Stimulants by Duration

Short-Acting:

Methylphenidate

Methylin (Methylphenidate HCl); oral solution / chewable tablet; Generic

- **Age:**
  - ADHD: >= 6y
  - Narcolepsy: no age floor
- **Onset:** ~ 1 hour
- **Duration:** 3 to 4 hours
- **Initial Dose:**
  - >= 6 y/o and older: 5 mg twice daily, before breakfast and before lunch
  - Adults: 20 to 30 mg daily in 2 or 3 divided doses, 30 to 45 minutes before meals.
- **Titration:** 5 - 10 mg every 7 days
- **Max Dose:** 60 mg/day
- **Considerations:** The chewable tablet must be taken with at least 8 ounces of fluid because it swells and can cause choking, and it contains phenylalanine.

Focalin (Dexmethylphenidate); tablet; Brand/Generic

- **Age:**
  - 6-17 y/o: established in two controlled trials
  - Under 6 y/o: not established
  - 18 y/o and older: no adult dose ladder on this label; adult data sit on the Focalin XR label
- **Onset:** ~ 30 min
- **Duration:** 5 to 6 hours
- **Initial Dose:**
  - New to methylphenidate: 5 mg daily, given as 2.5 mg twice daily
  - Currently on racemic methylphenidate: half the current total daily dose
- **Titration:** 2.5 mg to 5 mg every 7 days
- **Max Dose:** 20 mg/day, given as 10 mg twice daily
- **Considerations:** Give twice daily at least 4 hours apart, with or without food. Converting from racemic methylphenidate is half the total daily dose, never milligram for milligram.

Methylphenidate

Ritalin (Methylphenidate); tablet; Brand/Generic

- **Age:**
  - ADHD: >= 6y, and adults
  - Narcolepsy: no age floor
- **Onset:** ~ 1 hour
- **Duration:** 3 to 4 hours
- **Initial Dose:**
  - >= 6 y/o and older: 5 mg twice daily, before breakfast and before lunch
  - Adults: 20 to 30 mg daily in 2 or 3 divided doses, 30 to 45 minutes before meals.
- **Titration:** 5 - 10 mg every 7 days
- **Max Dose:** 60 mg/day
- **Considerations:** Give 30 to 45 minutes before meals, and the last dose before 6 p.m. The offset is abrupt and visible, which is the trade-off against every long-acting product.

Amphetamine

Adderall (amphetamine salt combo); tablets; Brand/Generic

- **Age:**
  - ADHD: ≥ 3 y/o
  - Narcolepsy: ≥ 6 y/o
- **Onset:** 30-60 min
- **Duration:** 4-6 hours
- **Initial Dose:**
  - 3-5 y/o: 2.5 mg daily
  - ≥ 6 y/o: 5 mg once or twice daily
- **Titration:**
  - 3-5 y/o: increase by 2.5 mg at weekly intervals
  - ≥ 6 y/o: increase by 5 mg at weekly intervals
- **Max Dose:**
  - ADHD: 40 mg/day; the label states only in rare cases will it be necessary to exceed this
  - Narcolepsy: usual range 5-60 mg/day
- **Considerations:** Give the first dose on waking, with further doses at 4-6 hour intervals. May be taken with or without food; a high-fat meal may delay absorption. Avoid late-afternoon dosing.

Amphetamine

Evekeo (Amphetamine sulfate); tablet; Brand

- **Age:**
  - ADHD: ≥ 3 y/o
  - Narcolepsy: ≥ 6 y/o
  - Exogenous obesity: ≥ 12 y/o
- **Onset:** 30 to 60 min
- **Duration:** 4 to 6 hours
- **Initial Dose:**
  - ADHD, 3-5 y/o: 2.5 mg daily
  - ADHD, ≥ 6 y/o: 5 mg once or twice daily
  - Narcolepsy, 6-11 y/o: 5 mg daily
  - Narcolepsy, ≥ 12 y/o: 10 mg daily
  - Exogenous obesity, ≥ 12 y/o: 5-10 mg per dose, 30-60 min before meals
- **Titration:**
  - ADHD, 3-5 y/o: 2.5 mg every 7 days
  - ADHD, ≥ 6 y/o: 5 mg every 7 days
  - Narcolepsy, 6-11 y/o: 5 mg every 7 days
  - Narcolepsy, ≥ 12 y/o: 10 mg every 7 days
- **Max Dose:**
  - ADHD: 40 mg/day, at any age
  - Narcolepsy: usual range 5-60 mg/day in divided doses
  - Exogenous obesity: up to 30 mg/day in divided doses of 5-10 mg
- **Considerations:** First dose on awakening, then one or two further doses at 4-6 hour intervals; the maximum is set by indication, not by weight, and late evening doses cause insomnia.

