

DRUG CARDS | DAILY



NAME(S):

- **Generic:** methylphenidate (methylphenidate)
- **Brand:** Ritalin, Ritalin LA, Concerta, Aptensio XR (40 IR/60 ER), Jornay PM, Daytrana, Methylin, Quillivant XR, QuillChew ER, Relexi, Cotempla XR-ODT

PHARMACOLOGIC & THERAPEUTIC CLASS: Stimulant | Norepinephrine Dopamine Reuptake Inhibitor (NDRI)

DOSAGE FORM & STRENGTH: (NOTE: There are many so always double check!)

- **ER Caps (50% IR, 50% ER):** 10 mg, 20 mg, 30 mg, 40 mg, 50 mg, 60 mg
- **ER Caps (30% IR, 70% ER):** 10 mg, 20 mg, 30 mg, 40 mg, 50 mg, 60 mg
- **ER Caps:** ... and others i.e. Aptensio 40 IR/60 ER
- **ER Caps:** 10 mg, 15 mg, 20 mg, 30 mg, 35 mg, 40 mg, 45 mg, 50 mg, 55 mg, 60 mg, 70 mg, 85 mg, 100 mg
- **ER Tabs:** 10 mg, 20 mg
- **ER Tabs:** 18 mg, 27 mg, 36 mg, 54 mg, 72 mg
- **ER Suspension:** 25 mg/5 mL
- **ER Disintegrating Tab:** 8.6 mg, 17.3 mg, 25.9 mg
- **ER Chewable Tab:** 20 mg, 30 mg, 40 mg
- **IR Chewable Tab:** 2.5 mg, 5 mg, 10 mg
- **IR Tab:** 5 mg, 10 mg, 20 mg
- **IR Solution:** 5 mg/5 mL, 10 mg/5 mL
- **Transdermal Patch:** 10 mg/9 hr, 15 mg/9 hr, 20 mg/9 hr, 30 mg/9 hr
- And other IR/ER spits...

INDICATION(S) & DOSING(S): ADULTS

1. Attention Deficit Hyperactivity Disorder (ADHD):

- **[IR Dosage Form]** Tx range 5-15 mg PO two to three times daily. Initiate 5-10 mg PO bid w/ dose increases of 5-10 mg/day every 7 days. Max of 60 mg/day. Duration of action is b/t 3-5 hours and should be given 30-45 min before a meal w/ doses not taken after 6 pm.
- **[ER Tablet dosed qd-bid]** Tx range b/t 10-20 mg PO one-two times daily. Initiate 10-20 mg PO qam w/ dose increase of 10 mg/day every 7 days. Max 60 mg/day. Duration of action b/t 2-8 hours. Take 30-45 minutes before a meal w/o crushing, cutting, or chewing the ER tablet.
- **[ER Tablet dosed qd]** Tx range 18-72 mg ER PO qam. Initiate 18-36 mg ER PO qd w/ dose increase of 18 mg/day every 7 days. Max of 72 mg/day. Do not use in patients over 65 years or older. Duration of action of ~12 hours. Do not crush/cut/chew.
- **[ER Capsule dosed qd]** Tx range 20-60 mg ER PO qam. Initiate 20 mg ER PO qam w/ dose increase b/t 10-20 mg/day every 7 days. Max of 60 mg/day.

2. Narcolepsy:

- **[IR Dosage Form]** Tx range 5-15 mg PO two to three times daily. Initiate 5-10 mg PO bid w/ dose increase b/t 5-10 mg/day every 7 days. Max of 60 mg/day.
- **[ER Tablets dosed qd-bid]** Tx range b/t 10-20 mg PO one to two times daily. Initiate 10-20 mg PO qam. Dose increase of 10 mg/day every 7 days. Max of 60 mg/day.



