NEURODIVERGENCE, SUBSTANCE USE AND ADDICTION: WORKING TOGETHER TOWARDS A BETTER UNDERSTANDING

Dr Eddie Mullen, Orygen

Artwork by Emrhan Tjapanangka Sultan, Luritja clan of the Western Desert
From the painting ‘Honey ants and the rivers of hope to sharing knowledge’, 2018

Orygen acknowledges the Traditional Owners of the lands we are on and pays respect to their Elders past and present. Orygen recognises and respects their cultural heritage, beliefs and relationships to Country, which continue to be important to the First Nations people living today.

DECLARATION

No conflict of interest

ACKNOWLEDGEMENTS

Mindful

Prof Sandra Radovini

Orygen Neurodevelopmental Stream

Dr Catherine Cox

Prof David Coghill

Orygen Youth Addiction and Dual Diagnosis Stream

Dr Steve Leicester

A/Prof Enrico Cementon

Rebecca Morrisson

PURPOSE OF TALK

Consider substance use and addictive behaviours with a developmental perspective

Consider impact of substance use in Neurodiversity

Reflect on opportunities and challenges for clinicians and services to provide care across different treatment settings

WHAT WE KNOW SO FAR

NEURODIVERGENCE

Autism Spectrum Disorder

ADHD

AUTISM

Changing Concepts[1]…

BUT still playing catch up… Autism is core business for MH!

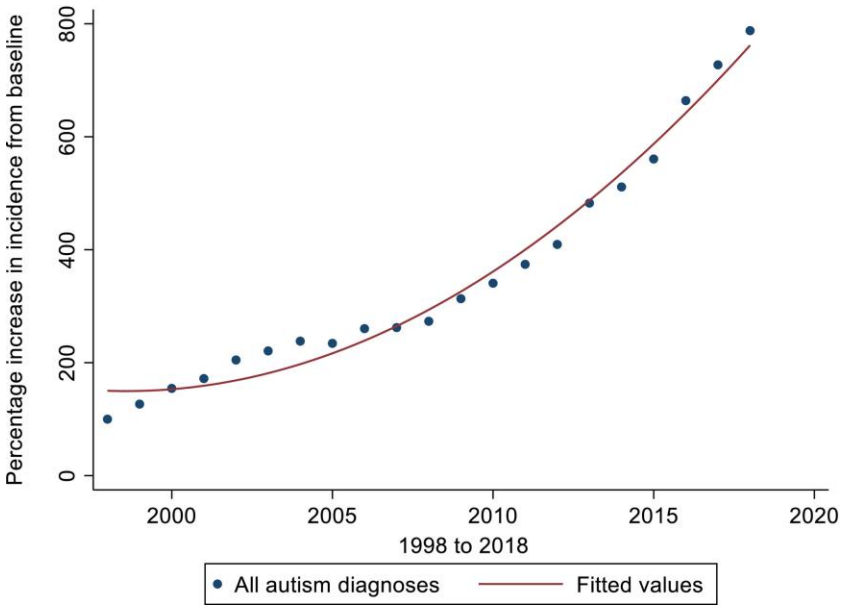
20th CENTURY

- A rare and severe neurodevelopmental disorder
- of childhood
- usually associated with intellectual disability
- and delayed language development
- categorically distinct from normal development and other disorders.

21ST CENTURY

- A relatively common neurodevelopmental condition
- present across the lifespan
- usually associated with normal range IQ
- that represents a form of natural human variation
- bringing both strengths and challenges

TIME TRENDS IN AUTISM DIAGNOSIS OVER 20 YEARS: A UK POPULATION-BASED COHORT STUDY

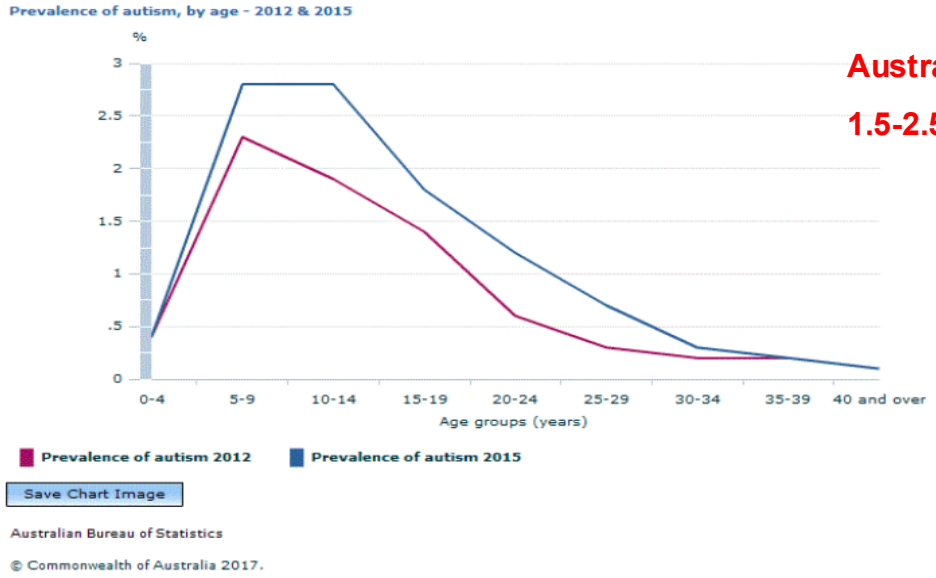


Child Psychology Psychiatry, Volume: 63, Issue: 6, Pages: 674-682, First published: 19 August 2021, DOI: (10.1111/jcpp.13505)

PREVALENCE ACROSS THE LIFESPAN

Changes in prevalence across the lifespan

There is variation in the prevalence of autism across age groups, with a marked drop off commencing in the late teens. Data are not presented in any detail for people aged over 40 years because the identified prevalence rates are too low for reliable estimates to be produced.

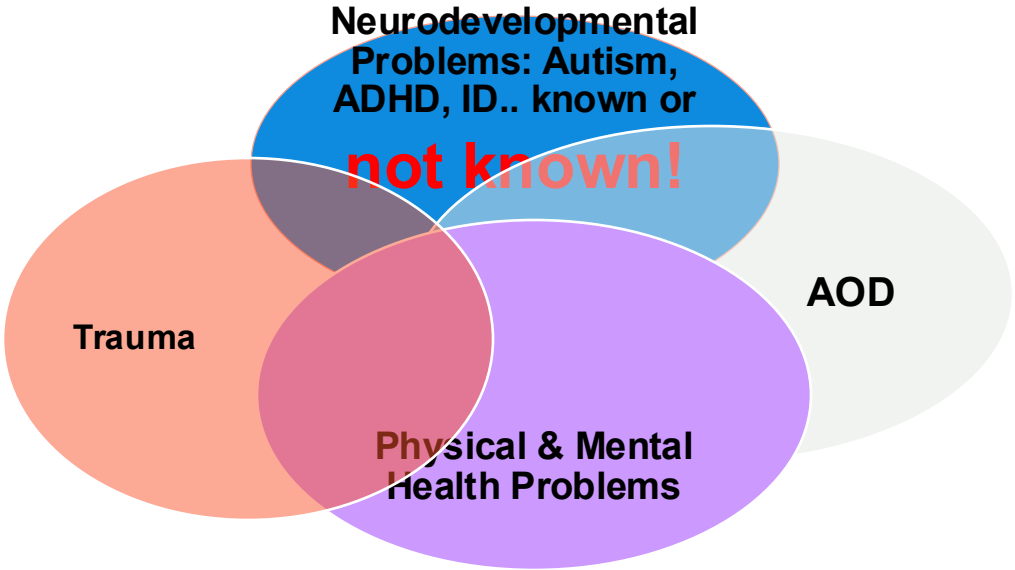


Australia:

1.5-2.5% (Randall et al 2016)

Source(s): *ABS Survey of Disability, Ageing and Carers: Summary of Findings - 2015*

FOR CLINICIANS THE 'DIAGNOSTIC' CONUNDRUM OF CO-OCCURRING PROBLEMS



BEWARE THE 'LENS' THROUGH WHICH YOU VIEW THINGS!

