💊 NCLEX-RN PHARMACOLOGY INFOGRAPHIC

BUPROPION vs. MIRTAZAPINE

Atypical Antidepressants | System: Neurologic / Psychiatric

High-Yield Rapid-Review · 2026 NCLEX-RN Test Plan · NGN / NCJMM Aligned

BUPROPION (Wellbutrin / Zyban)	MIRTAZAPINE (Remeron)
NDRI · Activating	*NaSSA / Tetracyclic · Sedating*

1. DRUG OVERVIEW — Why we give it

BUPROPION (Wellbutrin / Zyban)	MIRTAZAPINE (Remeron)
• **Class:** NDRI (Norepinephrine–Dopamine Reuptake Inhibitor); aminoketone	• **Class:** NaSSA (Noradrenergic & Specific Serotonergic Antidepressant); tetracyclic
• **Brands:** Wellbutrin (IR/SR/XL) · Zyban · Aplenzin · Contrave (w/ naltrexone)	• **Brand:** Remeron · Remeron SolTab (ODT)
• **Indications:** Major Depressive Disorder (MDD)	• **Indications:** Major Depressive Disorder (MDD)
• Seasonal Affective Disorder (SAD)	• Depression w/ insomnia or poor appetite
• Smoking cessation (Zyban)	• PTSD, GAD (off-label)
• ADHD (off-label); adjunct for SSRI-induced sexual dysfunction	• Appetite stimulation in elderly / cachectic / oncology patients (off-label)
• **Key clinical use:** *Preferred when patient wants* **NO weight gain & NO sexual side effects**	• **Key clinical use:** *Preferred for* **depressed patient who can't sleep or eat**

2. MECHANISM OF ACTION (Simplified)

BUPROPION (Wellbutrin / Zyban)	MIRTAZAPINE (Remeron)
• **Weakly blocks reuptake of NE & Dopamine**	• **Blocks central α2-adrenergic autoreceptors**
• ↓ NE reuptake → ↑ NE in synapse	• → ↑ release of NE AND 5-HT (serotonin)
• ↓ DA reuptake → ↑ DA in synapse	• **Blocks H1 (histamine)** → sedation + ↑ appetite
• → ↑ energy, ↑ focus, ↑ mood, ↓ nicotine cravings	• **Blocks 5-HT2 & 5-HT3** → ↓ anxiety, ↓ nausea, ↑ weight
• **NO effect on serotonin** → explains NO sexual SE & NO weight gain	• → Improved mood + sleep + appetite
• **Lowers seizure threshold (dose-dependent)**	• **Low doses = MORE sedating; higher doses = LESS sedating (paradox)**

3. THERAPEUTIC EFFECTS — What tells you it's working

BUPROPION (Wellbutrin / Zyban)	MIRTAZAPINE (Remeron)
• ↑ Mood, ↑ energy, ↑ motivation	• ↑ Mood, ↓ anxiety
• ↑ Concentration / focus	• ↑ Sleep quality (↓ sleep latency)
• ↓ Nicotine cravings & withdrawal	• ↑ Appetite → ↑ weight gain

- Weight-neutral or weight LOSS
- **Onset:** 1–3 wks; full effect 4–6 wks
- **Signs it's working:** ↑ activity level, better sleep patterns, PHQ-9 ↓, smoking cessation

- ↓ Nausea (5-HT3 blockade)
- **Onset:** Sleep/appetite within 1 wk; mood 2–4 wks
- **Signs it's working:** sleeping through night, eating meals, ↑ weight, PHQ-9 ↓

4. SIDE EFFECTS & ADVERSE REACTIONS

- **COMMON:**
- Insomnia, agitation, anxiety, tremor
- Dry mouth, headache, nausea
- Tachycardia, ↑ BP
- Weight LOSS, ↓ appetite
- 🚨 **SERIOUS / LIFE-THREATENING:**
- **SEIZURES** — dose-dependent; risk ↑↑ >450 mg/day
- **Hypertensive crisis** (esp. w/ nicotine patch or MAOI)
- **Suicidal ideation (Black Box: <25 yrs)**
- Psychosis, mania, hallucinations
- Serotonin syndrome (if combined w/ SSRI/MAOI)

