

# NICE type 2 diabetes management guidance: What's new?

*Su Down*

**Management of type 2 diabetes has become more challenging over the last few years. This challenge is driven by the new evidence that some of the medication classes in use for type 2 diabetes offer benefits over and above glycaemic lowering alone. In February 2022, NICE published updated guidance on the management of adults (aged 18 years and over) with type 2 diabetes. Whilst amendments have been made to the sections on individualised care, managing blood glucose levels (including individualising targets) and managing complications, the most significant recommendation changes are regarding first-line drug treatments, reviewing therapy and treatment options if further interventions are needed. In this article, the author provides an in-depth review of the updated NG28 guideline and the changes that have been made, with particular focus on the medication changes.**

The update to the NICE NG28 guidance on management of type 2 diabetes in adults (NICE, 2015) has been long awaited. The most significant change in this 2022 update is to the recommendations regarding glycaemic control.

Optimal glycaemic management is an acknowledged element of good diabetes care. However, many individuals fail to achieve and maintain their glycaemic targets (Khunti, 2013; Blonde, 2017; Bain, 2020). It is recommended that the target HbA<sub>1c</sub> level be individualised to account for multiple factors. These factors include:

- The individual's personal preferences.
- Comorbidities.
- Risks from polypharmacy.
- The likelihood of benefiting from long-term interventions.

In line with the growing evidence base and other national and international guidance (SIGN, 2017; Buse et al, 2020), NG28 now encourages the identification of those with either atherosclerotic

cardiovascular disease (ASCVD), chronic heart failure or high risk of CVD. The determination of high cardiovascular risk is defined as:

- A QRISK2 score of >10% in adults aged 40 years and over, **or:**
- An elevated lifetime risk of CVD (defined as the presence of one or more cardiovascular risk factor in someone under 40 years. These risk factors are hypertension, dyslipidaemia, smoking, obesity and family history [in a first-degree relative] of premature CVD).

This identification process should take place at diagnosis and at every diabetes review thereafter.

For any patient falling into these three categories, whether initially or at a subsequent review, the advice now is to offer dual therapy with metformin and an SGLT2 inhibitor with proven cardiovascular benefit; metformin is to be started until tolerability is established and then the SGLT2 inhibitor should be started immediately. Where metformin is contraindicated or not tolerated, the

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## Article points

1. The need for treatment individualisation has been emphasised and is now supported by a downloadable patient decision aid.
2. Where possible, SGLT2 inhibitors are now recommended first-line, as dual therapy with metformin, in any individual with atherosclerotic cardiovascular disease, chronic heart failure or high risk of cardiovascular disease.
2. GLP-1 RAs remain a fourth-line option for glycaemic control, which puts the NICE guideline at odds with most other international guidelines.

## Key words

- Clinical guidelines
- NICE NG28
- Type 2 diabetes

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### How to use SGLT2 inhibitors safely and effectively

This quick reference guide presents the latest guidance on the safe use of sodium–glucose cotransporter 2 inhibitors. Updated January 2021.

*Diabetes & Primary Care* 23: 5–7

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SGLT2 inhibitor should be used first-line. This is a real shift in current practice and brings the guidance in line with many other global recommendations.

### SGLT2 inhibitors

The SGLT2 inhibitor class of medications now has a far greater prominence across the treatment algorithms, both for initial management and if further intensification is indicated (see *Figure 1* and *Figure 2*). This recognises the growing evidence base for the class.

However, as Brown (2022) has pointed out, the recommendation that SGLT2 inhibitors be offered to all people with type 2 diabetes and chronic heart failure does not differentiate between the different types or stability of heart failure, and this could lead to potentially unsafe prescribing of SGLT2 inhibitors outside of their licence. Furthermore, as SGLT2 inhibitors are not currently licensed in the UK for reduction of cardiovascular risk when glucose is at target, people will also need to be counselled about off-licence use.

### Renal indications

In addition to the cardiovascular evidence, the guideline also acknowledges the renal benefits now demonstrated in the SGLT2 inhibitor class. Strong evidence from randomised controlled trials clearly shows that these agents reduce the risk of chronic kidney disease (CKD) progression, mortality and cardiovascular events in adults with type 2 diabetes and CKD. NG28 links to the [NICE CKD guideline \(NG203\)](#), which was published recently (NICE, 2021). NG203 recommends offering an SGLT2 inhibitor in addition to an ACEi/ARB in all those with an albumin:creatinine ratio (ACR) >30 mg/mmol. Furthermore, it encourages the consideration of this combination in those with an ACR of 3–30 mg/mmol (depending on individual drug licence indications, noting that not all SGLT2 inhibitors are currently licensed for this use). The addition of an SGLT2 inhibitor in these patients is due to the class's demonstrated renal benefits, as the ability to lower glucose diminishes with lower renal function.

### DKA risk

Prior to starting an SGLT2 inhibitor, the risk of developing diabetic ketoacidosis (DKA) must

be assessed. The risk is greater in some patients, especially if:

- They have had a previous episode of DKA.
- They are unwell with intercurrent illness.

