

Tuesday, 2:30 – 4:00, C2

## **Psychotropic Medication Concerns when Treating Individuals with Developmental Disabilities**

**Richard Berchou**

248-613-6716 [rberchou@wayne.edu](mailto:rberchou@wayne.edu)

Objective:

Identify effective methods for the practical application of concepts related to improving the delivery of services for persons with developmental disabilities

Notes:

## Medication Assistance On-Line Resources

### OBTAINING MEDICATION:

- Needy Meds
  - Needymeds.com
- Partnership for Prescriptions Assistance
  - Pparx.org
- Patient Assistance Program Center
  - Rxassist.org
- Insurance coverage & Prior authorization forms for most drug plans
  - Covermymeds.com

### REMINDERS TO TAKE MEDICATION:

- Medication reminder by Email, Phone call, or Text message
  - Sugaredspoon.com

### ANSWER MOST QUESTIONS ABOUT MEDICATIONS:

- Univ. of Michigan/West Virginia Schools of Pharmacy
  - Justaskblue.com
- Interactions between medications, over-the-counter (OTC) products and some foods; also has a pictorial Pill Identifier: May input an entire list of medications
  - Drugs.com

### OTHER TRUSTED SITES:

- Patient friendly information about disease and diagnoses
  - Mayoclinic.com, familydoctor.org
- Package inserts, boxed warnings, "Dear Doctor" letters (can sign up to receive e-mail alerts)
  - Dailymed.nlm.nih.gov
- Communications about drug safety
  - [www.Fda.gov/cder/drug/drugsafety/drugindex.htm](http://www.Fda.gov/cder/drug/drugsafety/drugindex.htm)
- Purchasing medications on-line
  - Pharnacychecker.com

# Psychotropic Medication for Persons with Developmental Disabilities

April 23, 2013

Richard Berchou, Pharm. D. Assoc. Clinical Prof., Dept. Psychiatry & Behavioral Neurosciences, Wayne State Univ.

---

---

---

---

---

---

---

---

## Discussion & Questions

**"ANYTIME"**

2

---

---

---

---

---

---

---

---

## Acute/Chronic Aggression

- Medication usually should be last option
  - Acute dangerous behaviors, sedate & evaluate
- Rule out
  - Environmental stressors
  - Health problems
  - Psychiatric/medical comorbidity
  - Behavioral stressors

3

---

---

---

---

---

---

---

---

## Frequent Causes of Aggression

- Psychosis
- Depression
- Medical problems
- Hunger
- Pain
- Thirst
- Rectal impaction
- Abuse or neglect

4

---

---

---

---

---

---

---

---

## Assessing Benefits of Psychotropic Medications

Severity of MR	Self-reporting	Caregiver Reporting	Behavioral Monitoring
Mild	R	R	H
Moderate	H	R	R
Severe	U	R	R

R = required H = Helpful, U = Unreliable

Richard Powers 2005 Bureau of Geriatric Psychiatry

5

---

---

---

---

---

---

---

---

## Aggression

- Best outcome - medication responsive psychiatric disorder
  - Schizophrenia, Autism, Depression, Bipolar
- No psychiatric disorder – treat specific & persistent symptoms which cause
  - Functional loss\* or
  - Physical harm to self or others

\*ADL's, Cognition, Communication, Continence, Motivation

---

---

---

---

---

---

---

---

## Aggression - Medication

- Antipsychotics
  - Atypicals [risperidone]
- Mood stabilizers
  - Valproate
  - Carbamazepine
  - Lithium
- Antidepressants
  - SSRI's [Celexa, Zoloft]

---

---

---

---

---

---

---

---

## Child Aggression Guidelines

(lack of evidence – antipsychotics/mood stabilizers)

### Concerns

- Treatment decision making
- Appropriate use of alternative therapies
- Long-term management
- Safety of multiple drug regimens
- Successful parental engagement and education
- Evidence-based psychosocial interventions should be 1<sup>st</sup> line treatments

