

# AMPHETAMINE (Adzenys XR-ODT, Dyanavel XR, Evekeo) Fact Sheet [G]

## Bottom Line:

Amphetamine is a 50:50 racemic mixture of dextro- and levo-amphetamine. In clinical practice, the most commonly prescribed amphetamine is Adderall (mixed amphetamine salts; see fact sheet later in this chapter). Based on meta-analyses, amphetamines are clearly the most effective option in both children and adults with ADHD. That doesn't mean they should always be the first choice, though. Methylphenidates are often better tolerated and have relatively less abuse potential. Several newer formulations of amphetamine may be helpful for patients who don't like to swallow pills—but they come with a price tag.

## FDA Indications:

**ADHD** (Adzenys XR-ODT: adults and children  $\geq 6$ ; Dyanavel XR: children  $\geq 6$ ; Evekeo: children  $\geq 3$ ); **narcolepsy** (Evekeo); obesity (Evekeo).

## Off-Label Uses:

Treatment-resistant depression.

## Dosage Forms:

- **Tablets (Evekeo, [G]):** 5 mg, 10 mg (scored); **(Evekeo ODT):** 5 mg, 10 mg, 15 mg, 20 mg.
- **ER tablets (Dyanavel XR):** 5 mg (scored), 10 mg, 15 mg, 20 mg.
- **ER orally disintegrating tablets (Adzenys XR-ODT):** 3.1 mg, 6.3 mg, 9.4 mg, 12.5 mg, 15.7 mg, 18.8 mg.
- **ER oral suspension (Dyanavel XR):** 2.5 mg/mL.

## Dosage Guidance:

- Tablets (Evekeo, [G]):
  - Children 3–5: Start 2.5 mg QAM, increase in 2.5 mg/day increments weekly.
  - Children 6–17: Start 5 mg QAM, increase in 5 mg/day increments weekly to maximum of 40 mg/day in divided doses.
  - Narcolepsy: Start 5 mg QAM (ages 6–12) or 10 mg QAM (ages >12), increase by 5 or 10 mg/day increments weekly, respectively. Maximum 60 mg/day in divided doses.
- ER ODT (Adzenys XR-ODT):
  - Start 6.3 mg QAM, increase in 3.1–6.3 mg/day increments weekly. Maximum of 18.8 mg/day (ages 6–12) or 12.5 mg/day (ages 13–17 and adults).
- ER oral suspension (Dyanavel XR):
  - Children 6–12: Start 2.5–5 mg QAM, increase in 2.5–10 mg/day increments every four to seven days. Maximum 20 mg/day.

**Monitoring:** ECG if history of cardiac disease.

**Cost:** (G): \$\$\$; others: \$\$\$\$

## Side Effects:

- Most common: Abdominal pain, decreased appetite, weight loss, insomnia, headache, nervousness.
- 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.
- Metabolized primarily via CYP2D6;  $t_{1/2}$ : 11 hours.
- Avoid use with MAOIs, antacids.

## Clinical Pearls:

- These racemic forms of amphetamine differ from dextroamphetamine in that the l-isomer component is more potent than the d-isomer in peripheral activity (potentially resulting in more cardiovascular effects and tics).
- A racemic mixture may be less appetite suppressing compared to dextroamphetamine.
- Divide IR (Evekeo) doses by intervals of four to six hours.
- Approximate equivalence doses of Adzenys XR-ODT and mixed amphetamine salts XR (Adderall XR) are: 3.1 mg = 5 mg, 6.3 mg = 10 mg, 9.4 mg = 15 mg, 12.5 mg = 20 mg, 15.7 mg = 25 mg, 18.8 mg = 30 mg.
- Dyanavel XR oral suspension: Shake well to get the intended extended-release effect. The approximate equivalence of 2.5 mg/mL is 4 mg of mixed amphetamine salts.

## Fun Facts:

The term “amphetamine” is the contracted name of the chemical “alpha-methylphenethylamine.” Its first pharmacologic use was in 1934 when pharmaceutical company Smith, Kline and French sold amphetamine under the trade name Benzedrine as a decongestant inhaler.