

# USE OF PSYCHOPHARMACOLOGY IN AUTISM

INSIGHTS INTO AUTISM CONFERENCE, 2025  
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LINE

# LEARNING OBJECTIVES

Objective 1 - Increased understanding of the medications used to treat psychiatric diagnoses in youth with Autism

Objective 2 - Identify which two medications have FDA approval for the treatment of irritability in autism.

## LATEST CDC ESTIMATE: 1 IN 36

- Co-occurring mental health conditions are more prevalent in the autism population than in the general population {Lai, 2019}. Recent estimate of having at least 1 psychiatric comorbidity ranges from 54.8-94%.
- Most common comorbidities: ADHD, anxiety, depression, sleep disorders {Hossain 2020}
- children with ASD are approximately 6.6 times more likely to be psychiatrically hospitalized compared to their neurotypical peers {Croen, 2006}.

# Autistic youth in Emergency Departments



## The Cost:

- Expensive for hospital system
- Expensive for the insurance agencies

## Dangerous (physically & emotionally) for:

- the autistic youth
- the ED staff who don't have specialized training
- other ED patients who are seeking care for medical emergencies/trauma.

## Solution:

- Increasing the availability of specialized outpatient medication management and therapeutic services for youth with autism could help divert these patients from going to the ED in the first place.
- If they do need an inpatient admission, a unit specialized in the evidenced based treatments available for autistic youth will help get them out of the ED more quickly and achieve the best outcome for their care.

**Child with ASD is having increased challenging symptoms/behaviors: aggression, food refusal, self injury, anxiety, inappropriate toileting, sedation, sadness, hyperactivity, etc.**

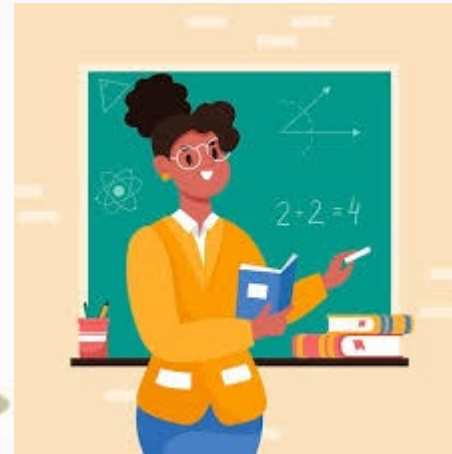
What do you do first?



- Medical conditions?
- Pain?
- Life changes?
- Inability to communicate?



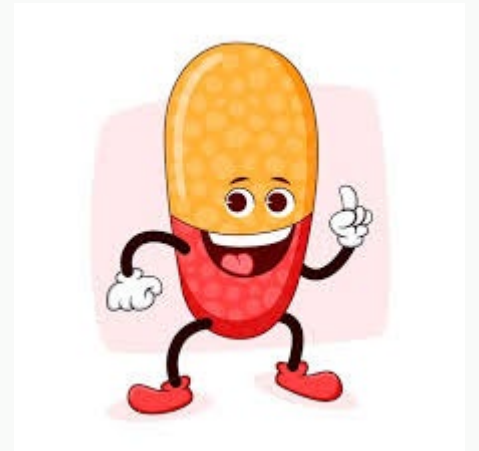
BROSIX



Once these things are considered/ruled out, and...  
significant clinical impairment/safety risk is present, and...  
the child has not responded to other therapeutic  
interventions or they are not available, then...  
it is time to consider medication.



Which one(s)?





# Limited Data on medication use in ASD due to:

- \*Many past studies/research excluded ASD

- \*Low numbers/enrollment in studies

- \*Diversity of ASD: Nonverbal, Intellectual Impairment, Co-morbid genetic disorder, savant, etc.





# Polypharmacy



Taking multiple medications at the same time to treat one or more medical conditions.

# HOW DO YOU KNOW WHICH RESEARCH/INFORMATION IS RELIABLE?

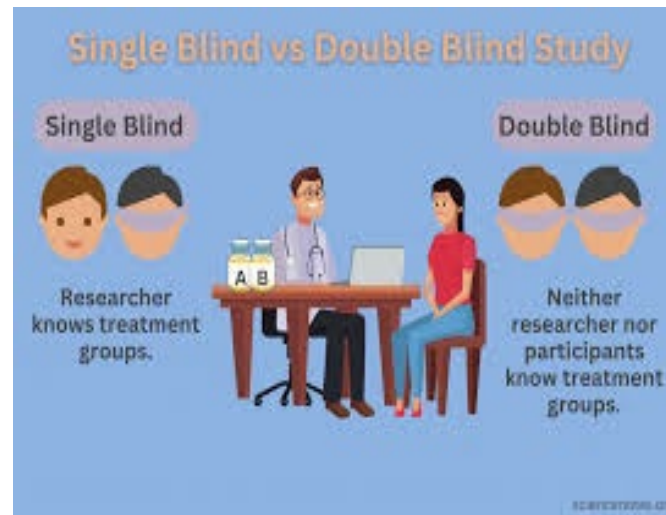
- Ask your doctor
- Trusted sites: NIH (National Institute of Health), AACAP (American Academy of Child and Adolescent Psychiatry), APA (American Psychiatric Association), Pubmed, NCAEP (National Clearinghouse on Autism Evidence & Practice).
- Who funded the research?
- How large was the study?