Pediatrics, June 2012 <sup>8</sup>

---

---

---

---

---

---

---

---

## Intermittent Explosive Disorder

Mayo Clinic 2012

- Psychotherapy and Medication
  - Antidepressants Prozac (fluoxetine), others
  - Anticonvulsants Tegretol, Trileptal, Dilantin, Topamax, Lamictal
  - Anti-anxiety agents Ativan (lorazepam), Klonopin (clonazepam)
  - Mood Stabilizers lithium

9

---

---

---

---

---

---

---

---

## Antipsychotic Therapy Indicated

Target symptoms without DSM-IV diagnosis

- Suicidal ideation/behavior\*
- Self-injurious behavior\* (SIB)
- Aggression toward others\*
- Hyperactivity

\*May require immediate hospitalization

AJMR, Treatment of Psychiatric and Behavioral Problems in Mental Retardation, Consensus Guidelines, 2000

---

---

---

---

---

---

---

---

## Atypical Antipsychotics

Usual Dosing (mg/day)

Aripirazole (Abilify)	5-30
Clozapine (Clozaril)	50-600
Olanzapine (Zyprexa)	2.5-20
Quetiapine (Seroquel)	25-800
Risperidone (Risperdal)	0.25-6
Ziprasidone (Geodon)	40-160
Paliperidone (invega)	3-12
Ascenapine (Saphris)	10-20
Iloperidone (Fanapt)	12-24

---

---

---

---

---

---

---

---

## Common Uses for Antipsychotics

- |                         |                      |
|-------------------------|----------------------|
| • Schizophrenia         | • Pain               |
| • Psychosis             | • Delirium           |
| • Schizophreniform D/O  | • Dementia           |
| • Schizoaffective D/O   | • Sundowning         |
| • Bipolar D/O           | • OCD/Tourette's     |
| • Agitation/Anger       | • CNS Lesions/stroke |
| • Aggression            | • OBS/Head injury    |
| • Impulse control D/O   | • Extreme anxiety    |
| • Delusional D/O        | • Insomnia           |
| • Refractory Depression | • Stuttering         |

---

---

---

---

---

---

---

---

## Antipsychotic Use in Children & Adolescents

- More susceptible to:
  - Sedation
  - Acute EPS
  - Weight gain (related abnormalities)
- Monitoring & Management Strategies
- Relevant thresholds for body wt and Metabolic parameters (children/adults)

Correll CU. J AM Acad Child Adolesc Psychiatry, 2008

---

---

---

---

---

---

---

---

## Morbidity with Weight Gain

- Diabetes/insulin resistance
- Hypertension
- Coronary artery disease
- Colon cancer
- Pulmonary disease
- Sleep apnea
- Psychological
  - Compliance
  - QOL (stigma)

---

---

---

---

---

---

---

---

## Metabolic Syndrome

- Metabolic syndrome is defined as the presence of three or more of the following conditions
  - **Abdominal obesity** (waist circumference >40 inches in men, >35 in women)
  - **Glucose intolerance** (fasting glucose  $\geq 100$ mg/dL)
  - **Blood pressure**  $\geq 130/85$  mmHg
  - **High triglycerides** (>100mg/dL)
  - **Low HDL** (<40mg/dL for men, <50mg/dL for women)

NCEP ATP III Circulation. 2002;106:3143.

---

---

---

---

---

---

---

---

**Adverse Effect Monitoring of AP Treated Children/Adolescents**

Assessments	Frequency
• Personal/Family Hx	• Baseline/Annually
• Lifestyle monitoring	• Every visit
• Ht, wt, BMI %/z-score	• Every visit
• Somnolence/sedation	• Every visit
• Sexual sx	• Baseline, titration, Q3mo
• BP, Pulse	• Baseline, 3mo, 6mo
• Fasting glucose, lipids	• Baseline, 3mo, 6mo
• Liver function	• Baseline, 3mo, 6mo
• EPS/TD	• Baseline, titration, 3mo, annual
• Electrolytes, CBC, Renal	• Baseline annually
• Prolactin	• When symptomatic
• ECG	• Baseline, titration, max dose

Correll CJ. J Am Acad Child Adolesc Psychiatry. 2008;47:9-20

---

---

---

---

---

---

---

---

---

---

---

---

**Risperdal FDA Indications**

- Schizophrenia - Adults acute and maintenance treatment & Adolescents aged 13-17
- Bipolar Mania - Monotherapy - Adults and Pediatrics treatment of acute manic or mixed episodes in adults and children aged 10-17
- Irritability - with Autistic Disorder (aged 5-16) including symptoms of aggression towards others, deliberate self-injuriousness, temper tantrums, and quickly changing moods

