

ADHD Medications

	Stimulants - Methylphenidate Long-Acting Formulations									
Drug	Dexmethylphenidate	Methylphenidate								
Brand	Focalin XR	Methylphenidate ER	Aptensio XR	Concerta⁸	Cotempla XR - ODT	Daytrana	Jornay PM	Metadate CD	Quillivant XR	Ritalin LA
Max Dose	40 mg/d	6 to 12 yo: 54 mg/d 13 to 65 yo: 72 mg/d	60 mg/d	72mg/d	51.8 mg/d	30 mg/d	100 mg/d	60 mg/d	60 mg/d	60 mg/d
Dosage Forms	Caps: 5, 10, 15, 20, 25, 30, 35, 40 mg	Tabs: 18, 27, 36, 45, 54, 63, 72 mg	Caps: 10, 15, 20, 30, 40, 50, 60 mg	Tabs: 18, 27, 36, 54 mg	Tabs: 8.6, 17.3, & 25.9 mg	Patch: 10, 15, 20, 30 mg	Caps: 20, 40, 60, 80, 100 mg	Caps: 10, 20, 30, 40, 50, 60 mg	Susp: 25mg/5mL (60, 120, 150, 180 mL)	Caps: 10, 20, 30, 40, 60 mg
Administration	QAM with or without food ²³	QAM with or without food	QAM with or without food ²²	QAM with or without food, must be taken with fluids	QAM consistently with or without food	Apply to hip area at the same time each day (alternating hips)	QPM consistently with or without food	QAM with or without food ²²	Shake ≥10 sec, QAM with or without food	QAM with or without food ²²
Onset	0.5 to 1h	1 h	1 h	≤1 h	~1h	≤2 h	~12 h	≤1 h	≤1 h	≤1 h
Tmax	Tmax: 1.5 h (1 st peak) 6.5 h (2 nd peak)	Tmax: 1.5h (1 st peak), 5.5 h (2 nd peak)	Tmax: 2 h (1 st peak), ~8 h (2 nd peak)	Tmax: 6.8 h	Tmax: 5 h	7.5 to 10.5 h	Tmax ~14 h	Tmax: 1.5 to 3h (1st peak), 4.5 to 6.6 h (2 nd peak)	Tmax: 2 to 5 h	Tmax: 1.5 to 3 h (1st peak), 4.5 to 6.6 h (2nd peak)
DOA⁶	9 to 12 h	Upto 24 h?	12 h	10-12 h	12 h	10-12 h	Dose dependent	8 h	12 h	8 h
Release	50% IR, 50% DR beads 0.5 to 1 hour; a second peak effect occurs ~6.5 hours after dose	Osmodex [®] osmotic drug delivery for controlled release throughout the day	Multi-layered beads- 40% IR, 60% CR	Tabs: non absorbable, 22% IR, 78% CR	ER ODT tabs	Transdermal onset: 2 hours after application	Delexis drug delivery technology contains 2 functional film coatings DR/ER - act synergistically to provide long-acting coverage	30% IR 70% DR beads	Susp: 20% IR, 80% DR	50% IR, 50% DR beads ~ 4 hrs after administration
Comments	Mimics BID dosing Bimodal release – a single, once-daily cap provides the same amount of dexmethylphenidate as two tabs given 4 hours apart Caps contents may be sprinkled over a spoonful of applesauce; consume immediately	Generic formulation of branded MPH ER tabs Biphasic pattern of absorption Highest MPH dose available Dose conversion from other MPH products not available?	T1/2 ~ 5 h Capsule maybe opened and sprinkled onto applesauce	Osmotic controlled release formulation (OROS) Do not crush or chew Not to be used with preexisting severe GI narrowing conditions	Take as soon as the blister is opened	Avoid exposure to external heat source, do not cut patch, total wear time should not exceed 9 h Absorption may continue for several hours after removal Efficacy of therapy >7 weeks has not been established	Given in PM between 6:30 to 9:30 pm. Maintain consistent dosing schedule once optimal time determined Capsules may be opened & contents sprinkled on applesauce	T1/2 ~7 h Initial dose 20 mg QDay Cap may be opened and sprinkled on food High fat meal may delay early peak (~1 h), & increase Cmax (~30%)	T1/2 ~5 h High fat meal may delay early peak (~1 h), & increase Cmax (~28%) Shake well for >10 sec before administering Wash dispenser after use	Spheroidal Oral Drug Absorption System (SODAS) mimics bimodal release of IR drug High fat meal may delay peak Initial dose 20 mg QDay