# Ideal Studies

## Randomized Controlled Trial (RCT)

a type of research study where participants are randomly assigned to different groups, one receiving the treatment being studied and the other a “control” group (which might receive a placebo, standard treatment, or no treatment).

## Single Blind



## “Double Blind Control Study”

- A type of RCT
- Neither the participants nor the researchers know which treatment the participants are receiving.
- There is a treatment group and a “control” or placebo group.



There are no medications  
with FDA approval to  
treat the core features of  
autism.



# Only 2 medications are approved by FDA (Food & Drug Administration) for:

Treatment of irritability including symptoms of aggression towards others, deliberate self injury, temper tantrums and quickly changing moods in children and adolescents with autism.



# **RISPERIDONE (2006) AND Aripiprazole (2009)**

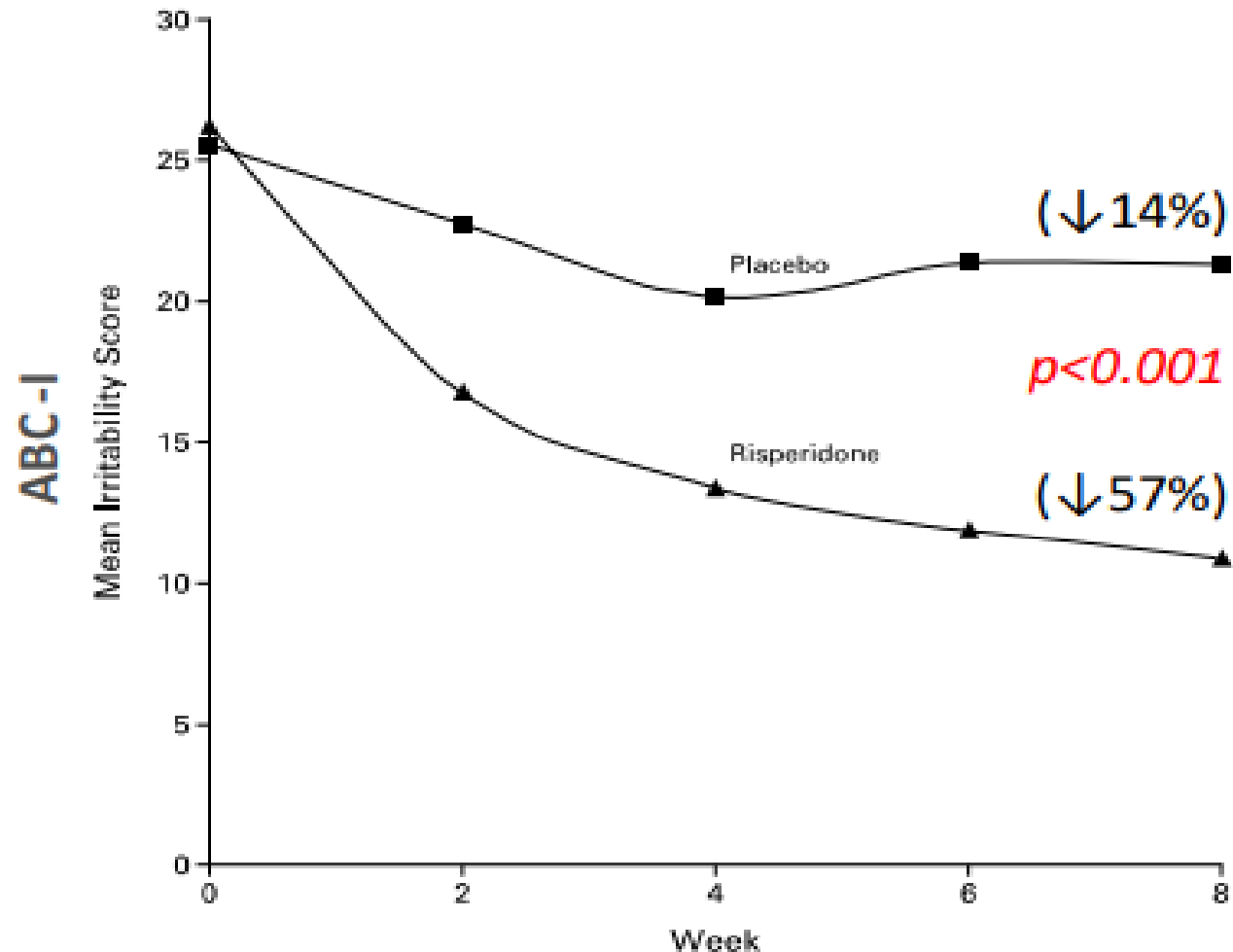
- Side effects: weight gain, cholesterol, glucose, abnormal movements, increased prolactin.
- Risperidone- RUPP (Research Units on Pediatric Psychopharmacology) Autism Network. 2 studies in 2002 and 2004.
- Aripiprazole- 2 studies in 2009 by Marcus RN and Owens R.
- Other atypical antipsychotics do not have as much evidence



