



Duloxetine

Erin Harris
Psychotropic Medication
Presentation
Dr. Lyons
EDG-6337-DM2



Drizalma Sprinkle®

Yentreve®

Duloxetine

Classification: SNRI (Serotonin-Norepinephrine Reuptake Inhibitor)

Patented: 1990 • U.S. Market Introduction: 2004

Irenka®

Cymbalta®



18 million
prescriptions dispensed

over 4 million
patients

Ranking Duloxetine as the 31st
most prescribed medication in the U.S.



What is a SNRI?

Serotonin–Norepinephrine Reuptake Inhibitor

Definition

- A class of **antidepressant** medications
- **Increases** levels of **serotonin** and **norepinephrine** in the brain
- Helps regulate mood, anxiety, and pain perception

How It Works

- **Blocks reuptake** of serotonin and norepinephrine at synapses
- **More neurotransmitters remain available** in the brain
- **Enhances communication between neurons**

(Dhaliwal, Spurling, & Molla, 2025)



FDA Approved uses for Duloxetine

Major Depressive Disorder

Improves mood and emotional balance

Generalized Anxiety Disorder

Reduces excessive worry and tension

Fibromyalgia

Eases widespread muscle pain and fatigue



Chronic Musculoskeletal Pain

Relieves ongoing joint/back pain

Diabetic Peripheral Neuropathy

Alleviates nerve pain from diabetes

(Rodrigues-Amorim et al., 2020)

Off Label uses for Duloxetine

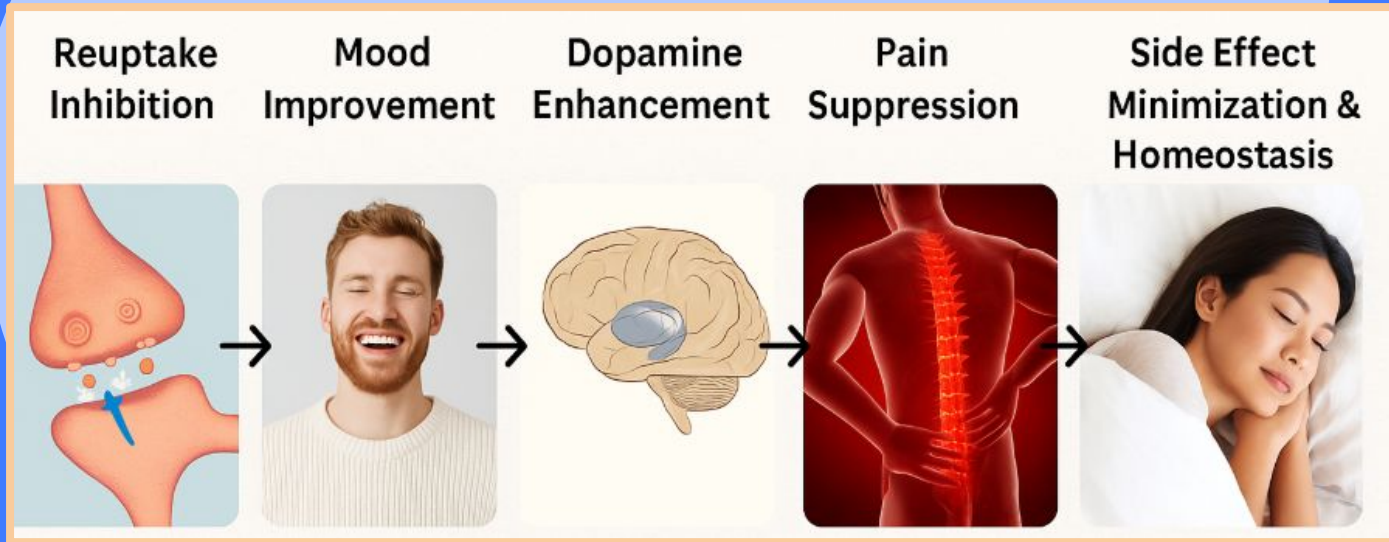
Chemo-Induced Neuropathy: May
reduce nerve pain
post-chemotherapy

Stress Urinary Incontinence:
Helps control bladder leakage

(Dhaliwal, Spurling, & Molla, 2025)



Basic Visual of Duloxetine Mechanism of Action

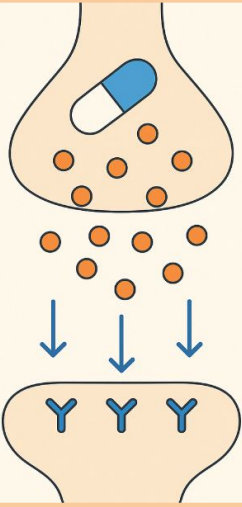


(Rodrigues-Amorim et al., 2020)

Mechanism of Action

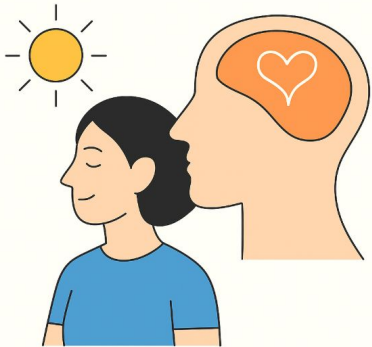
Initial Action – Reuptake Inhibition

- Duloxetine first **inhibits** serotonin and norepinephrine **reuptake** at the **synapse**.
- This leads to **increased levels** of both **neurotransmitters** in the synaptic cleft, **enhancing their signaling**.

