

Routines and Predictability

Thrive on Routine

Following a routine is regulating

Prefers to do the same things
(e.g., wear the same clothes, take
the same route, eat the same foods)

Justice and Rules

Strong sense of social justice

Strong moral compass

Prefers to follow rules

Rule has to make sense

Challenges with Change

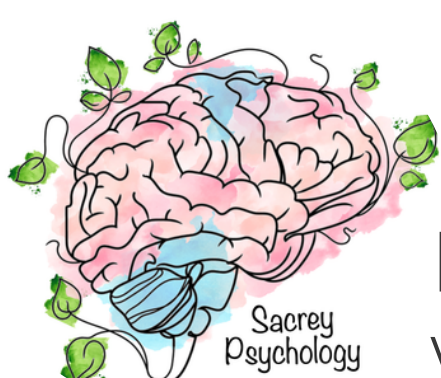
- Can become dysregulated with change
- Small changes can be unsettling
- Wanted changes can also cause distress
- May hold a grudge
- Trouble accepting others who disagree about your preferred interest
- May engage in “all or nothing” or “black and white” thinking
- If routine is interrupted, may become dysregulated
- Having to stop task when not ready can lead to distress



Masking Challenges with Change

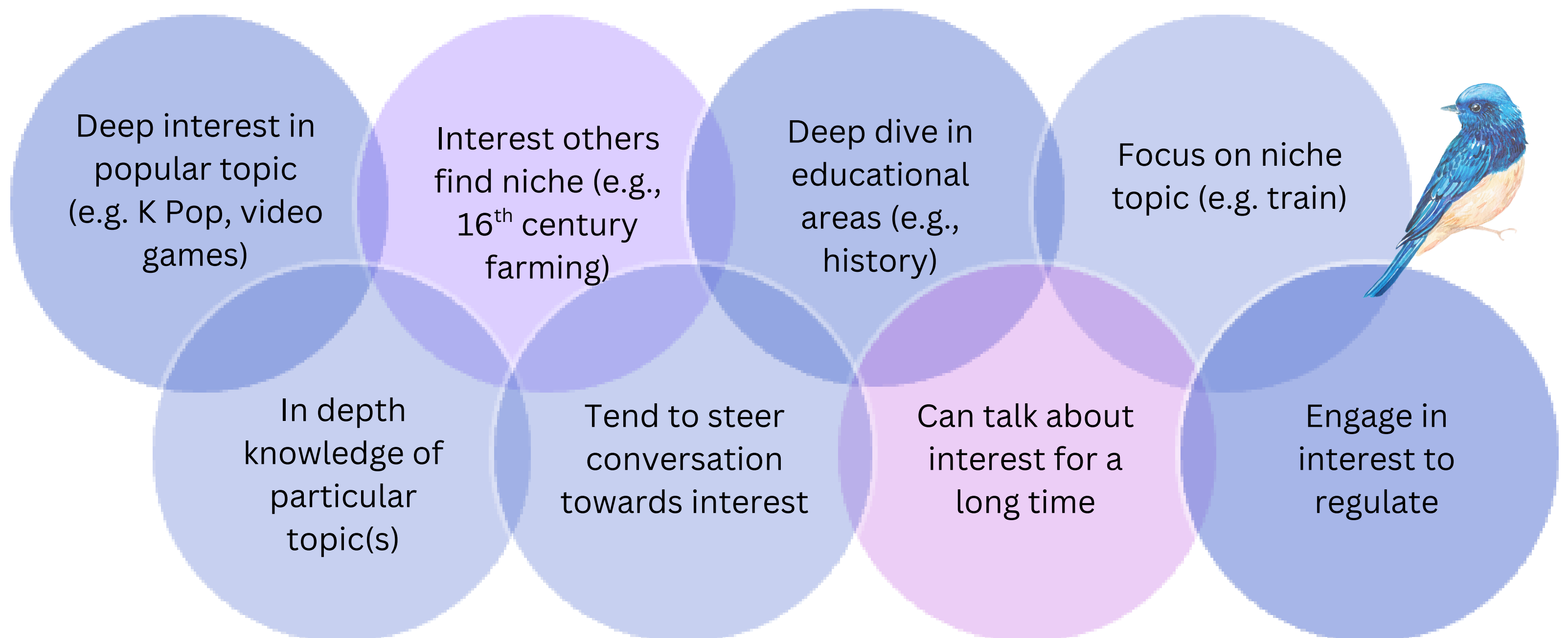


- Not speak up when rules are being broken
- Go along with change even when uncomfortable
- Hide discomfort when observing unjust decisions
- Pretend to be ok when preferred foods are not available or when routine cannot be followed (e.g., on vacation)