INDICATION(S) & DOSING(S): PEDIATRICS

1. **ADHD:**

- **[IR dosage form for ages 4-5 years old]** Tx range is b/t 2.5-7.5 mg PO tid. Initiate 2.5 mg PO bid w/ dose increase to 7.5 mg PO tid over 7 days. Max of 30 mg/day.
- **[IR dosage form for ages 6 and up]** Tx range b/t 0.3-2 mg/kg/day PO divided two to three times daily. Initiate 0.3 mg/kg/dose PO bid OR 2.5-5 mg PO bid w/ dose increase 0.1 mg/kg/dose OR 5-10 mg/day every 7 days. Max of 2 mg/kg/day up to 60 mg/day. Duration of action is b/t 3-5 hours.
- **[ER tablet dosage form given qd-bid for ages 6 and up]** Tx range 10-20 mg PO qd-bid. Initiate 10 mg PO qam. Dose increase by 10 mg/day every 7 days. Max of 2 mg/kg/day up to 60 mg/day. An alternative dosing tx range is 0.3-2 mg/kg/day PO divided one to two times daily. The duration of action is b/t 2-8 hours.
- **[ER capsule dosage form given qd for ages 6 and up]** Tx range 20-60 mg PO qam. Initiate 20 mg PO qam w/ dose increase of 10-20 mg/day every 7 days. Max of 2 mg/kg/day up to 60 mg/day.
- **[ER tablets given qd for ages 6-12]** tx range of 18-54 mg PO qam. Initiate 18 mg PO qam w/ dose increase of 18 mg/day every 7 days. Max of 2 mg/kg/day up to 54 mg/day. Duration of action is 12 hours.
- **[ER tablets given qd for ages 13 and up]** Tx range of 18-72 mg PO qam. Initiate 18 mg PO qam w/ dose increase of 18 mg/day every 7 days. Max of 2 mg/kg/day up to 72 mg/day w/ a duration of action of 12 hours.

MECHANISM OF ACTION & PHARMACOLOGY

- **MOA:** Not fully understood. Purposed sympathomimetic CNS activity stimulation occurs in the extraneuronal space. Increased norepinephrine (NE) and dopamine (DA) release while NE and DA reuptake is blocked. Stimulation in the cerebral cortex and subcortical structures appear to be similar to the affects of amphetamines. | **Absorption** is variable based on the dosage form, specific formulation, and food consumption. For example, food may delay initial peak in some formulations (IR tabs) while high fat meals may increase or decrease Cmax and AUC in other formulations (Aptensio, Jornay, Metadate). Consult literature to verify based on dosage form. | Extensively **metabolized** by the liver through de-esterification. 78-97% **excreted** in the urine with 1-3% fecally. | The **Onset of Action** is variable based on dosage form and particular formulation. ER caps (Metadate CD, Ritalin LA), ER tab (Concerta), IR chewable tab, oral solutions, and IR tabs are around 20-60 minutes. SR tabs are around 60-180 minutes. Transdermal is around 60 minutes. | The **Time to Peak** is also variable with the overall range b/t 1-5 hours and as high as 14 hours in adults. | The **Duration of Action** is b/t 8-16 hours. | The **Half-Life Elimination** is b/t 4-7 hours. | 10-33% **protein bound**.

SPECIAL POPULATIONS & CONSIDERATIONS

- **Extended Release Capsules Interchangeability:** ER Caps are not interchangeable by mg to mg dose. For example, for the ER caps have a biphasic release **(50% IR/50% DR)** that is comparable to 2 IR doses given 3 hours apart. Another example is that ER caps that have a biphasic release **(30% IR/ 70% ER)** is comparable to 2 IR doses given 2 hours apart w/ duration of action b/t 6-9 hours. There are conversion available and it is highly suggested to refer to them when converting. | **Patient Contraindications & Cautions:** Severe agitation/anxiety, Tourette's, glaucoma, hyperthyroidism, HTN, CHF, seizure hx/risk, and hx of substance abuse. | **Pregnancy:** Conflicting data. May be considered if ADHD tx is needed.

SIDE EFFECTS

- **Common:** Insomnia, weight loss, irritability, headache, nausea, abdominal pain, dizziness, & palpitations.
- **Serious:** Abuse, dependency, psychosis, MI, HTN, seizures, sudden death, leukopenia, & hepatotoxicity.



BLACK BOX WARNING: Abuse/Dependence – CNS stimulants abuse risk should be assessed prior to prescribing. Monitor for s/sx of abuse/misuse/dependence.

DRUG INTERACTIONS

- **Considerations for DI:** Gastric pH sensitive, hypertensive effects, ↑ seizure threshold, & serotonergic effects.
- **Some contraindicated and drug(s) of note:** Yohimbe, phenelzine, selegiline, cimetidine, citalopram, duloxetine, lithium, midodrine, morphine, tramadol, sertraline, bupropion, caffeine, esmolol, ephedrine, & oxaprozin.

MONITORING PARAMETERS

- Cardiac evaluation in pts that develop chest pain, syncope, and s/sx of cardiac disease, BP, sleep & behavior changes, growth rate, weight, & appetite.

