



# **East and West Midlands CYP Diabetes Networks**

Midlands T2 Diabetes Pathway

Draft: March 2024 Agreed: 20 March 2024 For Review: 19 March 2026

## **MIDLANDS PATHWAY FOR CYP WITH T2DM**

The majority of children and young people presenting with newly diagnosed diabetes will have insulin dependent diabetes and historically, all have been started on insulin from diagnosis. However, the incidence of Type 2 diabetes in children and young people (CYP) has increased rapidly over the past few years, with some paediatric centres reporting a tripling in the numbers of new diagnoses per year since the COVID pandemic (Denvir, personal communication). Education on carbohydrate counting, hypoglycaemia management and insulin adjustment is not needed for CYP with type 2 diabetes (T2D) if they are not starting on insulin but dietary changes, weight loss and tight glucose targets are critical in reducing the risk of long-term complications and potentially also reversing the condition. Young people with T2D also frequently have other comorbidities such as metabolic dysfunction-associated steatotic liver disease (MASLD-Previously known as non-alcoholic fatty liver disease), hypertension, polycystic ovarian syndrome and their identification and careful management are also critical in improving health outcomes. Early identification of CYP with T2D is thus vital to ensure appropriate treatment, aggressive treatment targets, addressing comorbidities and optimising outcomes.

Many centres will have only a handful of CYP with T2D (and some currently have none at all) and so experience and confidence in managing T2D will be very variable. An e-learning package for health care professionals (HCP) will be available on T2D in CYP from spring 2024.

The expectation is that every paediatric diabetes unit (PDU) in the Midlands will have a core group of HCP from the MDT who have completed this module (at least one paediatric diabetes specialist nurse, paediatric diabetes dietitian and senior paediatric doctor from every unit). Each PDU will also be linked to a lead PDU who will provide expert support and information on T2D as required as experience grows.

In CYP with a new diagnosis of diabetes (ie fasting blood glucose (BG)  $\geq$  7mmol/L or random BG >11 mmol/l) – consider T2DM if any of:

- BMI >95<sup>th</sup> percentile (>91<sup>st</sup> percentile if BAME background)
- Acanthosis nigricans
- Strong family history of T2DM
- Obesity-related comorbidities eg raised transaminases, hypertension
- HbA1C ≥ 48 mmol/mol but minimal symptoms (especially if no osmotic symptoms)

## AND

Negative diabetes antibodies (GAD, IA2 & ZnT8 antibodies)

See below for flow charts for initial management of CYP with T2D and escalation of treatment for CYP with T2D.

Many CYP with T2D will have other significant challenges in their lives and engagement with the diabetes team can be difficult. Early referral for help and support from Children's Services should be considered and psychological support from diagnosis is critical. Engagement with local, culturally appropriate services supporting adults with T2D may also be useful.

At any stage in the management and treatment of a child or young person with Type 2 Diabetes, discuss with the hub T2D centre or at the regional T2D MDT meeting if there are any queries or concerns.

This pathway is designed to provide a quick reference guide on managing T2D in the first year after diagnosis. For more detailed explanations and rationale, please refer to the NICE guidance NG18 (Overview | Diabetes (type 1 and type 2) in children and young people: diagnosis and management | Guidance | NICE, published 2023) &/or ACDC guidelines on managing T2D in young people (Endorsed Guidelines | Association of Children's Diabetes Clinicians (a-c-d-c.org)).

New diagnosis of DM – likely T2D because obesity, acanthosis nigricans, family history T2D etc.

#### **ENSURE DIABETES AUTOANTIBODIES SENT ASAP**

HbA1C < 69 mmol/mol (8.5%) and metabolically stable

HbA1C ≥ 69 mmol/mol (8.5%) and/or not metabolically stable

Start Metformin 500mg once a day, increasing to 1g BD over 3 weeks

T2D specific education - Educate on healthy lifestyle changes including calorie reduction and increased activity. Counsel on ketone monitoring when unwell.

