



Glucose-lowering medicines for type 2 diabetes

For primary care nurses and allied health professionals

Who will need medicines?

Glucose-lowering medicines are suitable for people with type 2 diabetes. These medicines are not generally used for people who have type 1 diabetes (autoimmune cause). They must be used with caution in those people with declining renal or liver function.

What types of medicines are available for type 2 diabetes?

In Australia there are seven classes of non-insulin medicines to manage diabetes. Each has a number of different brand names.

Note: There are various combinations of different medicines also available.

Class	Drug	Brand	Action	Side effects	Considerations	Administration
Biguanide	Metformin	Diabex, Diaformin, Formet	Increases insulin sensitivity Inhibits liver's release of glucose	Nausea Diarrhoea Metallic taste in mouth	Cease if diarrhoea continues for a few days Extended release has fewer GI side effects Avoid if severe renal or hepatic impairment May cause weight loss	With or just after food Withhold if fasting or nil-by-mouth Withhold if acutely unwell
Sulfonylurea	Glibenclamide, Gliclazide, Glipizide	Amaryl, Daonil, Diamicon, Glyade, Melezide, Nidem	Stimulates insulin secretion from pancreas	Hypoglycaemia	Efficacy may reduce as beta-cell function declines Avoid in frail older people with irregular eating patterns – especially long acting versions Avoid if severe renal or hepatic impairment	With food Withhold if fasting or nil-by-mouth Withhold if risk of hypo vomiting/diarrhoea)
DPP-4* inhibitor	Alogliptin, Linagliptin, Saxagliptin, Sitagliptin, Vildagliptin	Galvus, Januvia, Nesina, Onglyza, Trajenta	Increases insulin secretion after food Decreases glucose production from liver	Pancreatitis GI disturbances Joint or muscle pain Nasopharyngitis	Dose reduction for renal impairment (except Linagliptin) Lower risk for hypoglycaemia than sulfonylureas Caution if heart failure Avoid if history of pancreatitis	Before or after food
GLP-1# agonist (subcut injection)	Dulaglutide, Exenatide, Liraglutide, Semaglutide	Byetta, Bydureon, Trulicity, Victoza, Ozempic	Increases insulin secretion after food Slows gastric emptying	Nausea Vomiting Weight loss Pancreatitis	Avoid if history of pancreatitis Avoid in frail or underweight people GI effects more common in elderly May suppress appetite	Subcutaneous injection only Byetta – 30 minutes before meal twice daily Ozempic and Trulicity – once weekly before or after food Victoza – once daily
SGLT2^ inhibitor	Dapagliflozin, Empagliflozin, Ertugliflozin	Forxiga, Jardiance, Steglatro	Increases glucose loss through urine	Dehydration Urinary incontinence Genitourinary infections Ketoacidosis Weight loss	Avoid if low carbohydrate intake Caution with renal impairment Will increase need to urinate	Before or after food Withhold if fasting or nil-by-mouth Withhold if acutely unwell
Alpha glucosidase inhibitor	Acarbose	Glucobay	Slows carbohydrate absorption	Bloating Flatulence Diarrhoea Hypoglycaemia must be treated with glucose	Avoid in frail, elderly people due to side effects	With food
TZD+	Pioglitazone, Rosiglitazone	Actos, Avandia	Increases insulin sensitivity	Fluid retention Heart failure Fractures in women Weight gain	Change in blood glucose levels may take 12 weeks May worsen heart failure	

*DPP-4 = Dipeptidyl peptidase-4; #GLP-1 = Glucagon-like peptide-1; ^SGLT-2 = Sodium-glucose co-transporter 2; +TZD = Thiazolidinedione; GI = Gastro intestinal