ProCentra (Dextroamphetamine sulfate); oral solution; Brand/Generic

- **Age:**
  - ADHD: 3-16 y/o, the range this label's indication is written for
  - Narcolepsy: ≥ 6 y/o, no upper bound
- **Onset:** 30 to 60 min
- **Duration:** 4 to 6 hours
- **Initial Dose:**
  - ADHD, 3-5 y/o: 2.5 mg daily, that is 2.5 mL
  - ADHD, 6-16 y/o: 5 mg once or twice daily
  - Narcolepsy, 6-11 y/o: 5 mg daily
  - Narcolepsy, ≥ 12 y/o: 10 mg daily
- **Titration:**
  - ADHD, 3-5 y/o: 2.5 mg every 7 days
  - ADHD, 6-16 y/o: 5 mg every 7 days
  - Narcolepsy, 6-11 y/o: 5 mg every 7 days
  - Narcolepsy, ≥ 12 y/o: 10 mg every 7 days
- **Max Dose:**
  - ADHD: 40 mg/day at any age; the label says only in rare cases will it be necessary to exceed this
  - Narcolepsy: usual range 5-60 mg/day in divided doses
- **Considerations:** The maximum is set by indication, not by age or weight. First dose on awakening, then one or two more at 4-6 hour intervals. This is a solution, not a suspension; it does not need shaking.

Amphetamine

Zenzedi (Dextroamphetamine sulfate); tablet; Brand only at the 2.5 mg and 7.5 mg doses / Generic

- **Age:**
  - ADHD: 3-16 y/o, the lowest approved age here. Not recommended under 3
  - Narcolepsy: no age bound stated; dose ladder given from age 6
- **Onset:** 30-60 min
- **Duration:** 4-6 hours, the label's own redosing interval
- **Initial Dose:**
  - ADHD, 3-5 y/o: 2.5 mg daily
  - ADHD, 6-16 y/o: 5 mg once or twice daily
  - Narcolepsy, 6-11 y/o: 5 mg daily
  - Narcolepsy, ≥ 12 y/o: 10 mg daily
- **Titration:**
  - ADHD, 3-5 y/o: 2.5 mg at weekly intervals until optimal response
  - ADHD, 6-16 y/o: 5 mg at weekly intervals until optimal response
  - Narcolepsy, 6-11 y/o: 5 mg at weekly intervals
  - Narcolepsy, ≥ 12 y/o: 10 mg at weekly intervals
- **Max Dose:**
  - ADHD, 6-16 y/o: 40 mg/day; only in rare cases will it be necessary to exceed this
  - ADHD, 3-5 y/o: no maximum stated in this label. Titrate to optimal response; 40 mg/day is not transferable downward to a preschooler
  - Narcolepsy: usual range 5-60 mg/day in divided doses
- **Considerations:** First dose on waking, one or two further doses at 4 to 6 hour intervals; avoid late evening doses. The label directs interrupting treatment occasionally to test continued need.

Long-Acting:

Methylphenidate

Aptensio XR (methylphenidate XR); capsule; Brand/Generic

- **Age:** >= 6y; no upper limit
- **Onset:** ~ 1 hour
- **Duration:** up to 12 hours
- **Release Profile:** 40% IR / 60% ER via multilayer beads
- **Initial Dose:** 10 mg once daily in the morning
- **Titration:** 10 mg every 7 days
- **Max Dose:** 60 mg/day
- **Considerations:** May be swallowed whole or opened onto applesauce, but never divided, so the ladder moves in whole capsules only.

