

TYPE 2 DIABETES IN CHILDREN AND YOUNG PEOPLE

Position Statement: August 2024

This position sets out existing evidence on type 2 diabetes in children and young people, making recommendations for how health systems can ensure that this group are provided with the best possible care, and steps that can be taken by government and policymakers to prevent more young people developing the condition in the future. It also makes suggestions of focus areas for research.

When discussing children and young people in this document we refer to those aged between 0 and 25 years, in line with the NHS's Long Term Plan's ambition to move to a 0-25 year old children and young adult's service by 2028.¹¹ However, it is important to note that there are also rising rates of type 2 diabetes in adults under 40 years of age, commonly referred to as early-onset type 2 diabetes. Evidence and analysis concerning type 2 diabetes in people under 40 frequently overlaps with that of children and young people, especially those between 16-25 years of age, but they will also have distinct needs and separate guidance in some cases.

Varied approaches are required to meet the needs of children and young people at different points in their lives, such as between 0-11, 12-17 and 18-25 years of age. Specific age groups have been noted in this document where relevant, and where data or interventions have been cited that refer to children and young people outside of the 0-25 year age range, this has also been highlighted.

Why have we produced this position statement?

We are deeply concerned by the rise of type 2 diabetes in children and young people in the United Kingdom, with a comparatively small but growing population being diagnosed with the condition. Type 2 diabetes was until recently not described amongst children and young

people in the UK, but cases in the country have been rising since they were first reported around 25 years ago.²

This is a particularly urgent aspect of the ongoing diabetes epidemic that demands greater understanding, both to ensure that there is a consistently high level of support for children and young people with type 2 diabetes and interventions in place to reduce the risk of more developing it.³ As type 2 diabetes presents as a more aggressive condition with a faster progression to devastating complications in children and young people than in older adults, it is vital it is given a clearly defined focus.

The creation of a dedicated Young Type 2 audit, combining data from the National Diabetes Audit and National Paediatric Diabetes Audit, has provided comprehensive analysis of people aged 0-25 with type 2 diabetes in England and suggested initiatives to improve care.⁴⁵ Within the context of a wider increase in type 2 diabetes in adults under 40, this has led to the development of NHS England's T2Day programme which provides enhanced support to those aged between 18-25 – who represent a majority of the 0-25 cohort.⁶

Audit data has also reported that children and young people with type 2 diabetes up to the age of 24 are more likely to be female, of Asian, Black or Mixed ethnicity and from areas of higher deprivation compared to the national average. Furthermore, over 90% of children and young people with type 2 diabetes are also living with obesity or overweight, and there is a strong association between the rise of these conditions in youth.⁷

Due to the close links between an increased chance of having type 2 diabetes at a young age, being of a minoritised ethnic group and/or from a more deprived background, an understanding of health inequalities is an essential consideration in raising awareness, developing preventative strategies and adapting care to meet the needs of children and young people with the condition. The inclusion of diabetes as an area of clinical focus and the recommendation to improve the completion rate of care processes for type 2 diabetes in NHS England's Core20PLUS5 framework to address health inequalities for children and young people highlights its importance nationally.⁸

What do we say about this issue?

All children and young people with type 2 diabetes should receive a consistent high level of care from a team of healthcare professionals with confidence and experience in managing the condition.

This can be challenging for paediatric diabetes teams due to the relatively small number of type 2 diabetes cases in children and young people when compared with type 1 diabetes, and the subsequent lack of experience healthcare professionals have treating them.

All children and young people with type 2 diabetes should have support from a multi-disciplinary team which includes a dietitian and psychologist.

This is integral to addressing the social and psychological alongside the physical impacts of the condition, and providing children and young people with the holistic care they need.