Preferred Interests

Interests (Learning and Sharing)



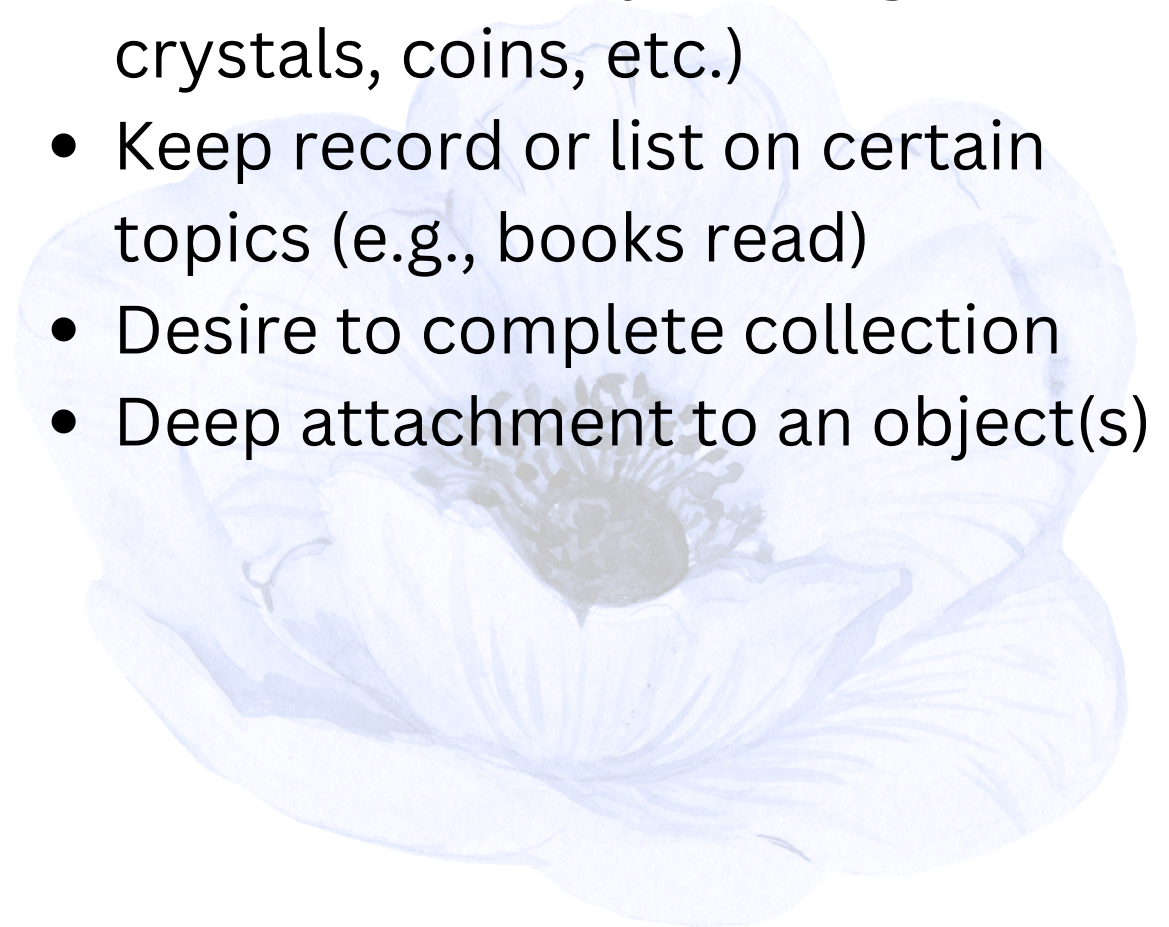
Associated Challenges

- Do not like to be interrupted when engaged in interest
- May be teased about their interest
- May forget to take a break, eat, or drink when engaged in interest
- Told they spend too much time on their interest
- Delay/avoid activities that don't include interest
- Lose track of time when engaged in interest



Collection/Lists

- Collection of objects (e.g., crystals, coins, etc.)
- Keep record or list on certain topics (e.g., books read)
- Desire to complete collection
- Deep attachment to an object(s)



Masking Preferred Interests

- Keep collection/object stowed away
- Avoid talking about interest(s)
- Carry "socially acceptable" version of their interest with them
- Find career that taps into preferred interests (e.g., statistician for math)



