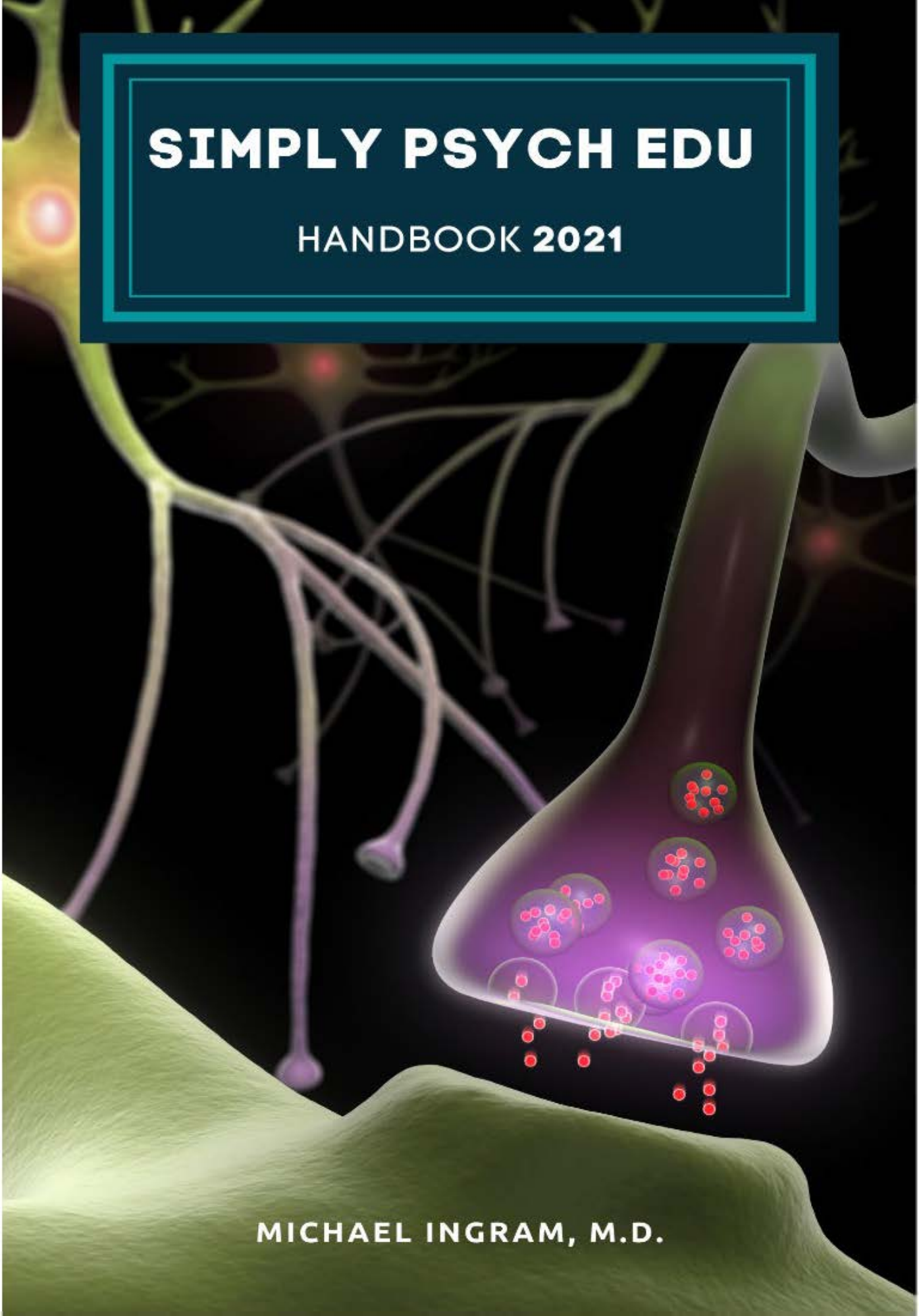
SIMPLY PSYCH EDU

HANDBOOK 2021



MICHAEL INGRAM, M.D.

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HANDBOOK

2021

FREE VERSION

MICHAEL T. INGRAM, M.D.

PURCHASE THE FULL VERSION AT THE SHOP

CONTENTS

PSYCHIATRIC EVALUATION

COMPONENTS OF THE EVALUATION

Patient Identification	**Name, Age, Gender identity**
Chief Complaint	**Reason for visit/admission**
History of Present Illness	**Symptom(s) onset, duration, severity, aggravating and alleviating factors, additional stressors.**
Psychiatric Review of Symptoms	**Depression (SIGECAPS)* Manic/Hypomanic Symptoms (DIGFAST)** Anxiety Symptoms Psychotic Symptoms**
Substance Use History	**Drug name(s), Date of first use, Quantity, Frequency, Duration, Longest period of sobriety (LPOS), Last use**
Past Psychiatric History	**Outpatient treatment history Inpatient treatment history Previous medication trials History of self-harm, suicide attempts, and violence**
Past Medical History	**Medical problems, Past Surgeries, Medications, Allergies**
Family History	**Psychiatric Disorders, Suicide attempts, completed suicide, substance use**
Social History	**Birthplace Early parental figures Developmental Milestones Education history**

	Relationship History **Marital status** **Social Support** **Religious preference** **Trauma and/or Abuse history** **Current Living Situation** **Employment History** **Legal History (arrests, DUIs, prison time)**
Medical Review of Systems	**Constitutional** **Skin** **HEENT** **Neck** **Cardiovascular** **Pulmonary** **Gastrointestinal** **Genitourinary** **Musculoskeletal** **Lymphatic** **Endocrine** **Neurological**
Physical Examination	**Mental Status Exam** **Neurological Exam** **Neurobehavioral Exam**