Methylphenidate

Azstarys (Serdexmethylphenidate and dexmethylphenidate);capsule; Brand

- **Age:**
  - 6-12 y/o: established by a controlled trial and a 12-month open-label safety study
  - 13-17 y/o and adults: established by pharmacokinetic bridging
  - Under 6 y/o: not recommended; higher plasma exposure and more adverse reactions, including weight loss
- **Onset:** ~ 2 hours fasted, later with food
- **Duration:** up to 13 hours
- **Release Profile:** fixed molar ratio, 30% dexmethylphenidate to 70% serdexmethylphenidate. This is capsule composition, not a bead-release split: the long tail comes from prodrug conversion in the lower gut
- **Initial Dose:** 39.2 mg / 7.8 mg once daily in the morning, in every age band
- **Titration:**
  - 6-12 y/o: after 7 days, increase to 52.3 mg / 10.4 mg or decrease to 26.1 mg / 5.2 mg
  - 13-17 y/o and adults: after 7 days, increase to 52.3 mg / 10.4 mg; no labelled down-titration step
- **Max Dose:** 52.3 mg / 10.4 mg once daily, in every age band
- **Considerations:** Once daily in the morning; food delays the peak about 2 hours without changing exposure. Never substitute for another methylphenidate milligram for milligram; stop it and titrate from the standard start.

Concerta (methylphenidate ER (OROS)); OSM tablets; Brand/Generic

- **Age:** 6 to 65 y/o
- **Onset:** ~ 1 hour
- **Duration:** up to 12 hours
- **Release Profile:** 22% IR / 78% ER via OROS osmotic delivery
- **Initial Dose:**
  - 6 to 17 y/o, new to methylphenidate: 18 mg once daily in the morning
  - 18 to 65 y/o, new to methylphenidate: 18 mg or 36 mg once daily
  - From IR methylphenidate, per dose given 2-3 times daily: 5 mg to 18 mg; 10 mg to 36 mg; 15 mg to 54 mg; 20 mg to 72 mg (13 y/o and older only)
- **Titration:** 18 mg every 7 days; use 27 mg for a smaller step
- **Max Dose:**
  - 6 to 12 y/o: 54 mg/day
  - 13 to 17 y/o: 72 mg/day, not to exceed 2 mg/kg/day
  - 18 to 65 y/o: 72 mg/day
- **Considerations:** Swallow whole; splitting or chewing destroys the extended release. The nondeformable tablet is unsuitable in severe GI narrowing, and the empty shell passing in stool is not a failed dose.

Cotempla XR-ODT (Methylphenidate XR-ODT); ODT; Brand

- **Age:** 6-17 y/o; pediatric only
- **Onset:** ~ 1 hour
- **Duration:** up to 12 hours
- **Release Profile:** 25% IR / 75% ER, methylphenidate ion-bound to polystyrene sulfonate resin
- **Initial Dose:** 17.3 mg once daily in the morning
- **Titration:** 8.6 mg to 17.3 mg every 7 days
- **Max Dose:** 51.8 mg/day
- **Considerations:** Strengths are methylphenidate base, so 17.3 mg equals 20 mg of a hydrochloride product. Do not co-prescribe an H2-blocker or PPI; they alter the release profile.

Methylphenidate

Daytrana (Methylphenidate patch); Brand/Generic

- **Age:** 6-17 y/o; pediatric only
- **Onset:** ~ 2 hours after application
- **Duration:** through 12 hours after application, on a 9-hour wear time
- **Release Profile:** continuous transdermal delivery from an adhesive matrix; no IR fraction and no bead or coat split
- **Initial Dose:** 10 mg/9 h patch (12.5 cm2) once daily, including when converting from an oral methylphenidate
- **Titration:** one patch size every 7 days, in the order 10, 15, 20, 30 mg/9 h
- **Max Dose:** 30 mg/9 h
- **Considerations:** Wear time is a second dosing variable: remove at 9 hours, or earlier for a shorter day. Never cut a patch. Heat or inflamed skin under the patch can double or triple absorption.

