Diabetes (type 1 and type 2) in children and young people: diagnosis and management - medicines for type 2 diabetes (update)

Consultation on draft guideline - Stakeholder comments table
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ABL Health	General	General	General	Children, particularly older ones, need to be screened for eating disorder so that they can access the right support, particularly as they could develop an unhealthy relationship (at such a vulnerable age) with certain medications such as GLP1s that can support weight loss	Thank you for your comment. Screening for eating disorders is outside the scope of this update, please see NG69 Eating disorders: recognition and treatment for guidance on this topic: https://www.nice.org.uk/guidance/ng69/chapter/Recommendations#identification-and-assessment
ABL Health	Guideline	004	013	Type 2 diabetes is not reversible but can go into "remission" – the potential to revert back to type 2 diabetes is always there	Thank you for your comment. The guideline has been amended using the term remission.
ABL Health	Guideline	005	010	To support children and families in making healthy lifestyle changes, healthcare professionals should consider referral to Tier 2 and Tier 3 specialist children's or family weight management services where possible and working in partnership with other relevant community groups	Thank you for your comment. The committee considered this issue and agreed this was outside the scope of this guideline update.
ABL Health	Guideline	018	013	Aside from capillary blood sugar monitoring, continuous glucose monitoring should be considered where compliance with capillary blood monitoring is lacking	Thank you for your comment. The committee considered stakeholder feedback, health inequality issues raised for this group and the known limited evidence base for continuous glucose monitoring (CGM) and agreed to extrapolate the recommendations for adults with type 2 diabetes to this population. The committee highlighted that a subset of the type 2 population would benefit from CGM. Given the lack of evidence a weaker consider recommendation was made for CGM for those on insulin therapy alongside education to support its use. The committee agreed to make a stronger offer recommendation for the use of CGM in children and young people with a condition or disability (including a learning disability or cognitive impairment) that means they cannot self-monitor their blood glucose by capillary blood glucose

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					monitoring. A stronger recommendation was warranted to address the known inequalities for this group. Regarding the choice of CGM device, following discussion the committee agreed to extrapolate the evidence considered for the effectiveness of CGM for children and young people with type 1 diabetes. This found enough evidence to justify the superiority of real time CGM (rtCGM) over intermittently scanned CGM (isCGM). This recommendation was adopted for the current type 2 update population to ensure parity with the type 1 population and to promote equity in access. Finally, the committee noted that the individual choice element of different CGM devices would be a benefit to children and young people and their parents or carers, as the 'best' device for each individual would depend on their preferences, needs and characteristics.
AstraZeneca	Evidence review	047 - 048	038 and 001 - 003	'Although the committee acknowledged that a GLP-1 agonist was not the most cost-effective option in adults, the majority of the more cost-effective options in adults are not licenced for use in children and young people' Dapagliflozin is licensed in adults and children aged 10 years and above for the treatment of T2DM. There is no evidence to suggest that the cost-effectiveness of dapagliflozin in children and young adults would differ significantly from that demonstrated in adults given that the clinically meaningful difference in HbA1C reduction was similar to the effect observed in adults with T2DM.	Thank you for your comment. The committee acknowledged that there was a lack of cost-effectiveness data therefore, the decision was mainly based on clinical data and committee consensus. However, it was not possible to conduct original modelling because there is no available utility data in this population. Given the size of the population, it is likely that other parameters would be extremely uncertain with large confidence intervals. Therefore, it was agreed that unit cost data would be the most informative for the committee when making recommendations.

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				Whilst GLP-1 inhibitors appear to have a slightly greater overall change in glycaemic control, NICE has not considered the total healthcare resource use associated with injectable therapies over oral therapies. Guideline recommendations should not consist of unit cost alone and should take into account all economic elements relating to these treatment options to make a fair and balanced conclusion of the cost-effectiveness of effective, licensed therapies which are relevant to the scope of the guideline. Therefore, AstraZeneca ask NICE to reconsider the decision to not recommend dapagliflozin, in line with the clinically meaningful benefits shown and the overall economic benefit of medicines on patients and NHS resources.	
AstraZeneca	General	General	General	References Imperatore G, Boyle JP, Thompson TJ, et al. Projections of type 1 and type 2 diabetes burden in the U.S. population aged <20 years through 2050: dynamic modeling of incidence, mortality, and population growth. Diabetes Care 2012; 35: 2515–20. Nadeau KJ, Anderson BJ, Berg EG, et al. Youth-onset type 2 diabetes consensus report: current status, challenges, and priorities. Diabetes Care 2016; 39: 1635–42 Zeitler P, Chou HS, Copeland KC, Geffner M.	Thank you for the references. Evidence from Tamborlane et al. 2022 has already been included in this updated evidence review on medicines for children and young people with type 2 diabetes. Your other suggested references are outside the scope of this guideline which considers type 2 diabetes in those 18 years and under.

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				Clinical trials in youth-onset type 2 diabetes: needs, barriers, and options. Curr Diab Rep 2015; 15: 28 Weiss T, Yang L, Carr RD, et al Real-world weight change, adherence, and discontinuation among patients with type 2 diabetes initiating glucagon-like peptide-1 receptor agonists in the UKBMJ Open Diabetes Research and Care 2022;10:e002517. doi: 10.1136/bmjdrc-2021-002517 Tamborlane, W.V., et al., Efficacy and safety of dapagliflozin in children and young adults with type 2 diabetes: a prospective, multicentre, randomised, parallel group, phase 3 study. The Lancet Diabetes & Endocrinology, 2022. 10(5): p. 341-350.	
AstraZeneca	Guideline	014	016 - 018	In addition to the above, the committee also agreed that the lowest dose of liraglutide or dulaglutide needed to achieve glycaemic control should be maintained because higher doses can lead to side effects and poorer treatment adherence. Data for the GLP-1 inhibitors in the Evidence Review document shows that the adverse events and the interpretation effect of GLP-1 inhibitors favours placebo for nausea and vomiting which is not the case for any adverse event profile for other treatments including SGLT2s. These two adverse events will have a notable impact on adherence and quality of life in an already difficult to treat population. The committee acknowledged that avoiding gastrointestinal side effects is an important	Thank you for your comment. The committee acknowledges your comment but note that recommendations about the use of empagliflozin, another SGLT2 inhibitor, have now been made in light of new evidence: https://doi.org/10.1016/S2213-8587(22)00387-4. Unlike the evidence for dapagliflozin, the evidence showed that empagliflozin compared to placebo is effective in reducing change scores on HbA1c% and fasting plasma glucose levels and does not appear to increase the risk of adverse events or gastrointestinal side effects. The recommendations therefore provide children and young people with a non-injectable alternative. Since no comparative data regarding the long-term effectiveness and safety of empagliflozin was available, the committee could not indirectly compare it to liraglutide and dulaglutide.

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				consideration for children and young people with T2DM yet the side effect profile of GLP-1 inhibitors and the impact they may have on patients has not been fully considered. Dapagliflozin has a manageable side effect profile and the data show in the NCT02725593 trial is consistent with the adverse event profile in adults with T2DM. AstraZeneca, therefore, ask that the committee take the totality of evidence into consideration with particular focus on adverse events that would notably impact the quality of life in this difficult to treat population.	
AstraZeneca	Guideline	016	002 - 012	With an increasing population of young people with type 2 diabetes mellitus (T2DM),1 there is an unmet need for additional treatment options that are effective, well tolerated, and easy to administer. It is well documented that children and young adults with type 2 diabetes can have challenges with self-care and adherence to treatment options.2,3 With glucagon-like peptide 1 (GLP-1) inhibitors being administered via daily or weekly subcutaneous injection, it is imperative that a population which is typically difficult to treat has alternative treatment options available which may be more appropriate when considering the overall needs of the patient. The potential challenges associated with GLP-1 therapies have been highlighted from an analysis of data from a UK CPRD retrospective cohort study of patients with T2DM initiating GLP-1 therapy (n=589) which showed that in patients aged >45	Thank you for your comment. The committee agreed it was of utmost importance to provide children and young people with type 2 diabetes with a choice of combination treatment as appropriate for the individual because the treatment burden associated with some medications can be substantial (often requiring several tablets or injections a day) and the needs diverse. The committee noted, using their knowledge and experience, that some children and young people with type 2 diabetes may prefer weekly to daily injections, or they may not like injections at all and so take tablets. Equally, children and young people with type 2 diabetes who have a daily regimen may find it more convenient because both metformin and insulin also require a daily administration. Moreover, there may be stigma associated with