- **COMMON:**
- Sedation / somnolence (esp. low doses)
- ↑ Appetite → WEIGHT GAIN
- Dry mouth, constipation, dizziness
- ↑ Cholesterol, ↑ triglycerides
- 🚨 **SERIOUS / LIFE-THREATENING:**
- **AGRANULOCYTOSIS / neutropenia** (rare but classic NCLEX)
- **Suicidal ideation (Black Box: <25 yrs)**
- Serotonin syndrome (if combined w/ SSRI/MAOI/tramadol)
- Hepatotoxicity, ↑ LFTs
- Orthostatic hypotension → falls (esp. elderly)

5. PRIORITY NURSING CONSIDERATIONS — Assess · Monitor · Hold · Notify

- **ASSESS:** seizure history, eating disorder hx, BMI, EtOH use
- **MONITOR:** BP, HR, mental status, suicide risk, sleep
- **HOLD if:** seizure occurs, BP crisis, new suicidal ideation
- **CONTRAINDICATIONS:**
- Seizure disorder (ANY history)
- Anorexia or bulimia (current or past)
- Abrupt EtOH or benzo withdrawal
- MAOI within 14 days
- **INTERACTIONS:** MAOIs, SSRIs, tramadol, theophylline, nicotine patch (↑HTN)

- **ASSESS:** baseline weight, CBC, LFTs, lipids, fall risk
- **MONITOR:** weight, appetite, sleep, CBC, signs of infection
- **HOLD if:** fever, sore throat, mouth sores, flu-like sx (→ agranulocytosis)
- **NOTIFY HCP:** signs of infection, jaundice, suicidal ideation
- **CONTRAINDICATIONS:**
- MAOI within 14 days
- Severe hepatic impairment (caution)
- **INTERACTIONS:** CNS depressants (EtOH, benzos, opioids), SSRIs/SNRIs (SS), warfarin

6. LABS & DIAGNOSTICS

- **No routine drug level**
- LFTs — baseline & periodic
- BMP — renal function (dose adjust in CKD)

- **CBC with differential** — if infection signs (WATCH ANC)
- **ANC <1,500/mm³** = neutropenia; <500 = agranulocytosis → STOP drug
- LFTs (ALT/AST) — baseline & periodic

- BP & HR at each visit
- **Critical:** new-onset HTN, ↓ Na+ (SIADH-rare)
- **Pregnancy:** Category C — use cautiously

- Lipid panel — ↑ total chol & triglycerides
- Fasting glucose (weight gain risk)
- **Pregnancy:** Category C

7. ADMINISTRATION & SAFETY

- **Route:** PO only (IR, SR, XL forms)
- **Timing:** MORNING dose (prevents insomnia); SR → BID; XL → once daily
- ⚠ **MAX DOSE:** 450 mg/day (seizure risk ↑ sharply above this)
- Separate SR doses ≥ 8 hrs apart
- DO NOT crush / chew / split SR or XL tablets
- No abrupt discontinuation — taper
- Avoid alcohol completely (↑ seizure risk)
- **High-alert:** double-check dose if combined w/ Contrave or Zyban

- **Route:** PO (tablet or ODT – Remeron SolTab)
- **Timing:** AT BEDTIME (uses sedation therapeutically)
- **Starting dose:** 15 mg HS; max 45 mg/day
- ODT: place on tongue, let dissolve — DO NOT split
- Remember the paradox: ↑ dose = LESS sedation
- Taper to discontinue — avoid withdrawal
- Take w/ or without food
- **Avoid:** alcohol, benzos, opioids (additive CNS depression)

8. PATIENT EDUCATION

- Take in the MORNING to avoid insomnia
- Full effect takes 4–6 weeks — don't stop early
- **STOP & CALL 911 if:** seizure, chest pain, severe headache
- Report: suicidal thoughts, new agitation, mood changes
- NO alcohol, illicit stimulants, or extra bupropion products
- Expect possible weight loss; NO sexual side effects
- If quitting smoking: set quit date 1–2 wks after starting

- Take at BEDTIME — you will feel sleepy
- **CALL HCP if:** fever, sore throat, mouth sores, chills (infection)
- Report: yellow skin/eyes, dark urine (hepatotoxicity)
- Expect weight gain & ↑ appetite — monitor meals
- Rise slowly from sitting/lying (orthostasis)
- NO alcohol, benzos, opioids without HCP approval
- Report suicidal thoughts, esp. first weeks

9. NCLEX TEST TRAPS ⚠

- ⚠ **TRAP #1:** giving to a patient w/ eating disorder → SEIZURE
- ⚠ **TRAP #2:** combining w/ nicotine patch → hypertensive crisis
- ⚠ **TRAP #3:** crushing XL/SR → seizure (dose-dumping)
- Priority: seizure hx > depression severity (don't give!)
- NOT first-line w/ anxiety (can WORSEN anxiety)
- **BEST ANSWER:** 'no sexual side effects' & 'no weight gain'
- Zyban = smoking cessation (same drug, diff indication)