Sensory Differences

Avoidance/Challenges

Certain fabrics (e.g., wool)
 Certain textures (e.g., meat) Unwanted hugs/touch

Temp regulation (hot - cold) Hunger and thirst cues
 Bathroom cues Pain tolerance
 Emotional dysregulation



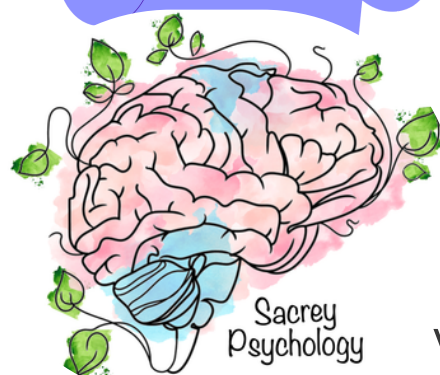
Avoidance of environment due to visual stimuli (lights/patterns)
 Fluorescent lights Overhead lights

Flavours (e.g., strong) Scents (e.g., artificial)



Wear noise cancelling headphones
 Loud noises Sudden noises
 Hard to filter background noise

May not habituate



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Seeking/Enjoy

Certain fabrics (e.g., soft)
 Certain textures (e.g., smooth surface)



Movement seeking (e.g., spinning)
 Alternative seating Deep pressure
 Weighted blanket Temperature seeking

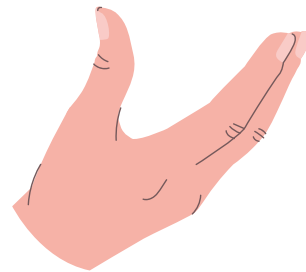
Repetitive stimuli (e.g., lava lamps)
 Certain colours Certain patterns



Flavours (e.g., sweet) Scents (e.g., natural)
 Chewing gum/candy

Repeat song (part or whole)
 Nature noises Listen to music
 Prefer background noise

Touch/
 Texture



Interoception



Visual



Taste/Smell



Auditory



Masking Challenges

- Stay in an uncomfortable environment (lighting, scent, overlapping conversation, etc.)
- Eat disliked food to not upset others
- Wear uncomfortable clothes to 'fit in'
- Accept hugs even when uncomfortable



Co-Occurring Conditions

As highlighted on **Layer 2, the Lived Experience** generally includes behaviours that do not map onto the diagnostic criteria.

Features of neurodiversity can be **highly variable** and **complex** due to underlying genetic contributors, medical concerns, and psychological diagnoses. As such, neurodivergent individuals can (and do) often experience co-occurring conditions.

Commonly occurring conditions include ADHD, depression, anxiety, intellectual developmental disorder, schizophrenia, epilepsy, functional neurological disorder, Fragile X syndrome, Rett Syndrome, gastrointestinal (stomach) issues, and susceptibility to infections (Salehi et al., 2024; Jadva & Bal, 2022).

Two studies explored large datasets on co-occurring conditions in autistic individuals, with the first describing the youth experience and the second describing the adult experience.



Youth Experience

Salehi et al. (2024) examined data from the National Survey of Children's Health (NSCH) which collected data on children/youth aged 3-17 years for the years 2020-2021. The dataset consisting of 93,669 participants, of which 2,568 individuals (or 3.2%) had a confirmed current diagnosis of autism. They found that *96.4% of youth with autism had at least one co-occurring condition.*

Co-Occurring Conditions

Youth Experience

Salehi et al. (2024) found:

- The most common psychological co-occurring diagnoses were developmental delay (64%), then behavioural and conduct problems (57.8%), anxiety problems (45.7%), and ADHD (43%)
- The most common medical co-occurring diagnoses were allergies (32.4%), genetic conditions (26.2%), and asthma (12.6%)
- The odds of co-occurring vision problems, cerebral palsy, frequent/severe headaches, epilepsy, depression, and intellectual impairment were significantly greater in females than males, whereas ADHD and anxiety were significantly lower among females with autism



Adult Experience

Jadav et al. (2022) examined data from the SPARK dataset (SPARK = Simons Powering Autism Research Knowledge) in which autistic adults completed a medical questionnaire to indicate which psychiatric and medical conditions they have experienced. In total, 4,657 autistic adults provided data (age range was 18–85 years).

On the next page is a data table that summarizes the psychiatric and medical conditions endorsed by the complete sample (all), with information also shown for autistic adults under age 40 and over age 40.