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				years (n=127), 40.9% discontinued treatment after 12 months and 60.6% discontinued after 24 months.4 It is therefore likely that younger patients may find it more difficult to adhere to GLP-1 therapies compared with adults. In contrast, dapagliflozin is a once daily oral therapy which has been demonstrated to produce a clinically meaningful improvement in glycaemic control in adolescents and young adults aged 10 to 24 years with T2DM (both intention-to-treat [ITT] and per-protocol analysis), which was similar to the effect observed in adults with T2DM. In the trial, NCT02725593, a 0.75% reduction in glycated haemoglobin (HbA1c) was observed from baseline to Week 24 compared to placebo (95% confidence interval, CI: -1.65 to 0.15; p = 0.101).5 Although not statistically significant, this is a meaningful reduction for patients. Despite including both children and young adults with T2DM, there was a small number of participants for a phase 3 study, owing to the recognised challenge with recruitment of young people with T2DM.2,3 The small sample size should not preclude the clinically relevant improvement shown by participants and a 0.75% reduction in HbA1c, even after a relatively short amount of time, shows that dapagliflozin does have a clinically meaningful benefit on glycaemic control. Although the primary outcome of change in HbA1c concentration in participants receiving dapagliflozin in addition to standard of care was not significant in the ITT analysis, the prespecified sensitivity	receiving frequent daily treatment (for example, at school). Healthcare professionals (e.g., community nurses) could also administer injections rather than the child or young person (or their carer[s]) thus ensuring adherence if they attend appointments. Dulaglutide is administered as a weekly injection, whereas liraglutide requires daily injections. Empagliflozin is a daily oral (tablet) treatment. Because some children and young people may prefer 1 treatment regime over the other, the committee agreed to recommend both subcutaneous liraglutide and dulaglutide, and if contraindicated oral empagliflozin.

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				analysis of protocol-compliant participants showed a significant change in HbA1c concentration over 24 weeks of our study. This analysis, detailed below, shows an expected reduction of 1.13% in HbA1c compared with placebo when excluding those patients which had protocol deviations. This is an important outcome which is similar to the magnitude of HbA1c control observed with other medicines which are recommended in the draft guideline, such as liraglutide. Per-Protocol Sensitivity Analyses of the Primary Endpoint As treatment compliance in children and adolescents is known to be sub-optimal, a sensitivity analyses that reduced the impact of participants with relevant protocol deviations was performed. Only protocol-compliant participants were included in the per-protocol sensitivity analysis. This analysis, which excluded 12 (17%) of 72 participants for protocol deviations directly related to treatment compliance, showed a significant difference (p=0·012) in HbA1c with dapagliflozin versus placebo at Week 24 (REF _Ref127964353 \h Figure 1).5 Figure SEQ Figure * ARABIC 1: Sensitivity analysis of the primary outcome in the per-protocol population (excludes participants with relevant protocol deviations)5 Abbreviations: CI, confidence interval; SE, standard	

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				error This analysis combined with the primary endpoint clearly demonstrate that dapagliflozin does have a clinically meaningful benefit on glycaemic control in children and young adults with T2DM which has currently been disregarded in the development of the draft guideline. Dapagliflozin is the first oral glucose-lowering therapy since metformin to show a clinically relevant decrease in HbA1c concentration and acceptable safety in young people with T2DM. Therefore, AstraZeneca urges NICE to reconsider the decision to not recommend dapagliflozin, in line with marketing authorisation, within the guideline update as a treatment option for children and young people with T2DM to allow for flexibility in administration and allow patient choice.	
Barking Havering Redbridge University Hospitals NHS Trust	Guideline	004	016	Metformin: possible adverse effects. Do we need to monitor B12 level as per DoH guidance?	Thank you for your comment. The committee considered this issue and agreed that considering the adverse effects of metformin should be covered as part of the continuing programme of education from diagnosis. Recommendation 1.3.1 on education and information includes how metformin can help and its possible adverse effects.
Barking Havering Redbridge University Hospitals NHS Trust	Guideline	005	006	Do we need to include importance of checking blood ketones and to have an individualised “Sick Day” management plan to avoid DKA in ketosis prone Type 2s?	Thank you for your comment. The committee considered this issue and made further amendments to the guideline. Detail has been added on testing for ketones and contacting a health professional when levels are high.

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Boehringer Ingelheim	Guideline	004	019	Please add there are no data for treatment of T2D below 10 years of age	Thank you for your comment, this is stated in the rationale section of the evidence review for this topic.
Boehringer Ingelheim	Guideline	004	019	Note: Empagliflozin to be licenced for >10 years of age for type 2 diabetes in 2023 (pending submission)	Thank you for your comment. We will note this for future updates of this guideline.
Boehringer Ingelheim	Guideline	046	032	Note: Empagliflozin to be licenced for >10 years of age for type 2 diabetes in 2023 (pending submission)	Thank you for your comment. We will note this for future updates of this guideline.
Boehringer Ingelheim	Guideline	047	004	Please consider the DINAMO study which is now published. Empagliflozin will be licenced for treatment for type 2 diabetes in 2023 (pending submission). Empagliflozin met its primary endpoint and showed a statistically significant reduction in HbA1C of -0.84% for empagliflozin doses pooled (10mg and 25mg) versus placebo (95% CI – 1.50 to -0.19; p+0.012) Secondary outcomes include adjusted mean change in fasting plasma glucose (FPG) from baseline at week 26 was -35.2mg/dL (95% CI -58.61 to -11.74) for empagliflozin doses pooled (10mg and 25mg)	Thank you for your comment, we have included the trial in the evidence review and recommended the off-label use of oral empagliflozin for children and young people with type 2 diabetes as an alternative to liraglutide and dulaglutide if these are not well tolerated or if there is a preference for it. We will update the recommendation if and when the licence is extended to the paediatric type 2 diabetes population.
Boehringer Ingelheim	Guideline	General	General	Dear NICE, Boehringer Ingelheim welcomes the opportunity to comment on this guideline. Overall, we welcome the continuing evaluation of the value of medicines for type 1 and 2 diabetes in children and young people, given that they are a small but important group of patients who may be disproportionately	Thank you for your comment, we welcome your support.

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				affected by diabetes where there is a relatively limited pool of evidence and available treatment options. These changes have the potential to significantly benefit both patients and the NHS system. We hope that the suggestions and additions are recognised in the final NICE guideline. Thank you Kind Regards Boehringer Ingelheim	
Boehringer Ingelheim	Guideline	General	General	The DINAMO study (Diabetes Study of Linagliptin and Empagliflozin in Children and Adolescents (DINAMO)TM - Full Text View - ClinicalTrials.gov) has compared both linagliptin (DPP4 inhibitor) and empagliflozin (SGLT2 inhibitor) to standard care for children with type 2 diabetes. All patients in the study were between 10 and 17 years of age, and were already taking metformin and/or insulin. The trial achieved its primary endpoint of a statistically significant reduction in HbA1c with empagliflozin compared with placebo. Full text: Laffel LM et al, Lancet Diabetes and Endocrinology 2023. https://doi.org/10.1016/S2213-8587(22)00387-4 We perceive that the inclusion of the information from the DINAMO trial would provide additional benefit to physicians by providing additional potential evidence based, oral agents for paediatric diabetes management, particularly given the limited treatment options and evidence available for this age group.	Thank you for your comment, we have included the trial in the evidence review and recommended the off-label use of oral empagliflozin for children and young people with type 2 diabetes as an alternative to liraglutide and dulaglutide if these are not well tolerated or if there is a preference for it. We will update the recommendation if and when the licence is extended to the paediatric type 2 diabetes population. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.

