

Neurodiversity & ASD in schools

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What is ASD? Neurodiversity?

Red Flags – diagnostic referrals

Co-existing issues

Therapy and support ideas



Neurodiversity

- ▶ Initially used to self-describe as “being somewhere on the autism spectrum”
- ▶ Now more broadly including those with
 - ▶ ASD ~1-2% or 1 in 44 (US 2021)
 - ▶ ADHD 3-4%
 - ▶ Dyslexia, dyspraxia, dyscalculia ~10% ?
 - ▶ FASD 2% ??
- ▶ Impairments and disabilities vs Intense strengths and weaknesses

What is ASD?

- ▶ Defined previously as the group of pervasive developmental disorders that include 'severe' Autism generally with significant intellectual disability to 'high functioning' Autism with less impairment and average intellectual ability
- ▶ In the NZ ASD Guideline (2016) they noted that the "spectrum of autism disorders is now recognised as covering a wide range of severity and intellectual ability, from the person with the severe impairment of classical autism to a 'high functioning' individual with Asperger syndrome. "

ASD Guideline Definition

- ▶ Those diagnosed with ASD all display (and have in their lifetimes displayed):
 - ▶ impairment in social communication and social interaction
 - ▶ restricted, repetitive patterns of behaviour, interests, or activities.
- ▶ Are all-encompassing which cause clinically significant impairment in social, occupational, or other important areas of current functioning, although intensity may vary.

(NZASD Guideline, 2016)

Changing Pattern of Diagnosis

- ▶ Historically autism thought to be a rare condition (2–4/10,000)
- ▶ In 1990s & early 2000s, studies reported rise in incidence of ASD in preschoolers (prev. 60/10,000)
- ▶ Currently, the wider spectrum of ASD is thought to affect about 1-2% of the population (or more than 50 -100, 000 New Zealanders)

Why the increase?

- ▶ Changes in diagnostic criteria over time
e.g. DSM – IV –TR to DSM-V
- ▶ PDD – Pervasive Development Disorder
 - ▶ Asperger's Disorder
 - ▶ Autistic Disorder
 - ▶ Childhood Disintegrative Disorder
 - ▶ Rett's Disorder
 - ▶ Pervasive Developmental Disorder – NOS
- ▶ Differences in methods used in studies
- ▶ Increasing awareness amongst professionals & the wider community

Why the increase?

