!"

https://www.theinformedslp.com/review/let-s-give-them-something-to-gestalt-about

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Different processing

Leading to differences in language and/or accommodation needs

- **Auditory processing disorder (APD):** Difficulty with auditory processing in the central nervous system.
- **Language processing issues:** Can be difficulty processing incoming (receptive) language and/or difficulty with expressive language (i.e., word-finding issues)
- **Prosopagnosia:** Face-blindness due to issues with bottom-up processing (e.g., seeing the details but failing to put together the whole).

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Different motor system

The hand bones connected to the eye bones

- **Apraxia:** difficulty with motor planning (sequences are out of order and/or missing steps)
  - **Childhood Apraxia of Speech** (CAS)
- **Muscle weakness:** "umbrella term" can be paralysis, atrophy, etc...
- **Spasticity:** abnormal muscle tightness due to prolonged muscle contraction
- **Ataxia:** "without coordination" movements are too big or too small for desired action
- **Motor ticks:** Involuntary movements caused by spasm-like contractions of muscles and/or vocal outbursts

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Different sensory system

The sense bones connected to the "AAAHHH!!! THIS IS TOO MUCH!" bones

- **Sensory processing disorder (SPD)**: (also known as Sensory Integration Disorder) Difficulty with processing sensory information resulting in hyper- or hypo-sensitivity
  - Researchers at UCSF found quantifiable differences in brain structure in people with SPD. (Owen et al., 2013)
- **Synesthesia:** Stimulation of one sensory modality (e.g., hearing) leads to automatic, involuntary experiences in a second sensory modality (e.g., vision)
  - Higher in autistics (18.9%) compared to that of the general population (7.2%) (Baron-Cohen et al., 2013).
  - Can lead to overstimulation in those with SPD.

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Different modalities of communication

"Talking" with, well, all of yourself

Multimodal Communicators: Using all available modes of communication —**speaking, vocalizations, facial expressions, body language, gestures, ASL, augmentative and alternative communication (AAC) device**, etc.

- Due to differences in processing, motor output, as well as comorbidities (e.g., anxiety), many autistics are multimodal communicators.
- There is a responsibility of communication partners to *respect* every type of modality, *respond* to *every communicative attempt*, and act upon the communicated message in a timely manner.

Communication requires a method and *motivation*

- **Motivation is lost when communicative intents are not honored.**

https://praacticalaac.org/praactical/5-ways-to-support-multimodal-communicators/

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Different experience of emotions and affect

"emotional blindness" (internally) & what emotions look like (externally)

Alexithymia: is "a ***personality trait*** characterized by the **inability to *identify* and *describe* emotions experienced by oneself**."

- People with alexithymia feel emotions (i.e., have a working autonomic system), but can't label them.
- Common in trauma victims, autistics, and some ADHDers.

Affect: The *observed* emotional state of a person.

- Many autistics use different facial expressions from neurotypicals to express the same emotion

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"...what have previously been thought of as 'social deficits' in autistic people may actually reflect a mismatch in the facial expressions produced by autistic and neurotypical people"

https://theconversation.com/research-on-facial-expressions-challenges-the-way-we-think-about-autism-134053

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Different experiences of sexuality and gender

LBTQIA+ and neurodiversity: "A Venn diagram with a lot of overlap" (Gadsby, 2022)

- Almost 70% of people with autism identify as "non-heterosexual"
- Only 50% of autistic women reported being cisgender
- Only 8% of autistic women reported being exclusively heterosexual
- People who do not identify with their birth-assigned gender are 3 to 6 times more likely to be autistic

https://www.pridecentervt.org/2021/12/22/neurodivergence-in-the-lgbtq-community/

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Comorbidities

I.e., "It's not just autism"

- **Anxiety disorders:** any of a group of disorders that have as their central organizing theme the emotional state of fear, worry, or excessive apprehension (e.g., social phobia, obsessive-compulsive disorder (OCD))
  - Appears in ~40% of autistics (Zaboski & Storch, 2018)
  - A lot of overlap with symptoms of trauma response
- **Seizures:** "a burst of uncontrolled electrical activity between brain cells that causes temporary abnormalities in muscle tone or movements (stiffness, twitching or limpness), behaviors, sensations or states of awareness."
  - Appears in ~20% of autistics (Besag, 2018)

https://www.hopkinsmedicine.org/health/conditions-and-diseases/epilepsy/types-of-seizur

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Systemic issues

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The Neurodivergency Movement

