

Action		Insulin Name	Onset	Peak	Effective Duration	Considerations
Bolus	Very Rapid Acting Analogs	Aspart (Fiasp)	2.5 min	~60 min	3-5 hours	Bolus insulin lowers after-meal glucose. Post meal BG reflects efficacy.
		Lispro-aabc (Lyumjev)	1 min	~60 min	4-5 hours	
	Rapid Acting Analogs	Aspart (Novolog)	5 - 15 min	30 - 90 min	< 5 hrs	Basal insulin controls BG between meals and nighttime. Fasting BG reflects efficacy.
		Lispro (Humalog*/ Admelog)				
	Short Acting	Regular*	30 - 60 min	2 - 3 hrs	5 - 8 hrs	
Basal	Intermediate	NPH	2 - 4 hrs	4 - 10 hrs	10 - 16 hrs	Side effects: hypoglycemia, weight gain.
	Long Acting	Detemir (Levemir)	3 - 8 hrs	No peak	6 - 24 hrs	
		Glargine (Lantus*/ Basaglar/Semglee)	2 - 4 hrs		20 - 24 hrs	Typical dosing range: 0.5-1.0 units/kg body wt/day.
		Degludec (Tresiba)*	~ 1 hr		< 42 hrs	
Basal + Bolus	Intermediate + short	Combo of NPH + Reg 70/30 = 70% NPH + 30% Reg 50/50 = 50% NPH + 50% Reg	30 - 60 min	Dual peaks	10 - 16 hrs	Discard open vials after 28 days. For pen storage guidelines, see package insert.
	Intermediate + rapid	Novolog® Mix - 70/30 Humalog® Mix - 75/25 or 50/50	5 - 15 min		24 hrs	

\*Concentrated insulins available - see Concentrated Insulin Card for details. Insulin action times vary; time periods are general guidelines only. All PocketCard content is for educational purposes only. Please consult prescribing information for detailed guidelines. © 2021

## Concentrated & Inhaled Insulins

Name/Concentration	Insulin/Action	Considerations
Humulin Regular U-500 <ul style="list-style-type: none"><li>500 units insulin/mL</li><li>KwikPen or Vial</li></ul>	Regular Bolus / Basal	5 xs concentration of u-100 insulin. Indicated for pts taking 200+ units insulin daily. 3 mL Pen – Once opened, good for 28 days. 20 mL Vial – Once opened, good for 40 days. Use designated U-500 insulin syringe.
Humalog KwikPen U-200 200 units insulin/mL	Lispro (Humalog) Bolus	2 xs concentration of u-100 insulin. 3 mL Pen. Once opened, good for 28 days
Toujeo Solostar U-300 Pen 300 units insulin/mL	Glargine (Lantus) Basal	3 xs concentration of u-100 insulin 1.5 mL or 3 mL (Max Solostar) Pen.
Tresiba FlexTouch U-200 Pen 200 units insulin/mL	Degludec (Tresiba) Ultra basal	2 xs concentration of u-100 insulin 3 mL Pen. Once opened, good for 8 weeks
All concentrated insulin pens and the U-500 syringe automatically deliver correct dose (in less volume). No conversion, calculation or adjustments required. For example, if order reads 30 units, dial the concentrated pen to 30 units or draw up 30 units on the U-500 syringe. Important – never withdraw concentrated insulin from the pen using a syringe.		

## Inhaled Insulin

Action	Insulin Name	Dose Range	Onset	Peak	Duration	Considerations
Bolus – Rapid-acting	Afrezza Inhaled regular human insulin	4, 8, and 12 unit cartridges before meals	~ 12 min	35 - 45 mins	1.5 - 3 hrs	Assess lung function. Avoid in lung disease — bronchospasm risk. Side effects: hypo, cough, throat irritation.