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e.g. DSM – IV –TR to

DSM-V

- ~~▶ PDD – Pervasive Development Disorder~~

Autistic Spectrum Disorder

- ~~▶ Asperger's Disorder~~

- ~~▶ Autistic Disorder~~

- ~~▶ Childhood Disintegrative Disorder~~

- ~~▶ Rett's Disorder~~

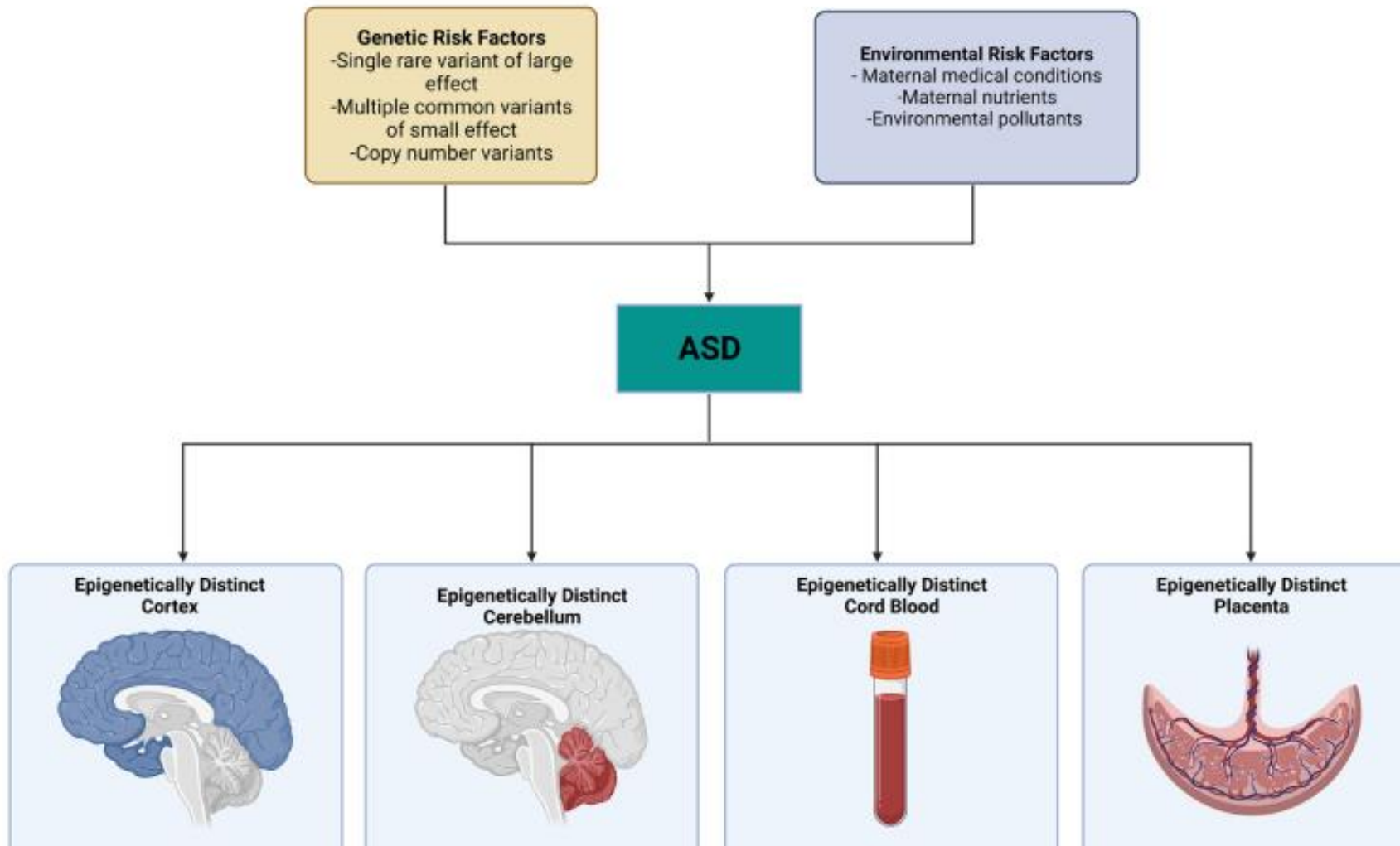
- ~~▶ Pervasive Developmental Disorder – NOS~~

- ▶ Differences in methods used in studies

- ▶ Increasing awareness amongst professionals & the wider community

Why the increase?

- ▶ Recognition that ASD:
 - occurs in association with other conditions (eg. ID, physical disability, syndromes, psychiatric conditions)
 - does occur in people with high IQ
 - presentation can be subtle
- ▶ Paternal family history of ASD 50%
- ▶ Pre- and Peri- natal risk factors 25% (Prenatal alcohol exposure, severe asphyxia, seizures, prematurity)
- ▶ Genetics: overlap with ID, ADHD, Mood Disorders, Schizophrenia
- ▶ Epigenetics ?
- ▶ The question as to whether there has been a genuine increase remains open



Social Communication

A: Persistent deficits in social communication & social interaction across contexts, not accounted for by general developmental delays, and manifest by all 3 of the following:

1. Deficits in social-emotional reciprocity
2. Deficits in nonverbal communication
3. Deficits in developing and maintaining relationships, appropriate to developmental level (beyond those with caregivers)

Fixed Interests & Repetitive Behaviours

- B. Restricted, repetitive patterns of behavior, interests, or activities as manifested by at least two of the following:
1. Stereotyped or repetitive speech, motor movements, or use of objects
 2. Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change.
 3. Highly restricted, fixated interests that are abnormal in intensity or focus
 4. Hyper-or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment

DSM V continued....

- C. Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capacities)
- D. Symptoms together limit and impair everyday functioning.

Requiring both criteria to be completely fulfilled improves specificity of diagnosis without impairing sensitivity.

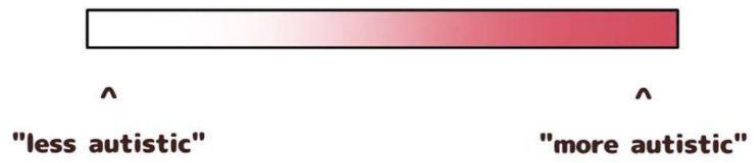
Providing examples for sub domains for a range of chronological ages and language levels increases sensitivity across severity levels from mild to more severe, while maintaining specificity with just two domains.