- ⚠ **TRAP #1:** fever + sore throat → call HCP NOW (agranulocytosis)
- ⚠ **TRAP #2:** higher dose = MORE sedating — FALSE (opposite!)
- ⚠ **TRAP #3:** giving in AM → daytime sedation + fall
- SIDE EFFECTS are often the REASON it's chosen (elderly, poor appetite, insomnia)
- NOT for pt trying to lose weight
- **BEST ANSWER:** 'give at bedtime' & 'monitor weight + CBC'

	• ODT dissolves on tongue — don't chew or split

🟩 10. MEMORY BOOSTERS & MNEMONICS

• 🧠 **"BUP-ROP-I-ON"** • B — BP ↑ (hypertension) • U — Up & energetic (activating) • P — Psychosis / seizure risk • R — Reduces cravings (smoking) • O — NO weight gain, NO sexual SE • P — Pregnant? caution • **Think:** *"Well-**but**-seizure" — well BUT seizure risk*	• 🧠 **"MIRT-AZ"** • M — Munchies (↑ appetite) • I — Insomnia helper • R — Rest / Remeron • T — Tired (sedation) • A — Agranulocytosis (rare) • Z — Zzz at bedtime • **Think:** *"**Remember to EAT and SLEEP**" = Remeron*

⚡ QUICK-GLANCE COMPARISON TABLE

FEATURE	BUPROPION	MIRTAZAPINE
Effect on Energy	↑ Activating	↓ Sedating
Weight	↓ Loss / Neutral	↑ Gain
Sleep	Insomnia (give AM)	Improves sleep (give HS)
Sexual SE	**NONE** ✅	Minimal
#1 RED FLAG	🚨 **SEIZURES**	🚨 **AGRANULOCYTOSIS**
Absolute Avoid	Eating disorder, seizure hx	MAOI, severe liver dz
Best Patient	Smoker / SAD / sexual SE	Elderly, insomnia, cachexia
Black Box	**Suicidality <25 yrs**	**Suicidality <25 yrs**

🚨 CLINICAL JUDGMENT SNAPSHOT (NCJMM)

🧠 BUPROPION — NCJMM SNAPSHOT

#1 Priority Risk: SEIZURES (dose-dependent, ↑↑ in eating disorders)

What Harms FIRST: Tonic-clonic seizure → airway/injury

FIRST Nursing Action: If seizure → ensure airway, SIDE-LYING, suction, STOP drug, notify HCP

Recognize Early: tremor, agitation, insomnia ≠ therapeutic — reassess dose

🧠 MIRTAZAPINE — NCJMM SNAPSHOT

#1 Priority Risk: AGRANULOCYTOSIS (rare but fatal if missed)

What Harms FIRST: Infection sepsis from undetected neutropenia; fall from sedation in elderly

FIRST Nursing Action: Fever/sore throat → HOLD drug, draw CBC w/ diff, notify HCP, infection precautions

Recognize Early: fever + sore throat + malaise = RED FLAG, not 'just a cold'

Avoid the Trap: Never give to pt w/ anorexia/bulimia or active seizure hx	**Avoid the Trap:** Never give in AM; never combine w/ MAOI or CNS depressants

💊 MOST-TESTED DRUGS IN THIS CLASS (Atypical Antidepressants)

ATYPICAL ANTIDEPRESSANT	CLASS	PRIMARY USE	KEY DISTINGUISHING POINT
Bupropion (Wellbutrin)	NDRI	MDD, SAD, smoking cessation	Activating · No sexual SE · Seizure risk
Mirtazapine (Remeron)	NaSSA / Tetracyclic	MDD w/ insomnia or poor appetite	Sedating · ↑ weight · Agranulocytosis
Trazodone (Desyrel)	SARI	Insomnia (off-label); MDD	**Watch PRIAPISM (>4 hr erection = ER)**
Vilazodone (Viibryd)	SPARI	MDD	Take WITH food (↑ absorption)
Vortioxetine (Trintellix)	Serotonin modulator	MDD w/ cognitive symptoms	Less sexual SE than SSRIs

✓2026 NCLEX-RN Test Plan | ✓NGN / NCJMM Aligned | ✓Clinical Judgment Focused

Study tool only — verify all medication administration against facility protocols and current drug references.