A brief history

- Neurodivergency parallels treatment of mental illness (https://online.csp.edu/resources/article/history-of-mental-illness-treatment/)
  - Trephination (began ~5,000 B.C.E.)
  - Bloodletting and purging (began ~1600 C.E.)
  - Isolation and Asylums (began in middle ages; wide-spread by ~1600 C.E.)
  - Lobotomy (1940 C.E. - 1950s C.E.)
- Tied to eugenics in terminology and history until *very* recently (Mardero, 2019)
  - "final medical assistance" of Nazi's T-4 project

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The Neurodivergency Movement

A brief history

- Leo Kanner was the first to use "autism" in relation to a "condition of infancy" and felt is was caused by "cold, cruel parenting" (*The Lanclet")*
  - Prior, the term "autism" was introduced by Bleulrer in 1922 to refer to the most severe cases of schizophrenia (Evans B, 2013)
- Lovaas applied behavioral conditioning to autistics, developing Applied Behavior Analysis (ABA) to "cure" autism.
  - ABA is widely considered abusive by adult autistic self-advocates
- The Neurodivergency Movement and Autistic Self-Advocacy Movement started in the 1990s
  - Conflict "arises from the interaction between a non-standard individual and an unaccommodating environment (the social model of disability)" (Leadbitter et al., 2021)

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Dehumanization

"Starts with language"

"Maiese defines dehumanization as '**the psychological process of demonizing the enemy**, making them seem ***less than human***...'

"[It] often starts with creating an *enemy image*. Once we see **people on 'the other side' of a conflict** as ***morally inferior*** and even ***dangerous***, the conflict starts being framed as **good versus evil**. "

(Brown, 2018)

Examples:
"merciless Indian savages"—The U.S. Declaration of Independence (1776); using **"illegal" as a synonym for "immigrant;" racist, sexist, anti-Semitic, LGBTQIA+ slurs**; Lovaas' statement on autistics; etc...

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We dehumanize what is "different"

Lovaas' 1974 quote in *Psychology Today*:

"You start pretty much from scratch when you work with an autistic child. You have **a person in the physical sense**– they have hair, a nose, a mouth– but **they are *not people* in the psychological sense**. One way to look at the job of helping autistic kids is to see it **as a matter of constructing a person**. You have the raw materials, but ***you have to build the person***."

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Dehumanization in ~~medicine~~ Education

The danger of too much objectivity

Functional uses:

- Complex problem-solving
- Tracking progress
- Attenuating the stress present when dealing with situations that causes physical and/or psychological pain.

***Nonfunctional* causes:**

- Deindividuating practices
- ***Impaired students' agency***
- ***Perceived dissimilarities*** between teachers and students (e.g., "us" vs. "them")

(Haque & Waytz, 2012)

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What they need vs. what they get

- to understand the "why" vs. "because I said so"
- "all behavior is communicative" vs. "problem-child"
- "no functional communication without regulation" vs. "you have to tell me what's wrong *before* I will help you"
- "we should collaborate on how to help *everyone* feel safe to learn" vs. "kid with the disorder must acquiesce to the desires of the neurotypical kids"
- "we can help you learn about yourself and problem-solve regulation" vs. "suck it up and push through—we don't care about your feelings, sensations, or instincts"

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The issue with "functioning" labels

"You almost seem like a real person, just like me." (https://neuroclastic.com/the-journey-begins/)

"The Lancet Commission ***conflates needing 24/7 support with having a measured IQ of 50 or below or being nonspeaking,*** but this is **a harmful oversimplification** — for example, *there are many autistic people who speak or who have higher IQs but who require around-the-clock services*, and **there are autistic AAC users who live independently**. We also know that IQ tests are notoriously unreliable for autistic people, particularly nonspeaking autistics."

https://autisticadvocacy.org/2021/12/functioning-labels-harm-autistic-people/

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Thought Exercise

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This leads to a high likelihood of

Chronic Trauma

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Trauma is...