# Efficacy-Irritability

## Parent-Rated

### ABC-Irritability Subscale



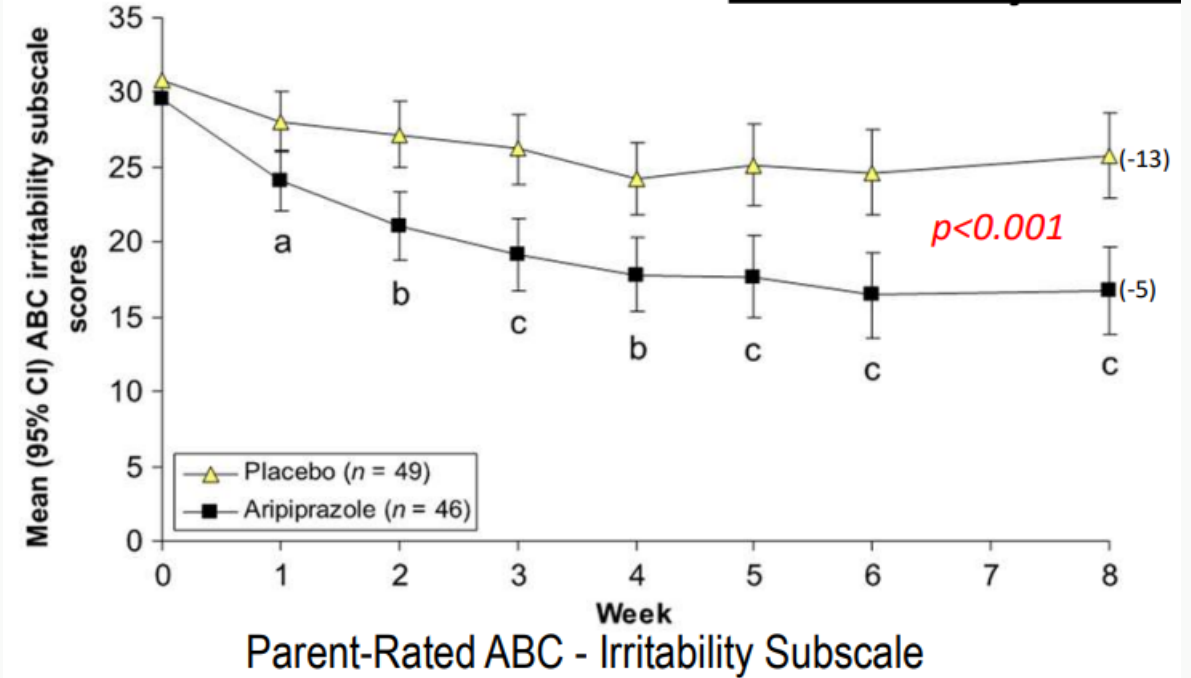
Risperidone

VS

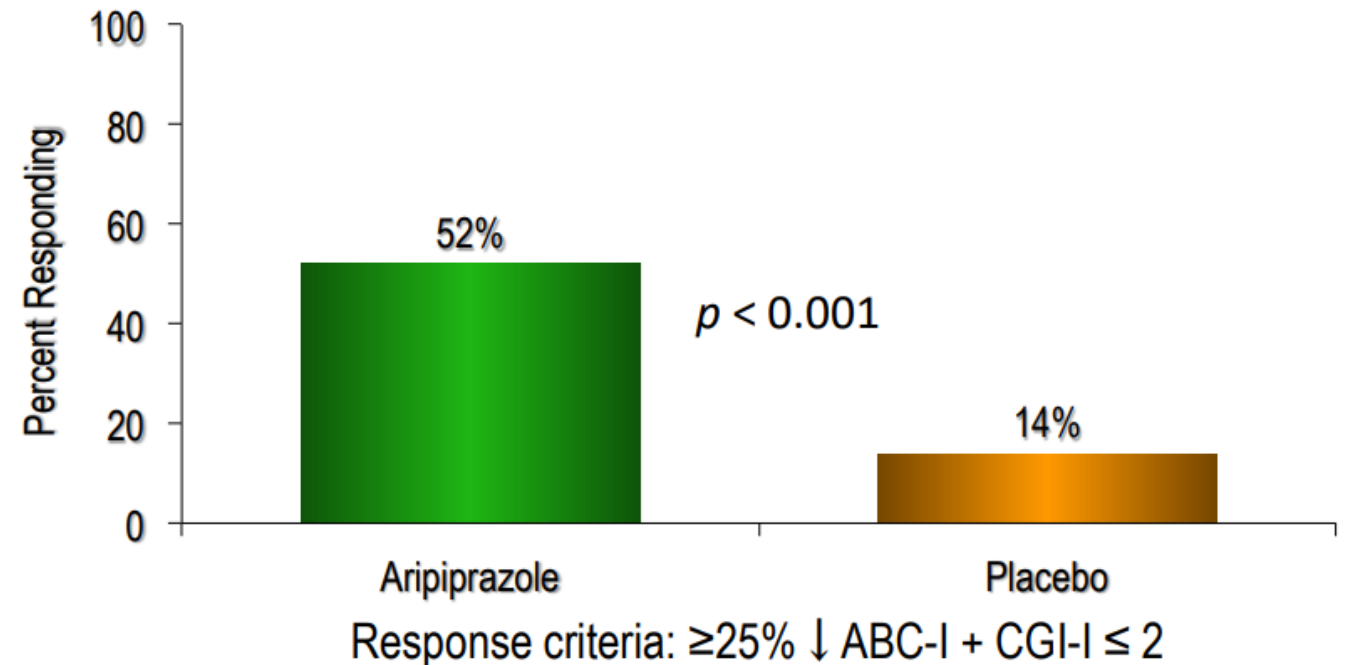
Placebo

RUPP Autism Network, 2002

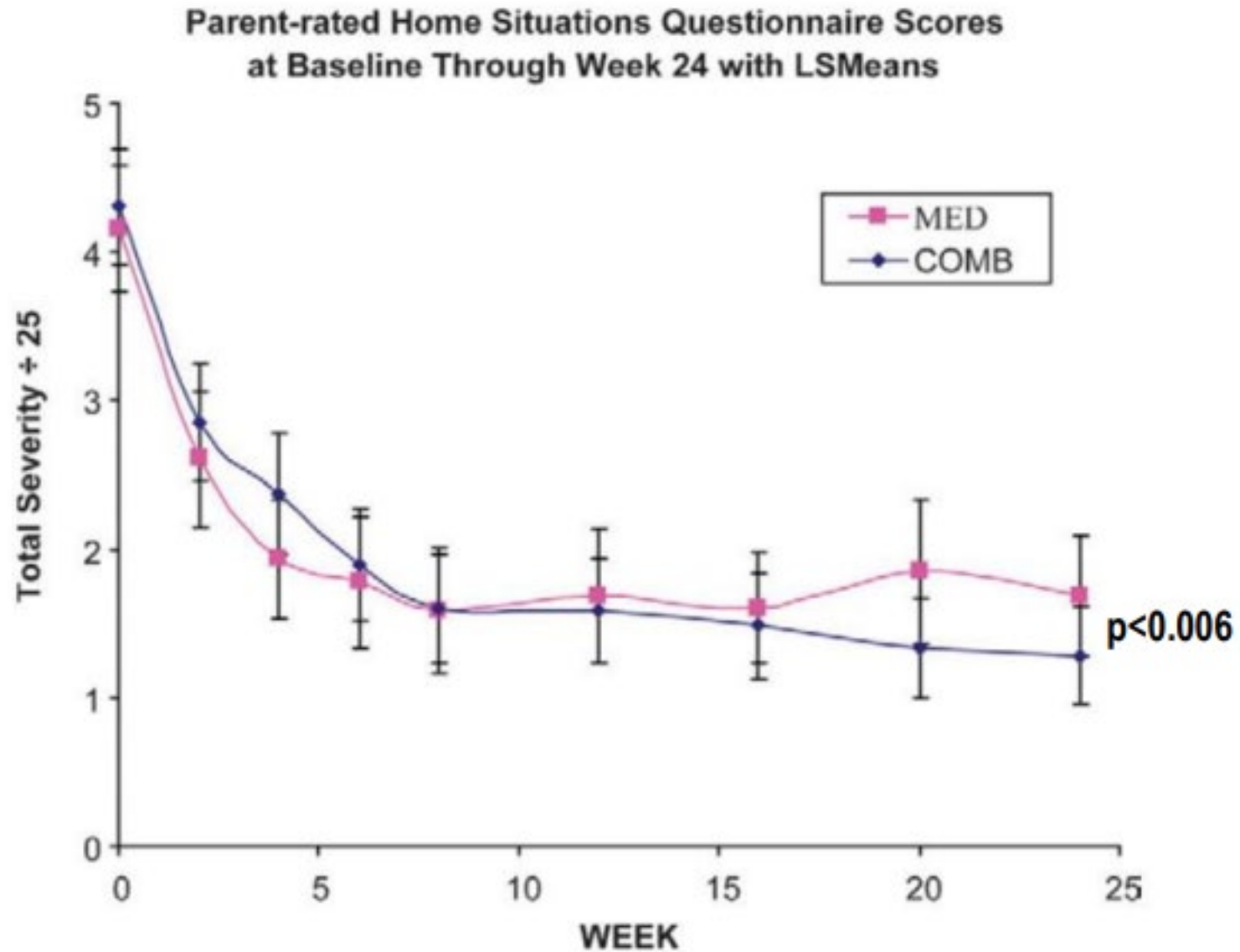
# Aripiprazole



Owen et al.,  
2009



Risperidone  
+  
Parent  
Training



24 week  
RCT  
(randomized  
controlled  
trial) in  
youth with  
ASD

# Anxiety in ASD

- Use what is approved for children & adolescents.
- SSRI's- still not enough evidence for anxiety in ASD.
- Miratazapine - recent 2022 study was not significant for anxiety in ASD. (McDougle et al, 2022)
- Propranolol- study showed it was not effective for anxiety in ASD. (Beversdorf et al., 2024)
- Buspirone- ongoing studies

# Depression in ASD

- No randomized placebo-controlled trials.
- Similarly to Anxiety, use the medications that have an evidence base for treatment of neurotypical children.

# ADHD in ASD

Methylphenidate (Ritalin, Concerta) - higher risk (irritability, insomnia, appetite), higher reward. Better tolerated in older, more verbal children. 49% were “very much” or “much” improved. (RUPP)

Alpha Agonists (Guanfacine/clonidine) - lower risk (sedation & irritability), lower reward. Guanfacine ER- 50% “much” improved. (Scahill, et al. Am J Psychiatry. 2015).

Atomoxetine/viloxazine (lowest risk [but activation], lowest reward) – Only 21% rate at “very much” or “much” improved. (Harfterkamp, et al. JAACAP. 2012).

Amphetamines (likely similar to methylphenidate but minimal data)