***SIGECAPS: Sleep disturbances, lack of Interest, low Energy, Concentration problems, Appetite changes, Psychomotor changes, Suicidal thoughts**

****DIGFAST: Distractibility, Impulsivity, Grandiosity, Flight of Ideas, Agitation, lack of Sleep, Talkative/pressured speech**

MENTAL STATUS EXAMINATION

VITAL SIGNS	**Temperature, Heart Rate, Blood Pressure, Respiratory Rate, Oxygen Saturation, Weight, Height**
ALERTNESS/ORIENTATION	**Is the patient awake, alert, and oriented to person, place, time, date, situation? Is the patient drowsy, confused, sedated, or lethargic?**
APPEARANCE	**Does the patient appear his or her age? Is the patient wearing appropriate attire? Is the patient disheveled? How is the patient's hygiene? Are there any physical abnormalities or distinguishing features such as tattoos, hairstyle, scars, or unusually smells? How is the patient's posture?**
BEHAVIOR	**Is the patient cooperative? Does the patient make appropriate eye contact? Behavioral descriptors include guarded, evasive, angry, seductive, bored, distracted, disinterested, indifferent/apathetic, pleasant, preoccupied, sarcastic, passive-aggressive, hostile, threatening, crying, tearful, smiling, laughing (inappropriate laughing, giggling, smiling).**

MOTOR	**Is the patient's motor activity slowed/decreased (e.g., parkinsonian, catatonic) or hyperactive/agitated/increased (e.g., restless, fidgety, chorea, pacing, foot tapping, hand wringing, skin picking)? Any abnormal movements present such as tics, dystonia, rigidity, tardive dyskinesia, athetoid, akathisia? Does the patient have a normal gait?**
SPEECH	**How is the patient's speech rate, rhythm, volume, quantity, articulation? Does the patient speak fluently and spontaneously?**
MOOD	**How does the patient describe their mood state?**
AFFECT	**How does the patient's mood appear to you (i.e., affect is the outward expression of the patient's emotional state)? Note the Stability, Range, Appropriateness, Intensity, and Quality (depressed, sad, happy, angry, euphoric, irritable, anxious, neutral, fearful, apathetic, pleasant)**
THOUGHT CONTENT	**Does the patient have suicidal ideations (passive, active), homicidal ideations, depressive cognitions, obsessions, compulsions, ruminations, phobias, ideas of reference, paranoid ideation, magical ideation, delusions, overvalued ideas? Are there any recurrent major themes discussed by the patient?**

THOUGHT PROCESS	**Is the patient's thought process linear, logical, and goal-directed or is it circumstantial, tangential, illogical, perseverative, and incoherent? Does the patient have disorganized thoughts, flight of ideas, loose associations, clang associations, neologisms, or thought blocking?**
PERCEPTION	**Does the patient report Hallucinations, Illusions, Depersonalization, Derealization, Déjà vu, Jamais vu? Is the patient responding to internal stimuli?**
INTELLECT	**Average, above average, below average?**
INSIGHT	**Does the patient demonstrate adequate understanding of their illness and the current situation?**
JUDGEMENT	**Does the patient have good judgement? Ask a question RELATED TO THE CURRENT SITUATION (e.g., hypothetical scenarios, etc.).**
IMPULSE CONTROL	**Is the patient impulsive and unpredictable?**

EMERGENCY PSYCHIATRY

ACUTE AGITATION

BEHAVIORAL INTERVENTIONS:

- ✓ Use an empathetic tone, give space, show your hands
- ✓ Offer choices such as food, drink, a quiet room, etc.
- ✓ Decrease external stimuli (quiet room, etc.)
- ✓ Show concern. Avoid being defensive or authoritative

PHARMACOLOGICAL INTERVENTIONS (WHEN ABOVE FAILS):

- ✓ ***Psychotic agitation***
  - ❖ Haloperidol 2mg-10mg PO/IM ± Lorazepam 1-2mg
  - ❖ Olanzapine 2.5mg-10mg PO/IM/ODT (dissolvable)
  - ❖ Ziprasidone 10mg-20mg PO/IM
  - ❖ Chlorpromazine 25mg-100mg PO/IM
  - ❖ Risperidone 1mg-2mg M-Tab/PO
- ✓ ***Alcohol/CNS Depressant intoxication:***
  - ❖ Haloperidol 2mg-10mg PO/IM
- ✓***Alcohol/Benzodiazepine withdrawal:***
  - ❖ Lorazepam 1mg-2mg PO/IM/IV
  - ❖ Diazepam 5mg-10mg PO
  - ❖ Chlordiazepoxide 50mg PO
- ✓***Stimulant-induced agitation***
  - ❖ Lorazepam 1mg-2mg PO/IM/IV
  - ❖ Diazepam 5mg-10mg PO
  - ❖ Chlordiazepoxide 50mg PO

DRUGS OF ABUSE

URINE TOXICOLOGY:

Drug	Duration(+UDS)
Amphetamines	1-3 days after use
Cocaine	2-4 days after use**
Opiates[a]	2-3 days after use
Benzodiazepines	1-14 days[#]
Cannabis/THC[a]	2-10 days**
PCP	10-20 days
Barbiturates	2-20 days[#]