The additional recognition of very-low-carbohydrate or ketogenic diets as a risk factor for developing DKA in those taking an SGLT2 inhibitor has been included in this update. The advice in these situations is to delay the introduction of an SGLT2 inhibitor until the diet has been modified. For patients already on an SGLT2 inhibitor, the clear advice is to recommend they do not start a very-low-carbohydrate or ketogenic diet without alerting their healthcare professional first. In these circumstances, the use of the SGLT2 inhibitor may be suspended for the period in which the diet is being followed.

### What if an SGLT2 inhibitor cannot be used?

The final point to note in this section on SGLT2 inhibitors is that, for those with established or high risk of CVD who are unable to tolerate an SGLT2 inhibitor, the recommendation is for them to remain on metformin alone. The decision not to recommend a GLP-1 RA at this point is a controversial issue.

The above changes to the guidance are welcomed and regarded by many as long overdue; however, the absence of the GLP-1 RA class early in the treatment algorithm is more contentious.

### GLP-1 RAs

The positioning of the GLP-1 RA class of medications is likely to be one of the greatest discussion points for the updated guidance. The decision of NICE to continue positioning the class as a fourth-line option puts the guidance at odds with many of the other guidelines across the world (SIGN, 2017; Buse et al, 2020).

GLP-1 RAs remain as a treatment option only after failure to achieve glycaemic control on three oral therapies, and there has been only one adjustment to the previous advice. Before, the guideline only supported the use of a GLP-1 RA alongside metformin and a sulfonylurea, and not with an SGLT2 inhibitor; this has now been updated to reflect the more prominent position of SGLT2 inhibitors in the treatment pathway as a whole.



## How to choose further medicines

### Rescue therapy

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

### Treatment options if further interventions are needed

#### At any point

HbA1c not controlled below individually agreed threshold

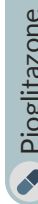
#### Switching or adding treatments

#### Consider:



DPP-4 inhibitor

or



Pioglitazone



Sulfonylurea

SGLT2 inhibitors may also be an option in dual therapy:

TA 315 Canagliflozin

TA 288 Dapagliflozin

TA 336 Empagliflozin

TA 572 Ertugliflozin

Or in triple therapy:

TA 315 Canagliflozin

TA 418 Dapagliflozin

TA 336 Empagliflozin

TA 583 Ertugliflozin

#### At any point

Cardiovascular risk or status change

If the person has or develops chronic heart failure or established atherosclerotic CVD

#### Switching or adding treatments

**Offer**  
An SGLT2 inhibitor (if not already prescribed)

If the person has or develops a high risk of CVD (QRISK2 of 10% or higher)

#### Switching or adding treatments

**Consider**  
An SGLT2 inhibitor (if not already prescribed)

Established atherosclerotic CVD includes coronary heart disease, acute coronary syndrome, previous myocardial infarction, stable angina, prior coronary or other revascularisation, cerebrovascular disease (ischaemic stroke and transient ischaemic attack) and peripheral arterial disease.

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 336 Empagliflozin

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/m<sup>2</sup> 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/m<sup>2</sup> **and:**
  - for whom insulin therapy would have significant occupational implications **or**
  - weight loss would benefit other significant obesity related comorbidities.

**Published date:** February 2022. This is a summary of the advice in the [NICE guideline on type 2 diabetes in adults: management](#). © NICE 2022. All rights reserved. Subject to [Notice of rights](#).

Figure 2. Treatment escalation algorithm within the new guideline.

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Keeping GLP-1 RAs as only a fourth-line option moves this guidance further from the American Diabetes Association (ADA)'s Standards of Care (ADA Professional Practice Committee, 2022). In these standards there is a clear recommendation, much earlier in the pathway, for the use of SGLT2i/GLP-1 RA combination therapy in those with established or high risk of CVD.

### Why are the GLP-1 RAs sidelined?

It has been acknowledged that the cardiovascular benefits of the GLP-1 RA class were not reviewed in depth for this update. Meanwhile, given the wide range of options in this class (twice-daily, daily and weekly injectables and an oral preparation) and the variable efficacy between the individual drugs (for more information, see [Morris, 2021](#)), the cost-effectiveness for glucose lowering has not been established for the class as a whole, and so the advice has not been altered since the 2015 update. As such, and reviewing the class purely on its glucose-lowering effect, NICE has continued recommending a BMI cut-off for starting a GLP-1 RA of  $\geq 35$  kg/m<sup>2</sup>, unless insulin therapy would have significant occupational implications or weight loss would improve other significant obesity-related comorbidities.

It also remains the case that the GLP-1 RA must be stopped if both HbA<sub>1c</sub> and weight have not significantly reduced (by 11 mmol/mol and 3% of body weight, respectively) at 6 months. Whilst it is always appropriate to review and stop medications where there has been no clear benefit, achieving both weight and HbA<sub>1c</sub> reductions can be challenging.

A further review of the cardiovascular benefits of GLP-1 RAs will begin in April 2022, and we will have to wait for this review to complete before any change to the positioning of the GLP-1 RA class can be expected.