---

---

---

---

---

---

---

---

---

---

---

---

**Abilify**

FDA Approval - children

- Bipolar I disorder manic or mixed episodes with or without psychotic features aged 10-17 years
- Schizophrenia age 13 and older
- Age 6-17 Irritability associated with autism

---

---

---

---

---

---

---

---

---

---

---

---



**Depakote (valproate)**

side effects

- Nausea
- GI discomfort
- Sedation
- Hair loss
- Weight gain
- Tremor
- Pancreatitis

---

---

---

---

---

---

---

---

**Valproate**

metabolic syndrome

- Obesity
- Hyperinsulinemia
- Lipid abnormalities
- Polycystic ovaries
- Hyperandrogenism

---

---

---

---

---

---

---

---

**Tegretol (carbamazepine)**

side effects

- drowsiness
- loss of coordination
- vertigo
- hepatic
- dermatologic
- hematologic

---

---

---

---

---

---

---

---

## Newer Agents Lack Data in Treating DD

- Tiagabine (Gabitril)
- Gabapentin (Nuerontin)
- Lamotrigine (Lamictal)
- Levetiracetam (Keppra)
- Oxcarbazepine (Trileptal)
- Lacosamide (Vimpat)

---

---

---

---

---

---

---

---

## Warning all Anticonvulsants FDA - 2008

“Patients being treated with antiepileptic drugs for any indication should be monitored for the emergence or worsening of depression, suicidal thoughts or behavior, or any unusual changes in mood or behavior”

Compared with trials for psychiatric or other conditions, the relative risk for suicidal thoughts or behavior was higher in clinical trials for epilepsy.

---

---

---

---

---

---

---

---

## Lithium

side effects

- Dermatologic - acne, psoriasis
- Weight gain
- Nausea, diarrhea
- Fatigue
- Tremor
- Cognitive impairment
- Hair loss
- Thyroid, renal function

---

---

---

---

---

---

---

---

## SSRI's

- Prozac (fluoxetine)\*
- Zoloft (sertraline)\*
- Paxil (paroxetine)\*
- Luvox (fluvoxamine)
- Celexa (citalopram) \*
- Lexapro (escitalopram)

\* Liquid available

---

---

---

---

---

---

---

---

## SSRI's - Side Effects

- Increased agitation
- Hypomania
- Sleep difficulties
- Tremor
- Sexual dysfunction
- Gastrointestinal sxs.
  - nausea
  - vomiting

---

---

---

---

---

---

---

---

## Utilization of PRN Psychotropic Medication

- To be taken as needed or PRN
- “pre re na’ta” according as circumstances may require
- Assessment for
- Choice of
- Administration of medication
- Assessment & judgment are necessary

---

---

---

---

---

---

---

---

## Psychotropic Medications PRN usage

- Agitation, aggression, threatening, potentially destructive, self-abusive, psychotic, .....
- Prior to outpatient surgery
- Management of pain
- Acute stress reactions
- Sleep disturbance
- Patient request

---

---

---

---

---

---

---

---

## PRN order for headaches

Sig: Give 1-2 ASA tablets Q 4-6 hrs.  
as needed for headache pain.  
Dr. Feelgood

How many tablets may the consumer be given?

29

---

---

---

---

---

---

---

---

## PRN ASA Order

- 0 – 4 – 8 – 12 – 16 – 20 – 24 hrs  
seven possible times to administer either 1 or 2 tablets ANSWER 0 to #14
- Strength? Low dose 81mg, regular 325mg, maximum strength 500mg
- For mild, moderate, severe pain?  
How to determine pain, what to ask the consumer?
- How long to continue the order – 1 day, 1 week?
- When to contact the Doctor?