PATIENT COUNSELING INFORMATION

- Methylphenidate is used to **increase ability to pay attention or stay focused and control behavior** in adults and children.
- Methylphenidate is also used in adults to treat **narcolepsy**.
- IR and ER formulations are to be **given 30-45 min before a meal with no doses given after 6 pm** for both adults and pediatrics.
- ER formulation is intended to be **taken whole** and not to be crushed, cut, or chewed.

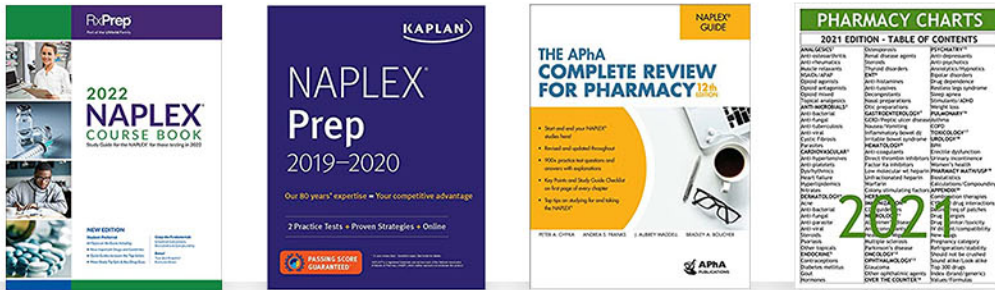
REFERENCE(S) & RESOURCE(S)

1. <https://online.epocrates.com/drugs/25210/methylphenidate/Monograph>
2. <https://www.drugs.com/ppa/methylphenidate.html>
3. <https://www.webmd.com/drugs/2/drug-12114-94/methylphenidate-hcl-oral/methylphenidate-oral/details>

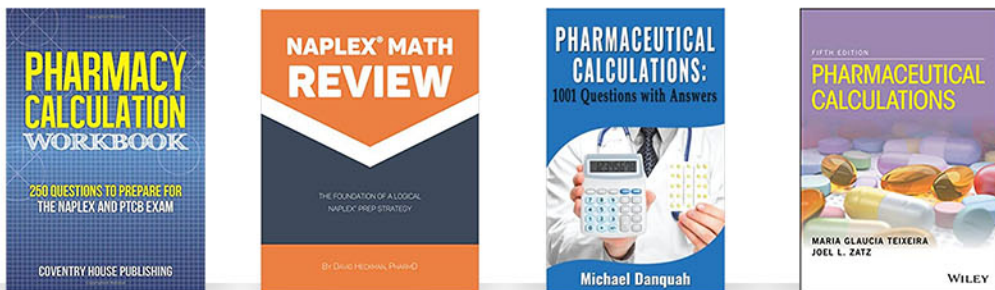


PREPARE FOR SUCCESS!

Comprehensive (NAPLEX)



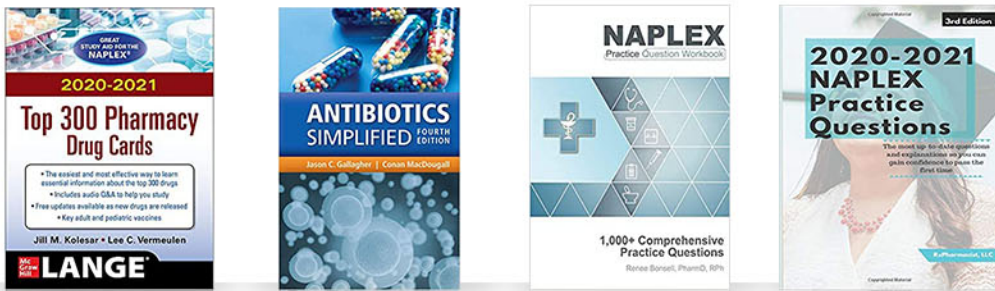
Calculations (NAPLEX)



Pharmacy Law (MPJE)



Supplemental



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DRUG CARDS DAILY

Monday at 7 am EST
(6 am CST, 4 am PST)

HEY NEW GRAD!

So you landed that perfect job offer or got the perfect match for your PGY1 and now the **ONLY** thing standing in your way is passing the NAPLEX and MPJE.

Here are some NAPLEX & MPJE prep recommendations to help you do everything you can to **pass the first time!**

HEY STUDENT!

When I was P1 one of the best pieces of advice I got from those before me was to use a NAPLEX Prep book while learning each topic.

This helps focus your learning and the repetition helps to retain info and indirectly prepare you for the NAPLEX



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