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**NATIONAL INSTITUTE FOR HEALTH AND CARE
EXCELLENCE**

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4

Guideline

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**Diabetes (type 1 and type 2) in children and young
people: diagnosis and management**

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Draft for consultation, March 2022

This is an update to NICE guideline NG18 (published August 2015). We have:

- reviewed the evidence on periodontal treatment
- made new recommendations and updated existing recommendation 1.2.1.

Who is it for?

- Healthcare professionals who care for children and young people with diabetes, including those working in dental services
- Commissioners and providers
- Children and young people with type 1 and type 2 diabetes, and their families and carers

It may also be relevant for non-NHS healthcare providers of dental services.

What does it include?

- the new recommendations and the recommendation that has been updated
- related recommendations that have not been updated but are included here for context (shaded in grey and marked **[2015]**)
- rationale and impact sections that explain why the committee made the 2022 recommendations and how they might affect practice

- the guideline context.

Information about how the guideline was developed is on the [guideline's webpage](#). This includes the evidence reviews, the scope, details of the committee and any declarations of interest.

Commenting on this update

We have reviewed the evidence on periodontal disease in children and young people with type 1 diabetes. You are invited to comment on the new and updated recommendations. These are marked as **[2022]**.

We have not reviewed the evidence for the recommendations marked **[2015]** (shaded in grey) and cannot accept comments on them.

Sections of the guideline that have had no changes at all have been temporarily removed for this consultation and will be re-instated when the final guideline is published. See the [current version of the guideline](#).

See [update information](#) for a full explanation of what is being updated.

Full details of the evidence and the committee's discussion on the 2022 recommendations are in the [evidence review](#). Evidence for the 2015 recommendations is in the [full version](#) of the 2015 guideline.

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1 Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in [NICE's information on making decisions about your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

2 1.2 Type 1 diabetes

3 Education and information

4 1.2.1 Offer children and young people with type 1 diabetes and their
5 families or carers a continuing programme of education from
6 diagnosis. Include the following core topics:

- 7 • insulin therapy (including its aims and how it works), insulin
8 delivery (including rotating injection sites within the same body
9 region) and dosage adjustment **[2015]**
- 10 • blood glucose monitoring, including blood glucose and HbA1c
11 targets **[2015]**
- 12 • how diet, physical activity and intercurrent illness effect blood
13 glucose levels **[2015]**
- 14 • managing intercurrent illness ('sick-day rules', including
15 monitoring of blood ketones [beta-hydroxybutyrate]) **[2015]**
- 16 • detecting and managing hypoglycaemia, hyperglycaemia and
17 ketosis **[2015]**
- 18 • the importance of good oral hygiene and regular dental check-
19 ups, for preventing periodontal disease. **[2022]**

1 Periodontal disease

2 1.2.111 Advise children and young people with type 1 diabetes and their
3 families and carers at their regular diabetes reviews that:

- 4 • they are at higher risk of periodontal disease
- 5 • if they get periodontal disease, treating it can improve their blood
6 glucose management and can reduce their risk of
7 hyperglycaemia and hypoglycaemia (abnormalities in blood
8 glucose levels) and their risk of insulin resistance. **[2022]**

9 1.2.112 Advise all children and young people with type 1 diabetes to have
10 regular oral health reviews (their dental team will tell them how
11 often, in line with the [NICE guideline on dental checks](#)). **[2022]**

12 1.2.113 For guidance for dental teams on how to provide oral health advice,
13 see the [NICE guidance on oral health promotion](#). **[2022]**

For a short explanation of why the committee made these recommendations
see the [rationale and impact section on periodontal disease](#).

Full details of the evidence and the committee's discussion are in [evidence
review C: periodontal treatment to improve diabetic control](#).

14 1.3 Type 2 diabetes

15 Education and information

16 1.3.3 Explain to children and young people with type 2 diabetes and their
17 families or carers that, like people without diabetes, they should
18 have:

- 19 • regular dental examinations (see the [NICE guideline on dental
20 checks](#))
- 21 • an eye examination by an optician every 2 years. **[2015]**

1 **Periodontal disease**

2 1.3.41 Advise children and young people with type 2 diabetes and their
3 families and carers at their regular diabetes reviews that:

- 4 • they are at higher risk of [periodontal disease](#)
- 5 • if they get periodontal disease, treating it can improve their
6 diabetes management and can reduce their risk of
7 hyperglycaemia and hypoglycaemia (abnormalities in blood
8 glucose levels), and their risk of insulin resistance. **[2022]**

9 1.3.42 Advise all children and young people with type 2 diabetes to have
10 regular oral health reviews (their dental team will tell them how
11 often, in line with the [NICE guideline on dental checks](#)). **[2022]**

12 1.3.43 For guidance for dental teams on how to provide oral health advice,
13 see the [NICE guidance on oral health promotion](#). **[2022]**

For a short explanation of why the committee made these recommendations
see the [rationale and impact section on periodontal disease](#).

