
METHYLPHENIDATE IR (Methylin, Ritalin) Fact Sheet [G]

Bottom Line:

Methylphenidate has a better side effect profile and somewhat lower abuse potential than amphetamines. However, patients often prefer the “kick” they get from Adderall.

FDA Indications:

ADHD (adults and children ≥ 6 years); **narcolepsy**.

Off-Label Uses:

Obesity; treatment-resistant depression.

Dosage Forms:

- **Tablets (Ritalin, [G]):** 5 mg, 10 mg, 20 mg.
- **Chewable tablets (Methylin CT, [G]):** 2.5 mg, 5 mg, 10 mg.
- **Oral solution (Methylin, [G]):** 5 mg/5 mL, 10 mg/5 mL.

Dosage Guidance:

- **ADHD:**
 - Adults: Start 5–10 mg BID, \uparrow by 10 mg/day at weekly intervals to max 60 mg/day.
 - Children ≥ 6 years: Start 0.3 mg/kg BID or 2.5–5 mg BID before breakfast and lunch, increase by 0.1 mg/kg/dose or 5–10 mg/day at weekly intervals to a max of 2 mg/kg/day or 60 mg/day.
- **Narcolepsy:** Same dosing as ADHD.

Monitoring: ECG if history of cardiac disease.

Cost: \$; chewable tabs: \$\$\$

Side Effects:

- Most common: Insomnia, headache, nervousness, abdominal pain, nausea, vomiting, anorexia, weight loss, affect lability, tics.
- Serious but rare: See class warnings in chapter introduction.
- Pregnancy/breastfeeding: Limited data in pregnancy; likely safe in breastfeeding.

Mechanism, Pharmacokinetics, and Drug Interactions:

- Stimulant that inhibits reuptake of dopamine and norepinephrine.
- Hepatic metabolism via carboxylesterase CES1A1, not CYP450 isoenzymes; $t_{1/2}$: 2–4 hours.
- Avoid use with MAOIs, antacids.

Clinical Pearls:

- Methylphenidate generally causes fewer side effects than amphetamine preparations—patients are less likely to report feeling “wired.”
- While all stimulants may cause tics, a Cochrane review of eight randomized trials showed that methylphenidate did not worsen tics in children with ADHD and a tic disorder; in some cases it even improved tics.
- Methylin chewable tablets: Administer with at least eight ounces of water or other fluid.

Fun Fact:

Methylphenidate was synthesized by Ciba (now Novartis) chemist Leandro Panizzon. His wife, Marguerite, had low blood pressure and would take the stimulant before playing tennis. He named the substance “Ritaline” (yes, with the “e” on the end) after his wife’s nickname, Rita.