### Other oral medications

Very little has changed for the other oral medication classes in terms of recommendations for initial or follow-on therapy. They remain options in dual or triple therapy. In addition, they can be offered as first-line therapy in the following circumstances.

#### Sulfonylureas

In addition to being used as a rescue therapy option in people who are osmotically symptomatic,

sulfonylureas are recommended as an option for individuals who are unable to take metformin due to either contraindication or intolerability, if they are not identified as being in the ASCVD, heart failure or CKD risk groups (in which case an SGLT2 inhibitor should be offered).

#### DPP-4 inhibitors

Like sulfonylureas, this class of medication is recommended for patients as a first-line option for those who are unable to take metformin either due to contraindication or intolerability. A DPP-4 inhibitor can be considered if patients are not identified as being in the ASCVD, heart failure or CKD risk groups.

#### Pioglitazone

Again, like sulfonylureas and DPP-4 inhibitors, pioglitazone (the only remaining licensed TZD in the class) is recommended as a first-line option for patients who are unable to take metformin either due to contraindication or intolerability, if they are not identified as being in the ASCVD, HF or CKD risk factor groups.

#### Insulin

Very little has changed in the advice on insulin. As well as being a third- or fourth-line option for glycaemic control, it remains an option in rescue therapy, like sulfonylureas, to normalise glycaemia quickly to eradicate osmotic symptoms.

The emphasis for choosing a biosimilar insulin, if available, is supported in this update. More information on biosimilars can be found in this journal ([Morris, 2022](#)).

### Other updated sections

#### Individualised care

The importance of individualising care is emphasised. To further support the individualisation of glycaemic targets, a [patient decision aid](#) has been produced. This also encourages the relaxation of targets in those with frailty.

#### Diagnosing and managing hypertension

The management of blood pressure is a key component of diabetes care. The identification and management of hypertension in people with diabetes has been removed from this guidance

**Type 2 diabetes: agreeing my blood glucose (HbA1c) target**  
Patient decision aid

**What is the best blood glucose (HbA1c) target for me?**

If you have type 2 diabetes you may have higher levels of glucose (sugar) in your blood. Your blood glucose levels are usually measured by an HbA1c blood test. Your HbA1c level shows your average blood glucose over the past 2 to 3 months.

You can help to manage your blood glucose levels with diet and changes to your lifestyle, such as having a healthy weight. But people with type 2 diabetes will also usually need to take medicines to manage their blood glucose.

NICE recommends that you and your diabetes team should agree a target HbA1c that you will aim for with their support. We've written this decision aid to help you work out together what that target should be for you at the moment.

When you are agreeing the target, it's important to think about what else is happening in your life and what matters most to you.

You can use the diagram on the last page to help you think about how important some things are compared with others. There might be other things you want to talk to your diabetes team about as well. It is important that you make a decision that you really **WANT** to aim for.

Every so often it's a good idea to think about whether this is still the best target for you. This could be at your annual review, or sooner if you wish.

Many people with type 2 diabetes find that their HbA1c increases over time, even with treatment. That's why treatments may need to be changed as part of your ongoing care.

**Blood glucose and long-term health**

In the long term, people who have a higher HbA1c are at higher risk of having problems with their blood vessels and heart. These might include angina, a heart attack or a stroke.

They also have an increased risk of conditions affecting the eyes and kidneys. The risk varies and depends on how often these could lead to complications that could seriously harm the person's quality of life.

But not everyone gets these problems, and there is a lot you can do to reduce your risk. As well as managing your blood glucose levels, these include:

- stopping smoking (if you smoke)
- keeping a healthy weight
- staying active
- managing your blood pressure (usually with medication)
- taking a statin or other medicine to manage your cholesterol.

Your diabetes team can explain more about these and how you can get help with them. NICE has produced other decision aids about managing blood pressure and taking a statin.

NICE National Institute for Health and Care Research

The new patient decision aid can be [found here](#).



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**NICE hypertension  
guidance: What's new?**

An in-depth review of the NICE NG136 guideline on hypertension and the changes that have been made.

*Journal of Diabetes Nursing*  
**23**: JDN091

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as they are included in the NG136 guideline *Hypertension in adults: diagnosis and management* (NICE, 2019). A review of the updated guidance was published in this journal (Milne, 2019).

**Conclusions**

In summary, there are a number of positive aspects to the updated NG28 guidance. The decision aid tool and recognition of the need to de-escalate therapy in the frail person, as well as the long-awaited shift in position to the early use of SGLT2 inhibitors, are all very welcome. In addition, a review of glucose monitoring has since been published at the end of March 2022. This update extends the option of flash glucose monitoring to certain individuals with type 2 diabetes who are on multiple daily insulin injection regimens, [which should prove very useful](#).

However, there were also some disappointments in the updated guidance. As we still have to wait for a further, wider review of GLP-1 RAs, one could argue that the guideline still feels behind the times in some areas, and that an opportunity is being missed for a potentially useful class of drugs. ■

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