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				As this pre-licence data doesn't fit in within the current document structure, we recommend a sub-heading of "other therapeutic options" or similar wording, whilst making it clear that neither agent is currently licensed in a paediatric population	
Diabetes UK	General	General	General	We welcome expansion of treatment options that go beyond metformin for children and young people with type 2 diabetes, with more regular reviews to re-assess care and ensure that this group are being timely and appropriately supported. We agree with initial use of insulin to avoid misdiagnosis, and in cases of extremely high blood glucose levels at diagnosis, but GLP-1 and metformin combination is preferred as insulin use can potentially lead to hypoglycaemia and make it harder to lose weight. However, given the inclusion of insulin we think that continuous glucose monitoring (isCGM and rtCGM) must be added as the option to support self-management. The omission of an option for continuous glucose monitoring in this update is notable given that it emphasises the need for close glucose monitoring to manage this more aggressive condition, and other related guidelines such as NG28 recommend this for adults with type 2 diabetes who are on insulin but find it more difficult to do finger-prick checks. We are also concerned about how the introduction of further treatments will be applied in practice given the distribution of care for this group, with many not seen in specialist paediatric units. Some	Thank you for your comment. The committee considered stakeholder feedback, health inequality issues raised for this group and the known limited evidence base for continuous glucose monitoring (CGM) and agreed to extrapolate the recommendations for adults with type 2 diabetes to this population. The committee highlighted that a subset of the type 2 population would benefit from CGM. Given the lack of evidence a weaker consider recommendation was made for CGM for those on insulin therapy alongside education to support its use. The committee agreed to make a stronger offer recommendation for the use of CGM in children and young people with a condition or disability (including a learning disability or cognitive impairment) that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring. A stronger recommendation was warranted to address the known inequalities for this group. Regarding the choice of CGM device, following discussion the committee agreed to extrapolate the evidence considered for the effectiveness of CGM for children and young people with type 1 diabetes. This found enough evidence to justify the effectiveness of real time CGM (rtCGM) over intermittently scanned CGM (isCGM). This recommendation was adopted for the current type 2

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				healthcare professionals may not have sufficient experience with treatments like GLP-1s to prescribe them confidently. Whilst the committee does note initiation of these treatments should start with a specialist before being prescribed in primary care when blood glucose levels are stabilised, we think there should be consideration of integrated care models to ensure there is specialist follow-up from a multi-disciplinary team. There is a general need to consider health inequalities and how services should be adapted to the circumstances of children with type 2 diabetes such as their overrepresentation in more socioeconomically deprived groups. It is vital that these recommendations do not exclude those who may face additional barriers getting this support.	update population to ensure parity with the type 1 population and to promote equity in access. Finally, the committee noted that the individual choice element of different CGM devices would be a benefit to children and young people and their parents or carers, as the 'best' device for each individual would depend on their preferences, needs and characteristics. Children and young people with type 2 diabetes have the most aggressive form of diabetes. Although there are cases in which primary care healthcare professionals may support children and young people with type 2 diabetes we have made clear that management of the condition should be overseen (in secondary care) by a specialist paediatric diabetes team. This will also ensure children and young people with type 2 diabetes have access to specialist services such as psychological support and dietetic support to help optimise body weight and blood glucose levels.
Diabetes UK	Guideline	004	012	"Remission" should be used here instead of "reverse" as it is a more accurate, clinical term. We also note that there is ongoing research into this area to for children and young people with type 2 diabetes, to understand possibility of remission for the group and best approaches such as the LEGEND study. Ref: https://www.diabetes.org.uk/research/our-research-projects/midlands/lengendary-remission-type-2-teens	Thank you for your comment. The guideline has been amended as you suggest using the term remission.

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Diabetes UK	Guideline	004	016	Healthcare professionals should also offer advice on how to reduce the side effects and the importance or reporting these side effects.	Thank you for your comment. It is expected that, as a matter of good practice, that healthcare professionals provide appropriate information, advice and support when prescribing drugs to people, especially children and young people.
Diabetes UK	Guideline	005	025	We think that isCGM or rtCGM also should be offered alongside capillary blood glucose testing for children and young people on insulin treatment if deemed appropriate by a clinician. This is because, as the committee note, type 2 diabetes in children and young people is a very aggressive form of the condition and tools to help manage it better are necessary. There are also cases when capillary blood glucose testing may not be suitable or practical. This would also bring this guideline in line with the recommendations on isCGM and rtCGM for adults with type 2 diabetes who use insulin in NG28, and offer children and young people a choice of options to help them self-manage.	Thank you for your comment. The committee considered stakeholder feedback, health inequality issues raised for this group and the known limited evidence base for continuous glucose monitoring (CGM) and agreed to extrapolate the recommendations for adults with type 2 diabetes to this population. The committee highlighted that a subset of the type 2 population would benefit from CGM. Given the lack of evidence a weaker consider recommendation was made for CGM for those on insulin therapy alongside education to support its use. The committee agreed to make a stronger offer recommendation for the use of CGM in children and young people with a condition or disability (including a learning disability or cognitive impairment) that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring. A stronger recommendation was warranted to address the known inequalities for this group. Regarding the choice of CGM device, following discussion the committee agreed to extrapolate the evidence considered for the effectiveness of CGM for children and young people with type 1 diabetes. This found enough evidence to justify the effectiveness of real time CGM (rtCGM) over intermittently scanned CGM (isCGM). This recommendation was adopted for the current type 2

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					update population to ensure parity with the type 1 population and to promote equity in access. Finally, the committee noted that the individual choice element of different CGM devices would be a benefit to children and young people and their parents or carers, as the 'best' device for each individual would depend on their preferences, needs and characteristics.
Diabetes UK	Guideline	006	002	This should be clear in explaining that, if prescribed insulin at diagnosis, review should happen after 4 weeks. The earlier recommendation 1.3.23 says at least every 3 months and this key distinction may be missed by some reading this guideline. The following recommendation 1.3.26 also states that reviews should be done after 4 weeks or at subsequent 3 month checks and it would be helpful for the guideline to consistently reinforce this message.	Thank you for your comment. The committee were in agreement and agreed to split this recommendation to: • At 4 weeks after diagnosis and starting metformin, review data from glucose monitoring. • Measure HbA1c levels every 3 months • Review suitability of treatment for children and young people with type 2 diabetes, as needed, at least every 3 months.
Diabetes UK	Guideline	006	011	We think there is a need to be clear here that children and young people with type 2 diabetes should be seen in a specialist clinic or at least have access to support from specialists. This is of particular importance given the GLP-1 medications that could be prescribed, particularly those that would be used off license like dulaglutide.	Thank you for your comment. Children and young people with type 2 diabetes have the most aggressive form of diabetes. Although there are cases in which primary care healthcare professionals may support children and young people with type 2 diabetes we have made clear that management of the condition should be overseen (in secondary care) by a specialist paediatric diabetes team. This will also ensure children and young people with type 2 diabetes have access to specialist services such as psychological support and dietetic support to help optimise body weight and blood glucose levels.

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Diabetes UK	Guideline	006	025	It is important to clearly note the risks of diabetic ketoacidosis (DKA) for people using insulin and GLP-1 at the same time here. As the British National Formulary states: “any dose reduction of insulin should be done in a stepwise manner with careful blood glucose self-monitoring, particularly when GLP-1 receptor agonist therapy is initiated. Patients should be informed of the risk factors for and signs and symptoms of diabetic ketoacidosis, and advised to seek immediate medical attention if these develop.” The need for careful self-monitoring further suggests that isCGM and rtCGM, which can help people with diabetes monitor their blood glucose levels more effectively, should be included in the guidance. Testing for ketones is also important additional advice that should be included.	Thank you for your comment. Cross references have been added to the guideline to relevant BNF and MHRA advice. Regarding self-monitoring: the committee considered stakeholder feedback, health inequality issues raised for this group and the known limited evidence base for continuous glucose monitoring (CGM) and agreed to extrapolate the recommendations for adults with type 2 diabetes to this population. The committee highlighted that a subset of the type 2 population would benefit from CGM. Given the lack of evidence a weaker consider recommendation was made for CGM for those on insulin therapy alongside education to support its use. The committee agreed to make a stronger offer recommendation for the use of CGM in children and young people with a condition or disability (including a learning disability or cognitive impairment) that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring. A stronger recommendation was warranted to address the known inequalities for this group.
Diabetes UK	Guideline	007	014	We welcome the consideration of education care plans within this guidance and the recommendation to update them regularly but suggest changing the wording of this line to “as soon as changes are made, or annually” to avoid any misunderstanding around frequently. This is particularly important considering the recommendation for treatment reviews at 4 weeks and subsequent appointments which will lead to changes in treatments for some	Thank you for your comment Your suggested wording has been added to the recommendation. The suggestions regarding the development of care plans and who bears overall responsibility for them is outside the scope of this review.

