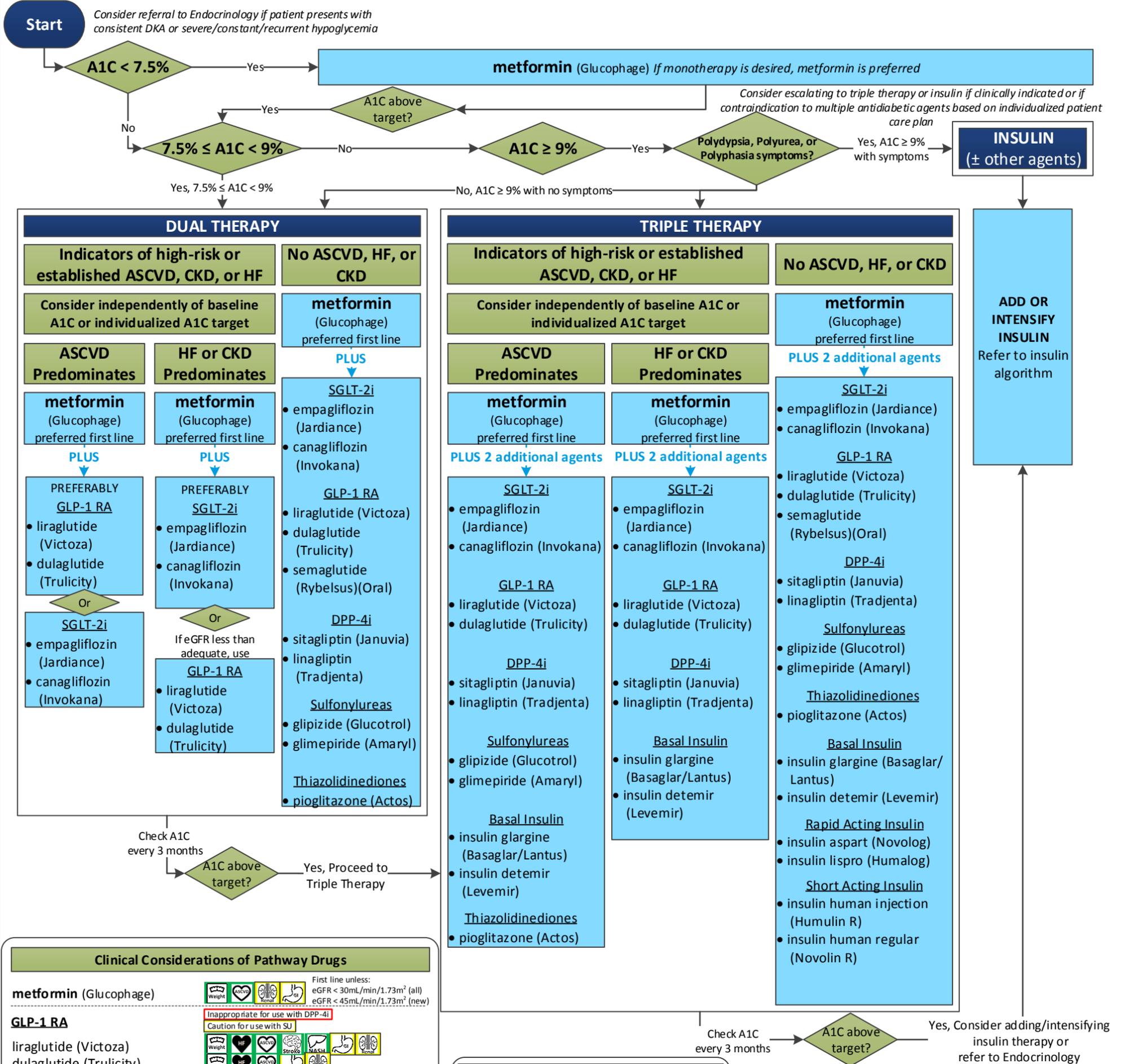


Mixed – Glycemic Control Algorithm for Diabetes Type 2 (DM2)

Implement lifestyle interventions (including medically assisted weight loss)