Focalin XR (dexmethylphenidate XR); capsule; Brand/Generic

- **Age:**
  - 6-17 y/o: safety and effectiveness established
  - 18 y/o and older: efficacy established at 20, 30 and 40 mg/day
  - Under 6 y/o: not recommended; higher plasma exposure and more adverse reactions, including weight loss, at the same dosage
- **Onset:** ~ 30 min
- **Duration:** up to 12 hours
- **Release Profile:** 50% IR / 50% delayed-release via enteric-coated beads, giving two plasma peaks about 4 hours apart, the second at about 6.5 hours
- **Initial Dose:**
  - New to methylphenidate, 6-17 y/o: 5 mg once daily in the morning
  - New to methylphenidate, 18 y/o and older: 10 mg once daily in the morning
  - Currently on racemic methylphenidate: half the current total daily dose
  - Currently on Focalin immediate-release tablets: the same total daily dose
- **Titration:** 5 mg every 7 days (6-17 y/o); 10 mg every 7 days (18 y/o and older)
- **Max Dose:** 30 mg/day (6-17 y/o); 40 mg/day (18 y/o and older)
- **Considerations:** Once daily in the morning, with or without food. Swallow whole or open onto applesauce and take immediately without chewing. A capsule must never be divided.

Jornay PM (methylphenidate delayed and extended release capsules); capsule; Brand

- **Age:** 6 y/o and older
- **Onset:** delayed until the following morning (~10 hours after an evening dose)
- **Duration:** through the day after dosing
- **Release Profile:** delayed-release outer coat holds absorption overnight; an extended-release inner coat meters release next day
- **Initial Dose:** 20 mg once daily in the evening, started at 8:00 p.m.
- **Titration:** 20 mg every 7 days
- **Max Dose:** 100 mg/day
- **Considerations:** Dose in the evening only, never in the morning. Start at 8:00 p.m., shift within 6:30 to 9:30 p.m. to tune next-morning onset, then hold that time.

Methylphenidate

QuilliChew ER (methylphenidate ER chewable); chewable tablet; Brand

- **Age:** >= 6y; no upper limit
- **Onset:** ~ 45 minutes
- **Duration:** up to 8 hours
- **Release Profile:** 30% IR / 70% ER via drug ion-bound to resin
- **Initial Dose:** 20 mg once daily in the morning
- **Titration:** 10, 15 or 20 mg every 7 days, up or down
- **Max Dose:** 60 mg/day
- **Considerations:** The 20 mg and 30 mg tablets are halved to give the 10 mg and 15 mg steps; the 40 mg is not scored. It contains aspartame, giving 3 to 6 mg of phenylalanine per tablet.

Quillivant XR (methylphenidate XR suspension); oral suspension; Brand

- **Age:** >= 6y; no upper limit
- **Onset:** ~ 45 minutes
- **Duration:** up to 12 hours
- **Release Profile:** 20% IR / 80% ER via drug ion-bound to suspended resin
- **Initial Dose:** 20 mg, which is 4 mL, once daily in the morning
- **Titration:** 10 - 20 mg every 7 days
- **Max Dose:** 60 mg/day, which is 12 mL
- **Considerations:** Shake vigorously at least 10 seconds before every dose or the dose drawn will be wrong. The reconstituted suspension is stable 4 months at room temperature.

Relexxii (Methylphenidate ER (OROS) Tablets); Brand

- **Age:** 6 to 65 y/o
- **Onset:** ~ 1 hour
- **Duration:** up to 12 hours
- **Release Profile:** 18% IR / 82% ER via OROS osmotic delivery
- **Initial Dose:**
  - 6 to 17 y/o, new to methylphenidate: 18 mg once daily in the morning
  - 18 to 65 y/o, new to methylphenidate: 18 mg or 36 mg once daily in the morning
  - From methylphenidate 2-3 times daily, per dose: 5 mg to 18 mg; 10 mg to 36 mg; 15 mg to 54 mg; 20 mg to 72 mg
- **Titration:** 18 mg every 7 days; 27, 45 and 63 mg give intermediate steps
- **Max Dose:**
  - 6 to 12 y/o: 54 mg/day
  - 13 to 17 y/o: 72 mg/day, not to exceed 2 mg/kg/day
  - 18 to 65 y/o: 72 mg/day
- **Considerations:** Swallow whole; chewing or dividing destroys the osmotic pump. The 45, 63 and 72 mg strengths avoid two-tablet regimens above 54 mg. Do not substitute milligram-for-milligram with another methylphenidate.