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				children and young people within a year. There could also be further guidance about how to develop education care plans and where responsibility for advising on care plans sits between health and education staff. We would suggest signposting to the Department for Education statutory guidance 'Supporting Pupils with Medical Conditions' for this purpose. Ref: https://www.gov.uk/government/publications/supporting-pupils-at-school-with-medical-conditions--3	
Diabetes UK	Guideline	008	001	We suggest adding a research recommendation on use of isCGM and rtCGM in children and young people with type 2 diabetes to help with monitoring blood glucose if on insulin, as well as their effectiveness as education tools to help people understand trends with changes to food, exercise etc. and learn what helps their diabetes management and what doesn't.	Thank you for your comment. The committee considered the draft guideline stakeholder comments and agreed to recommend continuous glucose monitoring to a subgroup of children and young people with type 2 diabetes. The NG18 guideline already has this research recommendation - What is the effectiveness and cost effectiveness of continuous glucose monitoring devices in children and young people with type 2 diabetes?
Diabetes UK	Guideline	008	001	We also suggest adding a research recommendation to consider when is the right time and what are the right targets for macrovascular disease risk factor management in children with type 2 diabetes such as lipids and blood pressure. Recognising that type 2 in children and young people is associated with a higher risk of worse cardiovascular outcomes compared to later-onset	Thank you for your comment. Your suggested research recommendation is outside the scope of this guideline update.

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				type 2, there is a question around whether a more aggressive approach to risk management is required.	
Diabetes UK	Guideline	009	020	This should also highlight the importance of retinal screening, as if people have had high glucose levels for some time before diagnosis, they could have background retinopathy and quickly improving their glycaemic control could worsen it. The NICE Type 2 Diabetes in Adults guidance [NG28] states that people should be referred immediately to the local eye screening service at diagnosis and this recommendation should be reflected here too.	Thank you for your comment. The existing NG18 guideline contains a recommendation - refer children and young people with type 2 diabetes for diabetic retinopathy screening from 12 years. There is also a section in the guideline on diabetic retinopathy for children and young people with type 2 diabetes.
Diabetes UK	Guideline	012	003	We would query the committee's decision not to use BMI as additional criteria, as we think that healthcare professionals should be able to decide to use metformin and a GLP-1 earlier to help children and young people with type 2 diabetes manage weight loss if they have a high BMI. In response to the point about the low numbers of children and young people with type 2 diabetes who are not overweight, only 10% of adults with type 2 are estimated to not be overweight or obese at diagnosis but BMI is used as a criteria for prescribing GLP-1s in NG28, so this should be added here.	Thank you for your comment. The committee considered this issue and agreed not use BMI as an additional criterion. There is a limited number of treatment options for this population group and they didn't want to restrict access to these treatments on these grounds alone.
Diabetes UK	Guideline	General	General	As a general note we wish to highlight that person-centred language should be used within these guidelines – with terms like "managing" instead of "controlling" blood glucose levels.	Thank you for your comment. We have checked through the guideline to ensure that all language is in line with the recommendations of Language Matters.

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				Healthcare professionals should be mindful about how they communicate with children and young people to reduce stigma, taking care to avoid terms which could be interpretated negatively as imparting judgement. Ref: https://www.england.nhs.uk/wp-content/uploads/2018/06/language-matters.pdf	
Medway NHS Foundation Trust	Guideline	006	012	Adding Semaglutide (to benefit from the oral preparation) for patients who are not requiring insulin, and might not adhere to injections.	Thank you for your comment. No evidence was identified on the effectiveness of semaglutide to manage glucose levels. We are aware of the ongoing PIONEER TEENS trial (https://clinicaltrials.gov/ct2/show/NCT04596631) and it is expected that the guideline will be updated in the future as, and when, the results are published. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.
National Children and Young People's Diabetes Network - NE and N Cumbria	Guideline	005	012	Modified release Metformin to support tolerance as important that metformin is tolerated from outset and YP is not put off taking.	Thank you for your comment. The committee agreed that a metformin monotherapy formulation, in line with the child or young person's preferences, should be offered at diagnosis. The committee noted that various formulations of metformin are available (for example, standard-release tablets, modified-release [also known as 'prolonged-release' or 'extended-release'] tablets, oral solutions) although only the standard-release tablets are licensed for use in a paediatric population. As such, as of March 2023, use of other formulations would be off label. The committee made their recommendation to offer a metformin monotherapy formulation on the basis that:

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					• it provides children and young people with type 2 diabetes with a choice of treatments • alternative formulations may be more acceptable or better tolerated and it is common practice for these to be used off label in such cases • the unit cost per day of modified-release tablets is the same as that of standard-release tablets.
National Children and Young People's Diabetes Network - NE and N Cumbria	Guideline	006	012	Agree with and welcome addition re dulaglutide	Thank you for your comment, we welcome your support.
National Children and Young People's Diabetes Network - NE and N Cumbria	Guideline	011	025	Agree with and welcome clarity on guidance of timing of insulin reduction.	Thank you for your comment, we welcome your support.
National Children and Young People's Diabetes Network - NE and N Cumbria	Guideline	General	General	To be added – 'withdraw rtCGM / isCGM once off multidose insulin (2 or more injections) if started at diagnosis when type of diabetes not confirmed and initially treated as Type 1'.	Thank you for your comment. The committee considered this issue but agreed this detail was not needed.

Consultation on draft guideline - Stakeholder comments table
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National Children and Young People's Diabetes Network - T2 National Working Group	Guideline	005	015	1.3.22 – MDI if ketosis is unclear. Should be clarified, if in DKA treat as per DKA. Could be interpreted as on MDI only while ketones present, but presumably means start and (initially) continue MDI if presenting with ketones. Has a bullet point been missed? Reading it, interpretation is: insulin (i.e. Lantus) if HbA1c over 69 and MDI if ketones at diagnosis – is this how the guidance is intended to be read?	Thank you for your comment, the recommendation is intended to be read as you state it. Please note that the recommendation has been slightly amended to (i) clarify that basal-bolus insulin be offered if they have ketosis but not diabetic ketoacidosis and (ii) cross reference to the recommendations on recognising and managing diabetic ketoacidosis.
National Children and Young People's Diabetes Network - T2 National Working Group	Guideline	006	009	Clarify after meals is 'two hours after meals'. Would be useful to specify proportion to reduce insulin by at each step.	Thank you for your comment. This clarification has been added to the recommendation.
National Children and Young People's Diabetes Network - T2 National Working Group	Guideline	007	008	Consistency of terms needed for clarity – GLP-1 used here but names (e.g. Liraglutide) used above.	Thank you for your comment. We have edited the recommendations to refer to specific drug names as appropriate.
National Children and Young People's Diabetes Network - T2	Guideline	012	003 - 008	A smaller proportion of CYP with T2DM are not overweight than adults with T2DM so the logic here is not followed. We agree with the conclusion though but due to limited number of treatment options in children.	Thank you for your comment. The committee considered this issue and agreed not use BMI as an additional criterion. There is a limited number of treatment options for this population group and they didn't want to restrict access to these treatments.