Clinical Considerations of Pathway Drugs

metformin (Glucophage)	First line unless: eGFR < 30mL/min/1.73m ² (all) eGFR < 45mL/min/1.73m ² (new)
GLP-1 RA liraglutide (Victoza) dulaglutide (Trulicity) semaglutide (Rybelsus)	Inappropriate for use with DPP-4i Caution for use with SU
SGLT-2i empagliflozin (Jardiance) canagliflozin (Invokana)	
DPP-4i sitagliptin (Januvia) linagliptin (Tradjenta)	Inappropriate for use with GLP-1 RA Caution for use with SU
SU glipizide (Glucotrol) glimepiride (Amaryl)	Caution for use with GLP-1 RA Caution for use with DPP-4i Caution for use with Rapid/Short Acting Insulins
TZD pioglitazone (Actos)	Caution for use with Insulin

Clinical Considerations of Pathway Insulin Drugs

Rapid Acting Insulin insulin aspart (Novolog) insulin lispro (Humalog)	Only one drug per patient, caution for use with TZD
Short Acting Insulin insulin human injection (Humulin R) insulin human regular (Novolin R)	Only one drug per patient, caution for use with TZD
Basal Insulin insulin glargine (Basaglar/Lantus) insulin detemir (Levemir)	Only one drug per patient, caution for use with TZD

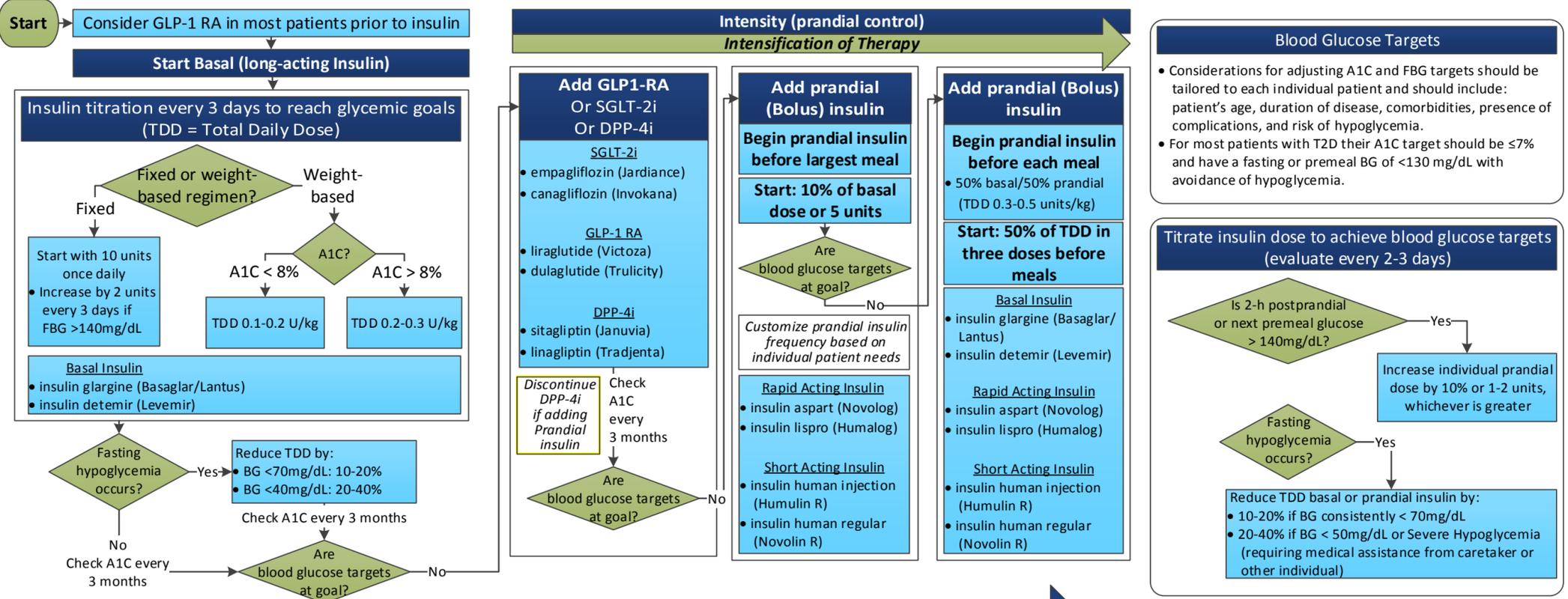
Key

	Hypoglycemia		Atherosclerotic Cardiovascular Disease
	Weight		Bone
	Renal		Ketoacidosis
	Genitourinary		Stroke
	Gastrointestinal		Peripheral Vascular Disease
	Heart Failure		Non-Alcoholic SteatoHepatitis
	Known/likely adverse effects (increased monitoring and counseling)		
	Use with caution (increased monitoring and counseling)		
	Anticipated positive impact and/or favorable safety profile		
	Neutral (the absence of an icon indicates neutral impact)		