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## GLP-1 Receptor Agonists & Injectables

Class/Main Action	Name	Dose Range	Considerations
<b>GLP-1 Receptor Agonist (GLP-1 RA)</b>  “Incretin Mimetic” <ul style="list-style-type: none"><li>Increases insulin release with food</li><li>Slows gastric emptying</li><li>Promotes satiety</li><li>Suppresses glucagon</li></ul>	exenatide (Byetta)	5 and 10 mcg BID	<b>Side effects for all:</b> Nausea, vomiting, weight loss, injection site reaction. Report signs of acute pancreatitis (severe abdominal pain, vomiting), stop med. Renally excreted.  <b>Black box warning:</b> Thyroid C-cell tumor warning for exenatide XR, liraglutide, dulaglutide, and semaglutide (avoid if family history of medullary thyroid tumor). *Significantly reduces risk of CV death, heart attack, and stroke. Lowers A1c 0.5 – 1.6% Weight loss of 1.6 to 6.0kg†
	exenatide XR (Bydureon)	2 mg 1x a week Pen injector - Bydureon BCise	
	liraglutide (Victoza)*	0.6, 1.2 and 1.8 mg daily Approved for pediatrics 10 yrs +	
	dulaglutide (Trulicity)*	0.75, 1.5, 3.0 and 4.5 mg 1x a week pen injector	
	lixisenatide (Adlyxin)	10 mcg 1x a day for 14 days 20 mcg 1x day starting day 15	
<b>Amylin Mimetic</b> <ul style="list-style-type: none"><li>Slows gastric emptying</li><li>Supress glucagon</li></ul>	semaglutide (Ozempic)*†  (Rybelsus) Oral tablet	0.5 and 1.0 mg 1x a week pen injector  3, 7, and 14 mg daily in a.m. Take on empty stomach w/H2O sip	For Type 1 or 2 on insulin. Severe hypoglycemic risk, decrease insulin dose when starting. <b>Side effects:</b> nausea, weight loss. Lowers A1c 0.5 – 1%
	pramlintide (Symlin)	Type 1: 15 - 60 mcg; Type 2: 60 - 120 mcg immediately before major meals	

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Insulin/Injectable Combos

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Name	Combines	Considerations
IDegLira* Xultophy 100/3.6	Insulin degludec (IDeg or Tresiba) Ultra long insulin  + Liraglutide (Victoza) GLP-1 Receptor Agonist (GLP-1 RA)	<b>Xultophy 100/3.6 pre-filled pen</b> = 100 units IDeg / 3.6 mg liraglutide per mL Once daily injection – Dose range 10 to 50 = 10 – 50 units IDeg + 0.36 -1.8 mg liraglutide  <b>Recommended starting dose:</b> <ul style="list-style-type: none"><li>16 IDegLira (= 16 units IDeg + 0.58 mg liraglutide)</li></ul> Titrate dose up or down by 2 units every 3-4 days to reach target. Supplied in package of five single-use 3mL pens. Once opened, good for 21 days.
iGlarLixi* Soliqua 100/33	Insulin glargine (Lantus) Basal Insulin  + Lixisenatide (Adlyxin) GLP-1 Receptor Agonist	<b>Soliqua 100/33 Solostar Pen</b> = 100 units glargine / 33 µg lixisenatide per mL Once daily injection an hour prior to first meal of day. Dose range 15 – 60 = 15-60 units glargine + 5 – 20µg lixisenatide  <b>Recommended starting dose:</b> <ul style="list-style-type: none"><li>15 units for pts not controlled on 30 units basal insulin or GLP-1 RA</li><li>30 units for pts not controlled on 30 -60 units basal insulin or GLP-1 RA</li></ul> Titrate dose up or down by 2-4 units every week to reach target. Supplied in package of five single-use 3mL pens. Once opened, good for 14 days.
*Discontinue basal insulin /GLP-1 RA therapy before starting. If dose missed, resume with next usual scheduled dose.		



