

Depression At a Glance

- 7.4% of the adult population in the US has experienced an episode of major depression ¹
- Only 35% of those having an episode of major depression seek treatment for the condition ²
- Median age of onset in the United States is 32.4 years, with a higher prevalence in women ³
- From 2015-2018, 13.2% of adults over 18 years-old used an antidepressant in the last month ⁴
- In a 2018 survey, 10.6% of office visits reported depression in the electronic health record ⁴
- Current guidelines stress the importance of provider knowledge for treatment success

Pathophysiology

Likely related to deficiencies in...

Serotonin (5-HT)
Norepinephrine (NE)
Dopamine (DA)

Risk Factors ^{5,6}

Family history, female sex, life stressors, widowed, separated, or divorced, low income, unemployed, disability, chronic illness, comorbid psychiatric disorders, medications (blood pressure medications, hormonal contraception, benzodiazepines, steroids)

Screening and Diagnosis

DSM-V Criteria

5 or more symptoms in the last 2 weeks.

Depressed Mood*

(S)leep Disturbances

(I)nterest or Pleasure Diminished*

(G)uilt or Worthlessness

(E)nergy Decreased

(C)oncentration Decreased

(A)ppetite Changes

(P)sychomotor Agitation or Retardation

(S)uicidal Ideation

*Must include one or both depressed mood or anhedonia

PHQ-9

20-27: Severe Depression

15-19: Moderately Severe Depression

10-14: Mild Depression

5-9: Minimal Symptoms

< 5: Absent Symptoms

Severe Depression

Psychotherapy AND Medication

Moderately Severe Depression

Psychotherapy AND/OR Medication

Mild Depression

Psychotherapy OR Medication

First Line Treatments for Depression ⁷

Selective Serotonin Reuptake Inhibitors (SSRIs), Serotonin Norepinephrine Reuptake Inhibitors (SNRIs), Bupropion (Wellbutrin), Mirtazapine (Remeron)

Prescription Treatment of Depression

6,7,8

Selective Serotonin

Reuptake Inhibitors (SSRIs)

Citalopram (Celexa), Escitalopram (Lexapro), Fluoxetine (Prozac), Paroxetine (Paxil), Sertraline (Zoloft), Fluvoxamine (Luvox)

Adverse Reactions

- Anxiety, Nervousness
- Nausea
- Headache
- Insomnia
- Sexual Dysfunction
- Rarely: Low sodium, bleeding with other medications

Considerations

- **Fluoxetine**
 - The most activating SSRI
 - A very long half-life, which may be beneficial for adherence
- **Paroxetine, Fluvoxamine**
 - The most sedating SSRIs
 - Paroxetine: High risk of constipation, weight gain, should not be used in pregnancy.
- **Sertraline**
 - High risk of diarrhea
 - Preferred in patients with a high risk of cardiovascular disease

Serotonin and Norepinephrine Reuptake Inhibitors (SNRIs)

Venlafaxine (Effexor)
Duloxetine (Cymbalta)
Desvenlafaxine (Pristiq)
Levomilnacipran (Fetzima)

Adverse Reactions

- CV effects, such as Increased BP
- Insomnia
- Nausea
- Sweating
- Sexual Dysfunction
- Bleeding with other medications

Considerations

- **All Agents**
 - Blood pressure should be monitored at baseline and regularly
 - Dose-dependent withdrawal more severe than with SSRIs
- **Duloxetine**
 - Effective in neuropathic pain, fibromyalgia

Norepinephrine and Dopamine Reuptake Inhibitor (NDRIs)

Bupropion (Wellbutrin)

Adverse Reactions

- Nausea
- Dry Mouth
- Tremor
- Weight Loss
- Insomnia
- Dose-dependent seizure activity

Considerations

- **Bupropion**
 - Should not be used in patients, seizure disorder, anorexia/bulimia
 - Bupropion SR can be used for smoking cessation
 - Less sexual dysfunction than other agents

Serotonin and Alpha-2 Adrenergic Antagonist (NaSSA)

Mirtazapine (Remeron)

Adverse Reactions

- Dose-Dependent Sedation
- Weight Gain
- High Triglycerides
- Arrhythmia
- Headache
- Anxiety
- Nausea
- Dry Mouth