AUTISM SPECTRUM DISORDER

A **neurodevelopmental condition** which affects an individual's development and social communication present from early childhood.

DSM-Two domains

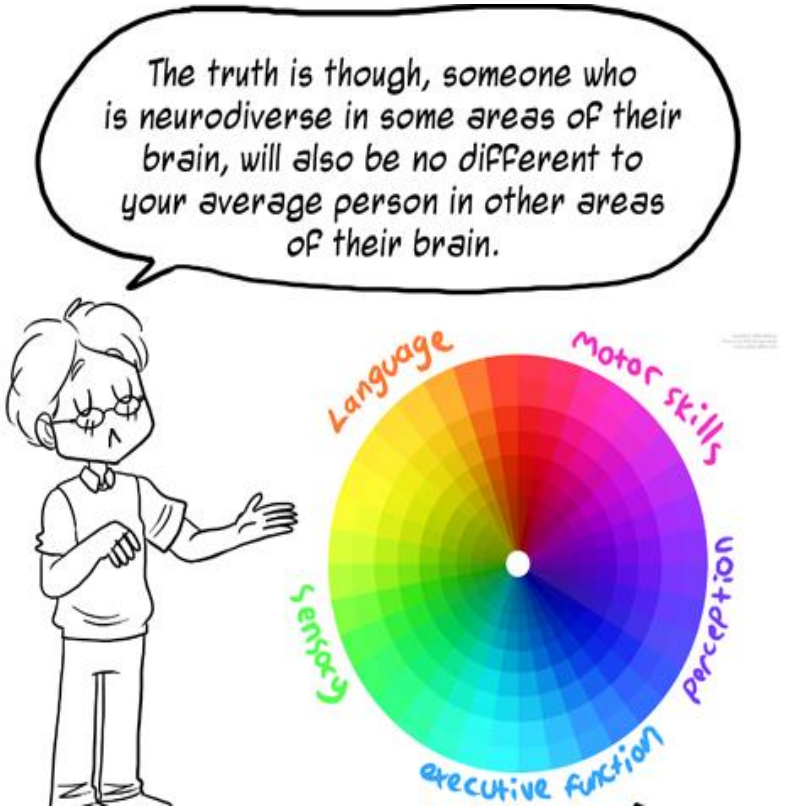
A- Social communication

B- Restricted and repetitive behaviours

(Autism Victoria/AMAZE, 2016)

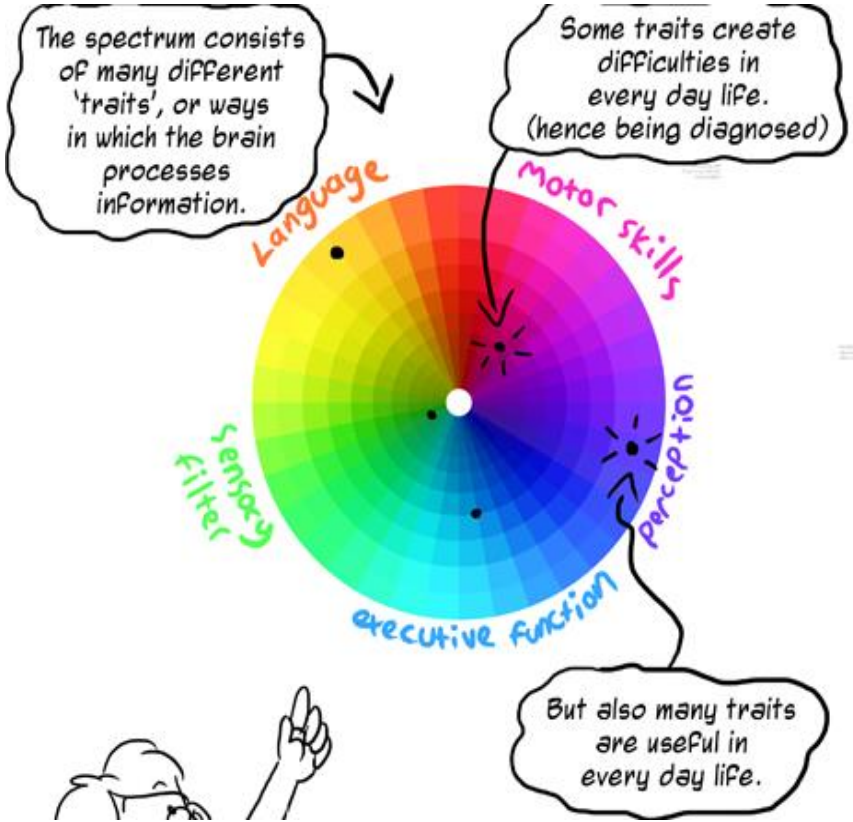
Another way to look at it...

By Rebecca Burgess - Theoraah.tumblr.com



Strengths & Challenges…

By Rebecca Burgess - Theoraah.tumblr.com



Vast differences

"If you've met one person with autism, then you have met one person with autism"

Not everyone who is different is autistic

Where to start?

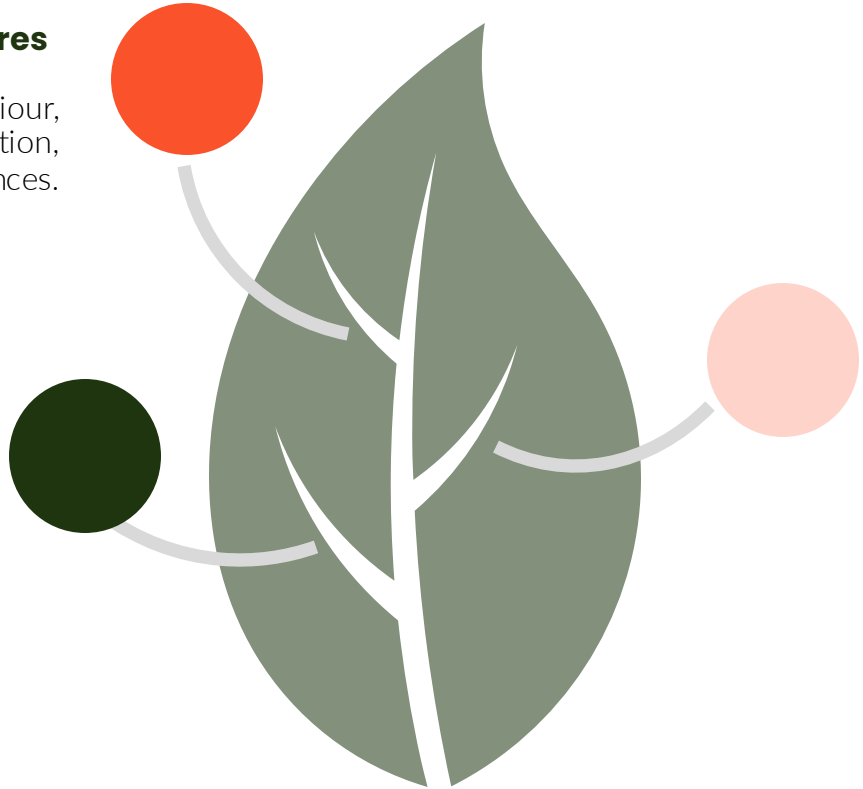
How can clinicians with general skills possibly know what ASD looks like?

