UNDIAGNOSED

TYPE 1 DIABETES IN CHILDREN IS A MEDICAL EMERGENCY.

A Healthcare Professionals’ guide to an early diagnosis
How can we diagnose Type 1 diabetes in the young earlier?

Nearly all young people with diabetes have Type 1 diabetes. Scotland has the fifth highest incidence of Type 1 diabetes in the world. Caused by autoimmune destruction of pancreatic beta cells, Type 1 diabetes results in total insulin deficiency and life-threatening ketoacidosis if diagnosis and treatment are delayed.

Each year in the UK more than 10 children die from ketoacidosis and a similar number suffer permanent neurological disability after developing cerebral oedema. Type 1 diabetes may occur at any age, and in Scotland approximately 300 new cases under the age of 16 years are diagnosed annually. More than one in every four of these children present in ketoacidosis, and this increases to one in three for those under five years of age.

Diabetic ketoacidosis is preventable if diabetes is diagnosed and treated sufficiently early. Unfortunately this is often not the case, and one third of children with new-onset diabetes have had at least one medical-related visit prior to diagnosis. This represents a ‘missed opportunity’ for early recognition, testing, diagnosis and treatment.

Is delayed diagnosis of diabetes in children really a problem?

Every Health Board in Scotland has young people present critically unwell with new onset diabetes and tragically several deaths have occurred in recent years. The diagnosis has often not been contemplated or, even if diabetes is considered, inappropriate testing is performed or referral has been delayed.

Improving early diagnosis of diabetes in the young

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Think. Test. Telephone.

Think diabetes

The early symptoms of diabetes in a child, adolescent or young adult can be recognised by Diabetes Scotland’s “4 T’s” campaign in a matter of seconds:

Thirsty?
- increased, excessive thirst
- drinking more frequently (including overnight)

Tired?
- increased tiredness
- increased lethargy

Thinner?
- losing or not gaining weight
- looking thinner than usual

Using the toilet more?
- increased urinary frequency (polyuria, nocturia)
- bed wetting in a previously dry child - diabetes must be excluded
- heavier nappies in babies

Type 1 diabetes may occur at any age.

Young children and unusual presentations

In the Under 5’s, classic symptoms are not always obvious, but any of the following clinical features might suggest a possible diagnosis of diabetes:

- nappies heavier than usual
- blurred vision
- candidiasis (oral, vulval)
- constipation
- recurring skin infections
- irritability, behaviour change
New onset diabetes in a child is a medical emergency.

Immediately refer to the local diabetes service when Type 1 diabetes is considered possible.

Call on-call paediatric services (e.g. paediatric registrar) if child presents out of hours.

Patient review on the same day by specialist children’s diabetes services is mandatory.

Matthew’s Story
Matthew was a 14 month old baby. His referral went to a non-urgent general paediatric outpatient clinic:

“I would appreciate if this young child could be reviewed in a general paediatric clinic. His mother is concerned that he has some symptoms of diabetes, including sleepiness, increased thirst, passing urine frequently, and irritability. He is generally otherwise healthy, and examination was unremarkable. There is a family history of diabetes. Thank you for seeing him to consider if he possibly has diabetes.”

Gemma’s Story
Gemma was eight years old and presented with a one week history of thirst and urinary frequency. No urinalysis was performed. The child was diagnosed with a “urinary tract infection” and prescribed antibiotics. She deteriorated, developing vomiting, lethargy & weight loss. The out of hours medical service was contacted, and advice given that the diagnosis was likely gastroenteritis. Gemma became increasingly drowsy, and an ambulance was called. On admission she was found to be in severe diabetic ketoacidosis, and required admission for four days.
Aims of National Diabetes Awareness & Ketoacidosis Prevention Campaign:

- Reduce number of children dying or becoming disabled due to a ‘missed’ diagnosis.
- Reduce number of new cases of Type 1 diabetes presenting in ketoacidosis.
- Reduce length of time from presentation to diagnosis.
- Reduce hospital admissions and length of stay.

WHY GETTING IT RIGHT MAKES A DIFFERENCE…

A Mum’s perspective

“When my son Tom was diagnosed, he was in a coma, had brain swelling and was close to death. He’d been ill for several weeks, but I didn’t know the symptoms well enough to insist his doctors test for Type 1 diabetes. Five years later, I spotted the early symptoms of Type 1 in his older brother, Joe. I took him straight to hospital and he was diagnosed very early, before ketoacidosis had set in. When Tom was diagnosed he was in a coma; when Joe was diagnosed he was well enough to go camping.”

PRACTICE POINTS TO REMEMBER

OVER 300 CHILDREN UNDER 16 YEARS ARE DIAGNOSED IN SCOTLAND ANNUALLY.

TYPE 1 DIABETES OCCURS AT ANY AGE.

CHILDREN UNDER FIVE YEARS OF AGE ARE AT GREATER RISK OF KETOACIDOSIS.

UNDIAGNOSED AND UNTREATED TYPE 1 DIABETES RESULTS IN KETOACIDOSIS AND DEATH.

Developed by:
Childhood & Adolescent Diabetes Scotland
REFERRAL PATHWAY FOR EARLY DIAGNOSIS OF TYPE 1 DIABETES

THINK SYMPTOMS
- Polydipsia
- Polyuria
- Nocturia
- Nocturnal enuresis
- Weight loss
- Tiredness/ lethargy

TEST IMMEDIATELY
Urgent capillary blood glucose from finger prick
Blood glucose > 11 mmol/l?

YES

TELEPHONE URGENTLY
Call for same day specialist review
Ketoacidosis symptoms?
- Nausea & Vomiting
- Abdominal pain
- Sweet “ketotic” breath
- Deep, “sighing” breathing
- Decreased consciousness
- Severe dehydration/shock

YES

TELEPHONE FOR EMERGENCY
Paediatric review or dial 999

NO

CONSIDER OTHER CAUSES OF SYMPTOMS OR CALL DIABETES SERVICE FOR ADVICE

YES

NO

YES

NO