A ***neurophysiological*** and ***psychological* response** to **an adverse event (or multiple events)** that sends a person (or group) **into "survival mode."**

Their **resources to cope** with the event **are overwhelmed**, and they develop ***lasting adverse effects*** including **chronic feelings of *fear, vulnerability,*** and ***helplessness.***

Key take-away: **Physiological shift —> lasting adverse effects**

(SAMHSA, 2014)

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So let's briefly talk about

The Physiological Side of Trauma

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Autonomic Nervous System

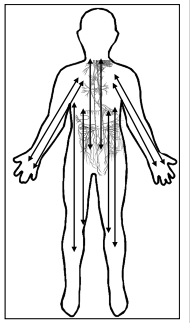
Review

Parasympathetic: "Rest and Digest"

- **Sensory:** Current "state of the body" information
- **Motor:** Slows heart rate, lowers blood pressure, "turns on" digestion

Sympathetic: "Fight or flight"

- **Sensory:** "Something has changed" information
- **Motor:** Speeds up heart rate, raises blood pressure, increases respiration



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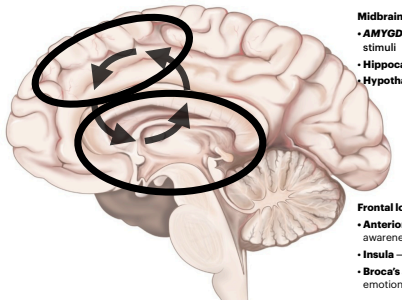

Midbrain emotional processing:

- ***AMYGDALA*—> *sets value* on autonomic stimuli**
- **Hippocampus** —> emotional memory
- **Hypothalamus** —> "hormonal brain"

Frontal lobe emotional processing:

- **Anterior Cingulate Cortex** —> conscious awareness of emotions
- **Insula** —> empathy
- **Broca's area** —> linguistically labeling emotions

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A healthy, regulated system = ——

Sympathetic and Parasympathetic activation is **in balance**

This is often described in mental health circles as...

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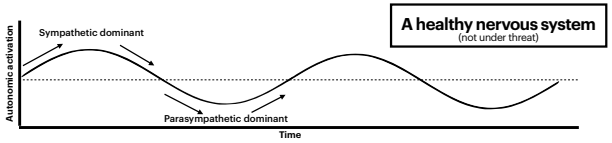
The Window of Tolerance

A model of healthy autonomic function over time



"It is the optimal range of autonomic arousal wherein emotions can ebb and flow in a manageable way."

—Dr. Dan Siegel

Gill, 2017; Lyons, 2017

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But, when we're under threat...

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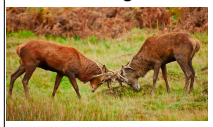
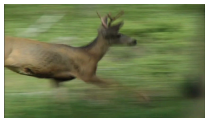
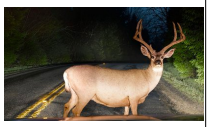
Survival mechanisms

The VIPs

Fight	Flight	Freeze
		
If it's the best choice for survival, your system will pick *fight*. (If you're trained in combat, have a weapon, etc...)	**If fight's not a good choice for survival, it'll pick *flight*.** (If it's a natural disaster like a fire, if the threat is too big to fight and win, etc...)	**If neither fight or flight works, it'll go to *freeze*.** (Maybe the threat will leave you alone if you're really, really still...)

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A trauma response happens because...

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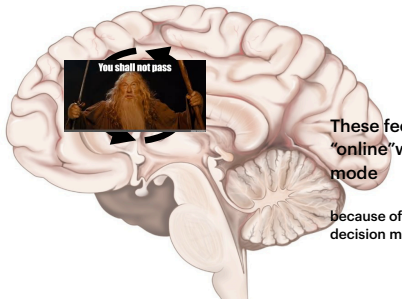

These feedback loops aren't "online" when in survival mode

because of the need for super-fast decision making

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Which means,
In a sympathetic-dominant state,

There is little-to-no **conscious awareness** of the **emotions** felt **in the body**

....I guess in the "running from a bear" analogy, it makes sense.
Not super helpful to be all, "I'm feeling scared and concerned about becoming this bear's lunch" in that situation

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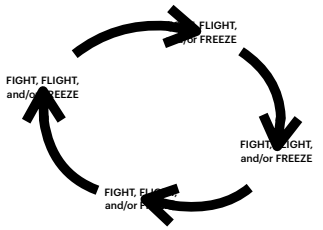
And so now, when the **amygdala** encounters ***similar enough* stimuli,**
it will **value** it as a **"threat," the cascade happens again,** and again, and again...



- **No feedback loops means no error-detection/correction for amygdala**
- **Parasympathetic system** becomes **"sluggish"**
- **More time spent** in **sympathetic dominance...**

Quinones et al., 2020

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And the NET EFFECT of all of this is...

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The whole limbic system is out of balance

And it tries, but can't get back to balance, because the **mechanisms to re-balance are too disrupted**

Quinones et al., 2020

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In the Window of Tolerance model, trauma response looks like this...