Initiatives developed with the support of national networks and the NHS England Diabetes Programme have begun to show how this can be delivered practically. The exact structure of services will likely vary depending on existing services in the area, local population mix and consideration of how children and their families can access them practically but should include:

- Use of hub-and-spoke models of care and peer support for healthcare professionals to ensure access to specialist input is available to all regardless of geography, enabling core multi-disciplinary teams to work through cases together and share knowledge within a network, such as those developed by the National Children and Young People's Diabetes Network⁹
- Training and professional development for healthcare professionals focused on type 2 diabetes in children and young people, including events like the National Diabetes Children and Young People National Working Group's biannual study days, and accessible online training resources like the Health Education England modules¹⁰
- Clear pathways of care from diagnosis with guidance and specifications on completing key care processes, optimising treatments and offering emotional and psychological support, based on latest clinical guidelines and service specifications from organisations such National Institute of Health and Care Excellence (NICE)¹¹, Association of Children's Diabetes Clinicians (ACDC)¹² International Society for Paediatric and Adolescent Diabetes (ISPAD)¹³ and NHS England¹⁴
- Collaboration with locally available weight management services to identify and support children and young people living with obesity or overweight, such as Complications of Excess Weight (CEW clinics) piloted in England, to supplement care from diabetes teams where appropriate and prevent cases of type 2 diabetes in those not diagnosed but at increased risk
- Consideration of the needs of those between 18-25 years old by developing strong links between paediatric and adult clinical teams to co-ordinate transition and where appropriate provide specialist advice, such as sexual health and pre-conception planning for women with type 2 diabetes.

Guidance for health systems to undertake case-finding in order to identify children and young people with type 2 diabetes who are exclusively cared for in primary care and, as appropriate, make efforts to refer them to specialist paediatric teams or provide additional dedicated support in primary care, such as the service specification defined in NHS England's T2Day programme for early onset type 2 diabetes in 18-39 year olds¹⁵

Healthcare systems, education providers and employers should continue to be supported to improve their services and support, and build on evidence of the most effective approaches and treatments.

This should be a holistic support package for children and young people with consideration of their emotional health and an understanding of the negative impact of stigma:

- Promote the use of tools and resources specifically designed to support with education and self-management of type 2 diabetes in children and young people, like the Digibete ‘Young Type 2’ resources¹⁶
- Fully utilise all funding streams to local systems for the provision of additional dedicated support to this vulnerable cohort (such as NHS England’s T2Day programme)
- Engage the whole family during education on eating well and moving more as much as possible – acknowledging the high likelihood of children and young people with the condition living with family member with the condition ¹⁷
- Weight management services should include appropriate psychological support for participants and their design and delivery should be informed by a psychological approach that reduces stigma.
- Ensure children and young people with type 2 diabetes are supported whilst in education with regularly updated individual healthcare plans agreed between the young person, their family, healthcare team and school
- Similarly, young people with type 2 diabetes in employment should also be supported by employers to agree with reasonable adjustments in line the Equality Act 2010, such as to allow them to monitor and treat their condition and take time off for healthcare appointments, enabling them stay healthy in work¹⁸

There should also be further research to understand the benefits of new and existing treatments and technologies for children and young people with type 2 diabetes, and the factors that lead to its development to inform preventative strategies:

- Continue to evaluate the evidence base on the benefits of a range of available treatments following recent updated guidelines, like NICE’s recommendation to use licensed GLP-1 (liraglutide and dulaglutide), SGLT2i (empagliflozin) medications and insulin after metformin for those aged 18 and under¹⁹
- Continue to develop evidence on the use of wearable technology, building on NICE guidelines recommending continuous glucose monitoring (CGM) technology for some children and young people with type 2 diabetes aged 18 and under, by assessing its impact on glycaemic management and undertaking more research into uses and benefits of CGM for more children and young people with type 2²⁰
- Better understand the feasibility of remission in young people under 18 years old – such as the ongoing LEGENDary study on remission using low-calorie diets in teenagers with type 2 diabetes aged between 12-18 years old²¹

- Research to better understand root causes of type 2 diabetes in children and young people, with consideration of links to genetics and other societal and behavioural factors.