'Pattern recognition' for MH problems

Autism Presents as a combination of

Core Features

Social, language, behaviour, interests, emotional regulation, sensory differences.



Masking/Camouflaging

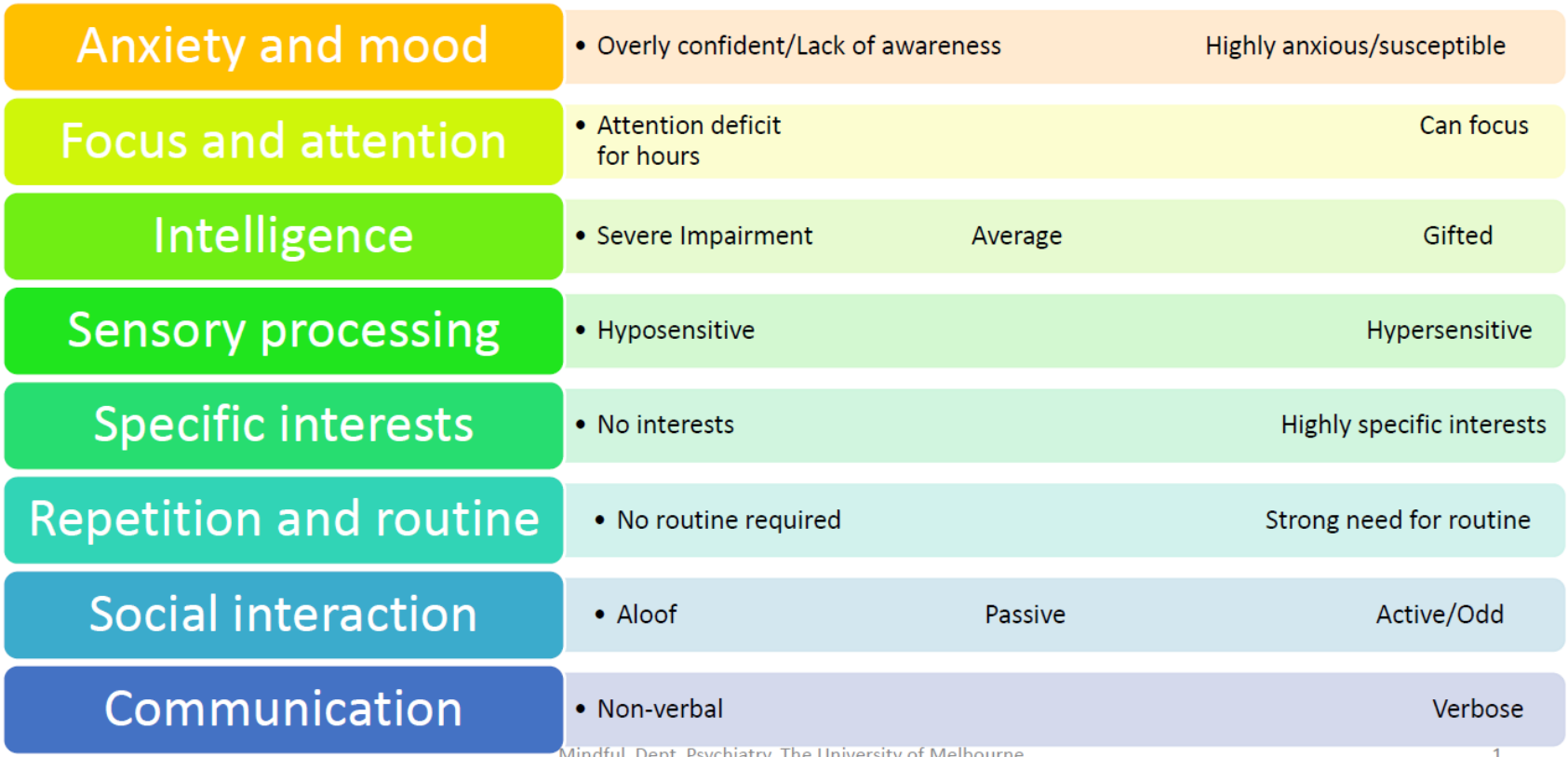
Compensatory mechanisms developed over a lifetime to "look normal"

Co-occurring

Mental Health Conditions

Other Neurodevelopmental

DIMENSIONS OF AUTISM



Ure et al., (JPCH, 2018)

ASD – The Great Imposter

Core Features can mimic other MH problems

Social Impairment

Social Anxiety

Avoidant Personality Disorder

Repetitive Behaviour

Obsessive Compulsive Disorder

Tourette's Syndrome

Motor Mannerisms of psychosis

ASD- The Great Imposter

Sensory

Trauma

Psychosis

Language

Thought Disorder especially poverty/alogia

Depression/Alexithymia

Schizophrenia

Emotional Dysregulation

Borderline or Anti-social personality disorder

ADHD

ADHD

ADHD SYMPTOMS

Inattentive presentation symptoms could be:

Issues staying focused on tasks.

Doesn't listen or daydreams.

Loses things frequently.

Difficulty organizing tasks and activities.

Hyperactive/impulsive presentation symptoms could be:

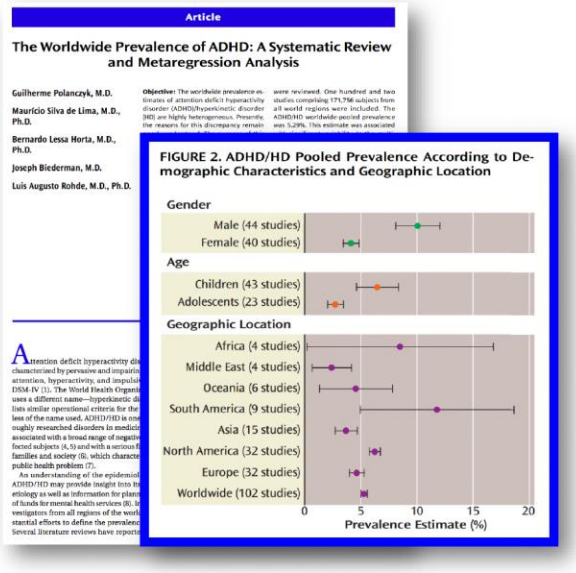
Fidgets or squirms frequently.