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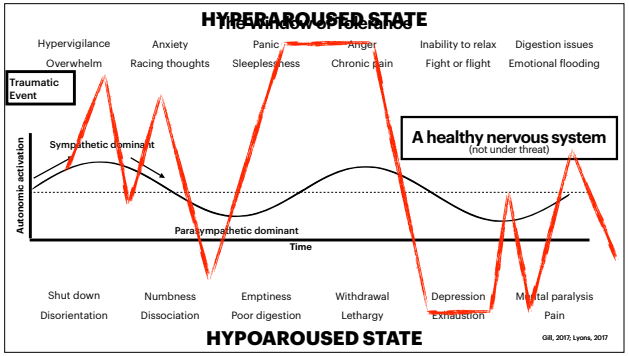

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which is why...

Nervous system dysregulation is the main* symptom of a trauma response

*of course, there are some researchers who debate this, cause when are there *NOT* researchers debating things???

Quinones et al., 2020

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The solution?

A trauma-informed approach

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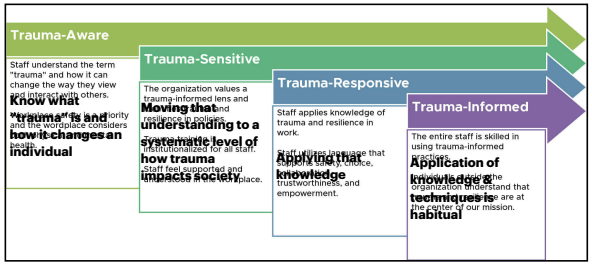
The Missouri Model of TIC



Missouri Department of Mental Health, 2019

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It means changing from a pathogenic approach to a salutogenic one

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Pathogenic paradigm		Salutogenic paradigm
Focused on **understanding the *origins of*** and ***treating*** (i.e., curing) ***disease.***		Focused on **understanding the factors that *promote health and healing***
Tx focuses on **dualistic, "if... then" approach** (i.e., if X is wrong, you do Y)	**vs.**	Using **problem-solving** and **co-regulation** to figure out that *individual's needs*
Focused on ***COMPLIANCE*** with your lesson or treatment plans because you "are the expert"		**Their needs** are **more important** than **your agenda**

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Being trauma-informed is the process of asking,

"What happened to you?"

instead of

"What's wrong with you?"

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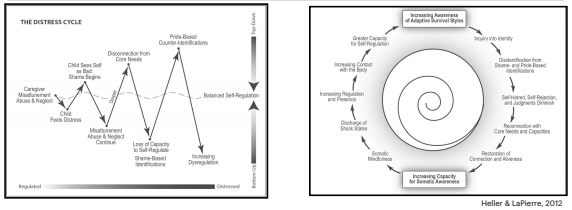
Trauma-informed care is also...

A paradigm for **how you treat *YOURSELF*** and ***others***
that helps change the **cycle of distress** to **a cycle of healing**



Heller & LaPierre, 2012

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Trauma-Informed Care
5 Core Principles

Choice
(including pts in their tx plans)

Trustworthiness
(ensuring client understanding of tx & following through w/ promises)

Safety
(clients' physical & emotional safety)

Empowerment
(strengths-based approach)

Collaboration
(communication & consistency b/w staff, clients, families)

But for "thinking on the go" simplicity,
I think this can be narrowed down to **two main principles**...

(Menschner & Maul, 2016)

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SAFETY **EMPOWERMENT**

Trustworthiness (follow-through) | **Collaboration** (consistency) | **Choice** (autonomy) | **Collaboration** (information)

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Safety for *all*

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Promoting Safety
Critical things to do

- **Presuming competence**
  - Teach the "why"
  - Deprogram ableism (in yourself and in the students)
- Teaching and respecting **body autonomy**
- ***Validating*** emotions and experiences of neurodivergent students
- **Bottom-up regulation for *everybody*!!!**
  - Providing tools/techniques for self-regulation
  - Co-regulation for staff/faculty and students
  - Ties right into empowerment!!!!

