Type 2 diabetes in adults: choosing medicines

Factors to take into account when choosing, reviewing and changing medicines

Prescribing guidance

Rescue therapy

For symptomatic hyperglycaemia, consider insulin or a sulfonylurea and review when blood glucose control has been achieved.

Diet and lifestyle advice

At each point reinforce advice about diet and lifestyle.

Choosing treatments

Base the choice of medicine on:

- the person's individual clinical circumstances, for example comorbidities, contraindications, weight, and risks from polypharmacy
- the person's individual preferences and needs
- the effectiveness of the drug treatments in terms of metabolic response and cardiovascular and renal protection
- safety (see MHRA guidance, the BNF and individual SPCs) and tolerability of the drug treatment
- monitoring requirements
- the licensed indications or combinations available
- cost (if 2 drugs in the same class are appropriate, choose the option with the lowest acquisition cost)

Reviewing and changing treatments

At each point, think about and discuss the following with the person:

- stopping medicines that are not tolerated
- stopping medicines that have had no impact on glycaemic control or weight, unless there is an additional clinical benefit, such as cardiovascular or renal protection, from continued treatment
- how to optimise their current treatment regimen before thinking about changing treatments, taking into account factors such as:
 - adverse effects
 - adherence to existing medicines
 - the need to revisit advice about diet and lifestyle
 - prescribed doses and formulations
- whether switching rather than adding drugs could be effective

High risk of cardiovascular disease

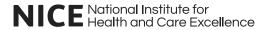
Adults with type 2 diabetes who have:

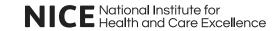
- QRISK2 more than 10% in adults aged 40 and over or
- an elevated lifetime risk of cardiovascular disease (defined as the presence of 1 or more cardiovascular risk factors in someone under 40).

Cardiovascular disease risk factors: hypertension, dyslipidaemia, smoking, obesity, and family history (in a first-degree relative) of premature cardiovascular disease.

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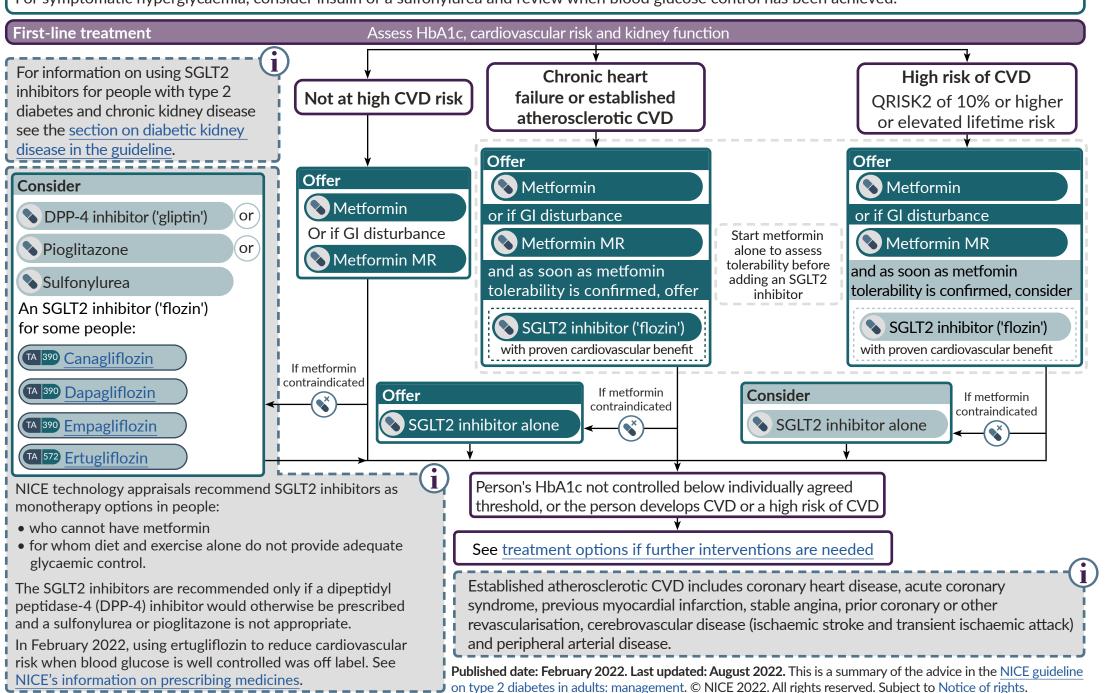
This is a summary of the advice in the NICE guideline on type 2 diabetes in adults: management.

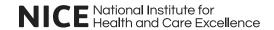




Rescue therapy

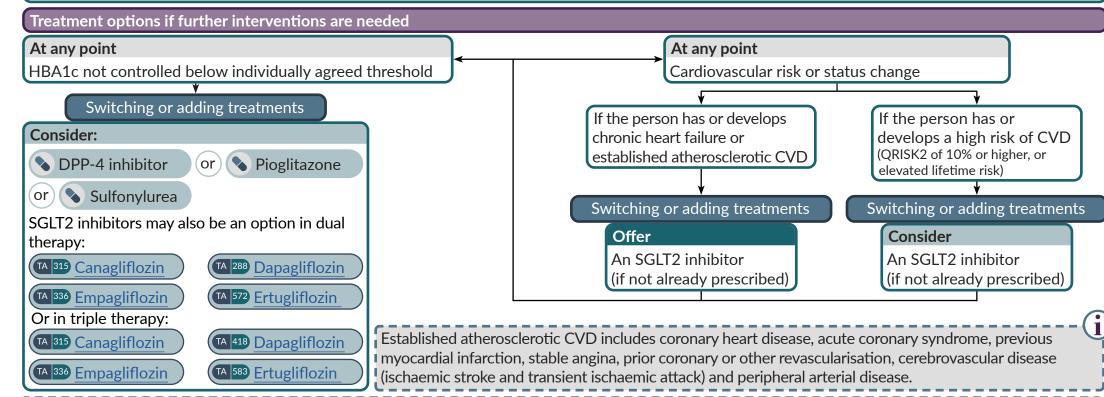
For symptomatic hyperglycaemia, consider insulin or a sulfonylurea and review when blood glucose control has been achieved.