Runs or climbs when inappropriate.

Trouble with quiet activities.

Has trouble waiting for their turn.

PREVALENCE OF ADHD


Article

The Worldwide Prevalence of ADHD: A Systematic Review and Metaregression Analysis

Guilherme Polanczyk, M.D.
Maurício Silva de Lima, M.D., Ph.D.
Bernardo Lessa Horta, M.D., Ph.D.
Joseph Biederman, M.D.
Luis Augusto Rohde, M.D., Ph.D.

FIGURE 2. ADHD/HD Pooled Prevalence According to Demographic Characteristics and Geographic Location

Gender
Male (44 studies)
Female (40 studies)
Age
Children (43 studies)
Adolescents (23 studies)
Geographic Location
Africa (4 studies)
Middle East (4 studies)
Oceania (6 studies)
South America (9 studies)
Asia (15 studies)
North America (32 studies)
Europe (32 studies)
Worldwide (102 studies)
0 5 10 15 20
Prevalence Estimate (%)

ADHD is common

5 – 7% in children and adolescents

2.5% in adults

… and not increasing over time

Int. J. Epidemiol. Advance Access published January 24, 2014

IJE

Original article

ADHD prevalence estimates across three decades: an updated systematic review and meta-regression analysis

Guilherme V Polanczyk,[1,2,3] Erik G Willcutt,[4] Giovanni A Salum,[1,5] Christian Kieling[1] and Luis A Rohde[2,3]*

Abstract

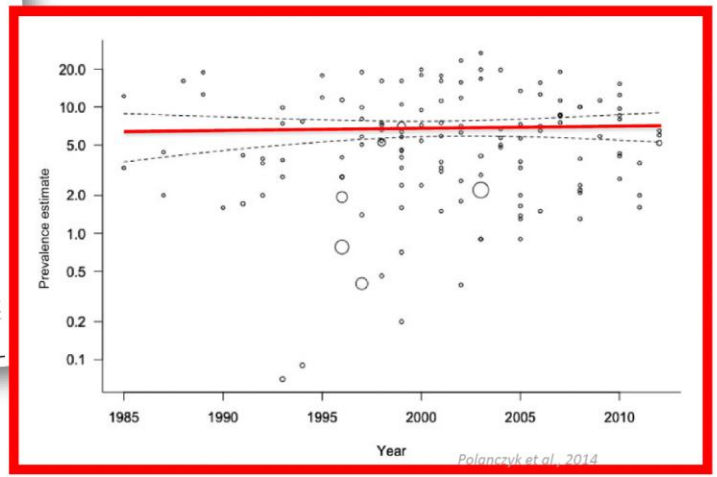
Background: Previous studies have identified significant variability in attention-deficit / hyperactivity disorder (ADHD) prevalence estimates worldwide, largely explained by methodological procedures. However, increasing rates of ADHD diagnosis and treatment throughout the past few decades have fuelled concerns about whether the true prevalence of the disorder has increased over time.

Methods: We updated the two most comprehensive systematic reviews on ADHD prevalence available in the literature. Meta-regression analyses were conducted to test the effect of year of study in the context of both methodological variables that determined variability in ADHD prevalence (diagnostic criteria, impairment criterion and source of information), and the geographical location of studies.

Results: We identified 154 original studies and included 135 in the multivariate analysis. Methodological procedures investigated were significantly associated with heterogeneity of studies. Geographical location and year of study were not associated with variability in ADHD prevalence estimates.

Conclusions: Confirming previous findings, variability in ADHD prevalence estimates is mostly explained by methodological characteristics of the studies. In the past three decades, there has been no evidence to support an increase in the number of children in the community who meet criteria for ADHD when standardised diagnostic procedures are followed.

Key words: ADHD, epidemiology, prevalence, time, cross-cultural, methodology



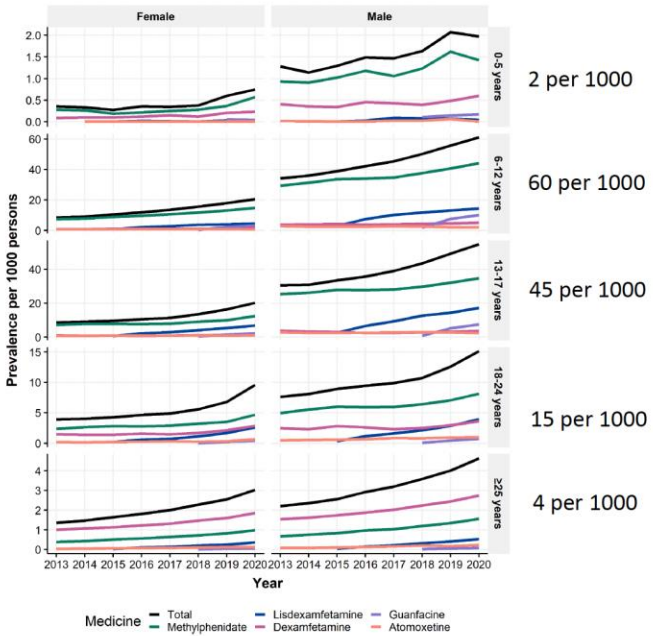
Polanczyk et al., 2014

PRESCRIBING IN ADHD

Patterns of ADHD medicine use in the era of new non-stimulant medicines: a population-based study among Australian children and adults (2013-2020)
BRUNO et al 2022 ANZJP

RESULTS – Prevalence of ADHD medication prescribing

- There has been a two-fold increase in the overall prevalence of ADHD medicine use between 2013 and 2020, from 4.9 to 9.7 per 1,000 persons.
- These increases are seen across all age groups and both sexes, but bigger among females than males.



2 per 1000

60 per 1000

45 per 1000

15 per 1000

4 per 1000

ADULT OUTCOMES OF ADHD

SUBSTANCE USE IN YOUNG PEOPLE

TERMINOLOGY IS IMPORTANT

Substance Use

Substance misuse/abuse

Substance Use Disorder

AOD USE IN YOUNG PEOPLE CAN BE THE NORM – THERE IS A SPECTRUM OF USE

- Experimental — Curiosity, novelty-seeking, risk-taking
- Social — Peer-influenced,"Gateway"
- Instrumental — Manipulate affect, behaviour, pleasure
- Habitual — Reliance for coping and recreation
- Compulsive — Salience, loss of function

