

Effective						
Action	Insulin Name		Onset	Peak	Duration	Considerations
Bolus	Very Rapid Acting Analogs	Aspart (Fiasp)	16 - 20 min	1 - 3 hrs	5 - 7 hrs	Bolus insulin lowers after-meal glucose. Post meal BG reflects efficacy. Basal insulin controls BG between meals and nighttime. Fasting BG reflects efficacy.
		Lispro-aabc (Lyumjev)	15 - 17 min	2 - 3 hrs	5 - 7 hrs	
	Rapid Acting Analogs	Aspart (Novolog / Merilog)	20 - 30 min	1 - 3 hrs	3 - 7 hrs	
		Lispro (Humalog* / Admelog)	30 min	2 - 3 hrs	5 - 7 hrs	
		Glulisine (Apidra)	15 - 30 min	1 - 3 hrs	3 - 4 hrs	
Basal	Short Acting	Regular*	30 - 60 min	2 - 4 hrs	5 - 8 hrs	Side effects: hypoglycemia, weight gain. Typical dosing range: 0.5-1.0 units/kg body wt/day.
	Intermediate	NPH	2 - 4 hrs	4 - 10 hrs	10 - 16 hrs	
		Glargine (Lantus*/Basaglar/Semglee/Rezvoglar)	2 - 4 hrs	No Peak	20 - 24 hrs	
Basal + Bolus	Long Acting	Degludec (Tresiba)*	~ 1 hr		< 42 hrs	Discard most open vials after 28 days. For pen storage guidelines, see package insert.
	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	
	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.
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Concentrated & Inhaled Insulins

Name/Concentration	Insulin/Action	Considerations
Humulin Regular U-500 500 units insulin/mL - KwikPen or Vial	Regular Bolus / Basal	Indicated for those taking 200+ units daily. 3 mL pen holds 1,500 units. Max dose 300 units. Once opened, good for 28 days. 20 mL vial holds 10,000 units. Max dose 250 units using U-500 syringe. Once opened, good for 40 days.
Humalog KwikPen U-200 200 units insulin/mL.	Lispro (Humalog) Bolus	3 mL pen holds 600 units. Max dose 60 units. Once opened good for 28 days.
Lyumjev KwikPen U-200 200 units insulin/mL.	Lispro (Lyumjev) Bolus	3 mL pen holds 600 units. Max dose 60 units. Once opened good for 28 days.
Toujeo Solostar U-300 Pen 300 units insulin/mL.	Glargine (Lantus) Basal	1.5 mL pen holds 450 units. Max dose 80 units. 3 mL Max Solostar pen holds 900 units. Max dose 160 units. Once opened good for 56 days.
Tresiba FlexTouch U-200 Pen 200 units insulin/mL.	Degludec (Tresiba) Ultra basal	3 mL pen holds 600 units. Max dose 160 units. Once opened good for 56 days.
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 Insulins

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.

The information listed here are not guidelines. Please consult prescribing information for details.

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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)	Xultophy 100/3.6 pre-filled pen = 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 Recommended starting dose: 16 IDegLira (= 16 units IDeg + 0.58 mg liraglutide) 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	Soliqua 100/33 Solostar Pen = 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 Recommended starting dose: 15 units if not meeting glucose target on 30 units basal insulin or GLP-1 RA 30 units if not meeting glucose target on 30-60 units basal insulin or GLP-1 RA 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.		

Observe precautions of each component drug.

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GLP-1 & GIP Receptor Agonists

Class/Main Action	Name	Dose Range	Considerations
GLP-1 RA - Glucagon Like Peptide Receptor Agonist “Incretin Mimetic” - Increases insulin release with food - Slows gastric emptying - Promotes satiety - Suppresses glucagon	exenatide (Byetta)	5 and 10 mcg BID	Side effects: nausea, vomiting, weight loss, injection site reaction. Report signs of acute pancreatitis or intestinal blockage (ileus) and stop med. Black box warning: Thyroid C-cell tumor warning (avoid if family history of medullary thyroid tumor). *Significantly reduces risk of CV death, heart attack, and stroke. §Approved to reduce risk of CKD †Approved for pediatrics 10-17 yrs Lowers A1C 0.5 – 1.6% Weight loss: 4-6% body weight loss.
	exenatide XR† (Bydureon)	2 mg 1x a week Pen injector - Bydureon BCise	
	liraglutide*† (Victoza)	0.6, 1.2 and 1.8 mg daily	
	dulaglutide*† (Trulicity)	0.75, 1.5, 3.0 and 4.5 mg 1x a week pen injector	
	semaglutide*§ (Ozempic) (Rybelsus) Oral tablet	0.25, 0.5, 1.0 and 2.0 mg 1x a week pen injector 1.5, 4, and 9 mg daily in a.m. Take on empty stomach with sip of water	
GLP-1 & GIP Receptor Agonist Activates receptors for GLP-1 (see above) & Glucose-dependent Insulinotropic Polypeptide (GIP).	Tirzepatide (Mounjaro)	2.5, 5.0, 7.5, 10, 12.5 and 15 mg 1x a week prefilled single dose pen Increase dose by 2.5 mg once monthly to reach targets.	Side effects: nausea, diarrhea, injection site reaction. Report pancreatitis, signs of intestinal blockage. Black box warning: Avoid if family history of medullary thyroid tumor. Lowers A1C ~ 1.8 - 2.4% Weight loss: 7-13% body weight loss at max dose.

