

# Diabetes Medication Information Sheet

## Biguanide

Helps lower the amount of sugar that the liver releases into the blood

Helps make it easier for the body to use insulin

Metformin - Glucophage®

Extended Release Metformin - Glumetza®

## DPP-4 Inhibitor

Acts when sugar increases after a meal, increases insulin levels (helps lower blood sugar) and decreases glucagon (a hormone that raises blood sugar)

Linagliptin - Trajenta™

Saxagliptin - Onglyza®

Sitagliptin - Januvia®

Alogliptin - Nesina®

Linagliptin/Metformin - Jentadueto®

Saxagliptin/Metformin - Komboglyze™

Sitagliptin/Metformin - Janumet®

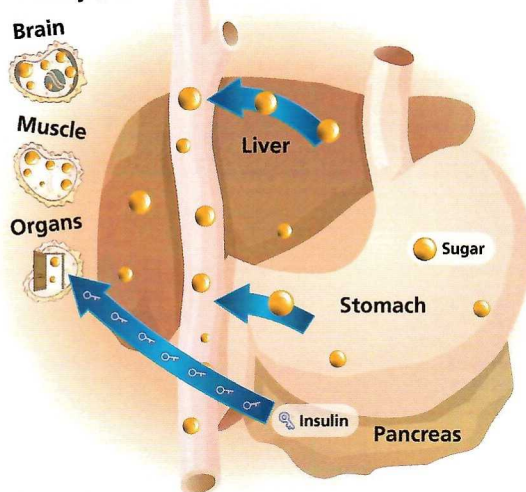
Alogliptin/Metformin - Kazano®

## Alpha-glucosidase inhibitor

Slows down the digestion of carbohydrates in the gut so that sugar is absorbed into the blood more slowly

Acarbose - Glucobay®

Sugar is energy for the body cells



## SGLT2 inhibitor

Helps lower blood sugar by reducing the amount of sugar recovered by the kidney

Canagliflozin - Invokana®

Dapagliflozin - Forxiga®

## GLP-1 Receptor Agonist

Acting when sugars are higher than normal, increases insulin levels (helps lower blood sugar) and decreases glucagon (a hormone that raises blood sugar)

Increases satiety and slows the emptying of the stomach

Liraglutide - Victoza®

Exenatide - Byetta®

## Sulfonylurea

Helps the pancreas to make more insulin

Gliclazide - Diamicon®

Gliclazide MR (modified release)

- Diamicon® MR

Glimepiride - Amaryl®

Glyburide - DiaBeta®

## Meglitinide

Stimulates the pancreas to release more insulin (short-acting)

Nateglinide - Starlix®

Repaglinide - GlucoNorm®

Class	A1C Lowering	Hypoglycemia	Weight	Other Considerations
Biguanide	↓↓	Rare	↓	GI side effects
Incretin Agent: GLP-1 receptor agonist	↓↓↓	Rare	↓↓↓	GI side effects
Incretin Agent: DPP-4 Inhibitor	↓↓	Rare	Neutral	
Insulin	↓↓↓	Yes	↑↑	No dose ceilings, flexible regimens
Insulin secretagogue: Meglitinide	↓↓	Yes	↑	Less hypoglycemia in context of missed meals Requires TID to QID dosing
Sulfonylurea	↓↓	Yes	↑	Gliclazide and Glimepiride associated with less hypoglycemia than Glyburide
Thiazolidinedione	↓↓	Rare	↑↑	CHF, edema, fractures, rare bladder cancer (pioglitazone), cardiovascular controversy (rosiglitazone), 6-12 weeks required for maximal effect
Alpha-glucosidase inhibitor	↓	Rare	Neutral to ↓↓↓	Improved postprandial control, GI side effects

Note: If eGFR is less than 50ml/min there may be additional dosing or usage considerations for antihyperglycemic medications. Canadian Diabetes Association (2013). "About Diabetes". Available online at <http://www.diabetes.ca/about-diabetes>

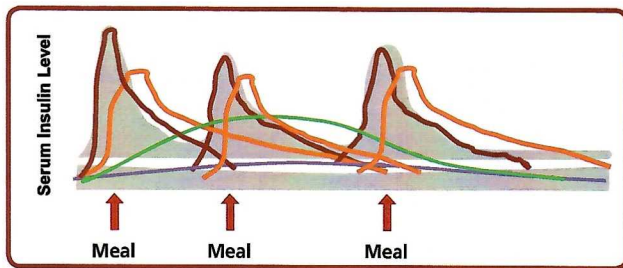
Class	A1C Lowering	Hypoglycemia	Weight	Other Considerations
SGLT2 inhibitor	Intermediate	Low Risk	Loss	Increased risk of genitourinary infection, reduces blood pressure, LDL increase

AstraZeneca Canada Inc. "Forxiga® Product Monograph". Canada. 2014. Print.  
Janssen Inc. "Invokana® Product Monograph". Canada. 2014. Print.