Considerations

- **Mirtazapine**
 - Less sexual dysfunction than other agents

Serotonin Antagonist Reuptake Inhibitors (SARIs)

Trazodone (Desyrel)
Nefazodone (Serzone)
Vortioxetine (Trintellix)
Vilazodone (Viibrid)

Adverse Reactions

- Sedation
- Nausea
- Diarrhea
- Constipation
- Dry mouth, blurred vision, dizziness
- Headache

Considerations

- **Trazodone**
 - Risk of priapism
- **Nefazodone**
 - Associated with liver failure
- **Vilazodone, Vortioxetine**
 - Less sexual dysfunction than SSRIs
 - Vilazodone: insomnia

Tricyclic Antidepressants (TCAs)

Imipramine (Tofranil)
Desipramine (Norpramin)
Amitriptyline (Elavil)
Nortriptyline (Pamelor)
Doxepin (Sinequan)

Adverse Reactions

- Orthostatic Hypotension
- Sedation
- Weight Gain
- Dose-Dependent Seizures
- Cognitive Impairment
- Dry Mouth
- Blurry Vision
- Urinary Retention
- Sexual Dysfunction

Considerations

- **Amitriptyline, Nortriptyline**
 - May have benefit off-label for migraine, fibromyalgia, neuropathic pain
- **Doxepin**
 - Approved for insomnia

Monoamine Oxidase Inhibitors (MAOIs)

Isocarboxazid (Marplan)
Phenelzine (Nardil)
Selegiline (Ensam)
Tranylcypromine (Parnate)

Adverse Reactions

- Orthostatic Hypotension
- Hypertensive Crisis
- Weight Gain
- Sleep Disturbances
- Sexual Dysfunction

Considerations

- **All Agents**
 - Tyramine containing foods increase the risk of Hypertensive Crisis ("Charcuterie Board")
- **Phenelzine, Isocarboxazid**
 - Sedating
- **Selegiline, Tranylcypromine**
 - Activating
- **Selegiline**
 - Available as a patch, used in Parkinson's Disease

Other Agents for Treatment-Resistant Depression

Aripiprazole (Abilify)
Quetiapine (Seroquel)
Bupropion (Wellbutrin)
Lithium
Triiodothyronine (Cytomel)

Considerations For All Antidepressants

Black Box Warning: Suicidal Ideation

May cause mania in underlying Bipolar Disorder

Must be tapered if stopping due to the risk of Discontinuation Syndrome

Must monitor for drug interactions

Caution when combining agents due to the risk of Serotonin Syndrome

Over-the-Counter Products

St. John's wort

- Guideline-recommended alternative therapy ⁷
- Studies have shown effectiveness in mild to moderate depression
- Adverse reactions are similar to SSRIs
- Significant drug interactions
- Should not be used with other serotonergic agents

SAM-e

- Insufficient evidence to support use as monotherapy ⁷
- Should not be used with other serotonergic agents
- Can cause GI upset, headache, dry mouth, and insomnia

Omega-3-Fatty Acids

- Insufficient evidence to support use as monotherapy ⁷
- May cause bleeding with certain medications ⁶

Non-Pharmacologic Therapies ^{6,7}

Therapy

- Psychotherapy*
- Interpersonal and group psychoeducation*
- Cognitive behavioral therapy*

Procedures

- Acupuncture*
- Vagal nerve stimulation
- Transcranial magnetic stimulation
- Electroconvulsive therapy

Self-care

- Yoga*
- Bright light therapy*

*Guideline Recommended Options

Resources for Patients and Providers

Patient Well-Being

- Care for Your Mind: help find affordable therapy and treatment
- Suicide Prevention Lifeline: 800-273-TALK
- Erika's Lighthouse: teen depression
- ADAA Directory: help find a mental health provider or therapist near you

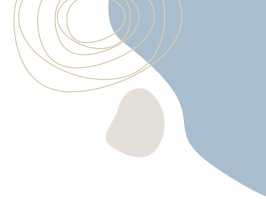
Pharmacotherapy Costs

- Pharmacy discount drug programs
 - Walmart \$4
 - Publix \$7.50
- NeedyMeds
- GoodRx

