

## Update on Psychiatric Medications for Autism

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## No Cure Yet . . . However Medications Treat Symptoms

- Hyperactivity and Inattention
- Problematic Repetitive Behavior
- Anxiety, Depression & Anger (Aggression, Self-Injury, TANTRUMS!)
- Social Impairment

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## PDD Symptoms That Psychiatric Medications Reduce:

- Hyperactivity and Inattention
- Problematic Repetitive Behavior
- Irritability(Aggression, Self-Injury, TANTRUMS!)
- Social Impairment

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## Pervasive Developmental Disorders (PDD)

- Autistic Disorder
- Asperger's Disorder
- Pervasive Disorder Not Otherwise Specified (PDD NOS)
- Rett's Disorder (rare)
- Childhood Disintegration Disorder (rare)

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## Autistic Disorder Defined

- Impairment in Social Interaction
- Impairment in Communication (Language)
- Restricted Patterns of Behavior, Interests and Activities
  - *Frequently Accompanied by Mental Retardation*

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## Asperger's Disorder Defined

- Impairment in Social Interaction
- Restricted Patterns of Behavior, Interests and Activities
- NO Impairment in Communication (Language)
  - *NO Mental Retardation*

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### Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS)

- Symptoms do not meet criteria for Autistic Disorder because:
  - late age of onset
  - sub-threshold symptoms
  - atypical symptoms
  - all of the above

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### Autistic Disorder DSM4

- (I) A total of six (or more) items from (A), (B), and (C), with at least two from (A), and one each from (B) and (C)
- (A) qualitative **impairment in social interaction**, as manifested by at least two of the following:
  - 1. marked impairments in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction
  - 2. failure to develop peer relationships appropriate to developmental level
  - 3. a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people, (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)
  - 4. lack of social or emotional reciprocity ( note: in the description, it gives the following as examples: not actively participating in simple social play or games, preferring solitary activities, or involving others in activities only as tools or "mechanical" aids )

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### Autistic Disorder DSM4

- (I) A total of six (or more) items from (A), (B), and (C), with at least two from (A), and one each from (B) and (C)
- (B) qualitative **impairments in communication** as manifested by at least one of the following:
  - 1. delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
  - 2. in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
  - 3. stereotyped and repetitive use of language or idiosyncratic language
  - 4. lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

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## Autistic Disorder DSM4

- (D) A total of six (or more) items from (A), (B), and (C), with at least two from (A), and one each from (B) and (C)
- (C) **restricted repetitive and stereotyped patterns of behavior, interests and activities**, as manifested by at least two of the following:
  1. encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
  2. apparently inflexible adherence to specific, nonfunctional routines or rituals
  3. stereotyped and repetitive motor mannerisms (e.g hand or finger flapping or twisting, or complex whole-body movements)
  4. persistent preoccupation with parts of objects

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## Autistic Disorder DSM4

- (II) Delays or abnormal functioning in at least one of the following areas, with **onset prior to age 3 years**:
  - (A) social interaction
  - (B) language as used in social communication
  - (C) symbolic or imaginative play

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## Autistic Disorder Statistics

- Boy: Girl Ratio = 4:1
- 75% have Mental Retardation
- Close to Half NEVER Develop Functional Verbal Communication

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## Asperger's Disorder DSM4

- Social Impairment
- NO COMMUNICATION/LANGUAGE DELAYS
- Restrictive Repetitive Behaviors, Interests and Activities

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## PDD Symptoms That Psychiatric Medications Reduce:

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## On Label Approved Medications for Irritability Associated With Autism

- Risperidone (Resperidal)
- Aripiprazole (Abilify)

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### ALL OTHER MEDICATION USE IS OFF LABEL

- however, there are research studies to support medications used to treat PDD symptoms, just not robust enough research to support FDA labeled use

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### Hyperactivity and Inattention

- Methylphenydate (Ritalin, Concerta, Focalin, etc.)
- Atomoxetine (Strattera)
- Clonidine (Catapres, Kapvay)
- Guanfacine (Tenex, Intuniv)

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### Hyperactivity/Inattention:

#### Methylphenidate

- Methylphenidate (Ritalin) 3 h 5 -20 mg
- Oros Methylphenidate(Concerta) 12 h 18-72 mg
- (Metadate CD) 8h 10 - 60
- (Ritalin LA) 10h 10 - 40 mg
- Dexmethylphenidate (Focalin, Focalin XR) 5h, 10h

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### Hyperactivity/Inattention: Methylphenidate

- Response Rates in Asperger's about the same as placebo
- Response Rates in Autism double placebo but lower than the rate as ADHD (14%, 50%, 70%)
- About 1/7 dropped out due to side effects, most notably irritability (start low, go slow)
- Risk of Worsening Social Withdrawal at high doses

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### Hyperactivity/Inattention: Antihypertensives

- Clonidine (Catapres, Kapvay) effective for hyperactivity/impulsivity only in very small research study
- Guanfacine (Tenex, Intuniv) preliminary evidence of efficacy for hyperactivity/impulsivity only

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### Hyperactivity/Inattention: Atomoxetine

- 75% much improved at high doses (1.0-1.4 mg.kg)
- 13% worse due to irritability
- small research study

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### Problematic Repetitive Behavior

Clomipramine (Anafranil) effective for autism but has cardiac risks

- Fluvoxamine (Luvox) better than placebo in autistic adults; better than placebo in PDD children
- Fluoxetine (Prozac) better than placebo low drop out rate in PDD children; average dose 10mg
- Citalopram (Celexa) No response
- Riluzole (Rilutek) pilot studies in progress; Lou Gehrig's Disease Drug

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### Irritability - Haloperidal and Second Generation Antipsychotics

- Haloperidal (Haldol) many high grade studies show effectiveness; muscle irregularities; 5-8 pound weight gain
- Risperidone (Respiradal)- 0.5-3.5 mg, 70% response rate; gained 7-15 pounds, fatigue, dizziness
- Olanzapine ( Zyprexa)-7.5-10 mg/day 6-16 pound weight gain; 50% respond vs. 20% for placebo

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### Irritability Second Generation Anti-psychotics

- Quetiapine ( Seroquel, Seroquel XR) - response rates increase with dosage 60% if tried up to 700mg; weight gain; risk of diabetes and hyperlipidemia
- Ziprasidone ( Geodon) weaker, smaller studies, 50% - 70% response rate - no weight gain, 20-160 mg; EKG risks not as concerning as initially thought
- Aripiprazole (Abilify) - fatigue, weight gain of 5 pounds; 2.5-15 mg 50-84% response rates; lower risk of diabetes and hyperlipidemia

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## Social Impairment

- Many failed trials: Fenfluramine, Naltrexone, Lamotragine, Amantadine, Risperidone, Fluoxetine, Citalopram, D-Cycloserine (TB drug)
- Stay tuned: Research in Progress:
  - Memantadine (Namenda)
  - D-Cycloserine + Social Skills Training
  - Intranasal Oxytocin (18 or 24 IU, 16 people)

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## Summary

- Medication can treat PDD symptoms (socialization) , not underlying disease
- Medication side effects monitoring is important
- Almost all treatment is off label
- Stimulants, clonidine, some SSRI's and SGA's are helpful
- Watch Gaunfacine, Atomoxopine, Ziprasidone and Oxytocin research

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