

Type 2 diabetes in children and young people

Position Statement (Updated: July 2018)

Why have we produced this position statement

The number of children and young people with Type 2 diabetes is rising, and Type 2 diabetes in children and young people is a more aggressive form of the condition than Type 2 diabetes in adults. There are challenges around the diagnosis, management and monitoring of Type 2 diabetes in children and young people.

How did we develop this position?

We developed this position through our knowledge and insight gained from:

- A review of the current literature
- A review of the NPDA and Scottish Diabetes Audit
- Consultation with medical, nursing and dietetic experts in the field of Type 2 diabetes in children and young people
- Attending international conferences

What we say about this issue

Type 2 diabetes in children and young people is a severe, progressive form of the condition. It is associated with greater insulin resistance and more rapid deterioration of beta cell function decline than Type 2 in adults. Children and young people frequently present with complications, progress to micro and macrovascular complications rapidly and respond poorly to treatment (1). There is currently limited evidence available leading to challenges around the diagnosis, management and monitoring of Type 2 diabetes in children and young people. Interventions also need to be in place to prevent Type 2 diabetes children and a significant part of this is reducing the prevalence of overweight and obesity in children.

Recommendations

Diabetes UK recommends:

- For diagnosis, management and monitoring of Type 2 diabetes in children and young people, the guidelines from the International Society for Paediatric and Adolescent Diabetes (2014) are followed https://cdn.ymaws.com/www.ispad.org/resource/resmgr/Docs/CPCG_2014_CHAP_3.pdf (note: these are currently under review, and updated guidelines expected late 2018)
- Research into safety, effectiveness and acceptability of drugs to treat Type 2 diabetes in children and adolescents must be prioritised, and consideration given to widening acceptance criteria to allow greater participation

- Consideration should be given to whether Type 2 diabetes should be treated in specialist paediatric diabetes centres, rather than part of a general paediatric diabetes caseload. Advantages of this include a concentration of patients allowing expertise to develop, relevant, expert clinicians readily available, and better access to trials. Disadvantages include families may be unable/unwilling to travel long distance particularly if they have limited income, other family pressures or do not fully appreciate the serious nature of the condition
- Services for children and young people with Type 2 diabetes should work closely with adult services in secondary or primary care in order to share expertise and enhance transition
- Diabetes UK supports Public Health England's sugar reduction and calorie reduction programmes (2) and wants to see further targets for ongoing reduction. The food and drink industry should participate in all of these programmes, across the entire spectrum of products.
- Restriction of the marketing of (HFSS) products on television should extend until after 21:00. The Government also needs to consult on how to further restrict digital advertising aimed at children. The revised Nutrient Profile Model should be used by the Committee of Advertising Practice to better protect children from HFSS adverts. Brand characters should be prohibited from use to advertise HFSS products to children.
- Government should encourage local authorities to review their provision of services that increase physical activity and educate about recommended levels of activity. Provision of physical activity should be inclusive of all age groups and health needs and be culturally appropriate.
- England's Department for Education should monitor the effectiveness of the new Food Preparation and Nutrition GCSE in England alongside mandatory teaching of nutrition and cooking skills up until Key Stage 3. UK Government should continue to invest in the health education of children throughout their school years.

Evidence and analysis

There are an estimated 715 children and young people with Type 2 diabetes in the England and Wales (3), 63 in Scotland (4) and 15 in Northern Ireland (5). Numbers are likely to be higher, as young people may be treated in GP surgeries, which do not contribute to the audits.

The prevalence of overweight and obesity in children is rising. 22.6% in reception are overweight or obese, rising to 34.2% in year 6 (6). Children in the UK are consuming too much sugar, saturated fat and salt (2) and only 18% reach the recommended target for physical activity (7). Children are also targeted with advertising of high fat, sugar and salt (HFSS) products through television, digital advertising and the use of brand characters.

Children and young people with Type 2 diabetes are all overweight or obese, and most commonly are:

- From Black and Asian ethnic backgrounds (3)
- Female (3)
- Living in deprived areas (3)
- Have a positive family history (8)

In addition, one third of children and young people with Type 2 diabetes were born to mothers with gestational diabetes (8).

Type 2 diabetes in children and young people is a much more aggressive condition than it is in adults (9). The overall risk of complications is higher than adults with Type 2 and children with Type 1, with complications appearing earlier (10)

Despite this, only 16.7% of young people aged 12 and above with Type 2 diabetes received all key care processes (3). This is just under half the key care process completion rate for Type 1 diabetes (35.5%).

Findings from the NPDA (3) also include (of those screened):

- The mean HbA1c for children with Type 2 diabetes was 59.7mmol/mol
- 40.4% of children and young people with Type 2 diabetes have high blood pressure
- 25.5% exceed the target for total blood cholesterol
- 14.5% have albuminuria
- 5.4% have eye disease
- 58% of children received psychological assessment.

References

1. White B. et al (2017) Type 2 diabetes in adolescents: a severe phenotype posing major clinical challenges and public health burden. *Lancet* 389:2252-60
2. Department of Health (2012). National Diet and Nutrition Survey: Headline Results from Years 1, 2 and 3 (combined) of the Rolling Programme 2008/09 – 2010/11 and Public Health England (2014). Sugar reduction: Responding to the challenge. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/324043/Sugar_Reduction_Responding_to_the_Challenge_26_June.pdf
3. National Paediatric Diabetes Audit (2018) <https://www.hqip.org.uk/resource/national-paediatric-diabetes-audit-report-2016-17-care-processes-and-outcomes/>
4. Scottish Diabetes Survey (2016) <http://www.diabetesinscotland.org.uk/Publications/Scottish%20Diabetes%20Survey%202016.pdf>
5. Diabetes UK Northern Ireland (2017) Personal communication
6. National Child Measurement Programme (2017) <https://digital.nhs.uk/data-and-information/publications/statistical/national-child-measurement-programme/2016-17-school-year>
7. BHF National Centre for Physical Activity (2016) Children's and Young People's Physical Activity. <http://www.bhfactive.org.uk/young-people-resources-and-publications-item/18/552/index.html>
8. Copeland K.C. et. Al. (2011) Characteristics of adolescents and youth with recent onset Type 2 diabetes: The TODAY cohort at baseline. *J Clin Endocrinol Metab* 96:159-67
9. Hannon T.S. and Arslanian S.A (2015) The changing face of diabetes in youth: lessons learned from studies of Type 2 diabetes. <https://nyaspubs.onlinelibrary.wiley.com/doi/pdf/10.1111/nyas.12939>
10. Dart A.B. et al (2014) Earlier onset of complications in youth with Type 2 diabetes. *Diabetes Care* 37: 436-43