Severity Level for ASD	Social Communication	Restricted interests & repetitive behaviours
Level 3 'Requiring very substantial support'	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning; very limited initiation of social interactions and minimal response to social overtures from others.	Preoccupations, fixated rituals and/or repetitive behaviours markedly interfere with functioning in all spheres. Marked distress when rituals or routines are interrupted; very difficult to redirect from fixated interest or returns to it quickly.
Level 2 'Requiring substantial support'	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions and reduced or abnormal response to social overtures from others.	RRBs and/or preoccupations or fixated interests appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress or frustration is apparent when RRB's are interrupted; difficult to redirect from fixated interest.
Level 1 'Requiring support'	Without supports in place, deficits in social communication cause noticeable impairments. Has difficulty initiating social interactions and demonstrates clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions.	Rituals and repetitive behaviours (RRB's) cause significant interference with functioning in one or more contexts. Resists attempts by others to interrupt RRB's or to be redirected from fixated interest.

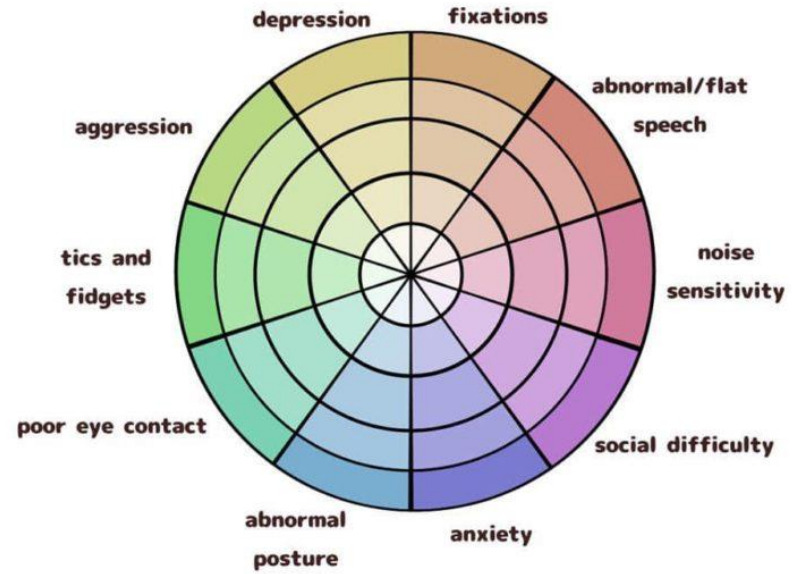




what people think the autism spectrum looks like:

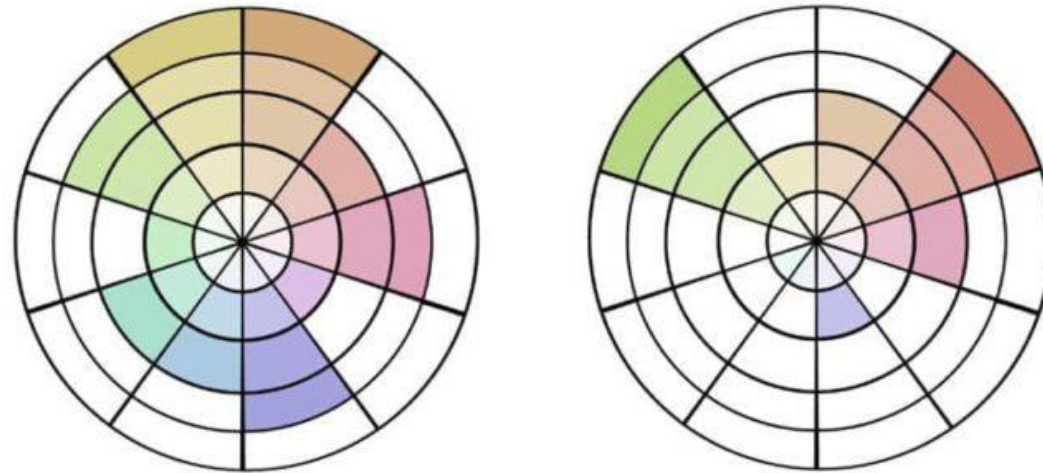


what it can actually look like:



no two autistic people are exactly alike, but we shouldn't be reduced to "high functioning" and "low functioning" stereotypes, either.

my autism looks like this. my brother's probably looks like this.



we have the same "amount" of autism, just different symptoms.