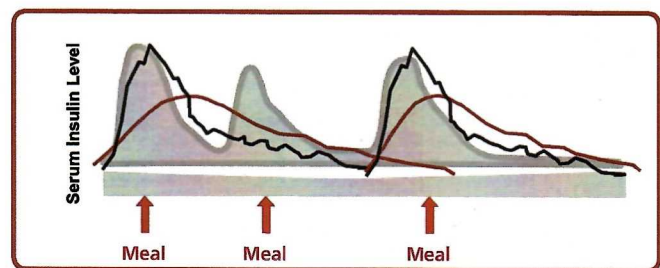


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Type	Onset (How quickly it starts working)	Peak (When it is most effective)	Duration (How long it works)	Timing of injection (When it should be given)
<b>Basal insulins</b>				
<b>Intermediate-acting</b> • Novolin <sup>®</sup> ge NPH / Humulin-N <sup>®</sup>	1-3 hours	5-8 hours	up to 18 hours	Often started once daily at bedtime. May be given once or twice daily. Not given at any time specific to meals. Snacks are often recommended to prevent hypoglycemia.
<b>Long-acting analogues</b> • Levemir <sup>®</sup> • Lantus <sup>®</sup>	90 min	not applicable	16-24 hours up to 24 hours	Often started once daily at bedtime.
<b>Bolus insulins</b>				
<b>Rapid-acting analogues</b> • NovoRapid <sup>®</sup> / Apidra <sup>®</sup> / Humalog <sup>®</sup>	10-15 min	1-2 hours	3-5 hours	Given with one or more meals per day. To be given 0-15 minutes before or after meals.
<b>Short-acting</b> • Novolin <sup>®</sup> ge Toronto / Humulin-R <sup>®</sup>	30 min	2-3 hours	6.5 hours	Given with one or more meals per day. Should be injected 30-45 minutes before the start of the meal.
<b>Premixed insulins</b>				
<b>Premixed insulin analogues</b> • NovoMix <sup>®</sup> 30, Humalog Mix 25 <sup>®</sup> , Humalog Mix 50 <sup>®</sup>	Rapid-acting / Intermediate-acting	Contains a fixed ratio of insulin (% of rapid-acting or short-acting insulin to % of intermediate-acting insulin): see above for information about peak actions based on insulin contained		Given with one or more meals per day. Should be injected 0-15 minutes before or after meals.
<b>Premixed regular insulin</b> • Novolin <sup>®</sup> ge 30/70, 40/60, 50/50 / Humulin <sup>®</sup> 30/70	Fast-acting / Intermediate-acting			Given with one or more meals per day. Should be injected 30-45 minutes before the start of the meal.



— Human Basal: Novolin<sup>®</sup>ge NPH, Humulin-N<sup>®</sup>  
— Analogue Basal: Levemir<sup>®</sup>, Lantus<sup>®</sup>  
— Human Bolus: Novolin<sup>®</sup>ge Toronto, Humulin-R<sup>®</sup>  
— Analogue Bolus: NovoRapid<sup>®</sup>, Apidra<sup>®</sup>, Humalog<sup>®</sup>



— Human Premixed: Novolin<sup>®</sup>ge 30/70, Humulin<sup>®</sup> 30/70  
— Analogue Premixed: NovoMix<sup>®</sup> 30, Humalog Mix25<sup>®</sup>

Insulin	Suggested Starting Dose	Transferring	Evaluation	Suggested Titration	Other Medication Adjustments
Long-acting	10 units od at hs	Unit for unit	Test blood sugar every morning	Adjust dose by 1 unit every day until target reached. Patients should be taught and encouraged to self titrate.	Metformin and Secretagogue are usually maintained
Rapid-acting or meal time insulin	4 units at one or each meal	Unit for unit	Check before next meal	If above target add 1 unit, if at target hold dose and if below target subtract 1 unit. Adjustments made to next day's dose.	Discontinue SUs, if applicable
Premixed insulin	6 units at breakfast and 6 units at supper	Basal to premixed – Take current basal dose divided by 2	Test blood sugar before meals and bedtime	Increase by 2 units until target is reached. Adjust breakfast dose according to pre-dinner level. Adjust dinner dose according to fasting blood sugar.	Discontinue SUs, if applicable

Note: Consider a change in timing or insulin type if glycemic targets are not being reached. As well, a lower starting dose, slower titration and higher targets may be considered for elderly or normal weight patients.