30

---

---

---

---

---

---

---

---

## ASA - Caution

- Aspirin should not be given to a child who has a fever especially if they have flu symptoms or chickenpox (may cause Reyes Syndrome)
- Stop: black, bloody or tarry stools; coughing up blood or coffee grounds vomit
- May interact with antidepressants –Prozac, Paxil, Celexa, Effexor, Cymbalta

31

---

---

---

---

---

---

---

---

## PRN

- Consider discontinuation of PRN orders not used for more than 3 months (exception meds for seizures)
- Avoid two or more classes of drugs used for a single indication
- Monitor drugs from the same class used regularly and PRN to avoid toxicity
- If PRN used regularly rewrite PRN order as a regular medication to be administered

32

---

---

---

---

---

---

---

---

## Nursing Use Of PRN's

- Clarity of order questionable
- Decision making process related to intervention not documented
- Poor documentation

All of these were found in a mental health facility with Nurses administering PRN's

Journal of Psychiatric & Mental Health Nursing 2001

---

---

---

---

---

---

---

---

## PRN's a Chemical Restraint

(MI Medicaid Prepaid Health Plan for DD)

- "Psychoactive Medication for Behavioral Control even for seriously maladaptive behavior behaviors in the DD are considered restrictive and subject to review by the BMC."
- "The consumer and/or guardian must provide informed consent for each administration of any medication used for behavioral control."

Mi Medicaid Managed Care Specialty Services & Supports Contract  
Medicaid Provider Manual (1/1/05)

---

---

---

---

---

---

---

---

## Polypharmacy definition

- More than one drug from the same class for the same patient at the same time
- Use of five or more drugs at the same time in the same patient
- Excessive or unnecessary use of prescription or non-prescription medication

---

---

---

---

---

---

---

---

## Polypharmacy

- Each year approximately 110,000 Americans die from *properly prescribed and correctly taken medications*.
- Death or hospitalization is proportional to the number of medications a patient is taking
- Polypharmacy is especially prevalent in patients with chronic illnesses

Lazarou J JAMA 1998

---

---

---

---

---

---

---

---

## Polypharmacy Behavioral Health

- **More medications**
  - More drug-interactions
  - More side effects
  - More non-compliance
  - More medication errors
  - More cost
- **Possibility that side effects and/or drug-interactions are mistaken for psychopathology**

---

---

---

---

---

---

---

---

## Case Example

Male age 42, 10 yr hx mental illness

- Xanax 1mg QID
- Cogentin 1mg BID
- Neurontin 300mg TID
- Abilify 20mg HS
- Geodon 80mg BID
- Klonopin 0.5mg BID
- Ambien 10mg HS
- Pamelor 25mg AM, 75mg HS
- Paxil CR 37.5mg HS

---

---

---

---

---

---

---

---

## Payor Pressures

- Encourage generic use
- Limit off-label use
- Limit doses exceeding FDA labeling
- Decrease Polypharmacy
- Use mail order pharmacies (3mos.)
- Promote evidence based practice
- Counter Detailing
- Formulary Management

---

---

---

---

---

---

---

---

## Electronic Prescribing

- Decrease health care costs
  - Ford, Verizon, Wal-Mart
- Reduce med errors
- Entice doctors to prescribe less expensive meds

---

---

---

---

---

---

---

---

## Other – Managed Care Tools

- Prior authorization
- Step therapy co-pays
- DUR (drug utilization and review)
- QA (quality assurance)
- Educational programs
- Medication therapy management programs
- Quantity Limits
- Generic Substitution
- Therapeutic Substitution

---

---

---

---

---

---

---

---

## Bipolar/Substance Abuse Patient

- Zyprexa 20mg #30 \$719
  - Lamictal 200mg #60 \$334
  - Depakote ER 500mg #120 \$308
  - Lunesta 3mg #30 \$140
  - Chantix 1mg #60 \$110
  - Vivitrol 380mg IM \$715
- \$2326 /mo  
\$27,912 /yr.

---

---

---

---

---

---

---

---



## Generic vs. Branded Medications

### is there a difference?

- Both are considered bioequivalent
  - Same active ingredient (strength, dosage form)
  - Same therapeutic effect
  - Same safety and tolerability
- Pharmaceutical “equivalent” or “alternative”
  - Alternative has the same active ingredient but it may be bound differently i.e. Paxil (paroxetine *HCL*), Peveva (paroxetine *mesylate*). The FDA does not consider these agents to be thrapeutically equivalent.