# Common Oral Diabetes Meds



Class/Main Action	Name(s)	Daily Dose Range	Considerations
<b>Biguanides</b> <ul style="list-style-type: none"><li>Decreases hepatic glucose output</li><li>First line med at diagnosis of type 2</li></ul>	metformin (Glucophage)	500 - 2500 mg (usually BID w/ meal)	<b>Side effects:</b> nausea, bloating, diarrhea, B12 deficiency. To minimize GI Side effects, use XR and take w/ meals. <b>Obtain GFR before starting.</b> <ul style="list-style-type: none"><li>If GFR &lt;30, do not use.</li><li>If GFR &lt;45, don't start Meformin</li><li>If pt on Metformin and GFR falls to 30-45, eval risk vs. benefit; consider decreasing dose.</li></ul> <b>For dye study</b> , if GFR <60, liver disease, alcoholism or heart failure, restart metformin after 48 hours if renal function stable. <b>Benefits:</b> lowers cholesterol, no hypo or weight gain, cheap. Approved for pediatrics, 10 yrs + Lowers A1c 1.0%-2.0%.
	Riomet (liquid metformin)	500 - 2500mg 500mg/5mL	
	Extended Release-XR (Glucophage XR) (Glumetza) (Fortamet)	(1x daily w/dinner) 500 – 2000 mg 500 – 2000 mg 500 – 2500 mg	
<b>Sulfonylureas</b> <ul style="list-style-type: none"><li>Stimulates sustained insulin release</li></ul>	glyburide: (Diabeta) (Glynase PresTabs)	1.25 – 20 mg 0.75 – 12 mg	Can take once or twice daily before meals. Low cost generic. <b>Side effects:</b> hypoglycemia and weight gain. Eliminated via kidney. <b>Caution:</b> Glyburide most likely to cause hypoglycemia. Lowers A1c 1.0% – 2.0%.
	glipizide: (Glucotrol) (Glucotrol XL)	2.5 – 40 mg 2.5 – 20 mg	
	glimepiride (Amaryl)	1.0 – 8 mg	

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## Common Oral Diabetes Meds

Class/Main Action	Name(s)	Daily Dose Range	Considerations
<b>SGLT2 Inhibitors</b> “Glucoretic” <ul style="list-style-type: none"><li>Decreases glucose reabsorption in kidneys</li></ul>	Canagliflozin* (Invokana)	100 - 300 mg 1x daily If GFR 30-60, max dose 100mg, see PI†	<b>Side effects:</b> hypotension, UTIs, increased urination, genital infections, ketoacidosis. <b>GFR Considerations and CV/Renal Protection</b> †GFR - See Package Insert (PI) for dosing recommendations based on kidney function and clinical indications. *Empagliflozin, Dapagliflozin, & Canagliflozin: - Reduce risk of CV death, heart failure and preserve long-term kidney function. <b>Benefits:</b> no hypo or weight gain. Lowers A1c 0.6%-1.5%. Lowers wt 1-3 lbs.
	Dapagliflozin* (Farxiga)	5 - 10 mg 1x daily If GFR <45, see PI†	
	Empagliflozin* (Jardiance)	10 - 25 mg 1x daily If GFR <45, see PI†	
	Ertugliflozin (Steglatro)	5 – 15 mg 1x daily If GFR <60, see PI†.	
<b>DPP – 4 Inhibitors</b> “Incretin Enhancers” <ul style="list-style-type: none"><li>Prolongs action of gut hormones</li><li>Increases insulin secretion</li><li>Delays gastric emptying</li></ul>	sitagliptin (Januvia)	25 - 100 mg daily – eliminated via kidney*	*If creat elevated, see med insert for dosing. <b>Side effects:</b> headache and flu-like symptoms. <b>Can cause severe, disabling joint pain.</b> Contact MD, stop med. Report signs of pancreatitis. †Saxagliptin and alogliptin can increase risk of heart failure. Notify MD for shortness of breath, edema, weakness, etc. No wt gain or hypoglycemia. Lowers A1c 0.6%-0.8%.
	saxagliptin (Onglyza)†	2.5 - 5 mg daily – eliminated via kidney*, feces	
	linagliptin (Tradjenta)	5 mg daily – eliminated via feces	
	alogliptin (Nesina)†	6.25 - 25 mg daily – eliminated via kidney*	

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## Other Oral Diabetes Medications