Psychological / Cognitive concepts

- ▶ Theory of Mind disturbance explains social and communication problems (mentalisation)
- ▶ Executive Dysfunction theory explains everyday coping problems
- ▶ Weak Central Coherence theory explains the detail focus (a cognitive strength) and difficulty 'seeing the big picture'
- ▶ No single theory is sufficient to explain all ASD symptoms

Neural basis of mentalising

- ▶ Set of brain regions consistently activated when subjects thinking about mental states (i.e. think, feel, believe).
- ▶ Autism group shows
 - ▶ Reduced neural activation in mentalising system
 - ▶ Equal activation in the visual system
 - ▶ Poorer connectivity between visual and mentalising systems

ASD Symptoms Explained by Mind Blindness

- ▶ Poor orienting to name
- ▶ Poor joint attention
- ▶ Poor pretend play with others
- ▶ Poor understanding of non-literal language
- ▶ Naivety in social interactions (and paranoia)
- ▶ No meeting of minds in personal relationships

Executive Dysfunction

- ▶ Executive function is an umbrella term for range of higher order control processes (e.g., planning , working memory, impulse control, inhibition, shifting set, initiating and monitoring action)
- ▶ People with ASD show impaired ability to perform tasks involving 'executive function'

ASD symptoms explained by executive function difficulties

Difficulties with

- ▶ Planning ahead
- ▶ Monitoring behaviour to check when a goal is reached
- ▶ Holding in mind several things at once
- ▶ Inhibiting no longer useful behaviours (perseveration)
- ▶ Responding flexibly in the face of change

Anxiety is created secondarily as a result of not knowing what to do, having to cope constantly with the unexpected or unplanned

Strategies to cope with executive function problems

- ▶ Clear structure
- ▶ Constant prompts and reminders
- ▶ External support
- ▶ Routinise behaviours
- ▶ Teach coping with novelty

Weak Central Coherence

- ▶ An information processing style where there is a tendency to process details at the expense of global meaning
- ▶ This theory attempts to explain the cognitive strengths seen in ASD
 - ▶ Superior perceptual discrimination
 - ▶ Superior rote memory
 - ▶ Superior performance on visual perceptual tasks
 - ▶ Savant skills

Weak Central Coherence

- ▶ Relatives of people with ASD are likely to have this cognitive style
- ▶ It is an advantage when analytic skills are required
- ▶ It is a disadvantage when overall meaning has to be integrated



ASD Symptoms explained by Weak Central Coherence

- ▶ Specialist narrow interests
- ▶ Insistence on sameness
- ▶ Storing knowledge and information is different in a detail focussed brain
 - ▶ Specific examples rather than “prototypes”
 - ▶ Reading for meaning is poorer than decoding text

What is ASD? Neurodiversity?

Red Flags – diagnostic referrals

Co-existing issues

Therapy and support ideas



Red flags – diagnostic referral

- ▶ Parents often know something is different by 18 months
- ▶ Parents are more likely to raise concerns than other health and education professionals
- ▶ Early detection & intervention - best outcomes
- ▶ Valid clinical diagnosis possible by 2 - 3 years (harder when younger and less cognitively able)

Diagnosis

- ▶ Average age diagnosis
 - ▶ ASD (Level 2 / 3) or Autism 5.5yr
 - ▶ ASD (Level 1) or Asperger's 11yr
 - ▶ BUT often further delayed if intellectual ability high and environmental supports good
- ▶ Diagnosis often considered at failed social challenges
 - ▶ Starting school
 - ▶ Starting high school and peer relationships
 - ▶ Leaving school and finding employment
 - ▶ Maintaining employment and social / work networks

Key Signs of ASD for 4-8 yr olds

- ▶ Communication difficulties
- ▶ Social difficulties
- ▶ Impairments in interests, activities and behaviours

Communication Impairments



- ▶ Abnormalities in language development, including muteness, odd or inappropriate.
- ▶ Intonation patterns, persistent echolalia, reference to self as 'you' or 'she/he' beyond 3 years, unusual vocabulary for child's age/social group.
- ▶ Limited use of language for communication and/or tendency to talk freely only about specific topics.