43

---

---

---

---

---

---

---

---

## Not Recommended does not mean medication will not work!

- Cochrane Report August, 2012
  - SSRI's (Prozac, Luvox, Celexa) not recommended for Autism in children or adults based on current evidence
  - Lack of evidence is not the same as evidence that the SSRI's don't work??
  - No evidence for effectiveness may even be harmful based on all existing studies
  - No FDA approval for SSRI's in Autism (off-label), some are approved for OCD (Prozac, Luvox, Zoloft) or Depression (Prozac, Lexapro).

44

---

---

---

---

---

---

---

---

## Summary

- Establish outcome measures for each medication
- Prioritize target symptoms
- Re-evaluate periodically medication benefit
- Slow  $\uparrow\downarrow$  of medications, one at a time
- Monitor for side effects regularly
- Symptoms being treated may be similar to medication side effects
- Multiple medications often lead to multiple side effects

---

---

---

---

---

---

---

---

## Psychotropic Medications

“Drugs prescribed to treat disorders of mood, mental status or behaviors”

<u>GENERIC (Trade Name)</u>	<u>Strength/Form(s)</u>	<u>USUAL Range (mg)</u>
<b><u>ANTIDEPRESSANTS</u></b>		
Amitriptyline ◇	10, 25, 50, 75, 100, 150 mg T	75 – 150 / 300
Amoxapine ◇ (Asendin)	25, 50, 100, 150 mg T	75 – 400 / 600
Bupropion (Wellbutrin)	75, 100; 100, 150, 200 SR; 150, 300 mg XL, T; Aplenzin 174, 348, 522 mg T; FortivoXL 450 mg	200 – 450
Clomipramine (Anafranil)	25, 50, 75 mg C	100 – 250
Citalopram (Celexa)	10, 20, 40 mg T; 10, 20, 40 mg ODT: 10 mg / 5 ml	20 – 40
Desipramine (Norpramin)	25, 50 C; 10, 25, 50, 75, 100, 150 mg T	75 – 300
Desvenlafaxine (Pristiq)	50, 100 mg T	50 – 400
Doxepin ◇ (Silenor, Sinequan)	10, 25, 50, 75, 100, 150 mg C; 10mg/ml [3, 6 mg T Silenor]	75 – 300
Duloxetine (Cymbalta)	20, 30, 60 mg C	60 – 120
Escitalopram (Lexapro)	5, 10, 20 mg T; 5mg/5ml	10 – 20
Fluoxetine (Prozac, Sarafem – 10, 20 C)	10, 20, 40, 90 mg C; 20 mg / 5 ml; 10, 30, 60mg T	10 – 80
Fluvoxamine (Luvox)	25, 50, 100 mg T, 100, 150 CR C	100 – 300
Imipramine ◇ (Tofranil)	10, 25, 50 T; 75, 100, 125, 150 mg C (PM)	75 – 150 / 300
Isocarboxazid (Marplan)	10 mg T	10 – 20
Maprotiline (Ludiomil)	25, 50, 75 mg T	75 – 150 / 225
Mirtazapine (Remeron)	15, 30, 45 T; 15, 30, 45 mg SolTab	15 – 45
Nefazodone	50, 100, 150, 200, 250	200 – 600
Nortriptyline (Aventyl, Pamelor)	10, 25, 75 mg C; 10 mg / 5 ml	50 – 150
Paroxetine (Paxil)	10, 20, 30, 40 mg T, 12.5, 25, 37.5 mg CR T, 10 mg / 5 ml	10 – 60 (75 CR)
Phenelzine (Nardil)	15 mg T	45 – 90
Protriptyline (Vivactil)	5, 10 mg T	15 – 60
Selegiline (Emsam)	6, 9, 12 mg 24 hr patch	6 – 12
Sertraline (Zoloft)	25, 50, 100 mg T, 20 mg / ml	50 – 200