Ensure early psychology input

Start insulin. If no ketones, start basal insulin alone. If ketosis (blood ketones >1.5), start MDI regimen

Start Metformin 500mg once a day, increasing to 1g BD over 3 weeks

T2D specific education - Educate on healthy lifestyle changes including calorie reduction and increased activity. Counsel on ketone monitoring when unwell.

Ensure early psychology input

**Screen for** and **treat** comorbidities and DM-related complications ASAP after diagnosis: Hypertension, MASLD, retinopathy, microalbuminuria, dyslipidaemia. Target BG <7 mmol/l fasting, <9 mmol/l post-prandial. **Check auto-antibodies all negative** 

Pubertal girls – counsel from diagnosis on avoiding unplanned pregnancy

See in clinic 4-weeks after diagnosis with HbA1C, weight and review of glucose levels with telephone contact every 1-2 weeks in between for first 3 months. Continue monthly contact for next 3 months

Target HbA1C <48 mmol/mol at 3 months post diagnosis

#### HbA1C <48 mmol/mol:

Reduce and stop insulin (if appropriate). Continue other treatments as before.

Check BP and arrange 24 hr tape if raised

## HbA1C > 48 mmol/mol

Review current treatment and concordance. Consider second-line treatment (see next page)

Check BP and arrange 24 hr tape if raised

## HbA1C > 48 mmol/mol 3 months after diagnosis

Review current treatment and weight loss. Review diet and exercise adherence. Consider use of rtCGM. Review psycho-social factors and consider support from external agencies eg Children's Services.

Discuss at regional T2D MDT meeting. Start second line treatment

### GLP1 agonists.

Check no PMH pancreatitis. 6ygj g Counsel on risks and symptoms of pancreatitis, cholelithiasis and cholecystitis plus importance of good fluid intake.

Start Victoza 0.6mg OD for one week, increase to 1.2mg OD for at least 1 week and to 1.8mg OD thereafter if necessary. Monitor BG closely if on insulin. Review 3 monthly

Review treatment response after 6 months GLP1 agonist treatment and only continue if HbA1C reduced by 11 mmol/mol &/or reduction in BMI SDS.

Discuss at regional T2D MDT if treatment targets not met. Consider switch to other second line T2D treatment.

# SGLT2 inhibitors – if GLP1 agonists not available

Counsel of risk of DKA, particularly with intercurrent illnesses. Ensure have blood glucose and ketone monitoring equipment and advise of need to check both if unwell. STOP immediately if develop DKA

Counsel on importance of genital & perineal hygiene and seeking urgent medical attention if experience pain, swelling or erythema in genital/perineal area along with fever or malaise. STOP immediately if develop Fournier's gangrene

Start Dapagliflozin 10mg once a day. Monitor BG closely if on insulin. Review 3 monthly.

Review treatment response at 6 months; HbA1C aim is <48 mmol/mol.

Discuss at regional T2D MDT if treatment targets not met. Consider switch to other second line T2D treatment.

If HbA1C is <48 mmol/mol at 6 months and still on insulin, aim to wean and stop. Review diet and exercise adherence. Review psycho-social factors and consider support from external agencies eg Children's Social Care Services.

If raised BP confirmed on 24 hour monitoring, start anti-hypertensive. If

# **Annual review**

Checkl	ist to support Annual Reviews:
	Measure and record weight, height, BMI SDS, blood pressure (including age-adjusted SDS). Set weight target and trajectory.
	Check HbA1C – target is <48 mmol/mol.
	Review all medications including anti-hypertensives and need for statins if applicable.
	Counsel all pubertal and post-pubertal girls/young women about pregnancy.
	Dietetic review and education update (including DKA risk and management).
Blood t	LFT Lipids (non-fasting OK for screening), including HDL & LDL TSH & FT4 Vitamin D FBC and iron studies Renal function
	Urine for microalbuminuria screening.
	Retinopathy screening.
	Assess psychological wellbeing.
	Foot examination including Ipswich touch test and ensure well-fitting footwear.
	Ensure registered with dentist and having regular dental check ups.
	Smoking and alcohol review.
	Vaccination status.
	Liver ultrasound at diagnosis and then every 3 years if normal.