Omega-3 fatty acids (minimal/moderate)



# Insomnia in ASD

1. Sleep Hygiene
2. Sleep Hygiene
3. Sleep Hygiene
4. Melatonin – comes in controlled release
5. Utilize current medications (already on guanfacine, clonidine or other sedating med?)
6. Others- Benadryl, hydroxyzine, trazodone, mirtazapine.

# OTHERS

Lurasidone (Latuda) – not effective over placebo (Loebel et al., 2016).

Memantine – ongoing studies hoping to show improvement in social functioning in ASD youth with higher levels of pgACC glutamate activity.

Ketamine – ongoing studies in children (elation/silliness). Klevzon at Mount Sinai, NY.

Oxytocin- Inconsistent evidence. Further research needed.

CBD – not recommended

# THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY RECOMMENDS:



## Use of Medical Marijuana in Children and Adolescents with Autism Spectrum Disorder for Core Autism Symptoms or Co-Occurring Emotional or Behavioral Problems

### Background

Amid changing legislation and attitudes related to marijuana and cannabinoids, such as cannabidiol (CBD) and tetrahydrocannabinol (THC), some physicians are issuing medical marijuana permits for children and adolescents with Autism Spectrum Disorder targeting core autism symptoms or co-occurring emotional and behavioral problems. However, there is no scientific evidence showing efficacy for these indications nor is there reliable information regarding potency, quantity, frequency, route of administration, duration, or age safe for use. Caregivers, understandably seeking to help their child with Autism Spectrum Disorder, may turn to marijuana or cannabinoids in the context of unsubstantiated or distorted claims of efficacy and safety.

There are clear risks of harm for children and adolescents using marijuana and cannabinoids. Consistent marijuana use at an earlier age poses greater risk of long-lasting impairment on cognition, brain structure, and brain function, associated with a potential irreversible decline in intelligence quotient. Long-term use of marijuana during adolescence is also associated with increased incidence and worsened course of psychotic, mood, anxiety, and substance use disorders. Short-term use can impair working and short-term memory, learning, attention, coordination, perception, and judgment, and can cause paranoia, anxiety, and irritability. Furthermore, the concentration of THC in marijuana has significantly increased in recent years, posing higher risks of marijuana use. Additionally, the products being sold in dispensaries currently are not subject to Food and Drug Administration standards and are not purely isolated cannabinoids; they are therefore not reliable in their potency/concentration of CBD or THC, or the inclusion of other ingredients.

Exposing children and adolescents with developmental disorders such as Autism Spectrum Disorder to marijuana or cannabinoids could further increase the prevalence or severity of psychiatric disorders and intellectual disability in this highly-vulnerable population.