Tranlycypromine (Parnate)	10 mg T	10 – 60
Trazodone (Desyrel)	50, 100, 150 mg T; 150, 300 mg ER (Oleptro max 375mg)	100 – 400
Venlafaxine (Effexor)	25, 37.5, 50, 75, 100 mg T; 37.5, 75, 150 XR, C	75 – 225 XR / 375
Vilazodone (Viibryd)	10, 20, 40 mg T	20 – 40
<b><u>ANTI-ANXIETY &amp; SEDATIVE</u></b>		
Alprazolam* (Xanax)	0.25, 0.5, 1, 2 mg T; 0.5, 1, 2, 3 mg XR, T ; 0.25, 0.5, 1, 2 ODT Niravam	0.5 – 10
Buspirone (BuSpar)	5, 7.5, 10 mg T; 15, 30 mg dividose	20 – 60
Chloral Hydrate*	250, 500 mg C	500 – 2000
Chlordiazepoxide* ◇ (Librium)	5, 10, 25 mg C	15 – 100
Clorazepate* (Tranxene)	3.75, 7.5, 11.25, 15, 22.5 mg T	15 – 60
Clonazepam* (Klonopin)	0.5, 1, 2 mg T; 0.125, 0.25, 0.5, 1, 2 mg Klonopin waffer	1 – 4 (20)
Diazepam* ◇ (Valium)	2, 5, 10 mg T; 5 mg / ml	6 – 40
Diphenhydramine ◇ (Benadryl)	25, 50 mg C	25 – 200
Eszopiclone* (Lunesta)	1, 2, 3 mg T	1 - 3
Estazolam* (ProSom)	1, 2 mg T	0.5 – 2
Flurazepam* ◇ (Dalmane)	15, 30 mg C	15 – 30
Halazepam (Paxipam)	40 mg T	40 – 80
Hydroxyzine (Atarax, Vistaril)	10 T; 25, 50, 100 mg T / C; 10 mg / 5 ml, 25 mg / 5 ml	50 – 400
Lorazepam* (Ativan)	0.5, 1, 2 mg T	0.5 – 10
Oxazepam* (Serax)	10, 15, 30 mg C / T	30 – 120
Quazepam* (Doral)	7.5, 15 mg C	7.5 – 15
Ramelteon (Rozerem)	8 mg T	8
Temazepam* ◇ (Restoril)	7.5, 15, 30 mg C	7.5 – 30
Triazolam* ◇ (Halcion)	0.125, 0.25 mg T	0.125 – 0.5
Zaleplon* (Sonata)	5, 10 mg T	5 – 10
Zolpidem* (Ambien), (Intermezzo)	5, 10 mg T; 6.25, 12.5 CR ; sublingual 1.75 mg women, 3.5 mg men	5 – 10
<b><u>ANTIPSYCHOTICS</u></b>		
Aripiprazole (Abilify)	2, 5, 10, 15, 20, 30 mg T; 10, 15 mg ODT; 1mg/ml; 9.75mg/1.3ml inj	10 – 30
Asenapine (Saphris)	5, 10 mg T sublingual	10 – 20
Chlorpromazine (Thorazine)	10, 25, 50, 100, 200 mg T; 25, 30, 100 mg / ml	10 – 800
Clozapine (Clozaril)	12.5, 25, 50, 100, 200 mg T; 25, 100 mg ODT FlazaClo	100 – 900
Fluphenazine (Permital)	1, 2.5, 5, 10 mg T; 0.5 mg / ml	1 – 40
Fluphenazine (Prolixin Decanoate)	25 mg / cc	Max 100 mg I.M.
Haloperidol (Haldol)	0.5, 1, 2, 5, 10, 20 mg T; 2 mg / ml	1 – 100
Haloperidol (Haldol Decanoate)	50, 100 mg / cc	Max 300 mg I.M.
Iloperidone (Fanapt)	1, 2, 4, 6, 8, 10, 12 mg T	12 – 24
Lurasidone (Latuda)	20, 40, 80, 160mg T	40 – 80
Loxapine (Loxitane)	5, 10, 25, 50 mg C; 25 mg / ml; 50 mg / ml inj. 10 mg inhalation powder Adasuve	20 – 250 10 mg
Olanzapine (Zyprexa)	2.5, 5, 7.5, 10, 15, 20 mg T; 5, 10, 15, 20 mg Zydis; 5mg/mi IM	2.5 – 20
Olanzapine (Relprevv) long-acting	210, 300, 405 mg/3ml vials after reconstitution	150 – 405 mg I.M.
Paliperidone (Invega)	3, 6, 9 mg ER T	3 – 12
	Invega Sustenna 39, 78, 117, 156, 234 mg IM	39 - 234
Perphenazine (Trilafon)	2, 4, 8, 16 mg T; 16 mg / ml	12 – 64