ADHD Medications

Stimulants – Amphetamine Long-Acting Formulations						
Drug	Mixed Amphetamine Salts					Lisdexamphetamine
Brand	Adderall XR	Mydayis®	Dyanavel XR	Adzenys XR-ODT	Xelstrym	Vyvanse
Max Dose	60 mg/day	50 mg/day	20 mg/day	18.8 mg/day*	4.5mg/9 hrs, 9mg/9hrs, 13.5mg/9hrs, 18mg/9hrs	70 mg/day
Dosage Forms	5, 10, 15, 20, 25, 30 mg caps	12.5, 25, 37.5, 50 mg caps	2.5 mg/mL ER susp 5, 10, 15, 20mg ER chewable tabs	ODT: 3.1, 6.3, 9.4, 12.5, 15.7, 18.8 mg	Transdermal patch	10, 20, 30, 40, 50, 60, 70 mg caps
Administration	Administer with or without food. Avoid afternoon doses to avoid insomnia	Administer upon awakening consistently with or without food	QAM with or without food Shake suspension well	QAM with or without food Remove tab, immediately place on tongue & allow to disintegrate. Swallow with saliva	Apply one 9mg/9 hour transdermal system topically 2 hours before an effect is needed and remove within 9 hours after application	QAM with or without food Avoid afternoon doses to avoid insomnia
Onset	≤1 h	2 to 4 h	≤1 h	≤1 h	2 h	≤1 h (delayed onset with food)
Tmax	Tmax: 7 h	Tmax extends by 5 h (d-amphetamine 7- 12h) & 4.5 h (l-amphetamine 7.5 - 12 h) after high-fat meal			Tmax: 9 h	Tmax: 3.5 to 3.8 h
DOA ⁶	8 to 12 h	10 to 16 h	up to 13 hours	8 to 12 hours	9-12 hours with 9-hour application	8 to 13 h
Release	3:1 ratio of d-amphetamine & l-amphetamine salts	3:1 ratio of d- to l-amphetamine salts	3.2 :1 ratio of d- to l-amphetamine salts	3:1 ratio of d-to l-amphetamine 50% IR & 50% ER	dextroamphetamine	pro-drug to dextro amphetamine
Comments	Caps may be opened & contents sprinkled on applesauce (consume immediately without chewing)	<ul style="list-style-type: none"> • For 13 years & older • Prior to treatment, assess for cardiac disease • Do not substitute for other amphetamine drugs on a mg-per-mg basis • Caps may be opened & contents sprinkled on a spoonful of applesauce (consume immediately without chewing) 	Shake well before administering suspension Wash suspension dispenser after each use Tablets can be chewed or swallowed whole	Do not chew or crush tablet	May titrate up to MAX 18mg/9 hours; use only one patch per 24 hours Application of heating pad shortened Tmax & increased AUC May remove early to adjust duration of action. Effects last 2-3 hour after removal	Caps may be opened & contents mixed with water, yogurt, orange juice; stir until dispersed completely Continuous-release capsule. High fat meal may delay peak by ~1 hr

ADHD Medications

Stimulants - Intermediate Acting Formulations			
Drug^{1,2}	Methylphenidate		Dextroamphetamine
Brand	Ritalin SR	Metadate ER	Dexedrine Spansules (intermediate to long-acting)
Max Dose (mg/day)	60	60	40
Dosage Forms	20 mg tabs	20 mg tabs	5, 10, 15 mg caps
Administration	Take 30 to 45 minutes before a meal. Swallow whole		Administer initial dose on awakening. Avoid late evening administration (potential for insomnia)
Onset	1 to 3 h ²¹		1-2 h
DOA⁶	2 to 6 h ²¹		8 h
Release	SR	ER	Caps: 50% IR & 50% DR beads
Comments	May be given in place of IR formulation (DOA about 8 h), once the IR daily dose is titrated & the titrated 8-hour dosage corresponds to sustained or ER tablet size		Do not crush sustained release products

ADHD Medications

Stimulants - Short Acting Formulations

Drug	Dextroamphetamine	Amphetamine	Mixed Amphetamine Salts	Dexmethylphenidate	Methylphenidate
Brand	DextroStat, Dexedrine	Evekeo	Adderall	Focalin	Ritalin, Methylin
Max Dose	60 mg/day	40 mg/day	40 mg/day	20 mg/day	60 mg/day
Dosage Forms	5, 10 mg tab	5, 10 mg tab	5, 7.5, 10, 12.5, 15, 20, 30 mg tabs	2.5, 5, 10 mg tab	5, 10, 20 mg tab; Methylin: 5 mg/5 mL (500 mL); 10 mg/5 mL (500 mL) Methylin chewable tab: 2.5, 5, 10 mg
Administration	Administer 1st dose on awakening	Administer with or without food Administer first dose on awakening, additional doses at 4-6 hrs intervals	Administer with or without food. Administer in 1 to 3 divided doses per day (4 - 6 hrs interval)	twice daily at least 4 hours apart; with or without food	Administer 30 to 45 min before a meal. Administer chewable tablet with at least 8 ounces of water/fluid
Onset	30-60 minutes	-	30-60 minutes	Rapid, within 1 to 2 hours	30-60 minutes
DOA ⁶	4 to 6 h	4 to 6 h	4 to 6 h	3-5 h	3-6 h
Comments	Avoid late evening dosing				High fat meal may delay peak by 1.5 hrs. Administer last dose before 6 pm if difficulty sleeping