Rescue therapy

For symptomatic hyperglycaemia, consider insulin or a sulfonylurea and review when blood glucose control has been achieved.



At each point follow the prescribing guidance.

Switch or add treatments from different drug classes up to triple therapy (dual therapy if metformin is contraindicated).

In February 2022, using ertugliflozin to reduce cardiovascular risk when blood glucose is well controlled was off label. See NICE's information on prescribing medicines.

Insulin therapy

When dual therapy has not continued to control HbA1c to below the person's individually agreed threshold, also consider insulin-based therapy (with or without other drugs).

TA 288 Dapagliflozin



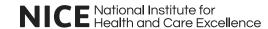
TA 315 Canagliflozin

GLP-1 mimetic treatments

If triple therapy with metformin and 2 other oral drugs is not effective, not tolerated or contraindicated, consider triple therapy by switching one drug for a GLP-1 mimetic for adults with type 2 diabetes who:

- have a body mass index (BMI) of 35 kg/m² or higher (adjust accordingly for people from Black, Asian and other minority ethnic groups) and specific psychological or other medical problems associated with obesity **or**
- have a BMI lower than 35 kg/m² and:
 - for whom insulin therapy would have significant occupational implications or
 - weight loss would benefit other significant obesity related comorbidities.

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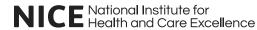
Medicine	Options and BNF link	Contraindications or special warnings (see SPCs)	Effect on weight	Hypoglycaemia risk	Renal impairment	Hepatic impairment
DPP-4 inhibitor ('gliptins')	Alogliptin Linagliptin Saxagliptin Sitagliptin Vildagliptin	Ketoacidosis	None	Low	Dose reduction or caution (not for linagliptin)	Dose reduction or caution or avoid (not for linagliptin and sitagliptin)
Metformin	Metformin	Acute metabolic acidosis	None	Low	Dose reduction or avoid. Check the BNF monograph for eGFR thresholds	Withdraw if tissue hypoxia likely
Pioglitazone	Pioglitazone	Ketoacidosis, history of heart failure, previous or active bladder cancer, uninvestigated macroscopic haematuria	Gain	Low	No warnings	Avoid
SGLT2 inhibitor ('flozins')	Canagliflozin Dapagliflozin Empagliflozin Ertugliflozin	Ketoacidosis	Loss	Low	Dose reduction or caution or avoid. Check the BNF monographs for eGFR thresholds	Caution or avoid. Check the BNF monographs for severity
Sulfonylurea	Gliclazide Glimepiride Glipizide Tolbutamide	All sulfonylureas: ketoacidosis Gliclazide and tolbutamide: avoid where possible in acute porphyrias	Gain	Moderate High in older people	Dose reduction or caution or avoid. Check the BNF monographs for eGFR thresholds	Caution or avoid. Check the BNF monographs for severity

When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

This information is a summary of the recommendations, please consult the guideline for the full recommendations. All supplementary information is taken from the BNF or the SPCs.

In February 2022, using ertugliflozin to reduce cardiovascular risk when blood glucose is well controlled was off label. See NICE's information on prescribing medicines.

See summaries of product characteristics (SPCs), British national formulary (BNF) or the Medicines and Healthcare products Regulatory Agency (MHRA) for up-to-date information.



Medicine	Options and BNF link	Form	Contraindications or special warnings (see SPCs)	Effect on weight	Hypoglycaemia risk	Renal impairment	Hepatic impairment
DPP-4 inhibitor ('gliptins')	Alogliptin Linagliptin Saxagliptin Sitagliptin Vildagliptin	Tablet	Ketoacidosis	None	Low	Dose reduction or caution (not for linagliptin)	Caution or avoid (not for linagliptin and sitagliptin)
GLP-1	Dulaglutide Exenatide Liraglutide Lixisenatide Semaglutide	Tablet or injection	Ketoacidosis Severe gastro-intestinal disease (not for liraglutide and semaglutide) Liraglutide: diabetic gastroparesis, inflammatory bowel disease	Loss	Low	Dose reduction or caution or avoid Check the BNF monographs for eGFR thresholds	Caution or avoid (not for dulaglutide, exenatide, and lixisenatide) Check the BNF monographs for severity
Insulin	Insulin treatment summary See BNF monographs	Injection	See individual SPCs	Gain	High	Dose reduction	Dose reduction
Pioglitazone	Pioglitazone	Tablet	History of heart failure, previous or active bladder cancer, uninvestigated macroscopic haematuria	Gain	Low	No warnings	Avoid
SGLT2 inhibitor ('flozins')	Canagliflozin Dapagliflozin Empagliflozin Ertugliflozin	Tablet	Ketoacidosis	Loss	Low	Dose reduction or caution or avoid. Check the BNF monographs for eGFR thresholds	Caution or avoid Check the BNF monographs for severity
Sulfonylurea	Gliclazide Glimepiride Glipizide Tolbutamide	Tablet	All sulfonylureas: ketoacidosis Gliclazide and tolbutamide: avoid where possible in acute porphyrias	Gain	Moderate High in older people	Dose reduction or caution or avoid. Check the BNF monographs for eGFR thresholds	Caution or avoid Check the BNF monographs for severity

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