Social Impairments


- ▶ Inability to join in with the play of other children, or inappropriate attempts at joint play (may manifest as aggressive or disruptive behaviour)
- ▶ Lack of awareness of classroom 'norms' (criticising teachers; overt unwillingness to cooperate in classroom activities; inability to appreciate/follow current trends, e.g., with regard to other children's dress, style of speech, interests etc)
- ▶ Easily overwhelmed by social and other stimulation
- ▶ Failure to relate normally to adults (too intense/no relationship)
- ▶ Showing extreme reactions to invasion of personal space and extreme resistance to being 'hurried'

Impairment of Interests, Activities & Behaviours

- ▶ Lack of flexible, cooperative imaginative play/creativity (although certain imaginary scenarios, e.g. copied from videos or cartoons, may be frequently re-enacted alone)
- ▶ Difficulty in organising self in relation to unstructured space (e.g. hugging the perimeter of playground, hall)
- ▶ Inability to cope with change or unstructured situations, even ones that other children enjoy (such as school trips, teachers being away etc)
- ▶ Preoccupation with restricted patterns of interest that are abnormal either in intensity or focus; over-attention to parts of objects

Other factors which may support a diagnosis of ASD

- ▶ Unusual profile of skills/deficits (e.g. social and motor skills very poorly developed, whilst general knowledge, reading or vocabulary skills are well above chronological/mental age)
- ▶ Any other evidence of odd behaviours, including over- or under-sensitivity to sound (e.g. has trouble functioning when there is noise around), touch (e.g., difficulties standing in line or close to others, avoids getting messy, or excessively touches people and objects)

- 
- ▶ Movement (e.g. avoids playground equipment or moving toys, or seeks all kind of movement, and this interferes with daily routines), visual stimuli (e.g., prefers to be in the dark, discomfort or avoids bright lights) or smells (e.g. deliberately smells objects)
 - ▶ Unusual responses to movement (e.g. toe walking and hand flapping)
 - ▶ Unusual responses to pain
 - ▶ Any significant history of loss of skills

Referring for Diagnosis ...

- ▶ GP review to complete ASD screen
- ▶ Age 4-15 yrs: referred to Paediatric Outpatient clinic
- ▶ Age 15+ yrs: referred to CAMHS
- ▶ Then referred on to agencies
 - ▶ MoE – Special Education
 - ▶ Taikura Trust for NASC
 - ▶ Taikura Trust to refer onto Explore Behavioural Support Services
 - ▶ Autism NZ/ Altogether Autism

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Co-existing issues

- ▶ Anxiety Disorders
- ▶ Depression
- ▶ Bipolar Disorder

- ▶ SLD or ID
- ▶ ADHD
- ▶ Sleep Disorders

Anxiety

- ▶ Generally: significantly higher levels than general population
- ▶ Generalised Anxiety Disorder 35%
- ▶ Specific Phobia 10%
- ▶ Obsessive Compulsive Disorder
- ▶ Social Anxiety Disorder

ADHD / Sleep issues

ADHD

- ▶ Significantly higher levels
- ▶ Literature includes Autism / ASD / Asperger's

Sleep Disorders

- ▶ 31% insomnia (initiating sleep), daytime tiredness
- ▶ Child / Adolescents: 73% vs 50% controls
- ▶ Anecdotally increased rates in adult population also

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Why anxious?

- ▶ Rigid or inflexible thinking patterns – all or nothing
- ▶ Intolerance of uncertainty - perceived as threatening → high anxiety
- ▶ Sensory sensitivities or totally overwhelmed
- ▶ Social skills and communication difficulties



Can present as ...

- ▶ Emotional meltdowns
- ▶ Inattention, oppositional, defiant
- ▶ Mutism
- ▶ Tics: vocal and/or physical

- ▶ Mismatch between
 - ▶ Chronological age
 - ▶ Emotional age (maturity)
 - ▶ Communication skills (advanced or challenging)
 - ▶ Cognitive skills
 - ▶ Adaptive functioning

What to do?