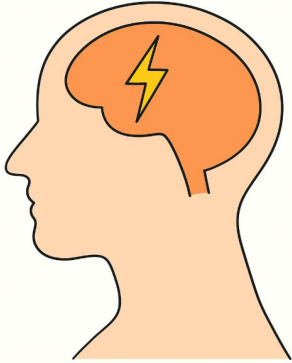


Mood Regulation – Emotional Symptom Relief

The **increase** in serotonin and norepinephrine **contributes to improved mood, motivation, and anxiety regulation**, typically the first therapeutic target in conditions like depression and anxiety.

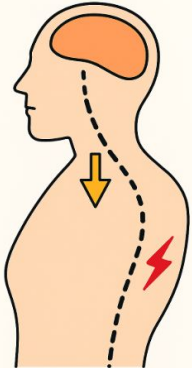


Mechanism of Action



Dopamine Effects – Cognitive & Motivational Support

- In the prefrontal cortex, where dopamine transporters are scarce, the **inhibition of norepinephrine transporters** also **slows dopamine reuptake**.
- This **indirectly increases dopamine availability**, supporting executive functioning, focus, and emotional regulation.



Pain Pathway Modulation – Chronic Pain Relief

- Duloxetine **enhances descending inhibitory pathways** from the brain to the spinal cord.
- These **pathways suppress the transmission of pain signals**, helping treat neuropathic and chronic pain conditions.

(Rodrigues-Amorim et al., 2020)



Secondary Effects

Neurochemical Balance & Fewer Side Effects

- Because Duloxetine **does not** significantly **affect other receptors**, it helps **minimize** side effects like **sedation or dry mouth** (Muscatello et al., 2019)
- Over time, the drug promotes **homeostasis in neurotransmitter systems**, supporting **long-term stability** in mood and pain response.
(Rodrigues-Amorim et al., 2020)

Common Possible Side Effects

Nausea: Most frequently reported, especially when starting the medication

Dry Mouth: Affects many users due to reduced saliva production

Drowsiness or Fatigue: May cause daytime tiredness or sedation, particularly in the first few weeks

Dizziness: Can occur during initiation or dose changes

Headache: Reported as a general side effect in both short- and long-term use

Insomnia or Sleep Disturbance: May disrupt sleep patterns in some individuals (NAMI, 2022)





Rare Side Effects

Suicidal Thoughts or Behavior: Increased risk of suicidal ideation or actions, especially in patients under age 25.

Serotonin Syndrome: A potentially life-threatening condition caused by **excessive serotonin**. Symptoms may include agitation, confusion, rapid heart rate, +

Liver Toxicity: Liver damage that can cause symptoms such as **jaundice, fatigue, dark urine, and abdominal pain**

Hyponatremia: Low sodium levels in the blood, more common in older adults. Can lead to **confusion, headache, nausea, or seizures**.

Syncope: A temporary loss of consciousness (**fainting**) often due to a sudden **drop in blood pressure**.
(NAMI, 2022)

Medication Alone Is Not the Only Option

While medications like Duloxetine **can effectively** regulate brain chemistry and **reduce** symptoms, **true healing** often requires **more** than pharmacological support (Dobson et al., 2008).



Combining “a pill” with “a skill” **enhances long-term outcomes, reduces relapse risk, and promotes greater emotional resilience** (Sage Neuroscience Center, 2021).

Psychotherapy offers tools and strategies that help individuals **engage actively** in their recovery, reinforcing the effects of medication (Dobson et al., 2008).



For **depression** and **anxiety**, one of the most effective and accessible approaches is **Behavioral Activation (BA)** (Malik et al., 2021).

What Is Behavioral Activation?

Behavioral Activation is a structured therapeutic approach that focuses on helping clients **increase engagement with positive, meaningful activities** (Malik et al., 2021).

It aims to **disrupt the cycle of avoidance and withdrawal** that fuels depression by **reintroducing actions** that generate **pleasure, mastery, and connection** (Malik et al., 2021).

BA **reinforces** the effects of medication like Duloxetine by **restoring motivation, improving mood, and building lasting behavioral habits that promote well-being** (Malik et al., 2021).





