

## Alert: Type 1 Diabetes and Ketoacidosis Presentations in the Young during the Coronavirus Pandemic

### Increase in number of children and young people diagnosed with Type 1 Diabetes

We appreciate the vital role our Primary Care colleagues have always played in early recognition of Type 1 diabetes. We are also aware of their constant efforts to provide care during the pandemic, balancing the need to socially distance with that of personally assessing the more seriously unwell.

Since early 2020 the GGC Children's and Young People's Diabetes Service (CYPDS) has recorded a **35% rise in patients diagnosed with Type 1 Diabetes**, an activity increase that will have affected both Primary and Secondary Care. We have also noted that the proportion of newly diagnosed Type 1 diabetes patients presenting in **ketoacidosis has increased from 30 to 40%**.

### Early diagnosis improves morbidity and mortality

Combined with increased incidence, the rise in number of new patients presenting in life-threatening Diabetic Ketoacidosis (DKA) is of significant concern. Children, adolescents, and young adults in DKA are at greater risk of disability or death from shock, renal failure, and cerebral oedema. Intensive care admissions have increased noticeably since the onset of the pandemic, as have the number of very young children (Under 5 years of age) diagnosed with Type 1 Diabetes.

Early diagnosis of Type 1 diabetes is key to limiting morbidity and mortality, and our colleagues in the Lanarkshire Children's Diabetes Service have issued an alert to their Primary Care partners regarding increased numbers of new Type 1 Diabetes patients and presentations with ketoacidosis. They have cited several papers in the international literature that also report an increased incidence of Type 1 diabetes and higher rates of presentation in Diabetic Ketoacidosis (please see list below).

We endorse the Lanarkshire team's approach of increasing awareness of this serious issue and similarly wish to inform our GGC Primary Care partners of this significant rise in incidence.

### "Think, Test, Telephone"

Scotland has the third highest incidence of Type 1 diabetes in the world, and local and national numbers of new patients presenting in ketoacidosis have remained stubbornly high for the last 30 years. While previously 25 to 30% of all Type 1 diabetes diagnoses per annum presented with DKA, in the 20 months since onset of the Coronavirus pandemic this proportion has increased to 40%.

We realise our Primary Care partners have borne the brunt of the pandemic and remain hard pressed. We also appreciate that, in a busy surgery where viral illness in infants, children and adolescents is often seen, it can be very challenging to differentiate the routine from the uncommon diagnosis of diabetes. Despite these difficulties, though, the great majority of referrals for suspected Type 1 Diabetes have been made on the day of first presentation.

Delayed referrals do occur, particularly when investigations more suitable for Type 2 patients are used for the young. Examples include requesting a later return for fasting blood tests, waiting for an HbA1c result or referring a child for an "early" clinic assessment. We wish to emphasise the urgency of diagnosing Type 1 diabetes in the young, particularly as they may decompensate rapidly.

In 2015 an awareness campaign for Type 1 diabetes was released, encouraging us all to:

- **Think:** Raising awareness of the possible diagnosis of Type 1 diabetes in the young,
- **Test:** Simplifying testing, recommending immediate Capillary Blood Glucose analysis, and
- **Telephone:** Emphasising urgent, same day referral of anyone thought to have Type 1 diabetes.

As well as providing details for the **Paediatric Medical Triage Line**, we also attach the “**Think, Test, Telephone**” leaflet. This contains an outline of features and recommended course of action for any suspected of having Type 1 Diabetes. The document’s main recommendations are summarised here:

### Think...

1. Consider Type 1 Diabetes in *any* infant, child or young person presenting with these symptoms (the “4 Ts”): **Thirst, Tiredness, Thinner** and **Toileting** more often. **Thrush** also occurs frequently.
2. Younger children may be found to have had **heavier nappies**.
3. Type 1 diabetes should be considered in *any* child with **new-onset bedwetting**.

### Test...

1. A **finger-prick Blood Glucose** is recommended as it provides immediate diagnostic information.
2. **Do not** request a *returned* urine specimen, *Fasting* Blood Glucose, HbA1c or an Oral Glucose Tolerance Test. (A urine specimen collected at the time a patient is seen may be useful).
3. A **urine or blood ketone test** is useful but should not delay referral if the diagnosis is suspected.

### Telephone...

1. **Call immediately** if your patient’s Blood Glucose is 11 mmol/l or more.
2. **Call 999** for an ambulance if **ketoacidosis suspected** (e.g. deep or rapid breathing rate, sweet smelling breath, abdominal pain, nausea, vomiting, severe dehydration, shock, drowsiness).
3. Call immediately to discuss if diabetes suspected but Blood Glucose under 11 mmol/l.

If fasted for any length of time (e.g., overnight or if fasted before blood testing) young children with early Type 1 diabetes may have either a normal or only slightly raised Blood Glucose. If well enough, a finger-prick glucose from a child after carbohydrate may better identify higher results. Specialist service review on the same day is essential if blood glucose or history suggests Type 1 Diabetes.

Thank you for your support, in both considering this matter and for your efforts during the pandemic.

Yours sincerely,

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*For and on behalf of the GGC Children’s & Young People’s Diabetes Service.*

[www.ggc-youngdiabetes.org](http://www.ggc-youngdiabetes.org)

<https://www.nhsggc.org.uk/media/253797/diabetes-mellitus-diagnosis.pdf>

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