[a]Drugs not detected: methadone, naloxone, fentanyl, propofol, synthetic cannabinoids (spice, K, etc).
***Rough estimates (may be test dependent)
****May be longer in chronic or high-dose users.
[#]Depends on the specific drug used

FALSE POSITIVES:

False (+) for	Medications/Herbs/Food
Amphetamines	Bupropion, Selegiline, Chlorpromazine, Propranolol, Pseudoephedrine, Ephedrine, Tyramine, Trazodone, Ranitidine, Amantadine
Opiates	Poppy seeds, dextromethorphan, rifampin, verapamil, quinolones
Benzodiazepines	Sertraline, Oxaprozin, Efavirenz
LSD	Imipramine, bupropion, amitriptyline,
PCP	Dextromethorphan, tramadol, venlafaxine, quinolones
TCAs	Cyclobenzaprine, Cyproheptadine, hydroxyzine

SEROTONIN SYNDROME & NMS

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LITHIUM TOXICITY

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CATATONIA

PRESENTATION:

- ✓ **Psychomotor retardation**: Catalepsy, Rigidity, Stupor
- ✓ **Motor agitation**: Purposeless movements
- ✓ **Mutism/Negativism:** Resists instructions, nonverbal
- ✓ **Echolalia/Echopraxia:** Copying the interviewer
- ✓ **Bizarre postures/stereotypy/Grimacing**

CAUSES:

- ✓ **Medical:** Drugs, Poisons, Infections, CNS diseases
- ✓ **Psychiatric:** Mood disorders, Schizophrenia, Conversion

TREATMENT:

- ✓ Medical workup to **find and treat suspected cause**
- ✓ **Lorazepam PO/IM/IV** 1-2mg q30min (20mg/d max)
- ✓ Switch to PO/NG (6-20mg/day) for maintenance
- ✓ Monitor heart rate and respiratory rate
- ✓ **Alternatives:** Zolpidem, Amantadine, memantine
- ✓ **ECT** (if unresponsive to meds or malignant)

SUICIDE RISK ASSESSMENT

RISK FACTORS

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PROTECTIVE FACTORS

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RISK FACTORS FOR VIOLENCE:

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CONSULTATION LIAISON PSYCHIATRY

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PSYCHOPHARMACOLOGY IN MEDICALLY COMPLEX PATIENTS

PATIENTS WITH CARDIOVASCULAR DISEASE

RULE OUT NEUROPSYCHIATRIC EFFECTS OF CARDIAC MEDICATIONS

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DRUG	NEUROPSYCHIATRIC EFFECTS
α-blockers	Depression, sexual dysfunction
Amiodarone	Hypothyroidism (depressed mood/fatigue)
ACEIs	Mood changes (rare)
Antiarrhythmics (e.g., lidocaine)	Hallucinations, confusion, delirium
B-Blockers	Fatigue, sexual dysfunction
Digoxin	Visual Hallucinations (colored rings around objects), delirium, depression
Diuretics	Anorexia, weakness, apathy due to electrolyte abnormalities. Thiazides sometimes cause erectile dysfunction.

PHARMACOKINETIC CHANGES IN HEART DISEASE

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Type text here **Left-Sided heart failure**	• Decreased hepatic artery blood flow decreases Phase I metabolism • Decreased renal artery blood low decreases GFR which reduces excretion of lithium, gabapentin, pregabalin, paliperidone, and memantine (and other renally excreted drugs)
Right-Sided heart failure	• Hepatic congestion and gut wall edema decrease absorption. • Hepatic cirrhosis from congestion leads to reduced albumin, ascites, and α1-acid glycoprotein which causes changes in free drug levels (and thus distribution of drugs)

ANXIOLYTICS/SEDATIVE-HYPNOTICS IN CARDIAC DISEASE

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ANTIDEPRESSANTS IN CARDIAC DISEASE

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MOOD STABILIZERS IN CARDIAC DISEASE

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QT PROLONGATION

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QTC PROLONGATION TABLES

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PATIENTS WITH LIVER DISEASE

✓**Adjust dose according to Child Pugh Score**

Class A: 75%-100% of normal dose

Class B: 50% of normal dose

Class C: Caution/Avoid use

Parameter	Numerical score		
	1	2	3
Ascites	None	Slight	Moderate to severe
Encephalopathy	None	Slight to moderate	Moderate to severe
Bilirubin (mg/dL)	< 2.0	2-3	> 3.0
Albumin (g/dL)	> 3.5	2.8-3.5	< 2.8
Prothrombin time (prolonged in seconds)	1-3 s	4-6 s	> 6.0

Child's Pugh Class A = 5-6 points; Child's Pugh Class B = 7-9 points; Child's Pugh Class C = 10-15 points.