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National Working Group					
Neonatal and Paediatric Pharmacists Group (NPPG)	Guideline	005	012	Rec 1.3.21 – We note that the committee recommends only the standard-release formulation of metformin. Given the potential for poor adherence in the adolescent population, more options should be offered. The modified-release formulation is associated with lower incidence of GI side effects and allows for once-daily dosing if needed (head-to-head study in Aggarwal et al. 2017: https://pubmed.ncbi.nlm.nih.gov/28857388/). The cost impact was historically higher, but current generic products are of comparable cost to standard-release tablets, and have minimal cost impact in context of the total population of children with T2DM.	Thank you for your comment. The committee agreed that a metformin monotherapy formulation, in line with the child or young person's preferences, should be offered at diagnosis. The committee noted that various formulations of metformin are available (for example, standard-release tablets, modified-release [also known as 'prolonged-release' or 'extended-release'] tablets, oral solutions) although only the standard-release tablets are licensed for use in a paediatric population. As such, as of March 2023, use of other formulations would be off label. The committee made their recommendation to offer a metformin monotherapy formulation on the basis that: • it provides children and young people with type 2 diabetes with a choice of treatments • alternative formulations may be more acceptable or better tolerated and it is common practice for these to be used off label in such cases • the unit cost per day of modified-release tablets is the same as that of standard-release tablets.
Neonatal and Paediatric Pharmacists Group (NPPG)	Guideline	005	013	Rec 1.3.21 – We are concerned that the only option for glucose monitoring offered to children with T2DM is capillary glucose monitoring. This is different from adult guidelines which consider intermittently scanned continuous glucose monitoring, isCGM (or real-time continuous glucose monitoring, rtCGM, of comparable cost) for selected	Thank you for your comment. The committee considered stakeholder feedback, health inequality issues raised for this group and the known limited evidence base for continuous glucose monitoring (CGM) and agreed to extrapolate the recommendations for adults with type 2 diabetes to this population. The committee highlighted that a

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				cases. This topic is highly relevant to equality and access to technology, since a significant proportion of children with T2DM come from minority ethnicities and disadvantaged socioeconomic backgrounds.	subset of the type 2 population would benefit from CGM. Given the lack of evidence a weaker consider recommendation was made for CGM for those on insulin therapy alongside education to support its use. The committee agreed to make a stronger offer recommendation for the use of CGM in children and young people with a condition or disability (including a learning disability or cognitive impairment) that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring. A stronger recommendation was warranted to address the known inequalities for this group. Regarding the choice of CGM device, following discussion the committee agreed to extrapolate the evidence considered for the effectiveness of CGM for children and young people with type 1 diabetes. This found enough evidence to justify the effectiveness of real time CGM (rtCGM) over intermittently scanned CGM (isCGM). This recommendation was adopted for the current type 2 update population to ensure parity with the type 1 population and to promote equity in access. Finally, the committee noted that the individual choice element of different CGM devices would be a benefit to children and young people and their parents or carers, as the 'best' device for each individual would depend on their preferences, needs and characteristics.
Neonatal and Paediatric Pharmacists Group (NPPG)	Guideline	005	016	Rec 1.3.22 – The threshold of 69mmol/mol for starting insulin appears to stem from historical guidelines. The ACDC guidelines 2021 cite the ADA standards of care for paediatric diabetes 2020,	Thank you for your comment. The threshold of 69mmol/ mol is based on committee advice but will be reviewed when more evidence is available in the future.

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				which itself cites AAC guidelines (Copeland et al 2013: https://publications.aap.org/pediatrics/article/131/2/364/31847/Management-of-Newly-Diagnosed-Type-2-Diabetes). The guidelines by Copeland itself uses a threshold of 9% rather than 8.4%, based on expert recommendations. At the time, the rationale for a low threshold was due to diagnostic uncertainties, the rarity of T2DM in children, and the lack of other therapeutic options aside from insulin. As T2DM incidence in children is rising rapidly, and with the availability of potent HbA1c-lowering options such as semaglutide, this threshold should eventually be revised. Although it is different from the adult threshold of 84mmol/mol (ADA-EASD guidelines 2022), it is understandably difficult to make recommendations against an international consensus in absence of evidence. We would suggest the committee recommends the topic as a research recommendation to allow early insulin-sparing interventions.	Furthermore, the committee are unable to make a research recommendation as this topic is outside the scope of this guideline update. The committee have not considered the current evidence base for this threshold. Research recommendations are made to address a known gap in the evidence base.
Neonatal and Paediatric Pharmacists Group (NPPG)	Guideline	005	018	Rec 1.3.22 – We note that the committee only offers basal-bolus regimen for T2DM diabetes for all children who require insulin. This is different from ACDC 2021 and ISPAD 2022 guidelines. The complexity of such regimen, including the need for education on carb counting, involvement of school staff, higher risk of hypoglycaemia, importance of insulin timing, and higher associated costs should	Thank you for your comment. The committee considered your feedback but agreed to the use of basal-bolus insulin if the child or young person presents with ketosis. This was to supplement insulin levels to ensure (as a matter of safety) that diabetic ketoacidosis does not develop and to allow a differential diagnosis because the presence of

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				be justified by evidence of superiority to a simple basal regimen of 0.2 units/kg/day. We would suggest basal insulin should be recommended in such cases, unless the initial presentation adds some diagnostic uncertainty on the type of diabetes (e.g., patient presenting in DKA, ketotic, or severe osmotic symptoms).	ketosis introduces clinical uncertainty about what type of diabetes the child or young person has.
Neonatal and Paediatric Pharmacists Group (NPPG)	Guideline	005	022	Rec 1.3.23 – "At least every 3 months". We would suggest considering rewording to "every 3 months". Members are not aware of evidence supporting HbA1c measurements at shorter intervals.	Thank you for your comment. The committee considered this issue and have agreed to split this recommendation to: • At 4 weeks after diagnosis and starting metformin, review data from glucose monitoring. • Measure HbA1c levels every 3 months • Review suitability of treatment for children and young people with type 2 diabetes, as needed, at least every 3 months.
Neonatal and Paediatric Pharmacists Group (NPPG)	Guideline	006	012	Rec 1.3.26 – We would like to suggest adding the unlicensed option of weekly semaglutide (Ozempic). As the committee had noted, weight loss is a major target when assessing therapy. From adult studies, semaglutide has shown clear superiority on HbA1c reduction and weight loss compared to liraglutide and dulaglutide, and this evidence needs to be taken into consideration. Fernando et al. 2021 presents a comparative review of trials. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8312211/pdf/13300_2021_Article_1116.pdf)	Thank you for your comment and sharing your unpublished data. No published evidence was identified on the effectiveness of semaglutide to manage glucose levels. We are aware of the ongoing PIONEER TEENS trial (https://clinicaltrials.gov/ct2/show/NCT04596631) and it is expected that the guideline will be updated in the future as, and when, the results are published. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.

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				Southampton has extensive experience with the use of semaglutide 1mg for paediatric T2DM and obesity, with weight loss outcomes exceeding those attained with standard doses of liraglutide 1.8mg. Van Boxel et al. 2022 (abstract: c)	
Neonatal and Paediatric Pharmacists Group (NPPG)	Guideline	016	009	We would like to comment on the committee's appraisal of the paediatric dapagliflozin trial (Tamborlane et al. 2022). The primary outcomes were conducted on an intention-to-treat basis, without accounting for the high level of non-adherence in adolescents compared to the adult population. When adjusted for this, the dapagliflozin group showed a significant HbA1c difference of 1.1%. We would also ask the committee to account for the rate of adherence to multiple-daily insulin injections in the paediatric T2DM population, as this is currently the committee's recommendation as third-line. In addition, some young patients with T2DM will show raised ACR from early on. Extrapolating from adult data, there is potential for reno-preserving effect if an SGLT-2 inhibitor is started early. We would ask the committee to consider dapagliflozin as a third-line option. This is due to a) HbA1c benefits with good adherence, b) potential reno-protective effect in children with raised ACR, and c) insulin-sparing third-line option, particularly for overweight patients.	Thank you for your comment. In our evidence reviews NICE uses an intention to treat analysis (where analysis of data from participants based on the group they were initially (and randomly) allocated to. This is regardless of whether or not they dropped out, fully adhered to the treatment or switched to an alternative treatment. The committee agreed that the evidence for the effectiveness of dapagliflozin at improving glycaemic control in combination with metformin was not sufficient to be recommended because the short-term evidence for dapagliflozin compared to placebo did not show a difference on any critical or important outcomes.
NHS England - CYP Transformatio	Evidence Review	037	024	Should this be a recommendation for future research, if it these outcomes have been identified as important?	Thank you for your comment. The committee agreed that future research should include these