↑ age

↑ substance use

↑ risk/severity of SUD

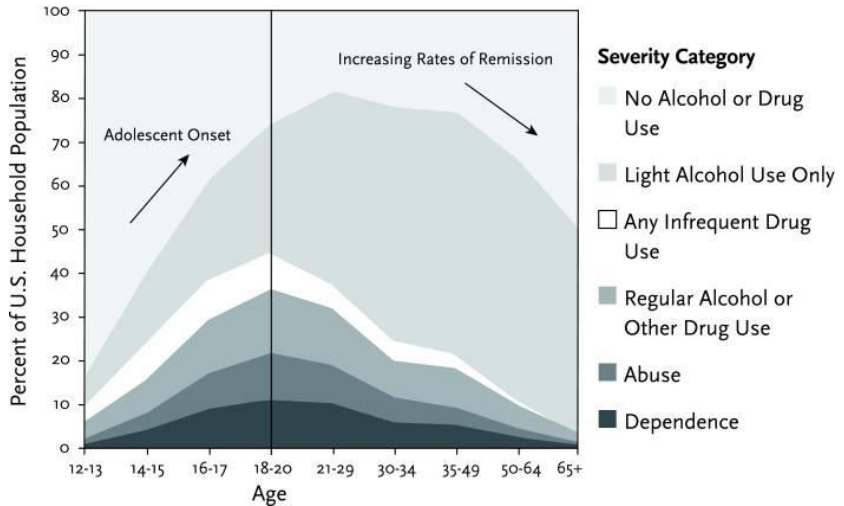
Nowinski et al, 1990

AGE OF ONSET

Most AOD use starts in adolescence AIHW, 2017

Peak onset of SUD 18-20 years old Dennis & Scott, 2007

Outcomes are worse in those with comorbid issues



CLICK ON THE RESOURCE YOU WANT TO DOWNLOAD

Example of the brochure opened up

REASONS FOR USE OF SUBSTANCES

For Fun

Social connection

Cope with negative emotions

THE 11 CRITERIA OF SUBSTANCE USE DISORDER

A. A problematic pattern of use … impairment or distress … at least 2 … within 12-month period

1. **Often taken in larger amounts or longer period than intended**
2. **Persistent desire or unsuccessful attempts to cut down or control**
3. **Great deal of time … to obtain/use/recover from effects**
4. **Craving, or strong desire or urge to use**
5. **Recurrent use resulting in failure to fulfil major role obligations at work, school or home**
6. **Continued use despite persistent or recurrent social or interpersonal problems caused or exacerbated by use**

11 CRITERIA CONTINUED

7. **Important social, occupational or recreational activities reduced or given up because of use**
8. **Recurrent use in physically hazardous situations**
9. **Use continued despite knowledge of physical or psychological problems caused or exacerbated by use**
10. **Tolerance, defined by either**
    a) Need for increased amounts to achieve same effect
    b) Reduced effect with continued use of same amount
11. **Withdrawal**
    a. Characteristic syndrome
    b. Same or closely related drug taken to relieve or avoid withdrawal

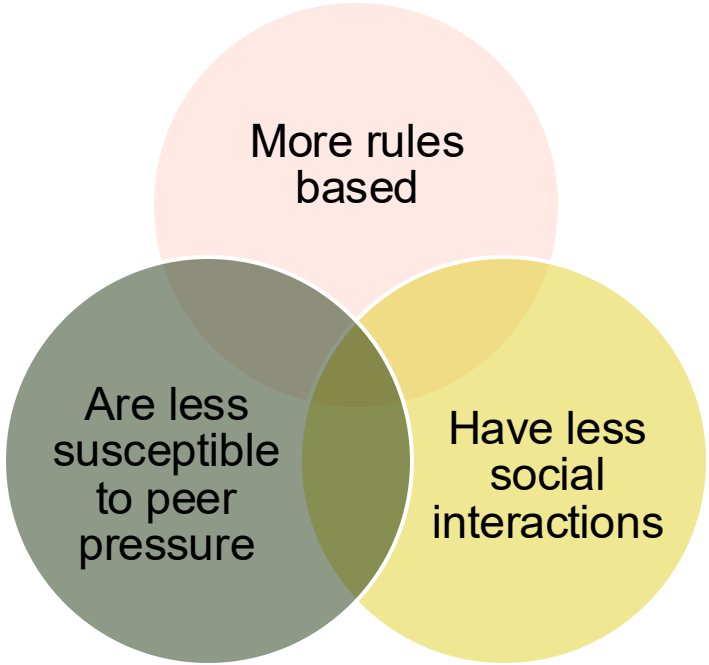
INTERNET, GAMBLING, GAMING

Normal use

Problematic

SUBSTANCE USE IN AUTISM

OLD VIEW OF AUTISTIC INDIVIDUALS



ADDICTION TRENDS IN AUTISM

Individuals with Austism are twice as likely to develop an addiction problem than their non-autistic peers.

Nearly 7% of individuals seeking substance abuse treatment also had an Alcohol Use Disorder diagnosis.

An estimated 1 in 5 teens and young adults receiving substance abuse treatment may have undiagnosed symptoms of Autism.

SUBSTANCE USE IN AUTISM

“Among those who provided any information regarding their motivations for using drugs, autistic individuals were nearly nine times more likely than non-autistic individuals to report using them to manage behaviour specifically”

Weir et al, Lancet 2021

SUBSTANCE USE IN AUTISM

“Individuals described using drugs to eliminate, control, or reduce autism or symptoms of autism (eg, sensory overload, stimming behaviour, improving overall function, improving perception) and other comorbid symptoms (eg, ADHD). “

One autistic individual noted “I smoke pot to make my anxiety and autism go away. It's the only time I fell on the same wave length as everyone else”.

Society for the Study of Addiction, 2021

WHAT ARE REASONS FOR USE IN AUTISTIC INDIVIDUALS ?

Fitting in

REASONS FOR USE IN AUTISM

Fitting in

Masking

REASONS FOR USE IN AUTISM

Fitting in

Masking

Social Anxiety

REASONS FOR USE IN AUTISM

Fitting in

Masking

Social Anxiety

Overstimulation

REASONS FOR USE IN AUTISM

- Fitting in
- Masking
- Social Anxiety
- Overstimulation
- Repetitive behaviours

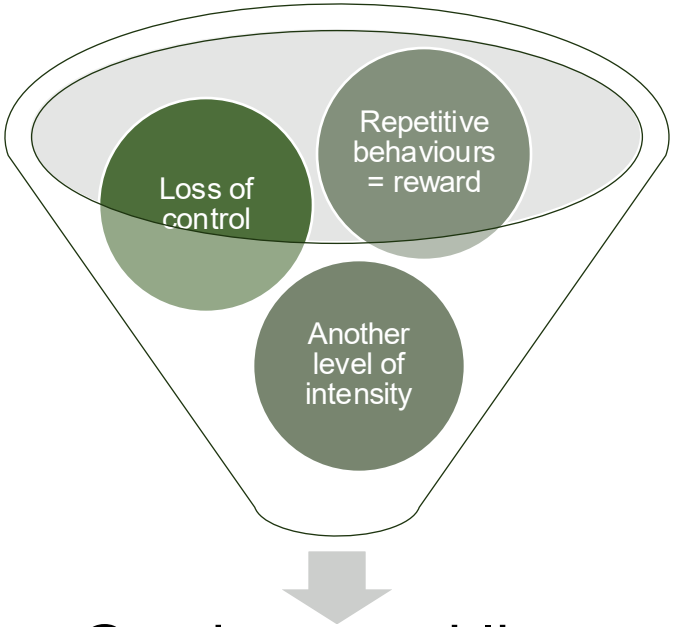
REASONS FOR USE IN AUTISM

Fitting in	Masking	Social Anxiety
Overstimulation	Repetitive behaviours	Focus

REASONS FOR USE IN AUTISM

- Fitting in
- Masking
- Social Anxiety
- Overstimulation
- Repetitive behaviours
- Focus
- Managing Emotions

BEHAVIOURAL ADDICTIONS IN AUTISM



Gaming, gambling, internet addiction

SUBSTANCE USE IN ADHD

ADHD AND SUDS

ADHD is a risk factor for the development of SUD, particularly if ADHD is untreated and, people presenting with SUDs have increased risk of having ADHD.