To stem the rise of type 2 diabetes in children and young people bold action must be taken across government.

Whilst continued improvements in care are vital to support children and young people, enabling those with the condition to live healthier and happier lives and halting the rise of the condition will depend on wider changes to lay the foundations of good health for all. The rise of type 2 diabetes in young people is linked to an increase in overweight and obesity at younger ages - with both disproportionately more likely to affect those who are from minority ethnic groups and from areas of higher deprivation.

A robust nationwide strategy is required to address the social determinants of health and the government must commit to measures to address childhood obesity and further impacts of poverty in childhood:

- Enact bold measures including changes to the tax system that enable healthier diets through the reformulation and reduction of consumption of unhealthy products. These should consider inequalities in access to healthy food, and seek to address them by making healthier options more affordable and accessible
- Implement existing commitments to reduce obesity, including delayed plans to protect children and young people from junk food advertising on TV and online
Bring forward an effective cross-government strategy to reduce health inequalities, including wide-ranging measures to reduce poverty.

Evidence and analysis – the reasons why we are saying what we do

Prevalence:

- The 2022/2023 National Paediatric Diabetes Audit (NPDA) reported there were **1,245** children and young people with type 2 diabetes receiving care from a paediatric diabetes unit in England and Wales. Of these 268 were new recorded cases, following an increase of 281 new diagnoses recorded in the previous audit year.²²

- There are also **94** reported cases of type 2 diabetes in people 19 years old or younger and a further 306 between 20-24 years old in Scotland²³
- Northern Ireland does not currently have an audit to provide an estimate for children and young people with type 2 diabetes but the previous iteration of this position published in 2017 estimated there were **15** reported cases at the time, and there were **6** new diagnoses reported in 2023.²⁴

Demographics:

- The NPDA's spotlight audit on type 2 in 2021²⁵ found the condition is overrepresented in children and young people in the two most deprived income quintiles when compared to Office of National Statistics data
- It further found that many children and young people with type 2 diabetes are from a minority ethnic background, with children and young people of Asian ethnicity forming the highest proportion at 38.6%. Those of Black, Mixed and Other ethnicity are also over-represented when compared to the UK census population
- The spotlight audit also highlights that the condition is overrepresented in females, comprising 64.3% of those included
- The National Child Measurement Programme reported that obesity rates amongst children at Reception (5-6 years old) and Year 6 (10-11 years old) in England remain higher than pre-pandemic levels – with children in more deprived areas twice as likely to be obese as those in less deprived areas²⁶

Comorbidities, complications and care processes:

- Of the children and young people with type 2 diabetes in England and Wales included in the NPDA Core Report 2022/23²⁷, over 93% were also living with overweight or obesity with a BMI above the 85th centile. This is compared with 41.7% of children and young people with type 1 diabetes
- Furthermore, 46.5% also had blood pressure in the hypertensive range, 29.6% had a total blood cholesterol of 5mmol/mol or higher and 21.4% had micro or macro albuminuria.
- The NDPA 2022/2023 also found that only 36% of those with type 2 diabetes aged 12 and over received all of their six essential health checks (for HbA1c, BMI, blood pressure, cholesterol, albuminuria, and feet) in 2021/22. This was a slight increase on the 33% who had all six health checks in the previous audit year but is nearly half the rate of those with type 1 diabetes of the same age who received all their checks in the same year (63.4%).
- Furthermore, 41.4% of children and young people with type 2 were assessed as requiring additional psychological support outside of multidisciplinary team clinics
- Though based on registry information of people with type 2 diabetes aged 18 and over – a study has shown the risk from major complications are more severe for those

diagnosed at younger ages - with life expectancy and excess risk of cardiovascular disease and death higher for those youngest at diagnosis²⁸