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n Programme Team					outcome measures to address this gap but that a research recommendation was not needed.
NHS England - CYP Transformation Programme Team	Evidence Review	040	002	Education and information - education and information for children and young people with type 2 diabetes – should this also include parents / carers and professionals supporting children and young people?	Thank you for your comment. We have included families and carers as you suggest.
NHS England - CYP Transformation Programme Team	Evidence Review	048	033	Other factors the committee took into account – mention of existing medical or mental health conditions, and may be receiving support for weight management, low self-esteem, or negative body image. Should there be links to school nursing services / public health services to support Children and young people around these issues?	Thank you for your comment. The committee agreed a focus on mental health issues for this group was needed and added a cross reference to existing recommendations on psychological support and social issues. The guideline update outlines the importance that the paediatric diabetes team updates the child or young person's school healthcare plan as soon as treatment is changed, and annually which is a key link to school nursing services/ public health services.
NHS England - CYP Transformation Programme Team	Evidence Review	049	002	Parents and carers frequently feel blamed for issues around their child's weight, and practitioners should also take this into consideration.	Thank you for your comment. The issue of weight is outside the scope of this guideline update.
NHS England - CYP Transformation Programme Team	Guideline	004	005	We suggest that pre-conception planning and care is also included in this section, and suggest a read-across to NG3 1.1	Thank you for your comment. We have cross-referenced NG3 Diabetes in pregnancy: management from preconception to the postnatal period section 1.1 as suggested.
NHS England - CYP Transformatio	Guideline	004	018	We recommend also including reference to education about how to look after wellbeing and mental health, since this was identified as an important outcome in the Evidence Review	Thank you for your comment. The committee agreed a focus on mental health issues for this group was needed and added a cross reference to

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n Programme Team					existing recommendations on psychological support and social issues.
NHS England - CYP Transformation Programme Team	Guideline	General	General	Overall – this is a very welcome update as it provides a further pharmacological option (GLP-1 agonists) for treating type 2 diabetes in children and young people. The guidance also recognises the importance of effective early management with clear parameters for early monitoring and escalation of treatment to achieve treatment targets	Thank you for your comment, we welcome your support.
NHS England - CYP Transformation Programme Team	Guideline	General	General	We recommend cross referencing to other NICE guidance Overview | Disabled children and young people up to 25 with severe complex needs: integrated service delivery and organisation across health, social care and education | Guidance | NICE	Thank you for your comment. The committee considered this feedback and made a new recommendation outlining the importance of tailoring the timing, content and delivery of information to meet the needs of these groups.
NHS England - CYP Transformation Programme Team	Guideline	General	General	The below is general feedback from the NHSE autism team: Assessment and Monitoring: We recommend that reference is made to Children and Young People who may not be aware of signs indicating hypo and hyper-states due to difficulties with introspection or alexithymia, and they may not notice symptoms like thirst or that they have not used the bathroom for several hours – so potentially will need some psychoeducational sessions to help learn to recognise signs and for others to recognise idiosyncratic symptoms Also to note that CYP may have their own preferred terms for describing hypo / hyper-states (e.g., “fuzzy”) – professionals the CYP is in contact with, including at school, need to know these terms so	Thank you for your comments. The committee considered this feedback and made a new recommendation outlining the importance of tailoring the timing, content and delivery of information to meet the needs of these groups.

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				they are not overly taxing the CYP if they are not feeling well, by asking lots of questions It is likely that this group will benefit from: a diabetes card/wristband + hospital passport and with a clear plan for what happens if hypo or hyper- and need input – so that acute interventions are not distressing and unpredictable for the CYP (e.g., as they suddenly have a lot of people in their face). CYP should be involved in developing this plan and reviewing what is working well and not so well Also from a walk through of the management plan, e.g., when in a new environment May have sensory dislikes in relation to any diabetes-related investigations; those that are one off and daily – may need sessions to become more able to tolerate these May prefer for the equipment used to be the same each time Medication Administration: We suggest reference to the sensory support that some children and young people may have and that also note some CYP y ay prefer to have a structured routine around this We suggest considering reference to a named pharmacy / pharmacist who can be consulted	

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				Medical appointments: The following reasonable adjustments may be useful for autistic children and young people and children and young people who have a learning disability: Keep the clinical team the same if possible; Do a walk through of the department so CYP knows what this looks like and what will happen Consider a semi structured agenda for appointments; send the CYP the plan in advance; give them options to ask questions at their own pace Visual scales can be useful rather than solely relying on more abstract questions, e.g., “how have you been feeling?” Check what time would suit best for the appointment, i.e., so that getting to clinic and waiting in the waiting room is least aversive experience Whole team approach We recommend consideration for more frequent professionals’ meetings with GP We recommend the Shared care plan is developed	

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				with the CYP and iterate this as the person ages Psychosocial In messaging about the role of diets, please be aware of how some CYP may have a literal interpretation of rules We recommend consideration around the impact of stigma or worry about diabetes. Some CYP may need a supportive space within which to discuss and may benefit from social stories to explain what is going to happen Transition We recommend strong focus on the need to plan transitions to adult services well in advance Co-occurring conditions Please be aware that some CYP will also have a learning disability and or other conditions including anxiety; so clinical approach may need to be further tailored to accommodate these symptoms/traits Please note that being underweight and overweight are both common – need to monitor this so that medication can be adjusted etc Parity of Provision: The following reasonable adjustments may be	

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				useful for autistic children and young people and children and young people who have a learning disability: Refer to all the information about reducing barriers to access to healthcare NHS England » Breaking down barriers to better health and care Offer options re in person, at home, in clinic appointments when feasible Also consider whether diabetes is a risk factor for other health conditions that may be undetected as yet If needs acute care (ambulance/A&E) – best to have autism-informed care, as the context could be very overwhelming and distressing Additional considerations: We recommend reference to capacity and consent. For many CYP the conversations will be happening with parents/carers so they might be observing and/or communicating with professionals. Consider also the communication needs parents/carers may have We caution that regard and focus should be given to Understanding behavioural responses to symptoms: A person with a learning disability and some autistic people may not articulate their response to pain/symptoms in the expected way or	

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				respond to it differently: for example, they may say that they have a pain in their stomach when the pain is not there; by displaying challenging behaviour; laughing or crying; trying to hurt themselves and also by seeking out specific sensations.	
NHS England - CYP Transformation Programme Team	Guideline	General	General	We are concerned there is no reference to the use of continuous glucose monitoring within this guideline. This guideline is therefore inconsistent with the adult guidelines on use of CGM (i.e. there is no mention of using isCGM in children with Type 2 diabetes on multiple daily insulin injections)- for example, see NG28 1.6.17-19. We would ask the committee to review this to ensure parity between adults and children and young people.	Thank you for your comment. The committee considered stakeholder feedback, health inequality issues raised for this group and the known limited evidence base for continuous glucose monitoring (CGM) and agreed to extrapolate the recommendations for adults with type 2 diabetes to this population. The committee highlighted that a subset of the type 2 population would benefit from CGM. Given the lack of evidence a weaker consider recommendation was made for CGM for those on insulin therapy alongside education to support its use. The committee agreed to make a stronger offer recommendation for the use of CGM in children and young people with a condition or disability (including a learning disability or cognitive impairment) that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring. A stronger recommendation was warranted to address the known inequalities for this group. Regarding the choice of CGM device, following discussion the committee agreed to extrapolate the evidence considered for the effectiveness of CGM for children and young people with type 1 diabetes. This found enough evidence to justify the effectiveness of real time CGM (rtCGM) over intermittently scanned CGM (isCGM). This