Full details of the evidence and the committee's discussion are in [evidence
review C: periodontal treatment to improve diabetic control](#).

14 **Rationale and impact**

15 These sections briefly explain why the committee made the recommendations
16 and how they might affect practice.

17 **Periodontal disease**

18 [Recommendations 1.2.1, 1.2.111 to 1.2.113, 1.3.3, and 1.3.41 to 1.3.43](#)

19 **Why the committee made the recommendations**

20 There was no evidence for children and young people. The committee
21 extrapolated from the evidence for adults with type 1 and type 2 diabetes. as
22 there was a lot of consistent evidence showing that adults with diabetes are at

1 increased risk of periodontal disease and its treatment improved diabetic
2 control. The clinical and cost effectiveness of periodontal treatment in adults
3 was sufficient to justify the recommendations for children and young people
4 with diabetes aimed at prevention and delay of the onset of periodontal
5 disease.

6 Children and young people with diabetes are at increased risk of developing
7 periodontal disease. However, in the committee's experience they are often
8 unaware of this, and may not be having regular oral health reviews. To
9 address this, the committee recommended making discussions of the risk of
10 periodontal disease a routine part of their diabetes reviews, alongside eye
11 disease and foot problems.

12 Oral hygiene and the need for regular oral health reviews has been added to
13 the standard education children and young people with diabetes should
14 receive, because this will help them to prevent periodontal disease.

15 **How the recommendations might affect practice**

16 For dental professionals, the recommendations should not lead to a significant
17 long-term increase in the number of oral health reviews, as they specify that
18 people should follow existing guidance (the [NICE guideline on dental checks](#)).
19 There may be a short-term increase if the guideline increases awareness of
20 periodontal disease. Any increase in the number of oral health reviews will
21 potentially impact on the service, as NHS dental services already have
22 capacity issues. Dental teams will need clear advice on what they need to do
23 for people with diabetes, and clear care pathways to improve quality of care
24 and service delivery.

25 For diabetes professionals, the recommendations should not lead to an
26 increase in costs, as they are about raising awareness and including new
27 information in existing reviews.

28 **Context**

29 Diabetes is a long-term condition that can have a major impact on the life of a
30 child or young person, as well as their family or carers. In addition to insulin

1 therapy, diabetes management should include education, support and access
2 to psychological services, as detailed in this guideline. Preparations should
3 also be made for the transition from paediatric to adult services, which have a
4 somewhat different model of care and evidence base.

5 Type 1 diabetes is becoming more common in the UK, and since 2004
6 type 2 diabetes is also being diagnosed with increasing frequency. In 2019,
7 there were an estimated 36,000 children and young people in the UK with
8 diabetes under the age of 19, up from 31,500 in 2015. Type 1 diabetes
9 constitutes the vast majority (90%) of diabetes in children and young people.
10 There were 866 children and young people with type 2 diabetes reported to
11 the National Paediatric Diabetes Audit, of whom 201 (23.2%) were newly
12 diagnosed within the audit year (2019-2020). Much of the general care for
13 type 2 diabetes is the same as for type 1 diabetes, although the initial
14 management is different. In addition, the overweight and obesity associated
15 with type 2 diabetes also bring an increased risk of renal complications in
16 particular, and of problems such as hypertension and dyslipidaemia. A variety
17 of genetic conditions (such as maturity-onset diabetes in the young) and other
18 conditions (such as cystic fibrosis-related diabetes) may also lead to diabetes
19 in children and young people, but the care of these diverse conditions is
20 beyond the scope of this guideline.

21 This guideline recommends attempting to reach a glycated haemoglobin
22 (HbA1c) level near the normal range and near normoglycaemia. This is to
23 further reduce the long-term risks associated with diabetes. Tight
24 management may be achieved by intensive insulin management (multiple
25 daily injections or insulin pump therapy) from diagnosis, accompanied by
26 carbohydrate counting.

27 By implementing the strict blood glucose management recommended in this
28 guideline, improvements can be made to diabetes care that reduce the impact
29 of the condition on the future health of children and young people.

1 **Finding more information and committee details**

2 To find NICE guidance on related topics, including guidance in development,
3 see the [NICE webpage on diabetes](#).

4 For details of the guideline committee see the [committee member list](#).

1 **Update information**

2 This guideline is an update of NICE guideline NG18 (published August 2015).

3 We have reviewed evidence on periodontal disease.

4 Recommendations are marked **[2022]** if the evidence has been reviewed.

5 For recommendations shaded in grey and ending **[2015]**, we have not

6 reviewed the evidence.

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