

# DRUG CARDS | DAILY



**NAME(S): Generic:** digoxin (di JOKS in) | **Brand:** Digox, Digitalis, Lanoxicaps

**PHARMACOLOGIC & THERAPEUTIC CLASS:** Antiarrhythmic Agent | Cardiac Glycoside | Inotrope

**DOSAGE FORM & STRENGTH:** **Tab**s: 62.5 mcg, 125 mcg, 187.5 mcg, 250 mcg | **Sol:** 0.05 mg/mL | **Inj:** 0.25 mg/mL

**INDICATION(S) & DOSING(S): ADULTS** (NOTE: Use lean body weight (LBW) for dose calculations. Doses are adjusted based on levels. The IV formulation is preferred to IM.)

1. **Heart Failure with reduced Ejection Fraction (HFrEF):**

- Tx range is b/t 3.4-5.1 mcg/kg/dose PO qd. IM/IV dosing is between 2.4-3.6 mcg/kg/dose.
- A loading dose of 10-15 mcg/kg PO or 8-12 mcg/kg IM/IV divided into 3 doses. 50% is given first, then 25% given in 6-8 hours and the last 25% in 6-8 hours.

2. **Atrial Fibrillation:**

- Tx range is b/t 3.4-5.1 mcg/kg/dose PO qd. IM/IV dosing is b/t 2.4-3.6 mcg/kg/dose for rate control.
- Loading dose is b/t 10-15 mcg/kg PO OR 8-12 mcg/kg IM/IV divided into three doses. 50% given initially. 25% after 6-8 hours. Then the remaining 25% after 6-8 hours.

- OFF LABEL | **Paroxysmal Supraventricular Tachycardia (PSVT) conversion:** Refer to HfrEF dosing.

**INDICATION(S) & DOSING(S): PEDIATRICS** (Weight based dosing based on LBW)

1. **HFrEF:**

- **Premature neonates:** Tx range is **4.7-8 mcg/kg/day PO** divided q12h OR b/t **3.8-6.2 mcg/kg/day IM/IV** divided q12h. Loading dose is b/t **20-30 mcg/kg PO** OR b/t **15-25 mcg/kg IM/IV** divided into 3 doses with 50% initially, 25% 4-8 hours later, and the final 25% given 4-8 hours later. Dosing based on LBW.
- **Full-term neonates:** Tx range is **7.5-11.3 mcg/kg/day PO** divided q12h OR b/t **6-9 mcg/kg/day IM/IV** divided q12h. Loading dose is b/t **25-35 mcg/kg PO** OR b/t **20-30 mcg/kg IM/IV** divided into 3 doses with 50% initially, 25% 4-8 hours later, and the final 25% given 4-8 hours later. Dosing based on LBW.
- **1 month to 2 years:** Tx range is **11.3-18.8 mcg/kg/day PO** divided q12h OR b/t **9-13 mcg/kg/day IM/IV** divided q12h. Loading dose is b/t **35-60 mcg/kg PO** OR b/t **30-50 mcg/kg IM/IV** divided into 3 doses with 50% initially, 25% 4-8 hours later, and the final 25% given 4-8 hours later. Dosing based on LBW.
- **2 years to 5 years:** (Note the dec from prev age range) Tx range is **9.4-13.1 mcg/kg/day PO** divided q12h OR b/t **7.6-10.6 mcg/kg/day IM/IV** divided q12h. Loading dose is b/t **30-45 mcg/kg PO** OR b/t **25-35 mcg/kg IM/IV** divided into 3 doses with 50% initially, 25% 4-8 hours later, and the final 25% given 4-8 hours later. Dosing based on LBW.
- **5 years to 10 years:** (Note the dec from prev age range) Tx range is **5.6-11.3 mcg/kg/day PO** divided q12h OR b/t **4.6-9 mcg/kg/day IM/IV** divided q12h. Loading dose is b/t **20-35 mcg/kg PO** OR b/t **15-30 mcg/kg IM/IV** divided into 3 doses with 50% initially, 25% 4-8 hours later, and the final 25% given 4-8 hours later. Dosing based on LBW.
- **>10 years:** (Note 1. The dec from prev age range; 2. Freq is qd instead of divided q12 dosing; 3. Load dose freq is now 6-8h instead of 4-8h) Tx range is **3.4-5.1 mcg/kg/day PO qd** OR b/t **2.4-3.6 mcg/kg/day IM/IV qd**. Loading dose is b/t **10-15 mcg/kg PO** OR b/t **8-12 mcg/kg IM/IV** divided into 3 doses with 50% initially, 25% **6-8 hours** later, and the final 25% given **6-8 hours** later. Dosing based on LBW.



