

Top 50 Commonly Prescribed Drugs: Knowledge for Better Eye Care

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Cholesterol lowering drugs

- <http://www.nhlbi.nih.gov/files/docs/guidelines/atglance.pdf> (National Cholesterol Education Program)

High Cholesterol in the United States

- 73.5 million adults (31.7%) in the United States have high LDL cholesterol.
- Less than half of adults with high LDL cholesterol are getting treatment.
- Nearly 31 million adult Americans have a total cholesterol level greater than 240 mg/dL.

1. Atorvastatin (Lipitor)

- Indications: Hyperlipidemia | Prevention of cardiovascular disease
- Dosage: 10 - 80 mg/d
- MOA: HMG-CoA reductase inhibitor
- Contraindications: Pregnancy: fetal harm | Active liver disease
- Adverse reactions: Rhabdomyolysis and myopathy | Liver enzyme abnormalities
- Drug Interactions: Myopathy: Cyclosporin, tipranavir clarithromycin, itraconazole

7. Simvastatin (Zocor)

- Indications: Hyperlipidemia | Prevention of cardiovascular disease
- Dosage: 5 - 80 mg/d, starting 20 – 40 mg/d; Lipid determinations after 4 weeks
- MOA: Prodrug | HMG-CoA reductase inhibitor
- Contraindications | Pregnancy: fetal harm | Active liver disease

23. Pravastatin (Pravachol)

43. Crestor (rosuvastatin)

42. Fenofibrate (Tricor)

Indications: Primary hypercholesterolemia | Hypertriglyceridemia

Dosage: 50 - 150 mg/d; Lipid determination at 4-8 weeks

MOA: Stimulates peroxisome proliferator activated receptor α (PPAR α)

Contraindications: Severe renal impairment | Active liver disease

Ocular manifestation of cholesterol deposits

- Xanthlasma, Arcus, Hollenhorst plaque

Thyroid Drugs

Facts about thyroid

- 27 million Americans have some sort of thyroid disease.
- ~ 13 million have no idea they suffer from a thyroid problem.
- Typically, women are more prone to thyroid issues than men.
- Thyroid disease becomes more common as we age.
- In the U.S., one in 1,000 women have hyperthyroidism.
- Many thyroid abnormalities are seen during times of fluctuating reproductive hormones.
- Thyroid panel (T4, T3, TSH, TPO) test is recommended

2. Levothyroxine (Synthroid)

- Indications: Replacement or supplemental therapy in hypothyroidism | Pituitary TSH suppression
- Dosage: 25 – 50 mcg/d, then slow increase to 100 - 125 mcg/d (adult); TSH monitoring at 6-8 weeks
- MOA: Thyroid nuclear receptor proteins

- Contraindications: Thyrotoxicosis| Uncorrected adrenal insufficiency
- NO SPECS
- Normative Exophthalmometry Demographic Data – Globe Protrusion (An Average of Averages)

Hypertension

- ~70 million American adults (29%) have high blood pressure.
- Only ~ half (52%) of patients have their condition under control.
- Nearly 1 of 3 American adults has prehypertension.
- High blood pressure costs the nation \$46 billion each year.

Why Blood Pressure Matters

- 360,000 American deaths in 2013 included high blood pressure as a primary or contributing cause.
- First heart attack: About 7 of every 10 people having their first heart attack have high blood pressure.
- First stroke: About 8 of every 10 people having their first stroke have high blood pressure.
- Chronic heart failure: About 7 of every 10 people with chronic heart failure have high blood pressure.

3. Lisinopril (Prinivil)

- Indications: Hypertension; Heart failure; Acute myocardial infarction
- Dosage: 20 – 40 mg
- MOA: inhibits angiotensin converting enzyme (ACE)
- Ocular Side Effects (mild & transient): Blur, photophobia, and diplopia

6. Amlodipine (Norvasc)

- Indications: Hypertension, Coronary artery disease (angina)
- Dosage: 5 – 10 mg/d
- MOA: A dihydropyridine calcium antagonist; More effect on vascular SM

9. Metoprolol ER (Toprol XL)

15. Metoprolol (Lopressor)

- Indications: Hypertension, Angina pectoris, Heart failure
- Dosage: 25 – 100 mg/d
- MOA: beta1-selective (cardioselective) adrenergic receptor blocker
- Adverse reactions: Tiredness, dizziness, depression, mental confusion, diarrhea, rash

38. Atenolol (Tenormin)

MOA: a beta1-selective (cardioselective) beta-adrenergic receptor blocker

27. Carvedilol (Coreg)

- Indications: Left ventricular dysfunction s/p MI; Hypertension
- Dosage: 12.5 – 50 mg/d
- MOA: An α/β -adrenergic blocker
- Adverse reactions: Dizziness, fatigue, hypotension, diarrhea, hyperglycemia, wt gain