The data in the table are sorted with the most common condition (for the all ages column) appearing at the top and the least endorsed condition appearing at the bottom



Co-Occurring Conditions

Adult Experience

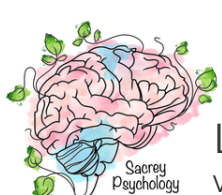
Jadav et al. (2022) found:

- The top three most commonly experiencing co-occurring conditions across the entire age range were anxiety disorders (other than social anxiety) at ~56%, depression at ~53%, and ADHD at 44%
- The top 3 conditions are also true for the 18-39 age group, but are different with the 40+ age group, with depression as the most common condition, at ~53%, followed by anxiety disorder at ~48%, and then ADHD at ~37%

(Sample of autistic adults = 4657)	All ages	18-39 years	40+ years
	%	%	%
Anxiety disorder except social anxiety	55.5	56	47.7
Depression	52.9	51.1	53.2
ADHD	44	46.5	36.7
Social anxiety disorder	36.5	35.9	34.7
Language or motor delay	30.3	32.6	21.8
Sleep	26.6	24.5	31.2
Obsessive-compulsive disorder	24.2	24.7	21.3
Bipolar disorder	16.2	16.3	13.6
Personality disorder	12.4	11.5	13.2
Separation anxiety	11.3	11.7	9.8
Eating disorder	10.8	11	9.6
Hoarding	5.1	4.4	6.5
Tourette's or tic disorder	4.1	4.4	3.2
GI Issues	0.6	0.6	0.6

Note that the data presented in these studies are based on confirmed clinical diagnoses. The actual percentage of autistic individuals (both for youths and adults) who experience co-occurring conditions is likely higher.

Also note that a co-occurring diagnosis of ADHD and autism was not possible prior to DSM-5.



Women and Girls

There is an under-diagnosis of autism in women and girls historically because they are:

‘Socially acceptable’ presentations (preferred interests, socialization)

Social Communication

Gender socialization - process where children learn the norms and behaviours associated with their gender. It is thought to occur within the family, peer groups, mass media and school curriculum (Bhattacharjee, 2021).

Daughters often given dolls and dress-up clothes that foster nurturing, social proximity, and role play and parents give positive feedback (praise, involvement, and physical closeness) for gender normative behaviour (Caldera, Huston, and O’Brien 1998). Also, children may face negative sanctions such as being criticized or marginalized by their peers (Ready 2001).

RRB’s

Preferred interests: Clinicians are traditionally trained to recognize male-associated RRBs, such as cars, dinosaurs, or space; females’ interests often include animals, art, celebrities, or literature (Travers, 2023). There are also difference is intensity of their interest!

Repetitive movements: Both males and females use rocking and hand movements; women may also repetitively twirl their hair, play with their nails, play with jewelry (Travers, 2023)

Change/Routine: May manifest as perfectionistic tendencies or restrictive patterns of eating (Travers, 2023)

Sensory: similar presentations (Edwards et al., 2023; meta-analysis)