PSYCHOTROPICS WITH HEPATOTOXIC POTENTIAL

- ✓ **Divalproex**
- ✓ **Carbamazepine**
- ✓ **Duloxetine**
- ✓ **Naltrexone**
- ✓ **Disulfiram**
- ✓ **Nefazodone**

ELEVATED TRANSAMINASES (ALT>AST) SEEN MOSTLY WITH

- ✓ **Olanzapine | Quetiapine**
- ✓ **Carbamazepine | Divalproex**
- ✓ **TCAs | SNRIs**
- ✓ **Benzodiazepines**

- ✓ **NSAIDs | Acetaminophen**
- ✓ **Statins**
- ✓ **ACE Inhibitors**
- ✓ **Omeprazole**
- ✓ **Allopurinol**
- ✓ **Oral Contraceptives**

LIVER IMPAIRMENT & ALCOHOL WITHDRAWAL:

- ✓ **Lorazepam**
- ✓ **Oxazepam**
- ✓ **Temazepam**

PATIENTS WITH RENAL DISEASE

HEMODIALYSIS (HD) PATIENTS

- ✓ Duloxetine is not properly excreted in HD (CNS Toxic)
- ✓ Mirtazapine and Amitriptyline levels ↓ after HD
- ✓ Fluoxetine (and norfluoxetine) levels not affected
- ✓ TCAs have longer elimination half-life in HD pts
- ✓ Lithium in HD patients (give dose after HD treatment)

MEDICATIONS AND EFFECTS ON URINARY SYSTEM

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RESPIRATORY DISEASE

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PATIENTS WITH NEUROLOGICAL DISEASE

POST STROKE DEPRESSION

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PSEUDOBULBAR AFFECT

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PARKINSON'S DISEASE

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HUNTINGTON'S DISEASE

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TRAUMATIC BRAIN INJURY

Depression/Anxiety:

- ✓ SSRIs (start low and go slow)
- ✓ Nortriptyline

Post-Concussion Headache:

- ✓ Amitriptyline
- ✓ Nortriptyline

Mania/Mood lability:

- ✓ Valproic acid
- ✓ Carbamazepine

Cognitive Enhancement:**

- ✓ Stimulants (amphetamines, methylphenidate, modafinil)
- ✓ Milnacipran
- ✓ Amantadine

**Controversial results with SSRIs, Antipsychotics, Acetylcholinesterase inhibitors

SEIZURE RISK & ANTIPSYCHOTICS

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CAPACITY

CAPACITY VS. COMPETENCE

Capacity: A clinical term for an individual's ability to make an informed decision about a specific treatment. Must be a specific question that is being addressed.
Competence: A legal term determined only by the court. Defined as the ability to understand and rationally apply knowledge to a decision-making process. Everyone is assumed competent until proven otherwise.

Standard for capacity changes depending on risk/benefit of the patient's choice.

CRITERIA FOR DECISION-MAKING CAPACITY

1) ***Communicate a choice***
   - Pt should be able to indicate a preference
   - Pt's choice should remain consistent
2) ***Understand the relevant information***

- Pt should paraphrase info in his/her own words
- Pt should grasp the meaning of info provided

3) *Appreciate the situation and its consequences*

- Pt should acknowledge his/her condition
- Pt should appreciate reasons for treatment
- Pt should be able to describe possible outcomes

4) *Reason about treatment options*

- Pt should engage in rational conversation
- Pt should be able to share reason behind choice

DOCUMENTING CAPACITY

"A thorough capacity evaluation was completed and based upon that evaluation, this patient DEMONSTRATES/LACKS capacity to [insert text]. This patient DOES/DOES NOT express a consistent preference regarding [inset text]. This patient DOES/DOES NOT have a factual understanding of the current situation as evidenced by [examples]. This patient DOES/DOES NOT appreciate the risks and benefits of treatment and nontreatment and is able/unable to rationally manipulate information to make this decision as evidenced by [examples]. Therefore it is my professional opinion that this patient DEMONSTRATES/LACKS capacity to [insert text]."

If capacity is present, respect the decision.

If capacity is not present, a substitute decision maker is needed

In emergency situations (imminent risk of loss of life or limb) treatment may be provided without consent if a physician act

in good faith and has determined that the patient does not have the capacity to refuse such treatment.

PREGNANCY & POST-PARTUM PERIOD

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INPATIENT PSYCHIATRY

TREATING COMMON PATIENT COMPLAINTS:

✓INSOMNIA

- Zolpidem 5mg-10mg PO QHS
- Zaleplon 5mg-20mg PO QHS
- Melatonin 1mg-10mg PO QHS
- Trazodone 12.5mg-100mg PO QHS
- Doxepin 10mg-50mg PO QHS
- Mirtazapine 7.5mg-45mg PO QHS
- Temazepam 7.5mg-30mg PO QHS
- Diphenhydramine 25mg-100mg PO QHS
- Quetiapine 12.5mg-100mg PO QHS
- Olanzapine 2.5mg-5.0mg PO QHS
- Gabapentin 100-900mg PO QHS
- Ramelteon 8mg PO QHS

✓BREAK-THROUGH ANXIETY

- Hydroxyzine (Vistaril) 25mg-50mg PO PRN
- Diphenhydramine (benadryl) 25mg-100mg PO PRN
- Clonidine (minipress) 0.1mg PO PRN
- Lorazepam (Ativan) 1mg-3mg PO PRN

✓PAIN

- Internal medicine consult
- Ibuprofen 400mg PO Q4-6hr PRN

✓PRURITUS

- Diphenhydramine 25mg-50mg PO PRN

✓AKATHISIA

- Restlessness/urge to move/ants in pants
- Propranolol (Inderal) 10mg-30mg PO TID
- Benztropine (Cogentin) 1mg-2mg PO BID
- Lorazepam (Ativan) 1mg PO TID
- Clonazepam (klonopin) 0.5mg PO BID

✓DYSTONIC REACTIONS

- Acute muscular rigidity and cramping
- Benztropine 2mg IM (repeat in 20min if needed)
- Diphenhydramine 50mg IM
- Lorazepam 1mg-2mg IM

✓PARKINSONISM

- Bradykinesia, rigidity of limbs, resting tremor
- Cogwheeling, masked facies, stooped posture
- Festinating gait, drooling
- Switch from typical to atypical (use lowest dose)
- Add Benztropine 1mg-2mg PO BID