10. Losartan (Cozaar)

37. Losartan Potassium (Cozaar)

- Indications: Hypertension; Diabetic nephropathy
- Dosage: 50mg/d
- MOA: an angiotensin II receptor blocker (ARB)

13. Hydrochlorothiazide (Microzide)

- Indications: Hypertension
- Dosage: 12.5mg/d
- MOA: Blocks reabsorption of sodium and chloride ions; ↓ K, H, Cl, I; ↑ Ca, uric acid

- Ocular SE: Transient blurred vision, xanthopsia

35. Lisinopril/HCTZ (*Zestoretic*)

14. Furosemide (*Lasix*)

- Indications: Edema (CHF, cirrhosis, renal); Hypertension
- Dosage: 20 – 80 mg/d
- MOA: Inhibits absorption of Na & Cl in the proximal & distal tubules, & loop of Henle

Hypertensive Retinopathy Scheie Classification

The Role of Ocular Perfusion Pressure in Glaucoma

4. Omeprazole (*Prilosec*)

- Indications: Gastroesophageal reflux disease; NSAID-associated gastric ulcer; H. pylori eradication
- Dosage: 20 – 40 mg/d
- MOA: A proton pump inhibitor
- Ocular SE (<1%): conjunctivitis, vision abnormal

16. Pantoprazole (*Protonix*)

- Indications: Erosive Esophagitis a/w GERD; Zollinger-Ellison Syndrome
- MOA: PPI

Facts about diabetes

- More than 29 million Americans are living with diabetes, and 86 million are living with prediabetes
- High blood sugar levels can lead to heart disease, stroke, blindness, kidney failure, and amputation of toes, feet, or legs.
- Diabetes is the leading cause of kidney failure, lower-limb amputations, and adult-onset blindness.
- More than 20% of health care spending is for people with diagnosed diabetes.

5. Metformin (Glucophage)

- Indications: Type 2 diabetes mellitus
- Dosage: 500mg bid
- Max < 2550 mg/d
- Contraindications: Renal disease; Metabolic acidosis
- Adverse reactions: Diarrhea, nausea, and upset stomach

Classification of diabetic retinopathy | Definition of CSME

Incidence of Pain, as Compared to Major Conditions

8. Hydrocodone/Acetaminophen (*Lortab*)

- Indications: Moderate to moderately severe pain
- Sched III Narcotic
- Dosage: 2.5/500, max 8 tablets
- MOA: Inhibits μ opioid receptor

17. Gabapentin (*Neurontin*)

- Indications: Postherpetic neuralgia; Epilepsy
- Dosage: 600 mg tid
- MOA: Unknown, structurally related to GABA
- Ocular SE (< 3%): Blurred vision, conjunctivitis, diplopia

24. Tramadol (*Ultram*)

- Indications: Moderate to moderately severe pain
- Schedule IV

- Dosage: 50 mg qid, max. 400 mg/d
- MOA: A centrally acting synthetic opioid analgesic

Antibiotic prescribing rates by country

11. Azithromycin (*Zithromax*)

- Indications: Mild to moderate infections
- Dosage: 250-500 mg/d
- MOA: A macrolide antibacterial drug

18. Amoxicillin (*Amoxil*)

32. Amoxicillin/Potassium Clavulanate ER (*Augmentin XR*)

- Indications: Infections due to susceptible strains (β -lactamase-negative)
- Dosage: 500 – 875 mg bid
- MOA: inhibition of biosynthesis of cell wall mucopeptide

20. Sertraline (*Zoloft*)

- Black box warning for Sertraline (Zoloft) and other antidepressants: Suicidal risk
- MOA: inhibition of CNS neuronal uptake of serotonin (5HT)

36. Citalopram (*Celexa*)

26. Escitalopram (*Lexapro*)

- Indications: Depression
- MOA: inhibition of CNS neuronal reuptake of serotonin
- Ocular SE (<1%): accommodation abnormal, conjunctivitis, eye pain

41. Fluoxetine (*Prozac*)

- Indications: Major Depressive Disorder; Obsessive Compulsive Disorder; Bulimia Nervosa (60 mg/d); Panic Disorder
- Dosage 10 – 20 mg/d
- MOA: Linked to SSRI

48. Trazodone (*Oleptro*)

- Indications: Depression
- Dosage: 150 mg – 400mg/d
- MOA: selectively inhibits serotonin uptake

40. Duloxetine (*Cymbalta*)

- Indications: Major Depressive Disorder; Generalized Anxiety Disorder; Diabetic Peripheral Neuropathic Pain
- Dosage: 40 – 60 mg/d
- MOA: Unknown, potentiation of serotonergic and noradrenergic activity

44. Venlafaxine (*Effexor*)

- Indications: Major depressive disorder
- Dosage: 75 – 150 mg/d
- MOA: potent inhibitors of neuronal serotonin and norepinephrine reuptake
- Ocular SE (<1%): Blurred vision, conjunctivitis, eye pain

34. Bupropion (*Wellbutrin*)

- Indications: Major depressive disorder | Zyban: smoking cessation
- Dosage: 200 – 300 mg/d
- MOA: Unknown, weak inhibitor of NE and DA neuronal uptake.