Common Oral Diabetes Meds



Class/Main Action	Name(s)	Daily Dose Range	Considerations
Biguanides Decreases hepatic glucose output	metformin (Glucophage)	500 - 2550 mg (usually BID w/ meal)	Side effects: nausea, bloating, diarrhea, B12 deficiency. To minimize GI Side effects, use XR and take w/ meals. Obtain GFR before starting. - If GFR <30, do not use. - If GFR <45, don't start Meformin - If pt on Metformin and GFR falls to 30-45, eval risk vs. benefit; consider decreasing dose. For dye study, if GFR <60, liver disease, alcoholism or heart failure, restart metformin after 48 hours if renal function stable. Benefits: lowers cholesterol, no hypo or weight gain, cheap. Approved for pediatrics, 10 yrs + Lowers A1c 1.0%-2.0%.
	Riomet (liquid metformin)	500 - 2550 mg 500mg/5mL	
	Extended Release-XR (Glucophage XR) (Glumetza) (Fortamet)	(1x daily w/dinner) 500 – 2000 mg 500 – 2000 mg 500 – 2500 mg	
Sulfonylureas Stimulates sustained insulin release	glyburide: (Diabeta) (Glynase PresTabs)	1.25 – 20 mg 0.75 – 12 mg	Can take once or twice daily before meals. Low cost generic. Side effects: hypoglycemia and weight gain. Eliminated via kidney. Caution: 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
SGLT2 Inhibitors “Glucoretic” Decreases glucose reabsorption in kidneys	Canagliflozin* (Invokana)	100 - 300 mg 1x daily	Side effects: hypotension, UTIs, genital infections, increased urination, weight loss, ketoacidosis. Heart Failure, CV & Kidney Protection: 1st line therapy for Heart Failure (HF), Kidney Disease (CKD), Cardiovascular Disease, before or with metformin Considerations: If GFR ≥ 20, use SGLT-2 to reduce CVD, Heart Failure and Chronic Kidney Disease. Limited BG lowering effect if GFR <45. See package insert for GFR cut-offs and dosing. Benefits: SGLT-2s* reduce BG, CV death & HF, slow CKD. †Approved for peds, 10 yrs +. Lowers A1C 0.6% to 1.5%.
	Dapagliflozin*† (Farxiga)	5 - 10 mg 1x daily	
	Empagliflozin*† (Jardiance)	10 - 25 mg 1x daily	
	Ertugliflozin (Steglatro)	5 – 15 mg 1x daily	
	Bexagliflozin (Brenzavvy)	20 mg 1x daily	
DPP – 4 Inhibitors “Incretin Enhancers” - Prolongs action of gut hormones - Increases insulin secretion - Delays gastric emptying	sitagliptin (Januvia, Zituvio)	25 - 100 mg daily – eliminated via kidney*	*If creat elevated, see med insert for dosing. Side effects: headache and flu-like symptoms. Can cause severe, disabling joint pain. Contact MD, stop med. Report signs of pancreatitis. †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%.
	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
Thiazolidinediones “TZDs” Increases insulin sensitivity	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	4 – 8 mg daily	
Glucosidase Inhibitors Delays carb absorption	acarbose (Precose)	25 – 100 mg w/meals;	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%.
	miglitol (Glyset)	300 mg max daily dose	
Meglitinides Stimulates rapid insulin burst	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)	
Dopamine Receptor Agonists Resets circadian rhythm	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%.
Bile Acid Sequestrants Decreases cholesterol / BG levels.	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
Trijardy XR (3 meds) empagliflozin linagliptin metformin XR	5 - 25 2.5 -5 1000	Janumet (sitagliptin/ metformin)	50/500 50/1000	Prandimet (repaglinide/ metformin)	1/500 2/500
ACTOplus Met* (pioglitazone/ metformin)	15/500 15/850	Janumet XR (sitagliptin/ metformin)	50/500 50/1000 or 100/1000	Qtern (saxagliptin / dapagliflozin)	5/10
ACTOplus Met XR (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
Duetact* (pioglitazone/ glimepiride)	30/2 30/4	Kazano (alogliptin/ metformin)	12.5/500 12.5/1000	Steglujan (ertugliflozin/ sitagliptin)	5/100 or 15/100
Glucovance* (glyburide/ metformin)	1.25/250 2.5/500 5/500	Metaglip* (glipizide/ metformin)	2.5/250 2.5/500 or 5/500	Synjardy (empagliflozin/ metformin)	5/500 or 12.5/500 5/1000 or 12.5/1000
Glyxambi (empagliflozin and linagliptin)	10/5 25/5	Oseni (alogliptin/ pioglitazone)	12.5/15 or 25/15 12.5/30 or 25/30 12.5/45 or 25/45	Synjardy XR† (empagliflozin/ metformin XR)	5/1000 or 10/1000 12.5/1000, 25/1000 †Approved for peds
Invokamet (canagliflozin/ metformin)	50/500 or 50/1000 150/500 or 150/1000			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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