✓TARDIVE DYSKINESIA

- Evaluate need for continued antipsychotic treatment

- Switch from typical to atypical (or another atypical)
- Trial of Clozapine
- Valbenazine (Ingrezza)

PSYCHOPHARMACOLOGY

DRUG SCHEDULES

Schedule	Criteria	Examples
I	No medical use; High addiction potential	Heroin, LSD, mescaline, PCP, MDMA, Marijuana
II	Medical use; high addiction potential opioids and barbiturates	Amphetamines, Cocaine, Methylphenidate

III	**Medical use; moderate abuse potential**	**Anabolic Steroids, barbiturates, dronabinol, ketamine**
IV	**Medical use; low abuse potential**	**Benzodiazepines, chloral hydrate, phentermine, sibutramine, weak opioids, zolpidem**

TERMS & DEFINITIONS:

- **Psychotropic Medication:** Ion or compound used primarily to treat signs/symptoms of mental disorders, diseases, or defects
- **Agonist**: Produces an effect on signal transduction similar in direction and degree to the naturally occurring neurotransmitter
- **Antagonist:** Produces no change in signal transduction (i.e., when bound to a receptor does not activate the receptor)
- **Partial Agonist:** Produces a change in signal transduction which is in the same direction as the natural neurotransmitter, but weaker
- **Inverse Agonist:** Produces a change in signal transduction opposite to that of the naturally occurring neurotransmitter
- **Allosteric Modulation:** When an ion/compound acts at a secondary site on the receptor that isn't the active site
- **Binding Affinity:** A measure of van der Waals forces between ion/compound and its receptor. Mathematically expressed

as one divided by the dissociation constant of the medication. (The dissociation constant is a measure of the concentration of medication needed to saturate one-half of the receptors present.)

DRUG LEVELS, LABS, & MONITORING

Drug	Therapeutic range	Labs
Antipsychotics	---	▪Baseline/yearly: CBC, CMP, Hba1c, TSH, Lipid panel ▪Monitor weight ▪Consider Baseline EKG ▪Yearly AIMS*
Clozapine	---	▪Same as above (except CBC scheduling) ▪CBC (ANC) Schedule: Check at baseline, weekly for 6 months, then biweekly for 6 months, then monthly after 1 year
Lithium	▪Acute: 0.8-1.2mEq/L ▪Chronic: 0.50-0.75mEq/L	▪Baseline/2-3x per year: CBC, Cr, BUN, TSH, CMP ▪Consider baseline EKG in pts >50yo ▪Monitor weight

		▪Check Li levels after 4-5 half lives (blood should be collected prior to next dose) ▪Recheck Li levels after dose changes, addition of other drugs, or if suspecting toxicity
Valproic acid	▪ 45-125ug/ml (Manic patients may require/ tolerate higher levels)	▪Baseline/q6-12mos: CBC, LFTs, Electrolytes, TSH
Carbamazepine	---	▪Baseline: Na, CBC, BUN, Cr, LFTs, TSH ▪Monitor weight ▪Follow CBC and Na q2-4wks for 8 wk then q3-6mos ▪Follow BUN, Cr, LFTs, and TSH q6-12mos
SNRIs, Bupropion, TCAs, MAOIs	---	▪Monitor blood pressure & HR

*AIMS (Abnormal Involuntary Movement Scale)

ANTIPSYCHOTICS

SIDE EFFECTS (LEAST TO MOST)

Sedation	Weight Gain	EPS
Aripiprazole	Aripiprazole	Clozapine
Lurasidone	Lurasidone	Quetiapine
Paliperidone	Ziprasidone	Aripiprazole
Risperidone	Asenapine	Asenapine
Ziprasidone	Paliperidone	Lurasidone
Asenapine	Risperidone	Olanzapine
Olanzapine	Quetiapine	Ziprasidone

Clozapine	Clozapine	Paliperidone
Quetiapine	Olanzapine	Risperidone
***EPS = Extrapyramidal Symptoms**		

BENZODIAZEPINES

- The rate of distribution as well as how lipid-soluble a benzodiazepine is determines its duration of action
- The first benzodiazepines were Chlordiazepoxide (1959) and Diazepam (1963)
- Alprazolam (1981), brand name Xanax, was the first benzodiazepine approved for panic disorder
- All benzodiazepines have structural similarity in that they all have a 1,4-benzodiazepine ring system
- Diazepam has a rapid onset of action due to its rapid absorption and distribution (very lipid-soluble)
- Diazepam has a shorter duration of clinical action than lorazepam after one dose
- Intramuscular administration of diazepam and chlordiazepoxide have unreliable and unpredictable absorption
- Benzodiazepines are all positive allosteric modulators of the GABA-A Receptor
- Benzodiazepines that preferentially bind to the α_1 subunit of the GABA-A receptor are thought to have more sedative/hypnotic effects while those that preferentially bind to the α_2 and α_3 subunits of the GABA-A receptor are thought

to have anti-anxiety effects (but there is little evidence to support this at this time)