Progression of Disease

List of antidiabetic drugs on page 2.
 Acknowledgements. Information contained herein is supported by recommendations and standards for glycemic control and insulin administration published by:
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 • ADA The American Diabetes Association. Pharmacologic Approaches to Glycemic Treatment: Standards of Medical Care in Diabetes—2020. Diabetes Care 2021 Jan; 44(Supplement 1): S111-S124.
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Algorithm for Adding or Intensifying Insulin for Diabetes Type 2 (DM2)



Progression of Disease

Clinical Considerations of Pathway Insulin Drugs

Rapid Acting Insulin

insulin aspart (Novolog), insulin lispro (Humalog)

Short Acting Insulin

insulin human injection (Humulin R), insulin human regular (Novolin R)

Clinical Considerations of Pathway Insulin Drugs

Basal Insulin

insulin glargine (Basaglar/Lantus), insulin detemir (Levemir)

DPP-4i

sitagliptin (Januvia), linagliptin (Tradjenta)

Clinical Considerations of Pathway Drugs

GLP-1 RA

liraglutide (Victoza), dulaglutide (Trulicity), semaglutide (Rybelsus)

SGLT-2i

empagliflozin (Jardiance), canagliflozin (Invokana)

Key

- Hypoglycemia (Red)
- Weight (Green)
- Renal (Blue)
- Genitourinary (Purple)
- Gastrointestinal (Orange)
- Heart Failure (Yellow)
- Atherosclerotic Cardiovascular Disease (Red)
- Bone (Green)
- DKA (Red)
- Stroke (Red)
- Peripheral Vascular Disease (Red)
- Non-Alcoholic SteatoHepatitis (Red)
- Known/likely adverse effects (increased monitoring and counseling) (Red)
- Use with caution (increased monitoring and counseling) (Yellow)
- Anticipated positive impact and/or favorable safety profile (Green)
- Neutral (the absence of an icon indicates neutral impact) (Grey)

List of Antidiabetic Drugs
Not meant to be a comprehensive list of clinical considerations