## ANTIPSYCHOTICS conti.

Pimozide (Orap)	2 mg T	1 – 20
Quetiapine (Seroquel)	25, 50, 100, 200, 300, 400 mg T ; 50, 150, 200, 300, 400 mg XR T	150 – 800
Risperidone (Risperdal)	0.25, 0.5, 1, 2, 3, 4 mg T; 0.5, 1, 2, 3, 4mg M-Tab; 1 mg / ml	1 – 16
Risperidone (Consta)	12.5, 25, 37.5, 50 mg; Max 50 mg I.M.	25 – 50
Thioridazine (Mellaril)	10, 15, 25, 50, 100, 150, 200 mg T; 30 mg / ml, 100 mg / ml	50 – 800
Thiothixene (Navane)	1, 2, 5, 10, 20 mg C; 5 mg / ml	6 – 60
Trifluoperazine (Stelazine)	1, 2, 5, 10 mg T; 10 mg / ml	2 – 40
Ziprasidone (Geodon)	20, 40, 60, 80 mg C; 20mg/ml inj (40mg/day max)	80 – 160

## MOOD STABILIZERS

Carbamazepine (Tegretol, Epitol)	100, 200, 400 mg XR T; 100 mg / 5 ml; 100 chew; 200 mg T	400 – 1200
Carbatrol ER	200, 300 mg C: Equetro 100, 200, 300 mg C	
Gabapentin (Neurontin)	100, 300, 400 mg C, T; 600, 800 mg T	300 – 3600
Lamotrigine (Lamictal)	25, 100, 150, 200, 250 T; 2, 5, 25 Chew T, 25, 50, 100, 200 ODT, 25, 50, 100, 200, 300 XR T [200/400mg max bipolar]	150 – 500 600 – 1800
Lithium	300 T; 150, 300, 600 mg C: 450 ER: 300 mg / 5 ml	200 – 400
Lacosamide (Vimpat)	50, 100, 150, 200 mg T; 10 mg/ml 465ml bottle	1 – 3000
Levetiracetam (Keppra)	250, 500, 750 mg T; 100 mg/ml; 500 mg/5ml inj.	1200 – 2400
Oxcarbazepine (Trileptal)	150, 300, 600 mg T; 300 mg / 5 ml	150 – 600
Pregabalin* (Lyrica)	25, 50, 75, 100, 150, 200, 225, 300 mg C	24 – 56
Tiagabine(Gabitril)	4, 12, 16, 20 mg T	50 – 400
Topiramate (Topamax)	25, 100, 200 T; 15, 25 sprinkle	15 – 60 mg / kg
Valproate (Depakote)/ Valproic acid	125, 250, 500 mg T (EC), 250, 500 mg T (ER); 125 sprinkle C 250 mg / 5 ml liq; 100 mg / 5 ml inj. (Depacon), 125, 250, 500 delayed release gel C (Stavzor)	100 – 600
Zonisamide (Zonegran)	25, 50, 100 mg C	