- **OFF LABEL | Atrial Fibrillation and PSVT conversion:** Similar to HfrEF w/ changes in dosing ranges. Please refer to most current literature in case there were range changes. Same are ranges as follows: Premature neonates, Full-term neonates, 1 month to 2 years, 2 years to 5 years, 5 years to 10 years, & >10 years.

#### MECHANISM OF ACTION & PHARMACOLOGY

- **MOA:** Na/K ATPase pump is inhibited → Increase of sodium intracellularly → Increased influx of calcium → increased contractility and improved baroreflex sensitivity. Specific to HF there is an increase in contractility and possible improvement in baroreflex sensitivity. Regarding Supraventricular arrhythmias there is an increased refractory period, a decrease of conduction velocity, some positive inotropic effects, and a decrease ventricular rate. | **Absorbed** in the upper small intestine. It is passive and non-saturable. | **Metabolized** in stomach via hydrolysis. Only ~16% through the liver. | 50-70% **excreted** in the urine. | The **onset of action** is b/t 1-2 hours when taken orally and 5-60 minutes if taken intravenously. | **Time to peak** is 1-3 hours. | **Duration of action** is b/t 3-4 days. | **Half-life elimination** in neonates is between 61-170 hours. Infants 18-25 hours. Children 18-36 hours. Adults 36-48 hours. | ~25% **protein bound**.

#### SPECIAL POPULATIONS & CONSIDERATIONS

- **Diet:** Make sure to maintain a healthy amount of dietary potassium in order to decrease the risk of hypokalemia. Low potassium increases risk of toxicity from digoxin | **Renally Impaired:** If eGFR is b/t 10-50 give b/t 25-75% of usual dose q24-36h. If eGFR is <10 give b/t 10-25% usual dose q48h. | Some **caution in pts** to be aware of are pts w/ ventricular fibrillation, myocarditis, acute MI, hypokalemia, hypocalcemia, renal impairment, AV block, bradycardia, and thyroid disease. | **Digoxin Toxicity:** S/sx are anorexia, n/v, visual changes, and usually associated w/ levels >2 ng/mL. Risk factors are pts w/ low body weight, advanced age, renal impairment, and low K<sup>+</sup>/Ca<sup>++</sup>/Mg<sup>++</sup> | **Pregnancy/Lactation:** May use. Harm not expected. No known risk. Limited data.

#### SIDE EFFECTS

- **Common:** Dizziness, headache, n/v/d, bradycardia, weakness, confusion, palpitations, depression, & more.
- **Serious:** Intestinal ischemia, delirium, thrombocytopenia, severe bradycardia, and AV block.

#### DRUG INTERACTIONS

- **Some considerations made when accessing possible DI:** P-gp substrate, meds that delay gastric emptying, binding to anion/cation exchange resin/polymer, bradycardia, & meds that shorten QT interval.
- **Some drug(s) of note to be avoided:** clonidine, neomycin, succinylcholine, and fingolimod.
- **Some drug(s) of note that warrant caution/adjustments:** acarbose, aloe, amiodarone, azithromycin, atropine, colestipol, carvedilol, esomeprazole, doxycycline, indomethacin, ibuprofen, warfarin, and many others.