The American Academy of Child and Adolescent Psychiatry recommends:

- Against the use of medical marijuana or isolated cannabinoids for core symptoms or co-occurring emotional or behavioral problems in children and adolescents with Autism Spectrum Disorder.
- That families should be educated about risks and discouraged from using marijuana and cannabinoids for Autism Spectrum Disorder.
- That State and Federal legislators refrain from approving the use of marijuana and cannabinoids in children with Autism Spectrum Disorder in the absence of scientific evidence in the peer-reviewed medical literature.

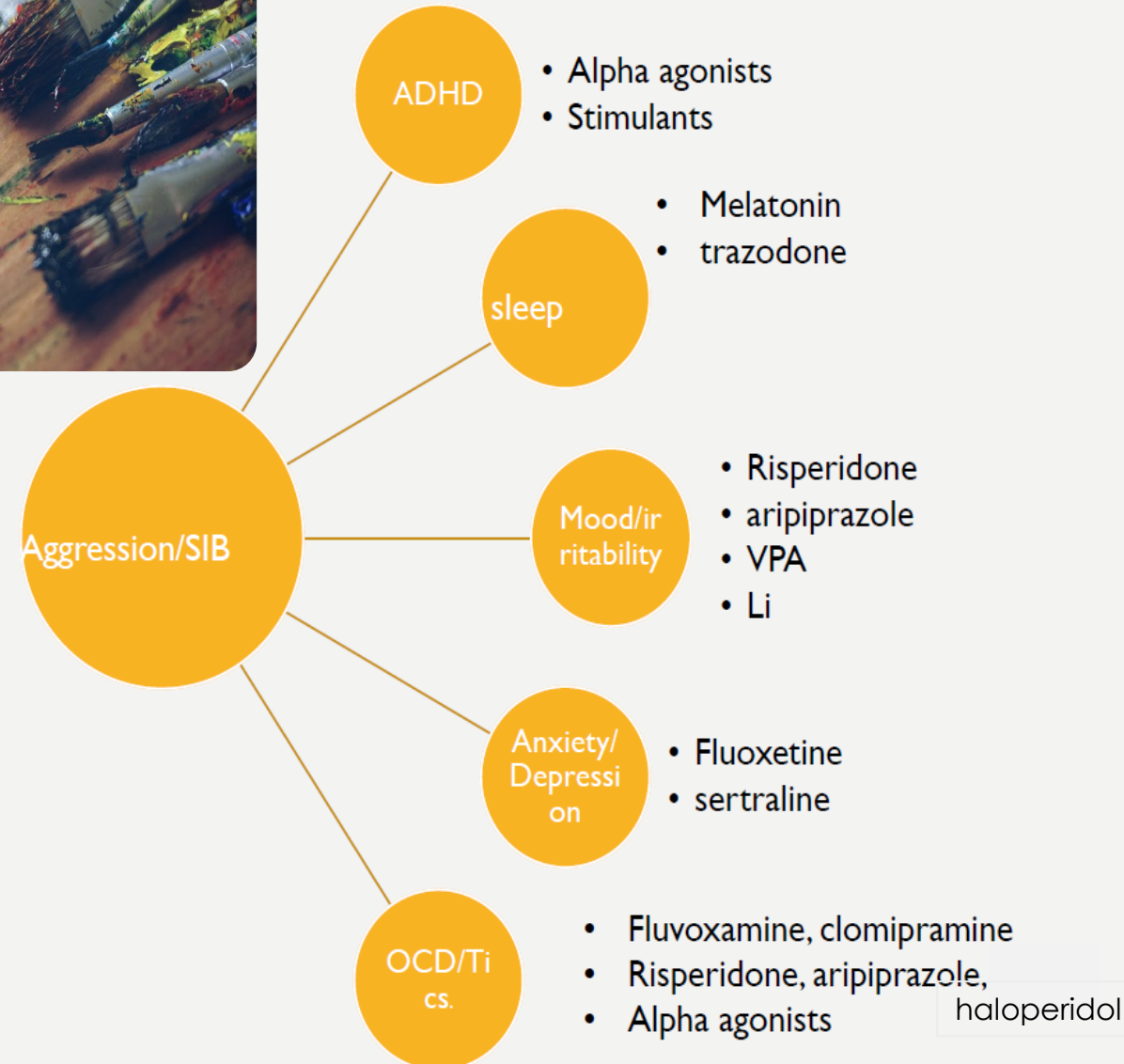
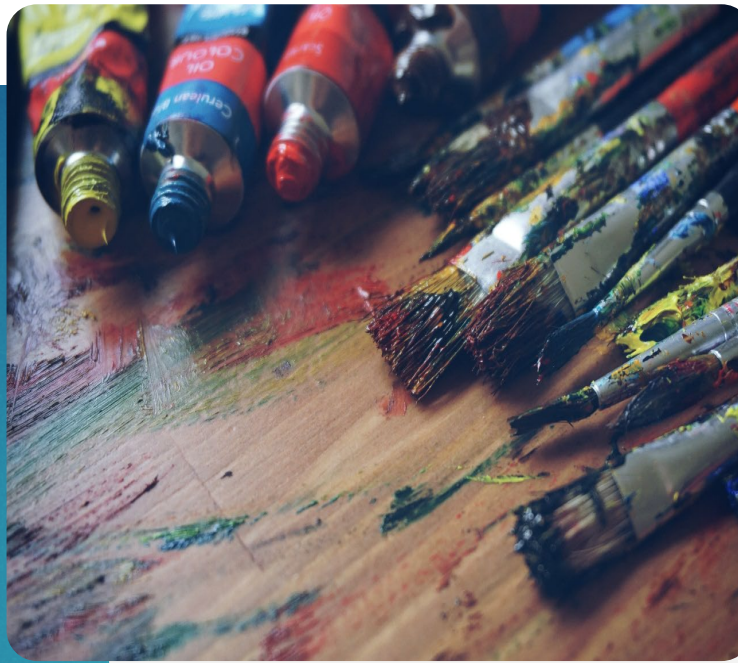
• **Against** the use of **medical marijuana** or isolated cannabinoids for core symptoms or co-occurring emotional or behavioral problems in children and adolescents with Autism Spectrum Disorder.