## MISCELLANEOUS

Acamprosate (Campral)	333 mg T [2 TID]	1998
Amantadine (Symmetrel)	100 mg C; 50 mg/5ml	100 – 400
Amphetamine / Dextro* (Adderall)	5, 7.5, 10, 12.5, 15, 20, 30 mg T; 5, 10, 15, 20, 25, 30 mg XR,C	5 – 40
Atomoxetine (Strattera)	5, 10, 18, 25, 40, 60 mg T [<70kg; start 0.5mg/kg to 1.4mg/kg]	10 – 100
Avanafil (Stendra)	50, 100, 200 mg T	50 – 200
Benzotropine (Cogentin)	0.5, 1, 2 mg T	0.5 – 6
Biperiden (Akineton)	2 mg T	2 – 16
Buprenorphine/naloxone (Suboxone)	2/0.5, 8/2 mg sublingual T; 5, 10, 20 ug/hr weekly patch	2 – 24
Clonidine (Catapres)	0.1, 0.2, 0.3 mg T; 0.1, 0.2, 0.3 TTS (patch), 0.1, 0.2 ER (Kapvay)	0.1 – .6
Dextroamphetamine* (Dexedrine)	5, 10 mg T; 5, 10, 15 mg Spansule; Liquid 5 mg / 5 ml Vyvanse [lisdexamfetamine] 20, 30, 40, 50, 60, 70 C	5 – 60 30 – 70
Dextromethorphan/quinidine (Nuedexta)	Dextromethorphan 20 mg/Quinidine 10 mg, 1cap X 7 days, 1 Q12 hr	1 Q 12hr
Disulfiram (Antabuse)	250 mg T	250 – 500
Donepezil (Aricept)	5, 10, 23 mg T; 5, 10 mg T ODT	5 – 23
Galantamine (Razadyne, old-Reminyl)	4, 8, 12 mg T; 8, 16, 23 ER C; 4 mg / ml	16 – 24
Glycopyrrolate (Cuvposa)	1mg/5ml; 16oz bot; start 0.02mg/kg TID, max 0.1mg/kg TID; age 3-16	1.5 – 3
Guanfacine (Tenex)	1, 2 mg T; 1, 2, 3, 4 mg XR (Intuniv)	1 – 4
Lorcaserin (Belviq)	10 mg T (for weight loss)	20
Memantine (Namenda)	5, 10 mg T; 7, 14, 21, 28 mg ER C; 2 mg/ml	10 – 28
Methamphetamine* (Desoxyn)	5, 10, 15 mg T	20 – 25
Methylphenidate* (Ritalin)	5, 10, 20 mg T; 10, 20, 30, 40 mg LA, C; Quillivant XR 5mg/ml	20 – 60
Methylin ER	10, 20 mg	
Metadate	10, 20 mg SR T; 10, 20, 30, 40, 50, 60 mg CD, C	
Daytrana QD patch	10, 15, 20, 30	
Concerta ER	18, ,27, 36, 54, mg T	18 – 72
dexmethylphenidate (Focalin)	2.5, 5, 10 mg T; 5, 10, 15, 20, 40 mg XR, C	10 – 20
Milnacipran (Savella)	12.5, 25, 50, 100 mg T	100 – 200
Modafinil* (Provigil)	100, 200 mg T; modafinil R-isomer (Nuvigil) 50, 150, 250 mg T	200 – 400
Naltrexone (Revia / Trexan)	50 mg T	50
(Vivitrol)	380 mg/vial	380 mg/mo
Olanzapine/fluoxetine (Symbyax)	6/25, 6/50, 12/25, 12/50 mg C	6/25 – 18/75
Perphenazine / Amitriptyline (Triavil)	2/10, 4/10, 2/25, 4/10, 4/25, 4/50	2 – 4 X Day
Phenteramine/topiramate (Qsymia)	3.75/23, 7.5/46, 11.25/69, 15/92 mg C (for weight loss)	7.5/46 – 15/92
Propranolol (Inderal)	10, 20, 40, 60, 80, 90 T; (LA; 60, 80, 120, 160 mg C)	40 – 240
Rivastigmine (Exelon)	1.5, 3, 4.5, 6 mg C; 2 mg / ml ; 4.6, 9.5, 13.3 mg 24 hr.patch	6 – 12
Sildenafil (Viagra)	25, 50, 100 mg T	25 – 100
Tadalafil (Cialis)	2.5, 5, 10, 20 mg T	10 – 20
Trihexyphenidyl (Artane)	2, 5 mg T; 5 mg Sequels	6 – 15
Vardenafil (Levitra)	2.5, 5, 10, 20 mg T	10 – 20
Varenicline (Chantix)	0.5, 1 mg T	1 – 2
Xyrem* (sodium Oxybate)	500 mg/ml oral solution (to order 866-997-3688)	3 – 9 gm

Legend: C = Capsule, T = Tablet, \* = Controlled Substance, ◇ caution > age 65, recent updates