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					recommendation was adopted for the current type 2 update population to ensure parity with the type 1 population and to promote equity in access. Finally, the committee noted that the individual choice element of different CGM devices would be a benefit to children and young people and their parents or carers, as the 'best' device for each individual would depend on their preferences, needs and characteristics.
NHS England - CYP Transformation Programme Team	Rationale and Impact	009	018	Education and information – should this also include parents / carers and professionals supporting children and young people	Thank you for your comment. We have included families and carers as you suggest.
NHS England South West	Guideline	017	014	Whilst most of the guidance is for secondary care (as this is where these patients will be cared for), it is important to share care plans / clinic letters with primary care so we are aware of treatments etc especially if we are taking responsibility for prescribing, this should happen already, but just making sure we join up care settings.	Thank you for your comment. Children and young people with type 2 diabetes have the most aggressive form of diabetes. Although there are cases in which primary care healthcare professionals may support children and young people with type 2 diabetes we have made clear that management of the condition should be overseen (in secondary care) by a specialist paediatric diabetes team. This will also ensure children and young people with type 2 diabetes have access to specialist services such as psychological support and dietetic support to help optimise body weight and blood glucose levels. The guideline update outlines the importance that the paediatric diabetes team updates the child or young person's school healthcare plan as soon as treatment is changed, and annually which is a key

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					link to school nursing services/ public health services.
Novo Nordisk	Evidence review	038	021	The evidence review acknowledges the low to very low quality of evidence from the RCT for Dulaglutide1 yet recommends it as an equal choice option alongside Liraglutide, despite the former not being yet licensed in this population. We can understand the rationale to be able to provide a choice of daily versus weekly injectable GLP-1RA; however, we suggest that given Liraglutide is the only GLP-1RA with a UK license for use in children and young people, that this is recommended as first choice, with the option of choosing Dulaglutide if the person has a strong preference for once weekly injection. This would reflect NICE guidelines manual that states 'off-label use may be recommended if the clinical need cannot be met by a licensed product and there is sufficient evidence and/or experience of using the medicine to demonstrate its safety and efficacy to support this'2. In this case there is a suitable licensed medicine. References 1.Arslanian, Silva A, Hannon, Tamara, Zeitler, Philip et al. (2022) Once-Weekly Dulaglutide for the Treatment of Youths with Type 2 Diabetes. The New England journal of medicine 387(5): 433-443	Thank you for your comment. We have recommended both liraglutide and dulaglutide with metformin because there is a clinical need as some children and young people may prefer to take a weekly rather than a daily medication. Given the small number of proven effective treatments in children and young people with type 2 diabetes, it is vitally important that they have a choice of medication. As such, we have noted that the use of dulaglutide is at the time of writing off label. However, the Committee for Medicinal Products for Human Use (CHMP) approved the licence extension of dulaglutide to children and young people over 10 years-old in January 2023: https://www.ema.europa.eu/en/documents/smop/chmp-post-authorisation-summary-opinion-trulicity-ii-65_en.pdf

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				2.NICE. Developing NICE guidelines: the manual, pp202. Available at https://www.nice.org.uk/process/pmg20/resources/developing-nice-guidelines-the-manual-pdf-72286708700869	
Novo Nordisk	Evidence review	047	028 - 033	We support the earlier use of GLP-1RAs in children and adolescents, given the evidence base for their clinical effectiveness and the importance of achieving optimal diabetes control in this high-risk population.	Thank you for your comment, we welcome your support.
Novo Nordisk	Evidence review	General	General	We recommend the ongoing trial PIONEER TEENS1 is kept under consideration by the committee. This trial is not due to report until 2024/25 but would offer an important oral alternative GLP-1RA. Reference Novo Nordisk A/S: A Research Study to Compare a New Medicine Oral Semaglutide to a Dummy Medicine in Children and Teenagers With Type 2 Diabetes (PIONEER TEENS) Accessible from https://clinicaltrials.gov/ct2/show/NCT04596631 Trial Ongoing.	Thank you for your comment. No published evidence was identified on the effectiveness of semaglutide to manage glucose levels. We are aware of the ongoing PIONEER TEENS trial (https://clinicaltrials.gov/ct2/show/NCT04596631) and it is expected that the guideline will be updated in the future as, and when, the results are published. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.
Novo Nordisk	Guideline	006	010	This line refers to recommendations 1.2.17 – 1.2.31 in the current guideline NG18 for children and young people with type 1 or type 2 diabetes. However, section 1.2 refers specifically to children with type 1 diabetes and could be therefore confusing as this draft section of the guideline is for children with type 2 diabetes. We recommend this line is amended to be clear	Thank you for your comment. The committee considered this issue alongside advice from the NICE editorial team. It was agreed to add the insulin therapy recommendations from the NICE NG18 guideline for children and young people with type 1 diabetes to this section for children and young people with type 2 diabetes. These recommendations have been adapted by the committee to be applicable to the type 2 population.

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				that the recommendations relating to insulin can be applied to children with type 2 diabetes. We suggest a wording amendment as follows: 'see also recommendations 1.2.17 – 1.2.31 on insulin therapy that can also be applied to children and young people with type 2 diabetes'.	
Novo Nordisk	Guideline	006	012	We suggest a clarification is added to make clear '4 weeks' refers to 4 weeks since starting Metformin. We recommend 1.3.26 reads: 'At 4 weeks after starting Metformin or at subsequent reviews, offer XXX'	Thank you for your comment. Your suggested clarification '4 weeks after starting metformin' has been added to the recommendation.
Novo Nordisk	Guideline	009	022	We agree with the low HbA1C threshold to initiate a GLP-1RA, given the aggressive nature of type 2 diabetes in this young population.	Thank you for your comment, we welcome your support.
Novo Nordisk	Guideline	012	027	Technology is now able to provide additional detail to inform treatment and next steps. We suggest the guideline encourages consideration of using a smart pen which records insulin doses and can provide additional data. We recommend an addition is made at line 27 to read 'If the young person is taking insulin, consider if a connected pen (such as NovoPen® 6 and NovoPen Echo® Plus) capable of recording insulin doses, could help provide additional useful information to inform management'.	Thank you for your comment. Insulin delivery mechanisms and specific devices were outside the scope of this guideline update
Novo Nordisk	Guideline	013	017	We suggest an amendment to this line as it is currently potentially confusing where it states 'initiate Metformin therapy with liraglutide or dulaglutide', given the person is likely to already be taking metformin.	Thank you for your comment. The committee considered your suggested clarification wording and agreed to add this.

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				We recommend clarifying this recommendation with this wording: 'The committee chose three thresholds for when to consider adding liraglutide or dulaglutide to metformin in children and young people with type 2 diabetes:'	
Novo Nordisk	Guideline	014	005 - 009 and 011 - 015	We agree with the recommendation to consider a GLP-1RA in preference to insulin and to add a GLP-1RA to insulin in preference to increasing the insulin, if the person has not already tried a GLP-1RA. NB there is a typo on line 12	Thank you for your committee and support for this recommendation.
Novo Nordisk	Guideline	014 - 015	026 - 028 and 008 - 015	The guideline states the risk of nausea and vomiting with long-term use of liraglutide and as such suggests it may be the less preferred option. This is a disingenuous statement as there are no equivalent published long-term data for Dulaglutide and in the evidence review the committee acknowledge long-term data from Dulaglutide is likely to result in increased risk of nausea and vomiting (page 46, lines 15-17 evidence review). This lack of long-term data for Dulaglutide is not however highlighted on the following page 'choosing the appropriate GLP-1 agonist' and therefore is reporting trial outcomes for Liraglutide without balancing them against a lack of equivalent trial outcomes for Dulaglutide. We strongly recommend that page 14, line 26 is amended to read 'The committee agreed to recommend both drugs because some children and young people may prefer one treatment regimen	Thank you for your comment. The evidence review did report that people in the liraglutide group were 2 to 3 times as likely, compared to those in the placebo group, to experience nausea and vomiting over the entire trial period (over 26 weeks). Following discussion the committee agreed to recommend both subcutaneous liraglutide and dulaglutide, and if contraindicated oral empagliflozin acknowledging that there is no long-term comparative data for dulaglutide or empagliflozin and GLP-1 receptor agonists may be contraindicated in some children and young people with type 2 diabetes.