- A study comparing the effects of type 2 diabetes in people aged 15-30 years and 40-50 years on morbidity and mortality has shown more severe complications developing in the younger cohort when matched for duration²⁹
- Research on early onset type 2 diabetes has also highlighted the increased risks that under 40s with condition have compared to older adults³⁰

Locality of care:

- The NPDA provides a comprehensive overview of children and young people with type 2 diabetes who receive care from paediatric diabetes units in England and Wales but there are also a significant number who are not being seen by specialist teams
 - Cross-sectional analysis of National Diabetes Audit (NDA) and NPDA data from 2021/22 which included primary care data estimated there are **2,000** people under 18 years of age with type 2 diabetes in England and Wales – with a further **9,765** aged 19-25.³¹
 - The 2021/22 NDA also reported around 30% of those aged between 16 and 18 years and 69.4% of those aged between 19 and 25 with type 2 diabetes are seen exclusively in primary care³²
- The NPDA Spotlight from 2021 reported that only 22 of 172 paediatric diabetes units cared for more than 10 children and young people with type 2 diabetes – with 30.1% of the units having five or fewer cases³³
- A study in the USA showed improved blood glucose levels in young people with diabetes - including 92 with type 2 - is associated with any form of regular specialist support, and the HbA1c of those seen in primary care did not differ significantly compared to those seen by specialist diabetes teams – suggesting that access to specialised support in a range of settings, such as using telehealth to allow teams to communicate remotely and hub-and-spoke models, are effective at improving outcomes. However, it should be noted that average age was 21.7 years for participants with type 2 diabetes³⁴

Stigma, emotional and psychological wellbeing

- Insights from children and young people with type 2 from NPDA&US in partnership with Diabetes UK³⁵ from 2021 noted that a lack of peer support, educational tools and resources for this group, with most focused on type 1 diabetes or type 2 in older adults
- It also found that limited information about type 2 diabetes in children and young people on online message boards, and discussions about the condition tended to

focus more on emotional wellbeing as opposed to self-management, as is seen in discussions for older adults with type 2 in message boards

- Stigma emerged as key theme in clinic chats with children and young people with type 2 diabetes, as well as finding difficulty explaining the condition or following lifestyle advice when faced with the practicalities of daily life for young people, linked to expectations for socialising with peers and family
- Many children and young people with type 2 diabetes also had a parent with type 2 diabetes: over 85% had at least one other family member with the condition. 59.9% had a mother and 36.7% had a father with it. There were expressions of resignation to the idea it would be passed on due to heredity, or misunderstanding of differences between condition at older and younger ages
- Contrary to common misconceptions that stigma can encourage weight loss, evidence from a study that included nearly 100 women with a median age of 19.15 years old shows that the reverse is true³⁶

Further information and resources

- [‘Prevention of type 2 diabetes and gestational diabetes by addressing the root causes of ill health’ – Diabetes UK position statement](#)
- [Treatment of Obesity – Diabetes UK position statement](#)
- [Diabetes and Employment – Diabetes UK position statement](#)
- [‘Reversing the Trend’ – Diabetes UK report](#)
- [Children and Young People with type 2 diabetes - NHS England RightCare toolkit](#)
- [Managing Type 2 Diabetes in Children and Young People - NHS England e-learning modules](#)
- [NICE NG18 - Type 1 and Type 2 Diabetes in Children and Young People \(under 18 years old\) guideline](#)
- [NICE NG28 – Type 2 Diabetes in Adults \(18 years old and over\) guideline](#)
- [A Practical Approach to Management of Type 2 Diabetes in Children and Young People under 18 years - Association of Children’s Diabetes Clinicians \(ACDC\) guideline](#)
- [Type 2 Diabetes in Children and Adolescents - International Society for Paediatric and Adolescent Diabetes \(ISPAD\) 2022 consensus guidelines](#)
- [National Children and Young People's Diabetes Network](#)
- [Digibete Young Type 2](#)
- [NHS England Core20Plus5 framework for Children and Young People](#)

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