Methylphenidate

Ritalin LA (methylphenidate LA); capsule; Brand/Generic

- **Age:** 6 to 12 y/o only; no adolescent and no adult indication
- **Onset:** ~ 1 hour
- **Duration:** about 8 hours
- **Release Profile:** 50% IR / 50% DR via bimodal beads
- **Initial Dose:**
  - New to methylphenidate: 20 mg once daily in the morning; 10 mg where a lower start is appropriate
  - From Ritalin twice daily, per dose: 5 mg to 10 mg; 10 mg to 20 mg; 15 mg to 30 mg; 20 mg to 40 mg; 30 mg to 60 mg once daily
- **Titration:** 10 mg every 7 days
- **Max Dose:** 60 mg/day
- **Considerations:** Switching from any methylphenidate other than Ritalin means titrating from the start, not converting milligram-for-milligram. Capsules may be opened onto cool applesauce.

Amphetamine

Adderall XR (amphetamine salt combo ER); capsule; Brand/Generic

- **Age:** ≥ 6 y/o; not recommended below 6 years
- **Onset:** 30-60 min, from the immediate-release bead fraction
- **Duration:** 10-12 hours
- **Release Profile:** Biphasic; immediate-release plus delayed-release beads in one capsule, Tmax about 7 hours
- **Initial Dose:**
  - 6-12 y/o: 10 mg once daily in the morning; 5 mg where a lower start is judged appropriate
  - 13-17 y/o: 10 mg once daily in the morning
  - ≥ 18 y/o: 20 mg once daily in the morning
  - Severe renal impairment (GFR 15 to < 30): 5 mg, 6-17 y/o; 15 mg, adults. ESRD not recommended
- **Titration:**
  - 6-12 y/o: increase by 5 mg or 10 mg at weekly intervals
  - 13-17 y/o: a single increase to 20 mg after one week if control is inadequate
- **Max Dose:**
  - 6-12 y/o: 30 mg/day; doses above 30 mg/day have not been studied in children. Severe renal impairment: 20 mg/day
  - 13-17 y/o: no numeric maximum in the label; no added benefit above 20 mg/day in the adolescent trial
  - ≥ 18 y/o: no numeric maximum; same finding above 20 mg/day
- **Considerations:** Give on awakening and avoid afternoon doses; a capsule may not be divided, and the patient must not take less than one whole capsule per day.

Amphetamine

Adzenys XR-ODT (Amphetamine ER); ODT; Brand

- **Age:** ≥ 6 y/o
- **Onset:** 30 to 60 min
- **Duration:** ~ 12 hours
- **Release Profile:** 50% immediate-release / 50% delayed-release amphetamine in one tablet. Delayed, not extended
- **Initial Dose:**
  - 6-17 y/o: 6.3 mg once daily in the morning
  - ≥ 18 y/o: 12.5 mg once daily, the recommended adult dose rather than a starting dose
- **Titration:** 3.1 mg or 6.3 mg every 7 days, patients 6-17
- **Max Dose:**
  - 6-12 y/o: 18.8 mg/day
  - 13-17 y/o: 12.5 mg/day
  - ≥ 18 y/o: 12.5 mg/day recommended; no separate adult maximum is stated
- **Considerations:** The adolescent ceiling is LOWER than the child ceiling, and is not a typo: a 13 year old cannot exceed 12.5 mg/day. Strengths are amphetamine base; never convert milligram for milligram.

Dyanavel XR (amphetamine ER); oral suspension / chewable / tablet; Brand

- **Age:** ≥ 6 y/o
- **Onset:** ~ 1 hour
- **Duration:** up to 13 hours
- **Release Profile:** combined immediate-release and extended-release components; this label publishes no percentage split
- **Initial Dose:** 2.5 mg or 5 mg once daily in the morning, all patients ≥ 6
- **Titration:** 2.5 mg to 10 mg per day every 4 to 7 days
- **Max Dose:** 20 mg once daily
- **Considerations:** Suspension and tablet substitute milligram for milligram; no other amphetamine does, because these strengths are base rather than salt. Titrate from scratch when switching in.