- ▶ Help them Understand and Recognise emotions
 - ▶ Often only 'get' Happy and Angry in themselves and others
 - ▶ Teach about facial expressions and body language
 - ▶ Read stories about emotions
 - ▶ Label feelings in yourself and others
 - ▶ Explore other emotion words to expand the vocabulary
 - ▶ Use their interest of favorite character and discuss their feelings
 - ▶ Use visuals, cartoons, emotion thermometers





THE THREAT RESPONSE

(FIGHT, FLIGHT, FREEZE)

FIGHT:

WHAT

A sympathetic nervous system response to stress or perceived threat.

SYMPTOMS?

Racing heart, hot flush, sweating, dizziness, nausea

- ⚡ Moody, irritable, angry
- ⚡ Feeling overwhelmed
- ⚡ Inability to concentrate
- ⚡ Lashing out, feeling backed into a corner
- ⚡ Seeing only negative
- ⚡ Poor judgement



THE THREAT RESPONSE

(FIGHT, FLIGHT, FREEZE)

FLIGHT:

WHAT

A sympathetic nervous system response to stress or perceived threat.

SYMPTOMS?

Racing heart, hot flush, sweating, dizziness, nausea

- 💧 Anxious | racing thoughts
- 💧 Inability to concentrate
- 💧 Worry & nervous habits
- 💧 Avoiding situations you fear
- 💧 Withdrawing from others
- 💧 Loneliness & isolation



THE THREAT RESPONSE

(FIGHT, FLIGHT, FREEZE)

FREEZE:

WHAT

A sympathetic nervous system response to stress or perceived threat.

SYMPTOMS?

Racing heart, hot flush, sweating, dizziness, nausea

- 💧 Memory problems
- 💧 Fear of judgement/ thinking everyone is laughing at & judging you
- 💧 Anxious | racing thoughts
- 💧 Inability to concentrate
- 💧 Freezing & shutting down
- 💧 Worry & nervous habits

What to do?

- ▶ Interoception
 - ▶ Ability to perceive internal physical body sensations
- ▶ Example: *Our moods change all the time. One mood we enjoy is feeling happy. We are now going to explore the feeling of happiness.*
- ▶ When do you feel especially happy?
- ▶ What can you imagine that would make you feel happy?
- ▶ How do we know we are happy?
 - ▶ How does your face look?
 - ▶ What thoughts do you have?
 - ▶ How are your energy levels?
 - ▶ How does your body move? Your voice change?

What to do?

- ▶ Identify and change the thoughts
 - ▶ Linking the thought and feeling
 - ▶ Identify anxious thoughts
 - ▶ Challenging anxious thoughts
- ▶ Relaxation
 - ▶ Breathing: box, belly, balloon, 5-finger ...
 - ▶ Progressive Muscle Relaxation
 - ▶ Visualisation
 - ▶ Grounding
 - ▶ Sensory tools

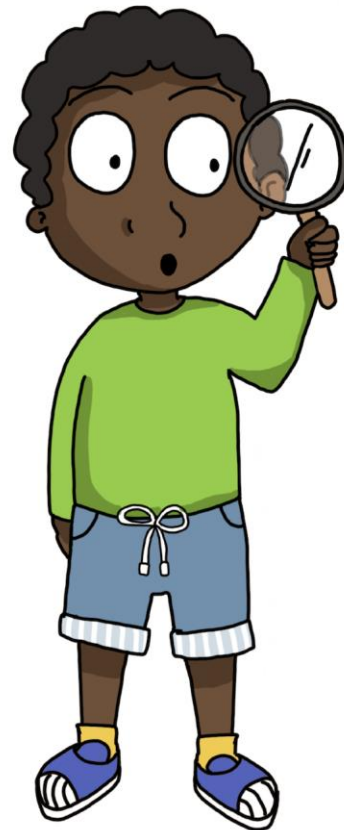




Anxiety & distress

Sensory grounding & distraction

- STEP 1** Take a deep breath into your belly & exhale slowly
- STEP 2** Pick a colour & look around the space you are in
- STEP 3** Make a mental note of everything you see with that colour
- STEP 4** If your mind wanders; gently bring yourself back to your breath & colour search



Spotting common 'unhelpful thinking styles'

-  **Catastrophising**
Blowing things out of proportion
-  **Labelling**
Assigning labels or name calling (self + others)
-  **Jumping to conclusions**
Predicting the outcomes
-  **Mind reading**
Imagining we know what others are thinking
-  **Filtering**
Ignoring the good things & paying attention to the bad