Quick depression screening tool

12. Zolpidem (*Ambien*)

- Indications: short-term treatment of insomnia
- Dosage: 5 – 10 mg/d

- MOA: interacts with a GABA-BZ receptor complex
- Ocular SE (<1%): diplopia, vision abnormal, eye irritation

28. Alprazolam (*Xanax*)

- Indications: Anxiety disorders; Panic disorder
- Dosage: 0.25 – 0.5 mg tid, max 4mg/d
- MOA: Unknown, CNS agents of the 1,4 benzodiazepine class

19. Prednisone (*Deltasone*)

- MOA: cause profound and varied metabolic effects; modify the body's immune responses to diverse stimuli.

49. Methylprednisolone (*Medrol*)

- Giant Cell Arteritis: intravenous (IV) methylprednisolone at doses of 250-1,000 mg daily for 3 days

30. Meloxicam (*Mobic*)

- Indications: relief of the signs and symptoms of osteoarthritis and rheumatoid arthritis.
- Black box warning about NSAIDs

21. Tamsulosin (*Flomax*)

- Indications: Benign prostatic hyperplasia
- MOA: an alpha1 adrenoceptor antagonist
- Ocular SE: Intraoperative floppy iris syndrome

22. Fluticasone (*Flonase*)

- Indications: perennial rhinitis
- Dosage: 2 sprays bid (200 mcg/d)
- MOA: anti-inflammatory activity

45. Ventolin (*albuterol sulfate*)

- Indications: Treatment or prevention of bronchospasm
- Dosage: 2 inhalations every 4 to 6 hours.
- MOA: a beta2-adrenergic agonist

25. Montelukast (*Singulair*)

- Indications: Prophylaxis and chronic treatment of asthma; Relief of symptoms of allergic rhinitis
- Dosage: 10 mg /d
- MOA: inhibits physiologic actions of LTD4 at the CysLT1 receptor

29. Warfarin (*Coumadin*)

- Indications: venous thrombosis & pulmonary embolism
- MOA: inhibiting the synthesis of vitamin K-dependent clotting factors (2, 7, 9, 10)
- Adverse reactions: fatal and nonfatal hemorrhage

31. Clopidogrel (*Plavix*)

- Indications: Acute coronary syndrome; Myocardial infarction
- MOA: an inhibitor of platelet activation and aggregation through the irreversible binding to ADP receptors on platelets.

33. Allopurinol (*Zyloprim*)

- Indications: Acute gout attacks
- Dosage: 200 – 600 mg/d, max 800 mg | Colchicine is given prophylactically.
- MOA: a xanthine oxidase inhibitor

Facts about erectile dysfunction

- ~10% of men aged 40-70 have severe or complete erectile dysfunction
- An additional 25% of men in this age category have intermittent erectile difficulties.
- Erectile dysfunction still affects 5%-10% of men below the age of 40.

39. Cialis (tadalafil)

- Indications: erectile dysfunction; benign prostatic hyperplasia
- Dosage: 5 – 20 mg/d
- MOA: a phosphodiesterase 5 (PDE5) inhibitor
- Ocular SE (<2%): blurred vision, changes in color vision, conjunctivitis, swelling of eyelids, NAION

46. Amphetamine/Dextroamphetamine (Adderall)

- Indications: Attention Deficit Hyperactivity Disorder (ADHD) and Narcolepsy
- Dosage: 5 – 40 mg/d
- MOA: block the reuptake of norepinephrine and dopamine
- Ocular SE: Difficulties with accommodation and blurring of vision, mydriasis

47. Cyclobenzaprine (Flexeril)

- Indications: for relief of muscle spasm associated with acute, painful musculoskeletal conditions
- Dosage: 5mg tid
- MOA: primarily within the central nervous system at brain stem; a reduction of tonic somatic motor activity
- Contraindications: MAOIs, SSRIs

Hypokalemia**50. Potassium Chloride (Klor-Con)**

- Indications: Hypokalemia
- Dosage: 20 – 100 mEq/d
- MOA: The intracellular concentration of potassium is approximately 150 to 160 mEq per liter

References

- <https://dailymed.nlm.nih.gov/dailymed/>
- <https://www.lowestmed.com/>
- <http://www.goodrx.com/>