Mydayis (Dextroamphetamine-Amphetamine ER Capsules); Brand/Generic

- **Age:** ≥ 13 y/o; not established at 12 years and younger
- **Onset:** 2-4 hours to measurable effect
- **Duration:** up to 16 hours
- **Release Profile:** Triple bead; one immediate-release plus two delayed-release beads releasing at pH 5.5 and pH 7.0. Tmax 7-10 hours pediatric, about 8 hours adult
- **Initial Dose:**
  - 13-17 y/o: 12.5 mg once daily on awakening
  - 18-55 y/o: 12.5 mg once daily on awakening; 25 mg may be considered
  - Severe renal impairment (GFR 15 to < 30), adults: 12.5 mg once daily. ESRD not recommended at any age
- **Titration:** 12.5 mg no sooner than weekly, at any age
- **Max Dose:**
  - 13-17 y/o: 25 mg/day; above 25 mg not evaluated in pediatric trials. Severe renal impairment: 12.5 mg/day
  - 18-55 y/o: 50 mg/day; no additional benefit above 50 mg. Severe renal impairment: 25 mg/day
  - No dosing recommendation above age 55
- **Considerations:** Give on awakening; effect may last 16 hours. Take consistently with or without food, since a high-fat meal delays Tmax 4.5 to 5 hours. A missed dose is skipped.

Amphetamine

Vyvanse (Lisdexamfetamine dimesylate); chewable tablet / capsule; Brand/Generic

- **Age:**
  - ADHD: ≥ 6 y/o; not recommended below 6 years
  - Binge eating disorder: ≥ 18 y/o only; not established under 18
- **Onset:** 1.5-2 hours
- **Duration:** 13-14 hours
- **Release Profile:** None. Inactive prodrug hydrolysed by red blood cells; Tmax about 3.5 h from the capsule, 4.4 h from the chewable
- **Initial Dose:**
  - ADHD, ≥ 6 y/o and adults: 30 mg once daily in the morning
  - BED, adults: 30 mg once daily in the morning
- **Titration:**
  - ADHD: 10 mg or 20 mg at approximately weekly intervals
  - BED: 20 mg at approximately weekly intervals, to a target of 50 to 70 mg/day
- **Max Dose:**
  - ADHD and BED: 70 mg/day
  - Severe renal impairment (GFR 15 to < 30): 50 mg/day
  - End stage renal disease (GFR < 15): 30 mg/day
- **Considerations:** Give in the morning; avoid afternoon doses. Capsule and chewable substitute milligram for milligram, but there is no 70 mg chewable.

Xelstrym (Dextroamphetamine patch); Brand

- **Age:** ≥ 6 y/o
- **Onset:** ~ 2 hours
- **Duration:** up to 12 hours
- **Release Profile:** continuous transdermal delivery, about 90% of content over 9 hours; peak plasma at 6 to 9 hours, ~6 hours on repeat
- **Initial Dose:**
  - 6-17 y/o: 4.5 mg/9 h daily
  - ≥ 18 y/o: 9 mg/9 h daily
- **Titration:** 4.5 mg/9 h every 7 days, patients 6-17
- **Max Dose:**
  - All ages: 18 mg/9 h, one system per 24 hours
  - Severe renal impairment, GFR 15 to under 30 mL/min/1.73 m^2: 13.5 mg/9 h
  - End-stage renal disease, GFR under 15 mL/min/1.73 m^2: 9 mg/9 h
- **Considerations:** Apply 2 hours before effect is needed, remove within 9 hours, and use a shorter wear to shorten the day. Rotate sites daily, never cut a patch, and keep external heat off it.

Revision #36
Created 2024-12-28 04:58:16 UTC by Josh LeJeune NP
Updated 2025-02-19 04:28:09 UTC by Josh LeJeune NP