Class/Main Action	Name(s)	Daily Dose Range	Considerations
<b>Thiazolidinediones</b> “TZDs” <ul style="list-style-type: none"><li>Increases insulin sensitivity</li></ul>	pioglitazone (Actos)	15 – 45 mg daily	Black Box Warning: TZDs may cause or worsen CHF. Monitor for edema and weight gain. Increased peripheral fracture risk. Actos may increase risk of bladder cancer. Lowers A1c 0.5% – 1.0%
	rosiglitazone (Avandia)	4 – 8 mg daily	
<b>Glucosidase Inhibitors</b> <ul style="list-style-type: none"><li>Delays carb absorption</li></ul>	acarbose (Precose) miglitol (Glyset)	25 – 100 mg w/meals; 300 mg max daily dose	Start low dose, increase at 4-8 wk intervals to decrease GI effects. Caution with liver or kidney problems. In case of hypo, treat w/ glucose tabs. Lowers A1c 0.5– 1.0%.
<b>Meglitinides</b> <ul style="list-style-type: none"><li>Stimulates rapid insulin burst</li></ul>	repaglinide (Prandin)	0.5 – 4 mg w/meals (metabolized in liver)	Take before meals. Side effects may include hypoglycemia and weight gain. Lowers A1c 1.0% – 2.0%.
	nateglinide (Starlix)	60 – 120 mg w/meals (eliminated via kidney)	
<b>Dopamine Receptor Agonists</b> <ul style="list-style-type: none"><li>Resets circadian rhythm</li></ul>	bromocriptine mesylate— Quick Release “QR” (Cycloset)	1.6 to 4.8 mg a day (each tab 0.8 mg)	Take within 2 hrs of waking. Side effects: nausea, headache, fatigue, hypotension, syncope, somnolence. Lowers A1c 0.6% – 0.9%.
<b>Bile Acid Sequestrants</b> <ul style="list-style-type: none"><li>Decreases cholesterol / BG levels.</li></ul>	Colesevelam HCL (Welchol)	Up to six (6) 625 mg pills (3 tabs am, 3 tabs pm)	Do not use if history of bowel obstruction, triglycerides >500, or pancreatitis. Can decrease absorption of certain meds, soluble vitamins. Lowers LDL by 15-30%. Side effects GI in nature. Lowers A1c 0.5%
		3.75gm packet in 4-8 ounces of fluid	

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## Combo Oral Medications PocketCard™

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Medications	Doses in mg	Medications	Doses in mg	Medications	Doses in mg
<b>Trijardy XR (3 meds)</b> empagliflozin linagliptin metformin XR	5 - 25 2.5 - 5 1000	Janumet (sitagliptin/ metformin)	50/500 50/1000	Prandimet (repaglinide/ metformin)	1/500 2/500
<b>ACTOplus Met*</b> (pioglitazone/ metformin)	15/500 15/850	Janumet XR (sitagliptin/ metformin)	50/500 50/1000 or 100/1000	Qtern (saxagliptin / dapagliflozin)	5/10
<b>ACTOplus Met XR</b> (pioglitazone/ metformin)	15/1000 30/1000	Jentadueto (linagliptin/ metformin)	2.5/500 2.5/850 or 2.5/1000	Segluromet (ertugliflozin/ metformin)	2.5/500 or 2.5/1000 or 7.5/500 or 7.5/1000
<b>Duetact*</b> (pioglitazone/ glimepiride)	30/2 30/4	Kazano (alogliptin/ metformin)	12.5/500 12.5/1000	Steglujan (ertugliflozin/ sitagliptin)	5/100 or 15/100
<b>Glucovance*</b> (glyburide/ metformin)	1.25/250 2.5/500 5/500	Kombiglyze XR (onglyza/ metformin XR)	2.5/1000 5/500 or 5/1000	Synjardy (empagliflozin/ metformin)	5/500 or 12.5/500 5/1000 or 12.5/1000
<b>Glyxambi</b> (empagliflozin and linagliptin)	10/5 25/5	Metaglip* (glipizide/ metformin)	2.5/250 2.5/500 or 5/500	Synjardy XR (empagliflozin/ metformin XR)	5/1000 or 10/1000 12.5/1000 or 25/1000
<b>Invokamet</b> (canagliflozin/ metformin)	50/500 or 50/1000 150/500 or 150/1000	Oseni (alogliptin/ pioglitazone)	12.5/15 or 25/15 12.5/30 or 25/30 12.5/45 or 25/45	Xigduo XR (dapagliflozin/ metformin)	5/500 or 10/500 5/1000 or 10/1000

\*Available in generic. Observe precautions of each component drug.

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