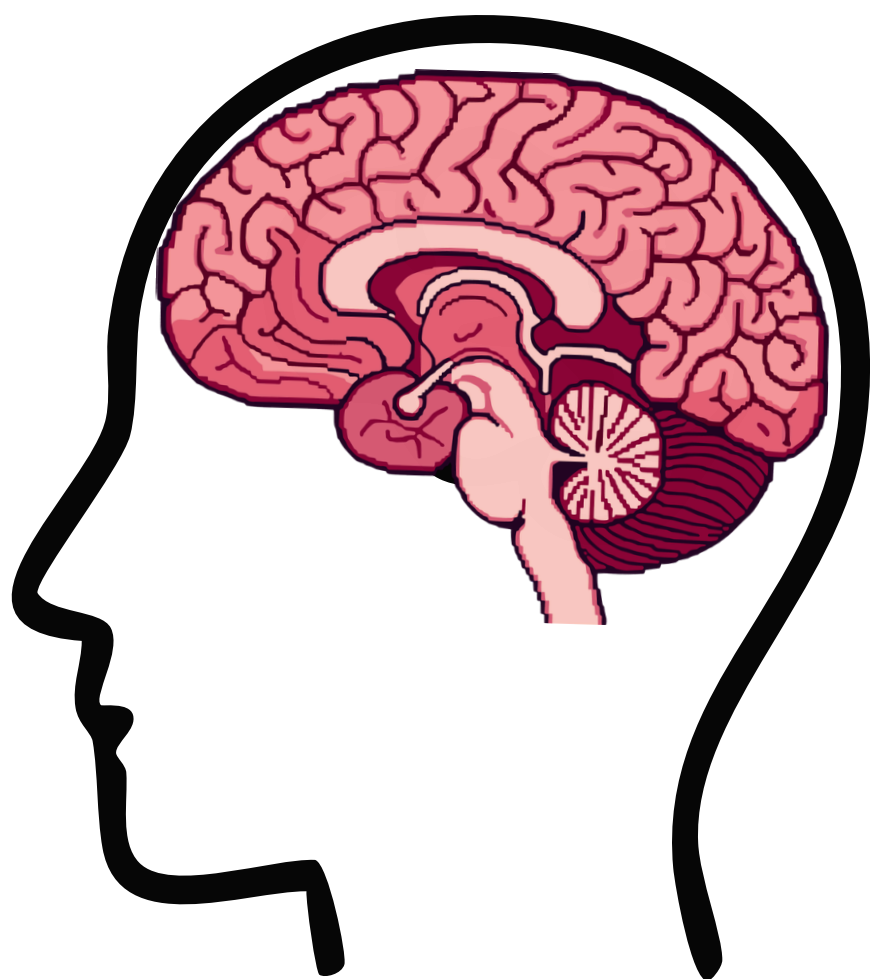
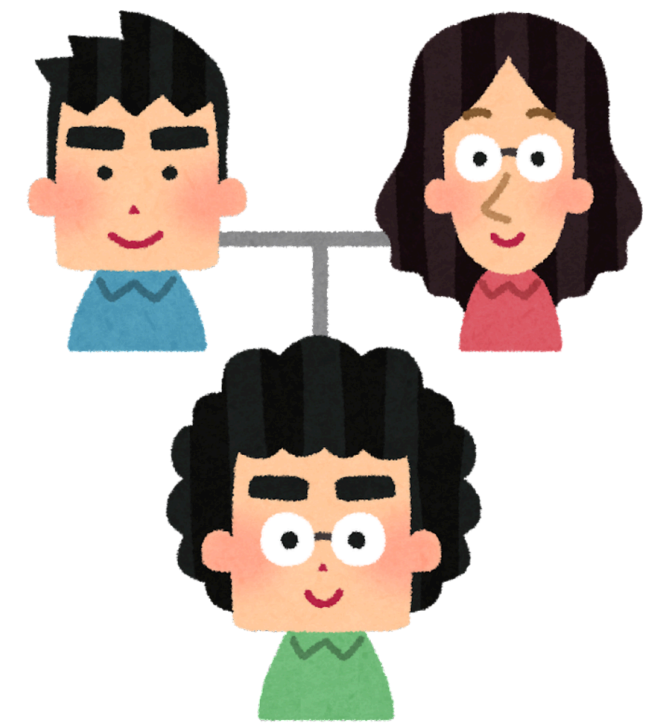


Neurological Indicators of Autism

Autism results from a combination of genetic and environmental factors

Genetic research has not identified a gene or set of genes that can be used to identify autism. The genes involved in autism are complex (i.e., multiple genes involved with no clear pattern; Gaugler et al. 2014; Geschwind 2011; Schaaf et al. 2020).

No biological marker is good enough to be clinically accepted so diagnosis is based from clinical observation of the individual's behavior (Barbaro and Dissanayake 2017; Hyman et al. 2020).

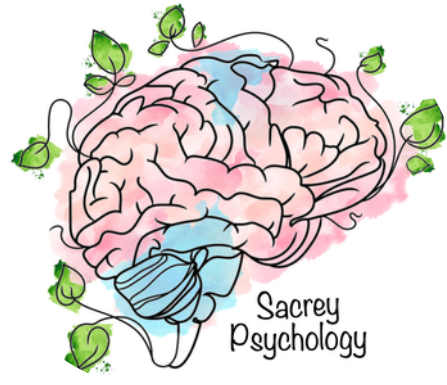


There is a lot of inconsistency in the research exploring brain areas linked to autism. Consistent findings include:

Autistic children have larger total brain volumes, and thicker cortices

- a. Total brain volume = total number of cells in brain
- b. Cortical thickness = how thick the brain is from the inner to outer layer

From ages 2 to 4 years of age, brain volumes in the amygdala, frontal cortex, and temporal cortex, areas important for social cognition, emotion regulation, and language, are larger than same aged non-autistic peers (Molnar-Szakacs et al., 2021)



About the Author

Lori Sacrey is a registered psychologist in the province of Alberta, Canada. She focuses on helping her clients manage their perceived challenges from a neurodiversity-affirming lens.



Lori also has a PhD in neuroscience and works as a research associate at the University of Alberta, where she continues to engage in research and stay up to date with the latest findings.