People with ADHD are almost three times more likely to be nicotine-dependent and 50% more likely to develop a drug or alcohol use disorder than individuals without ADHD.

20% of patients seeking treatment for SUD could be diagnosed with ADHD.

Rohner et al, 2023; Groenman et al, 2013;; van Emmerik-van Oortmerssen et al., 2012

ASSOCIATION OF ADHD AND SUD

- High stimulus/novelty-seeking behavior and Impulsivity
  - inherent features of ADHD
  - shared genetic risk
- Impaired social/academic/work function
  - secondary consequence of psychosocial impairments
- Relief from symptoms
  - self-treatment of symptoms (e.g. cannabis, alcohol, cocaine)

And conduct disorder

WHERE TO FROM HERE?

HOW CAN WE IMPROVE OUR SERVICES?

> *It is essential that we ensure that autistic people have equal access to high quality social and healthcare that can appropriately support their specific needs; and, unfortunately, it seems clear that our current systems are still not meeting this mark*
>
> — *Simon Baron-Cohen*

IDENTIFYING A PROBLEM

AUTISM SERVICES

Recognised but clinicians can feel unskilled managing AOD

Seeking referral

AOD/MH SERVICE

Autism rarely screened

Difficulty to engage in standard treatment settings

Treatment “failure”

PERSONALISATION

Attune to the individual, getting to know the person and working with the person's strengths and weaknesses

Communication – text, phone call, letters

Provide an environment that supports individual performance rather than group reliance

UNDERSTAND THE PERSON

https://headspace.org.au/assets/Uploads/headspace-psychosocial-assessment.pdf

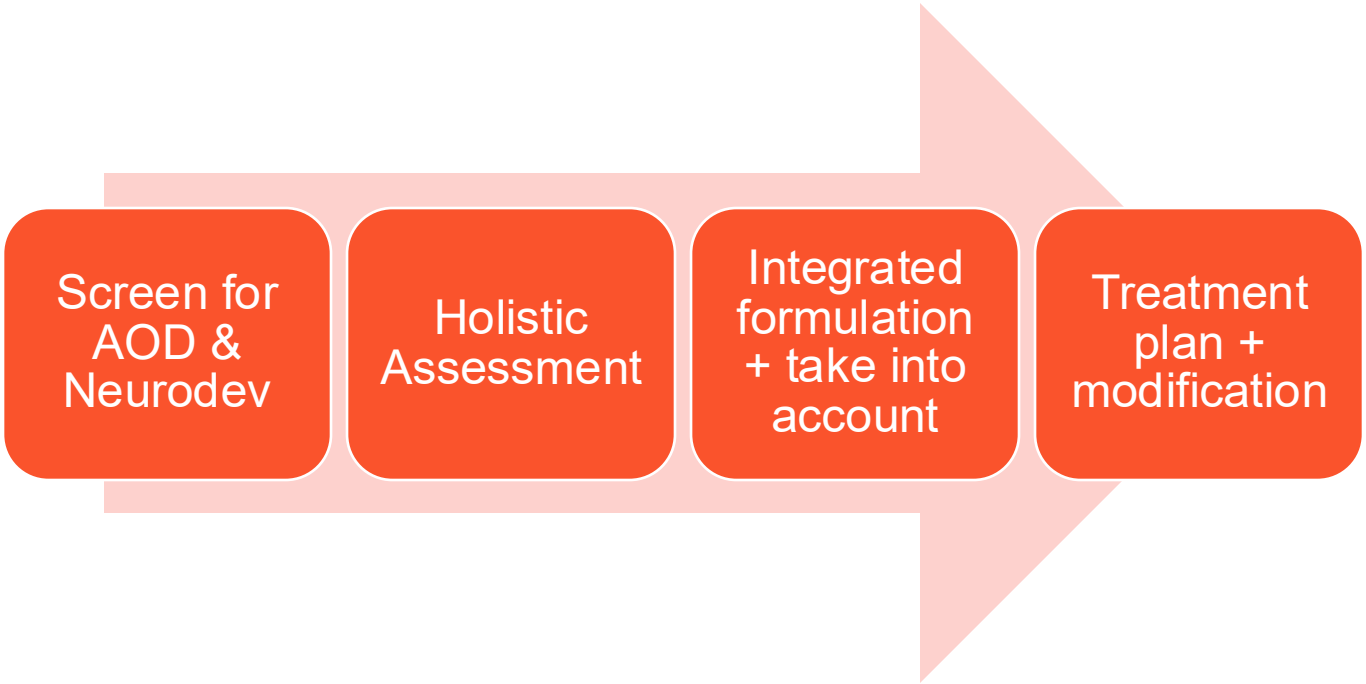
RACGP Clinical Guidelines

HARM REDUCTION APPROACH

The widely used ‘harm reduction’ approach is recommended.

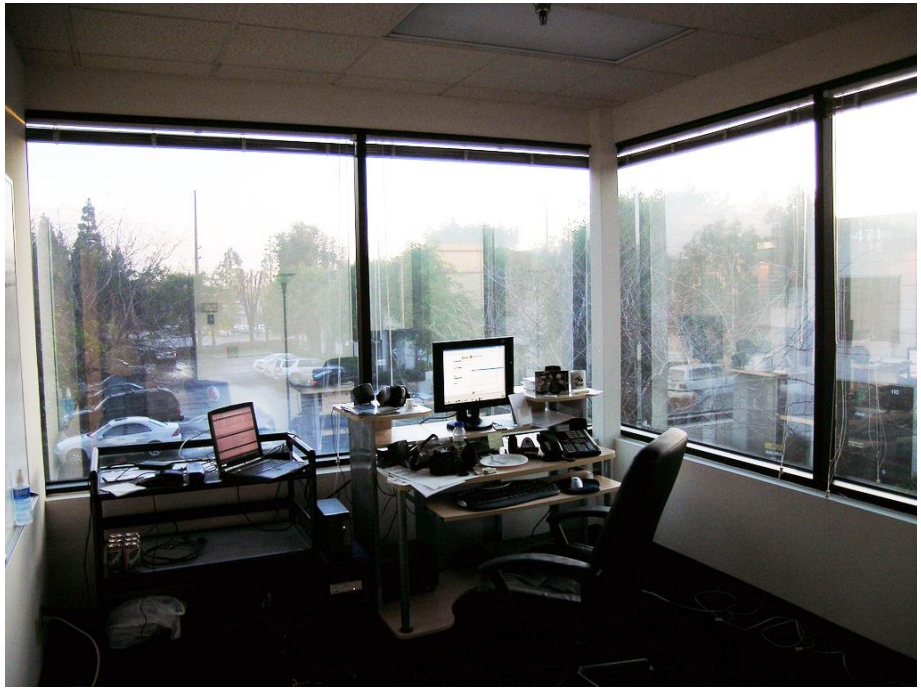
Abstinence may not be a realistic or achievable goal for many young people.