• That families should be educated about **risks** and discouraged from using marijuana and cannabinoids for Autism Spectrum Disorder.

• That State and Federal legislators **refrain** from approving the use of **marijuana and cannabinoids** in children with Autism Spectrum Disorder in the absence of scientific evidence in the peer-reviewed medical literature.

## ► *The art of medicine*

- Evidence base
- Side effect profile
- Clinical experience
- Individualized treatment





One thing  
to  
consider...

Rejected!



# WHAT TO DO?

Depends on the child:

- What is their cognitive level?
- Do they understand the concept of medications or side effects?
- Why don't they want to take it?
- Would an incentive help?

**REWARD CHART**

This chart belongs to: \_\_\_\_\_

DAILY TASK GOAL	MON	TUE	WED	THURS	FRI	SAT	SUN
	★	★	★	★	★	★	★
	★	★	★	★	★	★	★
	★	★	★	★	★	★	★
	★	★	★	★	★	★	★
	★	★	★	★	★	★	★
TOTAL							

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Another  
thing to  
consider...

# Blood Draw Social Story

## I am going to get a blood draw.

I am going to get a blood draw. A blood draw helps doctors know what is happening inside my body. The nurse will ask me to sit in a chair or on my bed and staff will sit near me.



The nurse will have some things to help collect the blood like tubes, a needle, gauze, and gloves.



The nurse will wrap a band around my arm. This might feel funny, but it does not hurt me.



The nurse will hold my arm and tap on it to find the best spot to do the blood test.



The nurse will use an alcohol wipe on the inside of my arm. The alcohol may smell funny and feel cold, but it does not hurt me.



The nurse will take the needle and insert it into my arm. It is very important that I do not move my arm. The nurse will push down on my arm, and I will feel a pinch. Staff will hold my hand and talk to me if I ask them too.



The blood goes from my arm into the needle. Then the blood goes into the collection tube. It is very important that I keep my arm still while the nurse takes my blood.

When the nurse is done filling the collection tube, she will put gauze over my arm and remove the needle. She will put a band-aid over the gauze.



I am all done with my blood draw! Everyone will be proud of me for doing a

good job!



Then I will get time to play on the tablet!



# Keep Track!

Was it a  
therapeutic  
medication  
trial?

Max dose?

How long?

Were there side  
effects?

Why stopped?