- Benzodiazepines increase the binding affinity of GABA for its receptor and increase the frequency of opening of the chloride channel embedded within the GABA-A receptor.
- This leads to increased chloride influx and hyperpolarization of the dendritic portion of neurons bearing GABA-A receptors).
- When benzodiazepines are given to an individual suffering from acute stress disorder, the probability of conversion to PTSD is roughly doubled (i.e., benzodiazepines may interfere with post trauma adaptation).
- Exposure therapies for anxiety disorders and PTSD do not work as well if performed in the presence of a benzodiazepines.
- Short course of benzodiazepines are commonly prescribed when starting SSRIs/SNRIs in patients with high anxiety to minimize activating side effects that can occur when initiating these agents
- The following benzodiazepines have little, if any, phase 1 metabolism in the liver and primarily undergo glucuronidation (and therefore they are preferred for individuals with hepatic impairment):
  - *Oxazepam*
  - *Temazepam*
  - *Lorazepam*
- Benzodiazepines have been associated with:
  - *Tolerance, physical dependence, withdrawal*
  - *Abuse potential*

- *Ataxia*
- *Diminished attention*
- *Failure of memory consolidation*
- *Increased risk of falls in the elderly*
- *Increased risk of delirium in the elderly*

BENZODIAZEPINE EQUIVALENCY TABLE:

	Dosage Equivalency (mg)	Elimination half-life (hrs)
Alprazolam (Xanax)	0.5	6-20
Chlordiazepoxide (Librium)	**10**	**30-100**
Clonazepam (Klonopin)	0.25	18-50
Diazepam (Valium)	**5**	**30-100**
Lorazepam (Ativan)	1	10-20
Midazolam (Versed)	**--**	**2-3**
Oxazepam (Serax)	15	8-12
Temazepam (Restoril)	**30**	**8-20**

TREATING EXTRAPYRAMIDAL SYMPTOMS

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DRUG INTERACTIONS TABLE

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HIGH YIELD PSYCHOPHARMACOLOGY CONCEPTS

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IMPORTANT DRUG-DRUG INTERACTIONS

VALPROIC ACID (VPA) + LAMOTRIGINE:

- ✓ Valproic acid (VPA) increases lamotrigine levels
- ✓ Increases risk of Steven-Johnson's Syndrome (SJS/TEN)
- ✓ When using both, decrease the dose of lamotrigine by 50%

CARBAMAZEPINE (CBZ) IS AN INDUCER OF CYP3A4

- ✓ CBZ induces its own metabolism
- ✓ CBZ induces the metabolism of numerous other medications including oral contraceptives, clozapine, alprazolam, buspirone, and clonazepam

LITHIUM + NSAIDS (NOT ASPIRIN), ACE INHIBITORS, THIAZIDE DIURETICS, LOW SODIUM DIET:

- ✓ Increases lithium levels

LITHIUM + CAFFEINE, THEOPHYLLINE, HIGH SODIUM DIET:

- ✓ Decreases lithium levels

GRAPEFRUIT JUICE

- ✓ Grapefruit juice is a potent inhibitor of CYP3A4 and P-glycoprotein
- ✓ Grapefruit juice increases blood levels of many medications metabolized by CYP3A4

SMOKING TOBACCO CIGARETTES:

- ✓ Induces activity of CYP1A2
- ✓ The induction does not appear to be from the nicotine, but from the hydrocarbons in smoke
- ✓ Decreases blood levels of medications metabolized by CYP1A2 (Olanzapine, Clozapine, Caffeine)

TYRAMINE

- ✓ Increased risk of hypertensive crisis when eating tyramine containing foods while taking MAOIs, SSRIs, TCAs, Pseudoephedrine, and Stimulants
- ✓ Tyramine-rich foods include banana peel, beer, fava beans, aged cheese, sauerkraut, sausage, soy sauce, concentrated yeast extract.

FLUOXETINE, PAROXETINE, AND BUPROPION ARE POTENT INHIBITORS OF CYP2D6

- ✓ They can raise blood levels of medications metabolized by CYP2D6.
- ✓ Tamoxifen and Codeine are prodrugs requiring metabolism by CYP2D6. Efficacy of these drugs may be decreased when used with inhibitors of CYP2D6.

ANTIMICROBIAL-PSYCHOTROPIC DRUG INTERACTIONS:

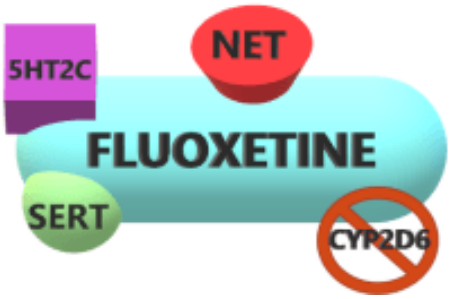
- ✓ **Antimalarials**: Increase phenothiazine (e.g. chlorpromazine) levels
- ✓ **Azoles**: Increase alprazolam, midazolam, and buspirone levels
- ✓ **Clarithromycin, Erythromycin**: Increase alprazolam, midazolam, carbamazepine, clozapine, and buspirone levels
- ✓ **Quinolones**: Increase clozapine and benzodiazepine levels but decreases benzodiazepine effects
- ✓ **Isoniazid:** Increases haloperidol and carbamazepine levels. Isoniazid + disulfiram can cause ataxia
- ✓ **Linezolid**: Serotonin syndrome if used with serotonergic drugs

OTHER INTERACTIONS/ADVERSE REACTIONS:

- ✓ **Erythromycin, Clarithromycin, and Ketoconazole**: QT prolongation and ventricular arrythmias with TCAs and antipsychotics
- ✓ **Linezolid is an irreversible MAO-A inhibitor**: Serotonin syndrome and Hypertensive crisis
- ✓ **Isoniazid is a weaker MAO inhibitor**: Reports of Serotonin syndrome and hypertensive crisis