ADHD Medications

Non-Stimulants								
Drug ^{1,2}	Brand	Dosing	Formulation	Dosage Forms (mg)	Max Dose (mg/day)	Onset: Peak effect	DOA ⁶	Crush?
Atomoxetine	Strattera	QDay - BID		caps: 10, 18, 25, 40, 60, 80, 100	100	1 wk ¹⁷	at least 10 to 12 h ¹⁶	No
Bupropion	Wellbutrin	TID	IR	tab: 75, 100	450	T _{max} 2 h	8 h	Yes
	Wellbutrin SR	BID	ER (12 h)	tab: 100, 150, 200	400	T _{max} 3 h	12 h	No
	Wellbutrin XL	QDay	ER (24 h)	tab: 150, 300	450	T _{max} 5 h	24 h	No
Clonidine	Catapres	QDay - QID	IR	tab: 0.1, 0.2, 0.3	2.4	2 - 4 h	6 - 10 h	Yes
	Catapres-TTS	Q 7 days	Patch	0.1, 0.2, 0.3 mg/24 h	0.6	2-3 days	T _{1/2} ~20 h ¹⁸	N/A
Guanfacine	Tenex		IR	tab: 1, 2		T _{max} 2.6 h	T _{1/2} ~17 h ¹⁹	Yes
	Intuniv	QDay	ER	tab: 1, 2, 3, 4	4	T _{max} ~5 h	at least 8 to 12 h	No ²⁰
Viloxazine	Qelbree	QDay		caps: 100, 150, 200	200	T _{max} ~5 h	T _{1/2} ~17h	No

1: all pregnancy category C except Tenex (category B) 2: generic available except Daytrana Patch, Quillivant XR, Vyvanse, Strattera, and Intuniv 3: transdermal: ~2 h (expedited by external heat) 4: Transdermal Patch 10 mg/9 h; 15 mg/9 h; 20 mg/9 h; 30 mg/9 h 5: Metadate CD capsules contains IR and ER beads, designed to release 30% of the dose immediately and 70% over an extended period 6: Duration of Action 7: ER/SR 8: osmotic controlled release formulation (OROS), IR overcoat provides an initial dose of methylphenidate within 1 hr, the remaining dose is released at a controlled rate over 5-9 hrs. The overcoat covers a trilayer core. The trilayer core is composed of two layers containing the drug and excipients, and one layer of osmotic components. As water from the GI tract enters the core, the osmotic components expand and methylphenidate is released 9: 1st peak: 1.5 hrs (range: 1-4 hours), 2nd peak: 6.5 hours (range: 4.5-7 hours) 10: May be taken whole or sprinkled on applesauce, sprinkled applesauce should not be chewed or stored 11: Caps may be opened & contents sprinkled over a spoonful of applesauce 12: prodrug of dextroamphetamine; requires hydrolysis in gut for activation; may limit abuse potential if injected or snorted 13: Swallow capsule whole, do not chew; capsule may be opened and the entire contents dissolved in glass of water 14: Dextroamphetamine: 3.8 hours (fasting), 4.7 hours (after high-fat meal) 15: Patients not currently taking methylphenidate 16: T_{1/2}- Atomoxetine: 5 hours (up to 24 h in poor metabolizers); Active metabolites: 4-hydroxyatomoxetine: 6-8 hours; N- desmethylatomoxetine: 6-8 hours (34-40 hours in poor metabolizers) 17: T_{max} 1-2 h, ADHD initial response: 1 week 18: T_{1/2} (after patch removal) ~20 h 19: T_{1/2} ~17 h (range: 10-30 h) 20: avoid high-fat meals 21: in children 22: Capsules may be opened and the contents sprinkled onto a small amount (equal to 1 tablespoon) of cold applesauce. Swallow applesauce mixture immediately without chewing. Do not crush or chew capsule contents 23: Capsules may be opened and contents sprinkled over a spoonful of applesauce; consume immediately; do not store for future use 24: in adults 25: 9 to 12 yo: 4 h (range: 3.98 to 6 hours); Adolescents (13 to 15 years): 2 hours (range: 1.98 to 4 hours); Adults: 4 hours (range: 1.3 to 7.3 hours)

References available upon request

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