Duloxetine + Behavioral Activation= Enhancing Outcomes



“Take a Pill, Use a Skill”

Why BA Enhances Duloxetine Treatment:

Reduces Dosage Creep: By building **natural positive reinforcement systems**, BA helps **stabilize** mood and motivation—**reducing** the need for increasing medication doses (Dobson et al., 2008)

Boosts Medication Adherence: As seen in depression and pain studies, **engaging in structured activities** supports medication routines and enhances overall treatment engagement (Yohn et al., 2016)

Empowers Clients: BA aligns with the **skill-centered approach** highlighted in Take a Pill, Do a Skill, **giving clients actionable tools** to foster sustained well-being, increase agency, and support homeostasis alongside pharmacotherapy (Sage Neuroscience Center, 2021)

In sum, behavioral activation is a practical, evidence-based counseling skill that complements duloxetine, promoting enduring benefits that may reduce reliance on escalating medication regimens (Dobson et al., 2008)

Resources for Clients

01

Duloxetine Facts

<https://www.nami.org/about-mental-illness/treatments/mental-health-medications/types-of-medication/duloxetine-cymbalta/>

02

Beyond Depression

https://pmc.ncbi.nlm.nih.gov/articles/PMC6844294/?utm_source=

03

Patient Tips

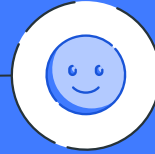
<https://www.drugs.com/tips/duloxetine-patient-tips?utm=>

04

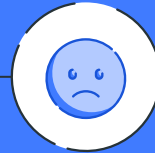
“Take a Pill, Do a Skill”

<https://www.youtube.com/watch?v=moUxiPJTPJw>

Final Thoughts



Duloxetine is a SNRI prescribed for both mental and physical conditions (Dhaliwal, Spurling, & Molla, 2025)



Duloxetine can cause some side effects, but rarely serious and often go away over time (NAMI, 2022)



With combined with psychotherapy, Duloxetine can contribute towards a path of healing (Dobson et al., 2008).

References

ClinCalc LLC. (2022). Duloxetine: Drug usage statistics, United States, 2013–2022. *ClinCalc DrugStats*.
<https://clincalc.com/DrugStats/Drugs/Duloxetine>

Dhaliwal, J. S., Spurling, B. C., & Molla, M. (2025). Duloxetine. *In StatPearls*. StatPearls Publishing.
<https://www.ncbi.nlm.nih.gov/books/NBK549806/>

Dobson, K. S., Hollon, S. D., Dimidjian, S., Schmalings, K. B., Kohlenberg, R. J., Gallop, R. J., Rizvi, S. L., Gollan, J. K., Dunner, D. L., & Jacobson, N. S. (2008). Randomized trial of behavioral activation, cognitive therapy, and antidepressant medication in the prevention of relapse and recurrence in major depression. *Journal of Consulting and Clinical Psychology*, 76(3), 468–477.
<https://doi.org/10.1037/0022-006X.76.3.468>

Malik, K., Ibrahim, M., Bernstein, A., Newlove-Delgado, T., & Ford, T. (2021). Behavioral activation as an ‘active ingredient’ of interventions addressing depression and anxiety among young people: A systematic review and evidence synthesis. *BMC Psychology*, 9(1), 150. <https://doi.org/10.1186/s40359-021-00655-x>

Muscatello, M. R. A., Zoccali, R. A., Pandolfo, G., Mangano, P., Lorusso, S., Cedro, C., Battaglia, F., Spina, E., & Bruno, A. (2019). Duloxetine in psychiatric disorders: Expansions beyond major depression and generalized anxiety disorder. *Frontiers in Psychiatry*, 10, 772. <https://doi.org/10.3389/fpsy.2019.00772>

National Alliance on Mental Illness. (2022). *Duloxetine (Cymbalta)*.
<https://www.nami.org/About-Mental-Illness/Treatments/Mental-Health-Medications/Types-of-Medication/Duloxetine>

References

- Rodrigues-Amorim, D., Olivares, J. M., Spuch, C., & Rivera-Baltanás, T. (2020). A systematic review of efficacy, safety, and tolerability of duloxetine. *Frontiers in Psychiatry*, 11, 554899. <https://doi.org/10.3389/fpsyt.2020.554899>
- Sage Neuroscience Center. (2021). *Take a pill, do a skill* [Video]. YouTube. <https://www.youtube.com/watch?v=moUxiPJTPJw>
- Yohn, C. N., Errington, A. C., Rosenhauer, A. M., Samuels, B. A., & Bruchas, M. R. (2016). Effects of duloxetine treatment on cognitive flexibility and BDNF expression in the mPFC of adult male mice exposed to social stress during adolescence. *Frontiers in Molecular Neuroscience*, 9, Article 95. <https://doi.org/10.3389/fnmol.2016.00095>