Biguanides; ~1% A1C Reduction		Alpha-glucosidase inhibitors (AGi); 0.7%-0.8% A1C Reduction	
metformin (Glucophage)†ΦЖ	PO QD-TID	acarbose (Precose)†Ж	PO TID (w/meals)
metformin ER (Glucophage XR)†ΦЖ	PO QD-BID	miglitol (Glyset)Ж	PO TID (w/meals)
metformin ER-Osmotic (Fortamet)†ΦЖ	PO QD-BID	Meglitinides (GLN); 0.7%-1.1% A1C Reduction	
metformin ER-Gastric (Glumetza)†ΦЖ	PO QD-BID	repaglinide (Prandin)†ΦЖ	PO BID-QID (w/meals)
Glucagon-Like Peptide 1 Receptor Agonists (GLP-1 RA); ~1% A1C Reduction		nateglinide (Starlix)Ж	PO TID (w/meals)
liraglutide (Victoza)	SQ QD	Others	
dulaglutide (Trulicity)	SQ QW	bromocriptine (Cycloset)	PO QD
semaglutide (Ozempic)	SQ QW	colesevelam (WelChol)Ж	PO QD-BID
semaglutide (Rybelsus)	PO QD	pramlintide (Symlin)	SQ w/each major meal
lixisenatide (Adlyxin)Φ	SQ QD	Insulins	
exenatide ER (Bydureon/Bydureon BCise)Φ	SQ QW	Rapid Acting Insulin	
exenatide (Byetta)Φ	SQ BID	insulin aspart (Novolog)Ж	U-100; Vials, Pre-Filled Pens, Penfill
Sodium-Glucose Co-Transporter 2 Inhibitor (SGLT-2i); ~0.4%-0.7% A1C Reduction		insulin lispro (Humalog)Ж	U-100, U-200; Vials, Cartridge, Pre-Filled Pens
empagliflozin (Jardiance)Φ	PO QD	insulin glulisine (Apidra)	U-100; Vials, Pre-Filled Pens
canagliflozin (Invokana)Φ	PO QD	insulin lispro (Admelog)	U-100; Vials, Pre-Filled Pens
dapagliflozin (Farxiga) Φ	PO QD	insulin aspart (Fiasp)	U-100; Vials, Pre-Filled Pens, Penfill
ertugliflozin (Steglatro)†Φ	PO QD	insulin human (Afrezza)	Inhaled; Inhalation powder
Dipeptidyl-Peptidase IV Inhibitors (DPP-4i); ~0.5%-0.7% A1C Reduction		Short-acting Insulin	
sitagliptin (Januvia)Φ	PO QD	insulin human injection (Humulin R)	U-100; Vials
linagliptin (Tradjenta)	PO QD	insulin human injection (Novolin R)	U-100; Vials, Pre-Filled Pens
alogliptin (Nesina)†ΦЖ	PO QD	insulin human injection (Humulin R)	U-500; Vials, Pre-Filled Pens
saxagliptin (Onglyza)Φ	PO QD	Intermediate-acting Insulin	
Sulfonylureas (SU); 0.7%-1.3% A1C Reduction		insulin NPH (Humulin N)	U-100; Vials, Pre-Filled Pens
glipizide (Glucotrol)†ΦЖ	PO QD-BID	insulin NPH (Novolin N)	U-100; Vials, Pre-Filled Pens
glimepiride (Amaryl)†ΦЖ	PO QD	Basal Insulin	
glyburide (Glynase)†ΦЖ	PO QD-BID	insulin glargine (Basaglar)	U-100; Pre-Filled Pens
Thiazolidinediones (TZD); 0.8%-0.9% A1C Reduction		insulin glargine (Lantus)	U-100; Vials, Pre-Filled Pens
pioglitazone (Actos)†Ж	PO QD	insulin detemir (Levemir)	U-100; Vials, Pre-Filled Pens
rosiglitazone (Avandia)†	PO QD-BID	insulin glargine (Toujeo)	U-300; Pre-Filled Pens
List of Combination Products (Refer to individual agent for clinical information)		insulin degludec (Tresiba)	U-100, U-200; Vials, Pre-Filled Pens
DPP-4i/metformin	sitagliptin/metformin (Janumet, Janumet XR); alogliptan/metformin (Kanzoo)Ж; linagliptan/metformin (Jentaduetto, Jentaduetto XR); saxagliptan/metformin (Kombiglyze XR)		
meglitinide/metformin	repaglinide/metformin (PrandiMet)Ж		
SGLT-2i/metformin	empagliflozin/metformin (Synjardy, Synjardy XR); canagliflozin/metformin (Invokamet, Invokamet XR); dapagliflozin/metformin (Xigduo XR); ertugliflozin/metformin (Segluromet)		
SU/metformin	glipizide/metformin (Metaglip)Ж; glyburide/metformin (Glucovance)Ж		
TZD/metformin	pioglitazone/metformin (ActoPlus Met Ж, ActoPlus Met XR); rosiglitazone/metformin (Avandamet)		
SGLT-2i/DPP-4i	empagliflozin/linagliptan (Glyxambi); dapagliflozin/saxagliptan (Qtern); ertugliflozin/sitagliptan (Steglujan)		
DPP-4i/TZD	alogliptan/pioglitazone (Oseni)Ж		
TZD/SU	pioglitazone/glimepiride (Duetact)Ж		
GLP-1 RA/basal insulin	lixisenatide/insulin glargine (Soliqua); liraglutide/insulin degludec (Xultophy)		

Dosing Considerations
Refer to prescribing information for individual drugs
Hepatic = †
Renal = Φ
Generic Availability = Ж

Dosing Abbreviations
PO = by mouth, SQ = Subcutaneous
QD = once daily, BID = twice daily, TID = three times daily, QID = four times a day
QW = once weekly

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