References

1. Major Depression [Internet]. Bethesda, MD: National Institute of Mental Health; c2021 [cited 2021 Oct 25]; [about 4 screens]. Available from: <https://www.nimh.nih.gov/health/statistics/major-depression>
2. In: Bombatch C, Garrett SD, Veverka A, Brian S, Davis C, Drew A, Wellings F, editors. 2022 NAPLEX course book. Coppel: RxPrep, Inc.; c2021. Chapter 63.
3. Facts and Statistics [Internet]. Silver Spring, MD: Anxiety & Depression Society of America; c2021 [cited 25 Oct 2021]. Available from: <https://adaa.org/understanding-anxiety/facts-statistics>
4. Centers for Disease Control and Prevention [Internet]. Washington, DC: U.S. Department of Health and Human Services. c2020 [cited 25 Oct 2021]. Available from: <https://www.cdc.gov/nchs/>
5. Depression [Internet]. Bethesda, MD: National Institute of Mental Health; c2018 [cited 2021 Oct 25]. Available from: <https://www.nimh.nih.gov/health/topics/depression>
6. Vandenberg AM. Major Depressive Disorder. In: Dipiro JT, Yee GC, Posey M, Haines ST, Nolin TD, Ellingrod V, editors. Pharmacotherapy: A pathophysiologic approach. 11th ed. [AU Intranet; Access Pharmacy]. New York: McGraw-Hill Medical; 2020 [cited 2021 Nov 1]. Chapter 85. Available from: <https://accesspharmacy.mhmedical.com/content.aspx?bookid=2577§ionid=234138584>
7. McQuaid JR, Lin EH, Barber JP, et al. APA clinical practice guideline for the treatment of depression across three age cohorts. American Psychological Association [Internet]. 2019 Feb [cited 1 Nov 2021]:1-60. Available from: <https://www.apa.org/depression-guideline/guideline.pdf>
8. Lexi-Drugs (Lexicomp Online) [AUHSOP Intranet]. St. Louis: Wolters Kluwer Clinical Drug Information [updated 2021, cited 2021 Nov 1]. [about 2 p.]. Available from: <https://online.lexi.com/lco/action/>

Test Your Knowledge



JS is a 32 year-old female presenting in clinic today for a 3-month check-up. Upon completion of a PHQ-9, JS scores a 22, indicating severe depression. The physician asks the team for help in choosing an antidepressant for JS. Which of the following are appropriate first-line agents for depression according to the APA guidelines? Select all that apply.

- A. Citalopram (Celexa)
- B. Sertraline (Zoloft)
- C. Lorazepam (Ativan)
- D. Duloxetine (Cymbalta)
- E. Bupropion (Wellbutrin)

Which antidepressant is contraindicated and should not be used in patients with a past medical history of seizures?

- A. Isocarboxazid (Marplan)
- B. Mirtazapine (Remeron)
- C. Desvenlafaxine (Pristiq)
- D. Bupropion (Wellbutrin)

Each class of antidepressants has differing effects on weight. Match the following antidepressants to whether each causes weight gain or weight loss.

Mirtazapine (Remeron) _____ A. Weight Gain

Bupropion (Wellbutrin) _____ B. Weight Loss

Paroxetine (Paxil) _____

Amitriptyline (Elavil) _____

EB is a 67 year-old male presenting in clinic today for a 1-month follow-up for his chronic conditions. His PMH includes type 2 diabetes, gout, and orthostatic hypotension. Which of the following medication classes would be concerning with EB given his PMH?

- A. Tricyclic Antidepressants (TCAs)
- B. Selective Serotonin Reuptake Inhibitors (SSRIs)
- C. Serotonin Norepinephrine Reuptake Inhibitors (SNRIs)
- D. Norepinephrine Dopamine Reuptake Inhibitors (NDRIs)

LJ presents in clinic and tells the nurse that she has been taking a medication OTC for mood but cannot recall the name. She remembers that the pharmacist told her that it is an herbal product that should be taken three times daily and that she should let her doctor know if she begins taking new medications due to the risk of drug interactions. Which OTC product for depression is LJ referring to?

- A. Vitamin D
- B. SAM-e
- C. St. John's wort
- D. Diphenhydramine

True or False: Pharmacy discounts, the Suicide Prevention Lifeline, and NeedyMeds.com are all helpful resources to give patients with depression to help achieve success with treatment.