Crane et al 2012


Screen for AOD & Neurodev
Holistic Assessment
Integrated formulation + take into account
Treatment plan + modification

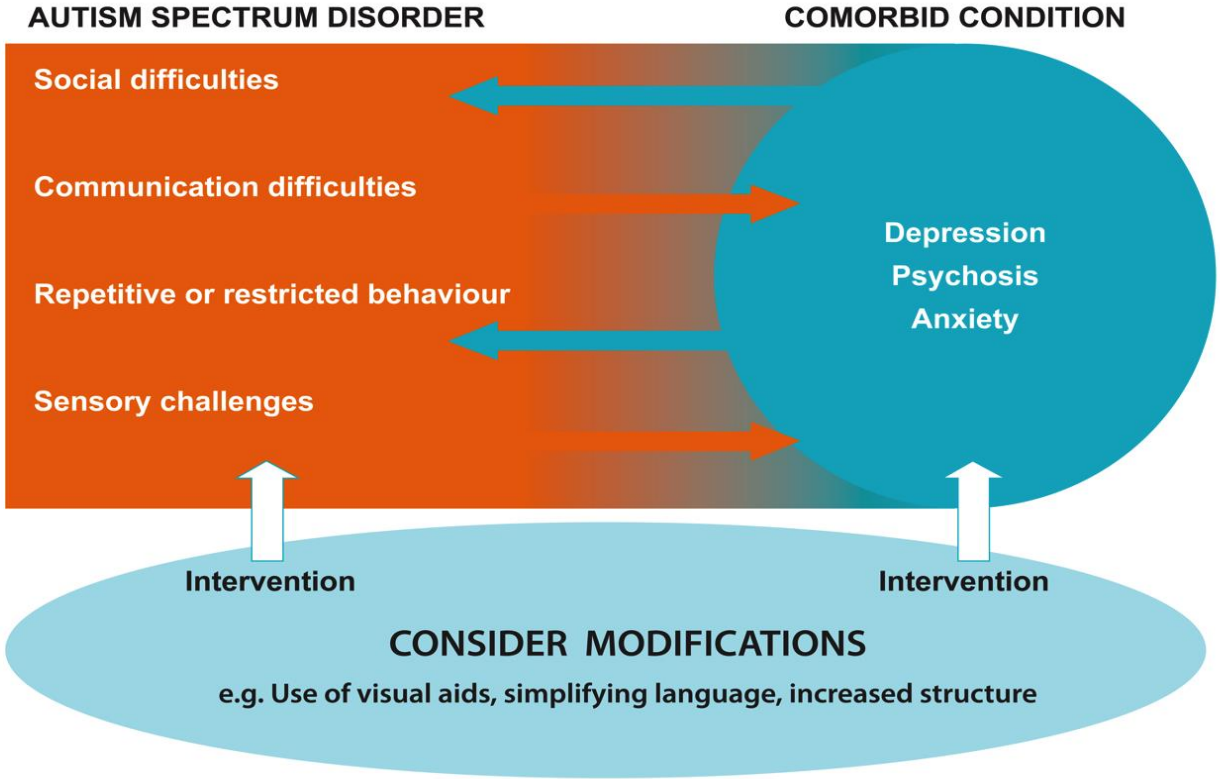
TREATMENT CHALLENGES

ENVIRONMENT



HOW CAN WE IMPROVE OUR PRACTICE?

Figure 3. Intervention Principles



Working with Young People with Autism Spectrum Disorders and Comorbid Mental Disorders, Orygen 2014

Therapeutic Engagement Tips

Make the abstract concrete

Provide specific information

Provide Structure and Predictability

Support processing of verbal info with visual aids

Capitalise on strengths

Make use of special interests

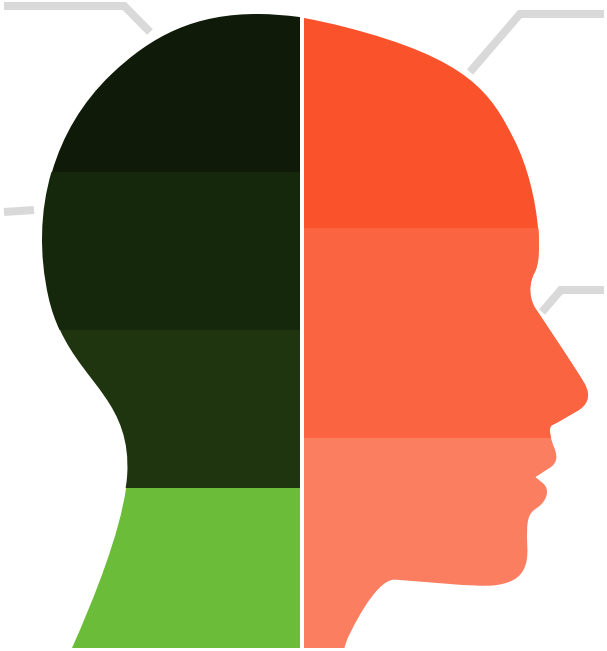
Provide opportunities for generalization

Working with Young People with Autism Spectrum Disorders and Comorbid Mental Disorders, Orygen 2014

Therapeutic Engagement Tips

Account for sensory preferences

Reduce anxiety with distancing techniques



Minimise executive functioning differences

Use positive reinforcement

Working with Young People with Autism Spectrum Disorders and Comorbid Mental Disorders, Orygen 2014

HIGH NEED FOR EXPLICIT CONTEXT

Our world and use of language is often very ambiguous.

Neurodivergent people do not always use context to work out what things mean.

They may take a slower and detail oriented approach to working things out.

Table One: Example modifications to psychotherapy for young people with ASD

Central Principle	Implementation Examples
Make the abstract concrete	Use visual aids and cues. Provide tangible and specific examples eg: how other young people have coped or managed . Reduce reflective language.
Provide information	Be more specific and detailed than you might ordinarily. Outline how the clinical encounter works, and the expectations on both sides of the social equation. Map and agree to an agenda or broad structure for how the session will unfold.
Provide structure and predictability	Stick to a routine. Have regular appointment days and times. Keep therapy rooms the same. Where this is not possible, give forewarning. Use language such as "sometimes" or "usually" so that fixed views are not developed. eg: "We will usually meet in this room, but sometimes it may not be available". If there are last-minute changes, check in as to how this has impacted. Discuss and prepare for changes - such as discharge - well in advance.
Support with processing verbal information	Simplify language. Use visual aids to represent complex concepts and slow down discussion. Computers, email, text messaging, art and diagrams may all be useful aids. Provide a range of responses to choose from. Check understanding – don't assume the young person will spontaneously advise if they do not understand. Explicitly encourage initiation (speaking up).
Capitalise on strengths e.g., intelligence and acquisition of new information.	Investigate a problem together. Set research or data collection projects.
Make use of special interests	Show an interest in special interests and areas of specialist knowledge. Routinely talk about topics familiar to the young person.
Provide opportunities for generalisation and ongoing practice	Include family members and other support people in sessions. Provide a written summary of key points of the discussion to take away.
Minimise sensory distraction	Ask about environmental distractions in the therapy space (e.g. lighting, perfumes, background noise of computers, temperature, airlessness, types of chairs, distracting visuals). Adapt the environment to maximise participation.
Minimise EF difficulties	Schedule shorter sessions. Limit eye-to-eye contact, to reduce the amount of information processing and attention required. Use clocks to manage time together.
Reduce anxiety with distancing techniques	Sit side by side. Use a computer screen. Talk about the problem while taking a walk or playing a game.