MEDICATION QUICK REFERENCE

FLUOXETINE (PROZAC)



HALF-LIFE: 1-16 days

STARTING DOSE: 10mg-20mg PO once daily

TARGET DOSING RANGE: 20mg-60mg PO daily

BEST TIME TO DOSE: Morning

HOW TO DOSE: Start 10mg to 20mg every morning and increase dose by 10mg-20mg every 4-6 weeks as tolerated. Max dose 80mg/day

SIDE EFFECTS: Nausea, heartburn, diarrhea, upset stomach, sweating, headache, fatigue, low libido (delayed ejaculation in men; anorgasmia in women), initial anxiety, increased risk of bleeding, restlessness, jitteriness, insomnia, emotional

blunting/flattening "feeling flat." Some of these side effects (e.g., nausea, jitteriness, increased anxiety, upset stomach, diarrhea, insomnia) are common when starting SSRI antidepressants but typically go away after 5-7 days of consistently taking the medication as prescribed.

PREGNANCY: SAFE

BREASTFEEDING: SAFE

FDA INDICATIONS:
1) Major depressive disorder (age 8 and older)
2) Obsessive-compulsive disorder (age 7 and older)
3) Panic disorder
4) Bulimia Nervosa
5) Binge eating disorder
6) Premenstrual dysphoric disorder
7) Bipolar depression (in combination with olanzapine)
8) Treatment-resistant depression (in combination with olanzapine)

ADDITIONAL INFORMATION:

- Fluoxetine can be activating for many individuals and therefore is a good option for those without energy or motivation. Probably ***NOT*** be the best option for those with severe anxiety
- Fluoxetine rarely causes withdrawal symptoms when stopped because it has an active metabolite with a half life of up to 2 weeks!

- Fluoxetine is not the best choice if also taking Tamoxifen or Codeine

SERTRALINE (ZOLOFT)

HALF-LIFE: Sertraline 1-3 days

STARTING DOSE: 25mg-50mg PO once daily

TARGET DOSING RANGE: 50mg-200mg

BEST TIME TO DOSE: Morning

HOW TO DOSE: Initial 25mg PO daily. Increase by 25mg every 4-6 weeks as needed to max dose 200mg/day. Max dose 200mg daily (some may require up to 300mg/day)

SIDE EFFECTS: Nausea, heartburn, diarrhea, upset stomach, sweating, headache, fatigue, low libido (delayed ejaculation in men; anorgasmia in women), initial anxiety, increased risk of bleeding, restlessness, jitteriness, insomnia, emotional blunting/flattening "feeling flat." Some of these side effects (e.g., nausea, jitteriness, increased anxiety, upset stomach, diarrhea, insomnia) are common when starting SSRI antidepressants but typically go away after 5-7 days of consistently taking the medication as prescribed.

PREGNANCY: SAFE

BREASTFEEDING: SAFE (minimal secretion in breast milk)

FDA INDICATIONS:
1) Major depressive disorder (age 8 and older)
2) Panic Disorder
3) Obsessive Compulsive Disorder
4) Social Anxiety Disorder
5) Post Traumatic Stress Disorder
6) Premenstrual dysphoric disorder

ADDITIONAL INFORMATION:

- Sertraline may be more activating and have less sexual side effects than other SSRIs

PAROXETINE (PAXIL)

HALF-LIFE: <20 hours (no active metabolites)

STARTING DOSE: 10mg-20mg PO once daily

TARGET DOSING RANGE: 20mg-50mg PO daily

BEST TIME TO DOSE: Evening (at bedtime)

HOW TO DOSE: Initial 10mg-20mg at bedtime. Increase dose by 10mg-20mg every 4-6 weeks. Max dose 50mg per day

SIDE EFFECTS: Nausea, heartburn, diarrhea, upset stomach, sweating, headache, fatigue, low libido (delayed ejaculation in men; anorgasmia in women), initial anxiety, increased risk of bleeding, restlessness, jitteriness, insomnia, emotional blunting/flattening "feeling flat." Some of these side effects (e.g., nausea, jitteriness, increased anxiety, upset stomach, diarrhea, insomnia) are common when starting SSRI

antidepressants but typically go away after 5-7 days of consistently taking the medication as prescribed.

PREGNANCY: AVOID IN PREGNANCY (if possible)

BREASTFEEDING: SAFE

FDA INDICATIONS:
1) Major depressive disorder
2) Panic Disorder
3) Obsessive Compulsive Disorder
4) Social Anxiety Disorder
5) Post Traumatic Stress Disorder
6) Generalized Anxiety Disorder
7) Premenstrual Dysphoric Disorder

ADDITIONAL INFORMATION:

- Paroxetine can be sedating and is usually dosed at night
- Paroxetine may cause constipation, urinary retention, blurred vision, and weight gain
- Paroxetine is not the best choice for the elderly or those who are sensitive to side effects
- Paroxetine is good for anxious-type depression especially when insomnia is present
- Paroxetine is notorious for causing sexual dysfunction in men
- Paroxetine has no active metabolites and a relatively short half life which means it is likely to cause withdrawal symptoms if stopped too quickly

- Paroxetine is not a good choice if also taking tamoxifen or codeine

FLUVOXAMINE (LUVOX)

HALF-LIFE: 15 hours

STARTING DOSE: 50mg-100mg PO daily

TARGET DOSING RANGE: 100mg-200mg daily

BEST TIME TO DOSE: Any

HOW TO DOSE: Initial 50mg-100mg PO once daily. Doses over 100mg/day of immediate release require BID dosing. Increase dose by 50mg/day every 1-2 weeks as tolerated. Max dose 200mg/day (some patient require doses up to 300mg/day)

SIDE EFFECTS: Nausea, heartburn, diarrhea, upset stomach, sweating, headache, fatigue, low libido (delayed ejaculation in men; anorgasmia in women), initial anxiety, increased risk of bleeding, restlessness, jitteriness, insomnia, emotional blunting/flattening "feeling flat." Some of these side effects (e.g., nausea, jitteriness, increased anxiety, upset stomach, diarrhea, insomnia) are common when starting SSRI antidepressants but typically go away after 5-7 days of consistently taking the medication as prescribed.