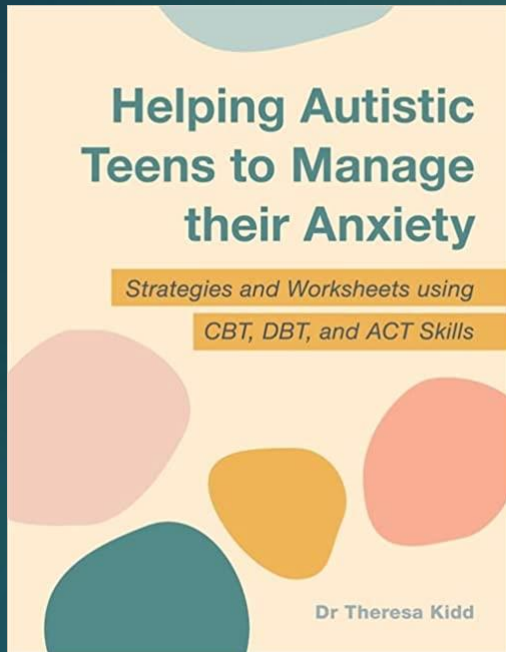
Strengths based approach

- ▶ What have they already done to successfully adapt?
- ▶ What have they researched?
- ▶ Who have they talked to / interviewed about this?

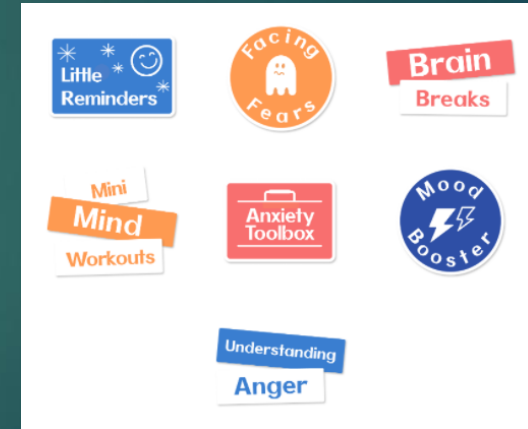
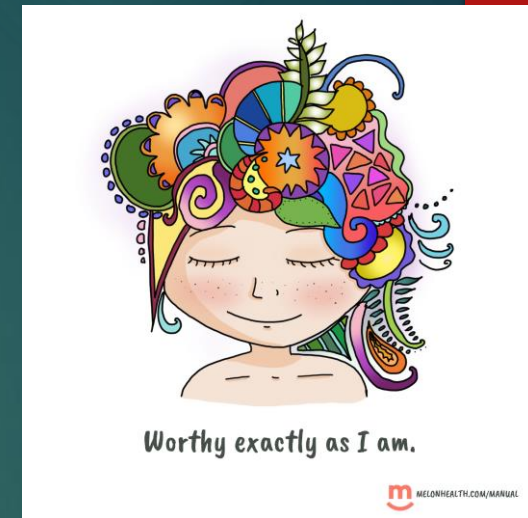
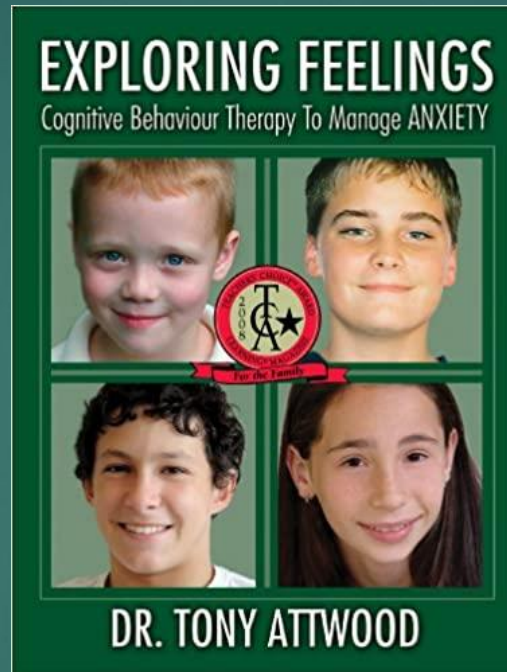
- ▶ Anxiety provoking: group work with verbal communication with 'random' classmates

Or Partnered with liked peer, on Google Drive, using skill of fast typist

Resources



Dr Theresa Kidd
(Australian clinician)



<https://www.melonhealth.com/manual/>