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Teach the "why"
The issue with "compliance for compliance's sake"

- Reinforcement-based techniques teach neurodivergents to comply with the system "or else."
- Not understanding the reason for an expectation is dysregulating for many autistics and ADHDers.
- The goal should be cooperation rather than compliance
- So teach "why" it is important the student do something.
  - And if the "why" is only to make someone else happy—rethink it in terms of safety and/or empowerment for everyone.

https://www.altteaching.org/370/

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Masking for autistics* and other neurodivergent populations

*Note: I am purposefully using **the preferred identify-first term** per **the majority in the autistic community** and **the Autistics Self-Advocacy Network (ASAN)**

Regarding common social-pragmatic goals:

"...an **autistic person** might ***internalize*** such goals as:
'For me to be acceptable, liked, loved, and included in the world, *I must*:

- **Force myself not to talk about my favorite subject,**
- **Say hello to people regardless of my feelings.**
- **Ask enough questions when people talk to me.**
- **Look at people's eyeballs [even if it makes me uncomfortable]**
- **Stay still**
- **Not be myself'"**

(Dorsey, Crow, & Gaddy, 2020)

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Bodily Autonomy
Promoting *physical* safety

Autonomy **refers to the ability to make choices independently** (with informed consent and without coercion)

Bodily autonomy is the simple but radical concept that **individuals have the right to control what does and does not happen to our bodies**

https://neuroclastic.com/aba-and-self-determination/
https://www.pwn-usa.org/bodily-autonomy-framework/

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Exercise time!

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Body autonomy
A few do's and don'ts

Don'ts

Wordlessly **grab a kid's hand on way to recess**

Make **anyone hug someone**

Use **hand-*OVER*-hand**

Do's

Explain the purpose of the contact
(holding a teacher's hand for safety)

Give them options
(thumbs up, high-five/fist bump, hug)

Use hand-UNDER-hand
(here's my hand if you want help)

***Basically, if you wouldn't make a stranger on the street do it "to be nice" or you wouldn't do it to a stranger, then don't ask a kid or cognitively-impaired patient to do it either.**

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A warning for those who work with kids:

On compliance with others and lack of bodily autonomy:

"When your life is being told not to follow your instincts, you are grooming a generation of vulnerable kids for exposure to all sorts of nasty."

—an autistic adult who is a sex abuse survivor

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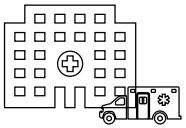
And a quick side-note on *compliance*...

We DO need to be compliant sometimes, like:

- **Moving out of the way (e.g., clear the path) for emergency services**
- **Following hospital orders re: physical transfers and swallow/diet orders**



...And:

- **Walking in an orderly manner during fire drills/fire alarms**
- **Not walking right in front or right behind of a bus and/or other large truck or RV**
- **"Active shooter" drills in schools**

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What do all these situations have in common?

SAFETY!

Society has developed these "rules" as **ways to optimize safety for everyone**.

So **presume competency**, and ***explain the "why"*** for clients/patients families, etc...

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Caveat...

When you *know* someone experienced abuse
...and they are now hurting others physically and/or emotionally

Dysregulation is an ***explanation*** it ***IS NOT*** **an excuse**

Remember, **EVERYONE has a right to safety**, so everyone needs to learn **to regulate and process** their anger/frustration in ways **that DOES NOT involve hurting others**

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Validation
Critical for emotional safety

Lets your students know that:

1. **You understand what they are feeling.**
2. **Their feelings are valid and totally okay to have.**

This ultimately builds trust and helps the student identify and trust their own emotions in the future.

- And even if you can't fully understand their feelings, showing you're trying to understand goes a looooooong way.

https://ctrinstitute.com/blog/how-to-practice-validation/

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Validation
the dos and don'ts

Don't

You're overreacting. Settle down.

It's not that big of a deal.

Happiness is a choice.

You've just gotta push through.

Do

That must be really hard.

I'm here no matter what.

Your feelings are your feelings. It's okay that you're having them.

It's okay to take some time to feel what you're feeling.

https://www.verywellmind.com/what-is-toxic-positivity-5093958

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Staff/faculty self-regulation
It's paramount!

Practice **staying regulated NO MATTER WHAT*!**
(in the treatment space)

...cause ***No one* can solve problems** when **dysregulated!**

*Requires ***awareness and ongoing monitoring*** of **your own triggers** for dysregulation

(can model for clients and do a whole regulation lesson/day if need be)

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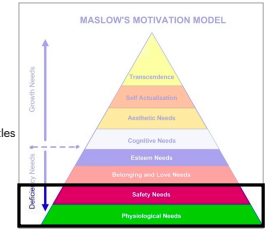
Bottom-up regulation strategies
Where safety meets empowerment

- **Tend to basic needs**
  - Drinking water, eating a snack
- **Tactile + breathing exercises**
  - Five-finger breathing, shapes breathing, butterfly hug
- **Sensory/motor stimuli**
  - Listen to nature sounds, use calming fidgets, glitter bottles
- **Physical exercise**
  - Taking a walk, jumping around a bit
- **Progressive muscle relaxation**



McLeod, S. (2020)

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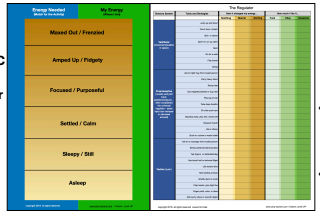
Autism Level Up! Energy Regulation Suite *
*No professional or financial affiliation. I just love this. Like, a LOT a lot.