ADHD + SUD TREATMENT

Treatment for people with ADHD and SUDs should focus on both disorders concurrently, should consider their interrelationship, and should follow the guidelines for each disorder and the general guidelines about treatment of people with co-occurring disorders.

AAPDA Guidelines

IMPACT OF ADHD ON SUD TREATMENT

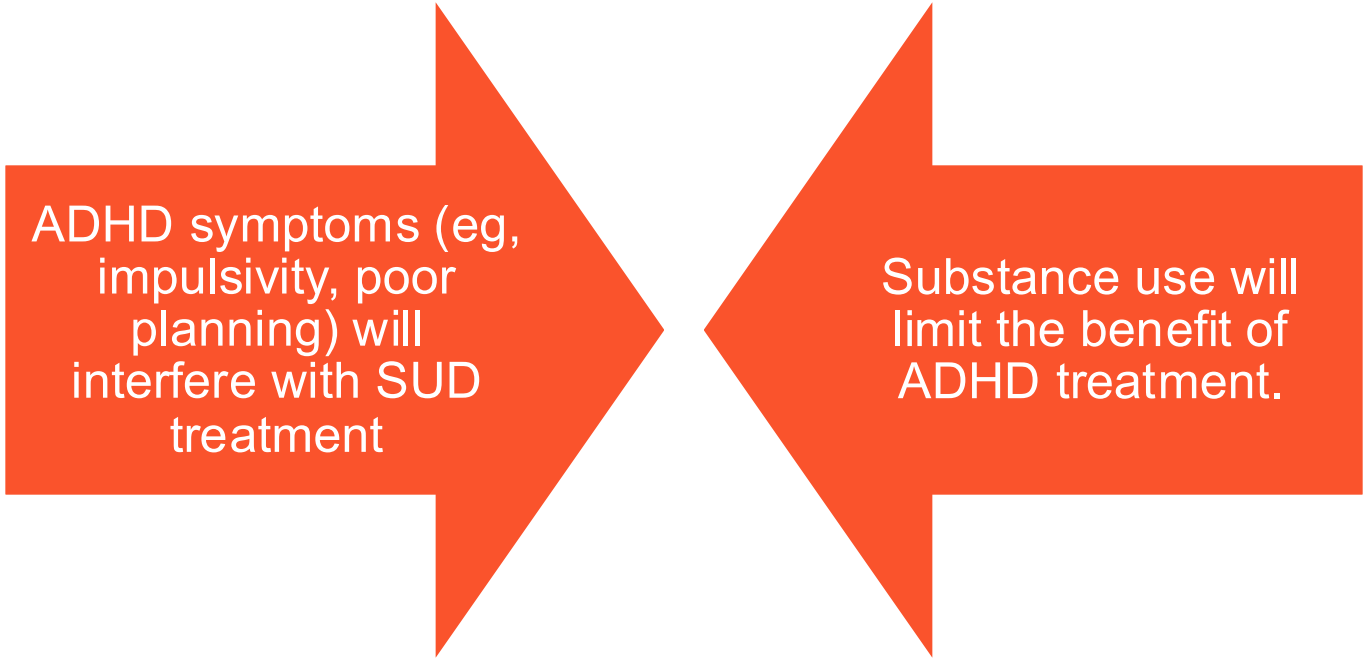
Individuals with ADHD and SUDs

- Earlier onset of SUD
- Greater Risk of ongoing problems once dependent
- Reduced remission rates and longer wait

Less likely to progress or remain in AOD treatment

Wilens et al, 1998; Levin et al, 2004

CLINICAL MANAGEMENT OF CO OCCURRENCE



Mariani + Levin, 2007

EARLY TREATMENT OF ADHD

Early initiation of Methylphenidate in children may improve longer term outcomes for Alcohol Use Disorder

Childhood ADHD pharmacotherapy might be associated with decreased risk of any SUD and future impairment

May have similar effect in adults with ADHD and SUD

Mauzza et al, 2008; Coetzee et al, 2023; Quinn et al, 2017

ADHD +SUD TREATMENT

Multi Modal approach is preferred - Combine with behavioural interventions – CBT/MI/Contingency Management

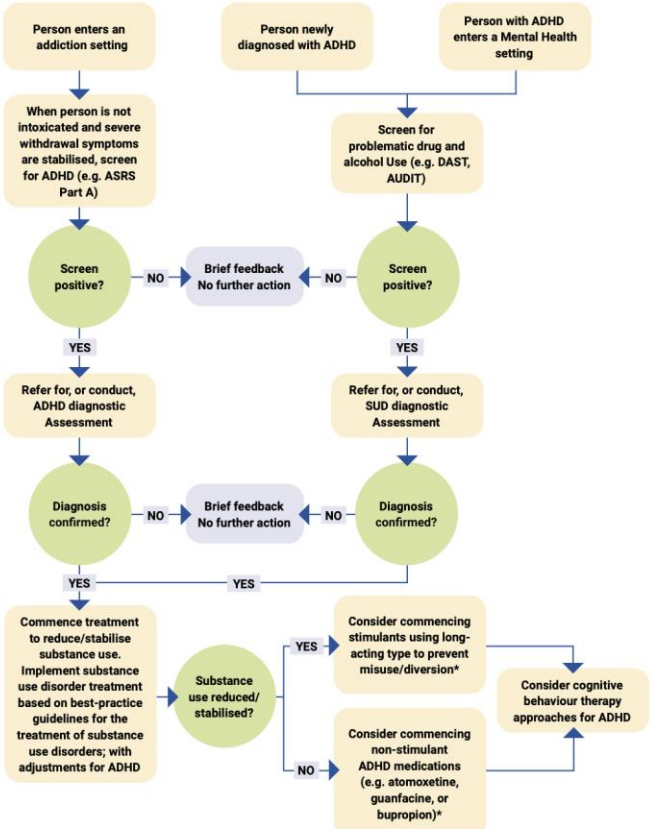
Pharmacotherapy consider non stimulant medication is SUD has not stabilised or diversion is suspected

Reduced efficacy of stimulants in setting of SUD

Consider longer acting agents

Crunelle et at al 2018; Ozgen et al, 2020; Kverno et al, 2024

DECISION FLOW CHART - AADPA



AADPA guidelines

HOW CAN WE WORK TOGETHER?

"You can work collaboratively, we will come at you as equals in that and work with you. The right person wants to work with you and understand you."

Autistic adult

"Many autistic people identify as LGBTQ+, you need to be clued up on this. It makes a massive difference."

Billie, autistic young person

National Autistic Society: Good Practice Guide

TOGETHER WE ARE BETTER

REVOLUTION IN MIND orygen

Eddie.mullen@orygen.org.au

THANK YOU

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