#### MONITORING PARAMETERS

- **Drug specifics:** In HF the tx drug levels are b/t 0.5-0.9 ng/mL. In Afib b/t 0.8-2 ng/mL. **Digoxin serum concentrations should be drawn approximately 6-8h after last dose.** Anything >2 ng/mL is considered a toxic level of the medication.
- **General:** Serum drug levels, HR, electrolytes, & Cr.

#### PATIENT COUNSELING INFORMATION

- Digoxin is commonly used in the treatment of **Heart Failure** and **Chronic Atrial Fibrillation** by reducing strain on the heart and helping to maintain a strong/steady/normal heartbeat.
- Taken w/ or w/o food with maintenance dosing typically being once daily unless otherwise specified by Pbr.



- **Foods high in fiber** and medications such as cholestyramine, cholestipol, or psyllium will decrease drug absorption so digoxin should be taken at **least 2 hours before or 2 hours after**.
- Medication should be taken regularly at the same time each day.

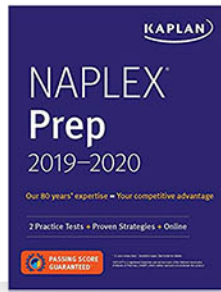
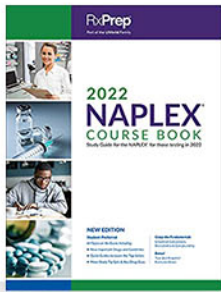
REFERENCE(S) & RESOURCE(S)

1. <https://online.epocrates.com/drugs/19710/digoxin/Monograph>
2. <https://www.drugs.com/ppa/digoxin.html>
3. <https://www.webmd.com/drugs/2/drug-4358/digoxin-oral/details>

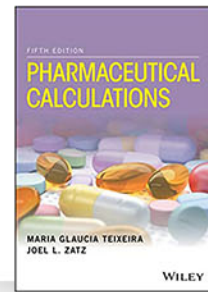
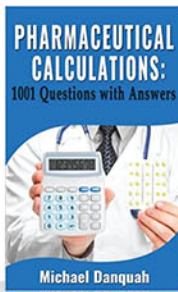
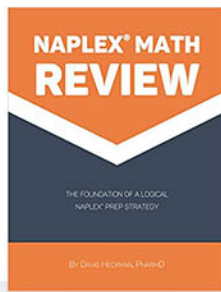
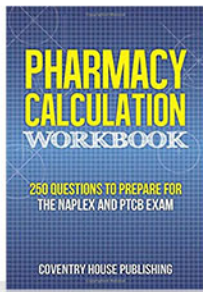


# PREPARE FOR SUCCESS!

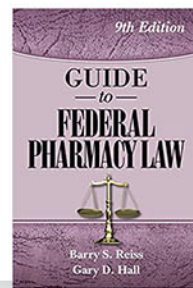
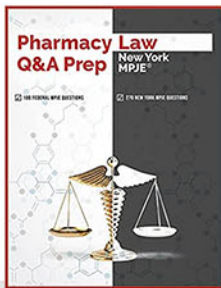
## Comprehensive (NAPLEX)



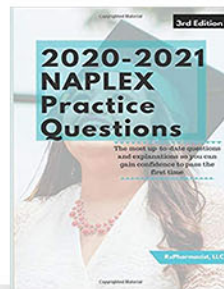
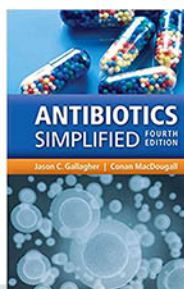
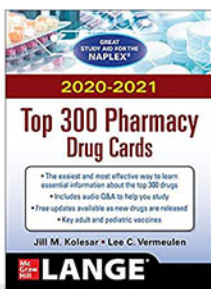
## Calculations (NAPLEX)



## 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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