PREGNANCY: AVOID, if possible (not enough data)

BREASTFEEDING: AVOID, if possible (not enough data)

FDA INDICATIONS:
1) Obsessive Compulsive Disorder
2) Social Anxiety Disorder

CITALOPRAM (CELEXA)

HALF-LIFE: 35 hours

STARTING DOSE: 10mg-20mg PO once daily

TARGET DOSING RANGE: 20mg-40mg PO daily

BEST TIME TO DOSE: Morning

HOW TO DOSE: Initial 10mg-20mg PO once daily. Increase dose by 10mg every 4-6 weeks to max dose 40mg daily. Max dose 40mg/day (some may require up to 80mg/day)

SIDE EFFECTS: Nausea, heartburn, diarrhea, upset stomach, sweating, headache, fatigue, low libido (delayed ejaculation in men; anorgasmia in women), initial anxiety, increased risk of bleeding, restlessness, jitteriness, insomnia, emotional blunting/flattening "feeling flat." Some of these side effects (e.g., nausea, jitteriness, increased anxiety, upset stomach, diarrhea, insomnia) are common when starting SSRI antidepressants but typically go away after 5-7 days of consistently taking the medication as prescribed.

PREGNANCY: SAFE

BREASTFEEDING: SAFE

FDA INDICATIONS:
1) Major depressive disorder

ADDITIONAL INFORMATION:

- Citalopram (Celexa) is a racemic mixture of R,S enantiomers
- R-enantiomer may interfere with SERT inhibition.
- Citalopram is well tolerated by most people
- Citalopram is a good option for elderly patients
- Risk of QTc prolongation (dose dependent >40mg/day)
- Citalopram is a weak inhibitor of CYP2D6

ESCITALOPRAM (LEXAPRO)

HALF-LIFE: 32 hours

STARTING DOSE: 5mg-10mg PO once daily

TARGET DOSING RANGE: 20mg-40mg PO daily

BEST TIME TO DOSE: Anytime

HOW TO DOSE: Initial 5-10mg PO daily. Increase dose by 10mg every 4-6 weeks. Max dose 40mg per day

SIDE EFFECTS: Nausea, heartburn, diarrhea, upset stomach, sweating, headache, fatigue, low libido (delayed ejaculation in men; anorgasmia in women), initial anxiety, increased risk of bleeding, restlessness, jitteriness, insomnia, emotional blunting/flattening "feeling flat." Some of these side effects (e.g., nausea, jitteriness, increased anxiety, upset stomach, diarrhea, insomnia) are common when starting SSRI antidepressants but typically go away after 5-7 days of consistently taking the medication as prescribed.

PREGNANCY: SAFE

BREASTFEEDING: SAFE

FDA INDICATIONS:
1) Major depressive disorder
2) Generalized Anxiety Disorder

ADDITIONAL INFORMATION:

- **Escitalopram** (Lexapro) is the S-enantiomer of R,S-Citalopram (Celexa)
- Escitalopram is a "Pure SSRI" with minimal side effects
- Almost no drug-drug interactions
- Some evidence of QT prolongation at higher doses (>20mg)

DULOXETINE (CYMBALTA)

VENLAFAXINE (EFFEXOR)

DESVENLAFAXINE (PRISTIQ)

LEVOMILNACIPRAN (FETZIMA)

BUPROPION (WELLBUTRIN)

MIRTAZAPINE (REMERON)

TRAZODONE (DESYREL)

VORTIOXETINE (TRINTELLIX)

TRICYCLIC ANTIDEPRESSANTS (TCAS)

BUSPIRONE (BUSPAR)

GABAPENTIN (NEURONTIN)

PREGABALIN (LYRICA)

LITHIUM

VALPROIC ACID (DEPAKOTE)

CARBAMAZEPINE (TEGRETOL)

LAMOTRIGINE (LAMICTAL)

TOPIRAMATE (TOPAMAX)

METHYLPHENIDATE (RITALIN, CONCERTA)

(D,L) AMPHETAMINE (ADDERALL)

(D) AMPHETAMINE (DEXEDRINE)

LISDEXAMFETAMINE (VYVANSE)

TYPICAL ANTIPSYCHOTICS

ATYPICAL ANTIPSYCHOTICS

CLOZAPINE (CLOZARIL)

RISPERIDONE (RISPERDAL)

OLANZAPINE (ZYPREXA)

QUETIAPINE (SEROQUEL)

ARIPIPRAZOLE (ABILIFY)

ZIPRASIDONE (GEODON)

ASENAPINE (SAPHRIS)

LURASIDONE (LATUDA)

DSM-5 DIAGNOSTIC CRITERIA

ICD-10 CODES

NEURODEVELOPMENTAL DISORDERS

NOT AVAILABLE WITH FREE VERSION

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