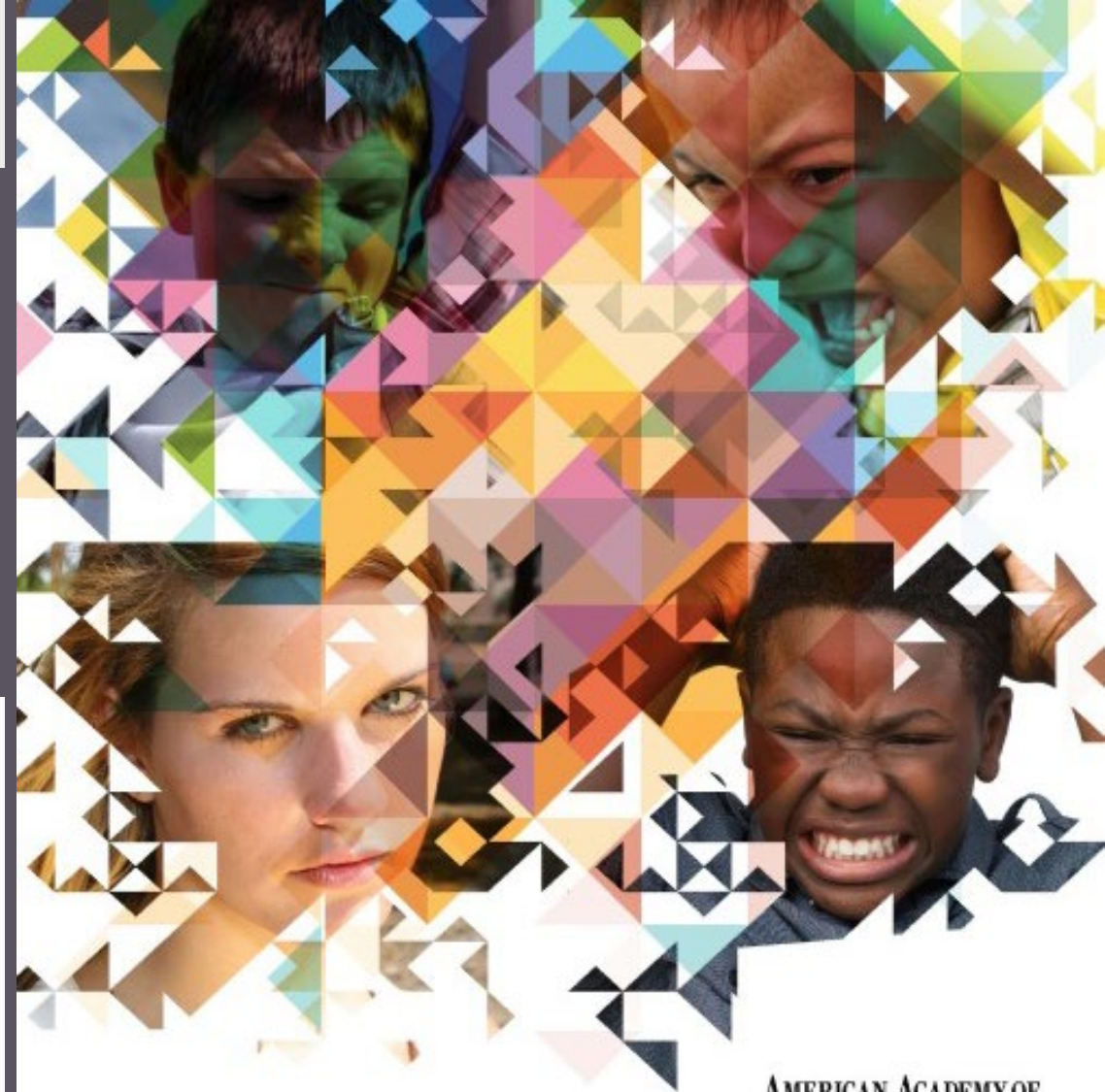
## Medication Tracking Form

Use this form to track your child's medication history. Bring this form to appointments with your provider and update changes in medications, doses, side effects and results.

Date	Medication	Dose	Side Effects	Reason for keeping/stopping
AACAP – Autism Spectrum Disorder. Parent's Medication Guide 2016				

2021

[https://www.aacap.org/App\\_Themes/AACAP/docs/resource\\_centers/resources/med\\_guides/Outbursts\\_Parents\\_Medication\\_Guide-web.pdf](https://www.aacap.org/App_Themes/AACAP/docs/resource_centers/resources/med_guides/Outbursts_Parents_Medication_Guide-web.pdf)



Impairing Emotional Outbursts:

## Parents' Medication Guide

AMERICAN ACADEMY OF  
CHILD & ADOLESCENT  
PSYCHIATRY  
WWW.AACAP.ORG

AMERICAN  
PSYCHIATRIC  
ASSOCIATION 



# 2016

(BASED ON STUDIES BETWEEN  
THE 1980'S THROUGH 2013)

[https://www.aacap.org/App\\_Themes/AACAP/Docs/resource\\_centers/autism/Autism\\_Spectrum\\_Disorder\\_Parents\\_Medication\\_Guide.pdf](https://www.aacap.org/App_Themes/AACAP/Docs/resource_centers/autism/Autism_Spectrum_Disorder_Parents_Medication_Guide.pdf)



Autism Spectrum Disorder:

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PSYCHIATRIC  
ASSOCIATION



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[https://sciencenotes.org/double-blind-study-blinded-experiments/#google\\_vignette](https://sciencenotes.org/double-blind-study-blinded-experiments/#google_vignette)

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# References



Very happy being  
a cat ☺

THANK YOU!

**Autistic Pride**

[www.aspiesforfreedom.org](http://www.aspiesforfreedom.org)