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				over the other'. And we also strongly recommend that page 15, line 8 is amended to read 'by contrast, there is no long-term trial data for Dulaglutide. And although the evidence for the effectiveness of dulaglutide XXX'.	
Novo Nordisk	Guideline	015	013 - 015	It is inaccurate to make effectiveness statements versus individual medicines outside of a head to head trial. The text currently reads 'Nevertheless, the short-term results compared to placebo indicated that it is likely even more effective than liraglutide in improving glycaemic control'. We recommend this is amended to read 'The short-term results compared to placebo indicated that it is an effective treatment in improving glycaemic control'.	Thank you for your comment. The wording of the guideline rationale has been amended with reference to the trial findings removed.
Royal College of General Practitioners	General	General	General	It was welcomed by Clinical Advisers that type 1 and type 2 diabetes for CYP are no longer separates guidelines and this should be reflected throughout the diabetes suite.	Thank you for your comment, we welcome your support.
Royal College of General Practitioners	General	General	General	The document is not clear regarding the delivery setting for this guideline. This document appears primarily focused on the secondary care aspects of diabetes management in specialist clinics. If there are aspects of the guideline which are specifically applied to primary care, then it should clearly state when and where.	Thank you for your comment. Children and young people with type 2 diabetes have the most aggressive form of diabetes. Although there are cases in which primary care healthcare professionals may support children and young people with type 2 diabetes we have made clear that management of the condition should be overseen (in secondary care) by a specialist paediatric diabetes team. This will also ensure children and young people with type 2 diabetes have access to specialist services such as

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					psychological support and dietetic support to help optimise body weight and blood glucose levels.
Royal College of General Practitioners	General	General	General	The topic of continuous blood glucose monitoring (with devices such as Freestyle Libre) does not appear to be fully addressed it this document. Though there is mention of it in the context part of the document, it is not included in this guideline. Since it is available for patients with type 1 diabetes on the NHS, and is frequently requested by patients in younger age groups, it was felt this should be considered for inclusion in this document.	Thank you for your comment. The committee considered stakeholder feedback, health inequality issues raised for this group and the known limited evidence base for continuous glucose monitoring (CGM) and agreed to extrapolate the recommendations for adults with type 2 diabetes to this population. The committee highlighted that a subset of the type 2 population would benefit from CGM. Given the lack of evidence a weaker consider recommendation was made for CGM for those on insulin therapy alongside education to support its use. The committee agreed to make a stronger offer recommendation for the use of CGM in children and young people with a condition or disability (including a learning disability or cognitive impairment) that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring. A stronger recommendation was warranted to address the known inequalities for this group. Regarding the choice of CGM device, following discussion the committee agreed to extrapolate the evidence considered for the effectiveness of CGM for children and young people with type 1 diabetes. This found enough evidence to justify the effectiveness of real time CGM (rtCGM) over intermittently scanned CGM (isCGM). This recommendation was adopted for the current type 2 update population to ensure parity with the type 1 population and to promote equity in access. Finally, the committee noted that the individual choice

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					element of different CGM devices would be a benefit to children and young people and their parents or carers, as the 'best' device for each individual would depend on their preferences, needs and characteristics.
Royal College of General Practitioners	Guideline	004	005	Rec 1.3.1 - The focus on continuing care for patients was well received, however it was felt a focus on mental health issues for CYP should be included here. The goal is for children and young people to fit in with their peers and so the behavioural and psychological impacts of medicating for diabetes should be included here for both the patients themselves and their families, particularly the consequences of non-adherence. There is information on mental health problems in the standing guidance but it would be useful to be linked at this point in the update. This section of the document also does not mention public health "exercise on prescription" programmes and how they evaluate and it was felt this would be a useful inclusion.	Thank you for your comment. The committee agreed a focus on mental health issues for this group was needed and added a cross reference to existing recommendations on psychological support and social issues.
Royal College of General Practitioners	Guideline	006	012	Rec 1.3.26 - In this section, information about pregnancy avoidance in females able to conceive is not included but it was felt it should be. It was felt it would also be useful here to have a section added covering recommended contraceptives.	Thank you for your comment. We have cross-referenced NG3 Diabetes in pregnancy: management from preconception to the postnatal period section 1.1 in the evidence review.
Royal College of Paediatrics and Child Health	Guideline	001	017 - 028	In this way you cannot differentiate between type 1 and type 2 because hypoglycaemia and ketosis are toxic to beta pancreatic cells in both types that leads to compromising their function and leads to low serum insulin and C-peptide for that initiating insulin delivery in both types result in subsiding the	Thank you for your comment. The issue you have raised is outside the scope of this guideline update and is covered in the diagnosis section (1.1) of the NG18 guideline - Diabetes (type 1 and type 2) in children and young people: diagnosis and management

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				hyperglycaemia and ketosis. Consequently restoring the function of beta cells with more insulin secretion and C-peptide and this, the pathogenesis of honeymoon period in type 1DM and the resolving the insulin deficiency in type 2 DN after insulin delivery at diagnosis in both types. For the above mentioned, to differentiate type 1 and type 2 we must revaluate the patient after 2 years for C-peptide and serum insulin added to those clinical findings age, obesity and acanthosis nigricans.	
Royal College of Paediatrics and Child Health	Guideline	005	002	1.3.2 - In addition to rotating injection sites within the same body region, it must be emphasised the importance of changing needles or syringes after infections, the length of needles or syringes according to the age of patient and his or her build, the appropriate techniques for insulin delivery to prevent lipodystrophy and never inject in lipohypertrophied area.	Thank you for your comment. The committee considered this feedback and agreed that further amendments were not required to this recommendation. The issues highlighted will be covered in the information and education on insulin therapy provided to this group.
Royal College of Paediatrics and Child Health	Guideline	005	021, 022, 023, 024	1.3.23 - In rare situations, a measure of average glycaemia other than HbA1c is useful, this most often is in the cases of abnormal haemoglobins or abnormal red blood cells production or survival glycated albumin. Fructosamine is measure of glycated serum proteins (predominantly albumin) and is proportional to the average plasma glucose over the preceding 1 to 3 weeks.	Thank you for your comment. The committee considered this issue and added a recommendation from the NG28 management of type 2 diabetes in adults outlining how to assess trends in blood glucose control in situations where HbA1c measurements may not be reliable.
Royal College of Paediatrics and Child Health	Guideline	006	002	1.3.25 - We would also suggest reducing insulin when shift site of injection from lipohypertrophied area to healthy site. Also when change the regimen e.g. from conventional to basal – bolus regimen also during sports and when increase physical activity.	Thank you for your comment. The committee considered this feedback and agreed that further amendments were not required to this recommendation. The issues highlighted will be covered in the information and education on insulin therapy provided to this group.

Diabetes (type 1 and type 2) in children and young people: diagnosis and management - medicines for type 2 diabetes (update)

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Royal College of Paediatrics and Child Health	Guideline	006	012	1.3.26 - When adding metformin and other oral hypoglycaemic agent the patient must be metabolically stable nonacidotic to prevent lactic acidosis.	Thank you for your comment The committee noted that diabetic ketoacidosis has been addressed within this guideline update and to also refer to section 1.4 in the NG18 guideline.
Royal College of Paediatrics and Child Health	Guideline	008	018	Basal bolus insulin is a regimen for delivery of insulin as insulin pump or conventional regimens for diabetic patients whatever the type not specific for ketosis. If the patient in diabetic ketoacidosis must admit to emergency or intensive care unit for management if not in DKA only ketosis managed as sick day dose by increasing insulin doses by 10% to 20% whatever the regimens.	Thank you for your comment. The committee considered this issue and added further clarification to the recommendation outlining that basal-bolus insulin be offered if the child or young person have ketosis but not diabetic ketoacidosis. The recommendations on recognising and managing DKA have also been cross referenced.

**None of the stakeholders who comments on this clinical guideline have declared any links to the tobacco industry.*