Promotes safety:
It's *Purely* bottom up!

- **Doesn't require ACC connection to Broca's to label your emotion**
- **Promotes awareness of how your *body* feels re: your autonomic state**



Promotes Empowerment:
No emotional projection from therapist!

- **Can use as visual for non-speech communication**
- **Personalized requests for tools/techniques that *work for you***

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Empowerment for *all*

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Promoting Empowerment
Critical things to do

- **Honesty about societal reactions** to differences in people
- Intra- and inter-**professional collaboration**
- Teach and model ***neuroaffirming vocabulary and perspectives*** to *everyone*
- Provide **knowledge** and **access to community resources** (e.g., safe communities of similar people)
- Using materials that **represent and celebrate human diversity**
- **Thoughtful goal setting** (e.g., work on self-advocacy re: "how I listen best" vs. "eye-contact"

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Honesty about societal reactions
Presuming "they can take it" (or "likely already know it") competency

- **"You're doing *great* at knowing what you need to calm yourself, but a lot of adults *DON'T* know this and aren't as good at it as you are"**
- **"Friendship goes both ways"** (re: neurodivergent masking)
- **Systemic racism exists** (as much as I wish it didn't)
- "A lot of employers won't understand or be willing to accommodate X, but some will" (or ***here's Y program to help you advocate with employers***)
- "**Don't worry about loving yourself, love *being yourself***"

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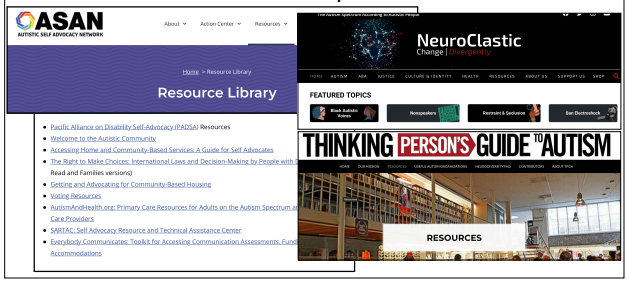
Neuro-affirming vocabulary
and concepts



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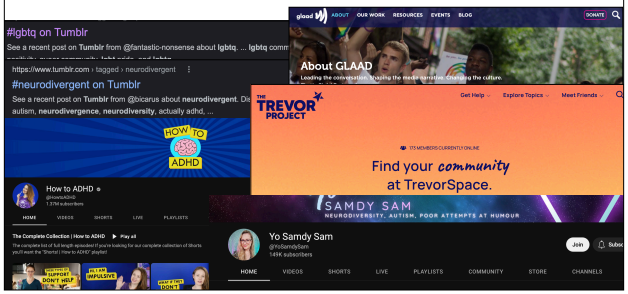
Providing resources
Connecting to a community



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Thoughtful goal setting

WHAT YOU NOTICE (re: clinical training)	WHAT THEY'LL LIKELY EXPERIENCE (socially)	One Example of WHAT THEY MIGHT NEED (safety and/or empowerment)
Eye contact, physical stemming and/or fidgeting	Getting "called out" for not listening	Understanding how these help them feel safe & self-advocacy re: how *they* listen
Hyperfixation and/or perseveration & dominating conversational turns	Social isolation and/or constant instruction in masking	Understanding of how they experience connection vs. others
A lot of "physical redirects" from staff	Dysregulation, potential traumatic response d/t lack of body autonomy	(Staff needs training, obs, but...) A way to ***clearly*** and ***firmly*** communicate "no" in that situation

*Write the goal on this

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Even more advocacy!

Keeping up with the internets

- **Be dedicated to continued education and growth.**
- Join forums led by a variety of minority groups and **JUST LISTEN** to their experiences (i.e., *just be a lurker*).
- Create a "quote" file on your computer to save neurodivergent voices talking about their own experiences
- etc...