Monitoring by a Tertiary Care Center

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PLACE HOLDER FOR SLIDE OF POLL QUESTION
Adequate Staffing to Support Monitoring

- Recognize physicians and APPs will need a well-trained staff to support monitoring
- Identify other staff who can support
  - CDEs, RNs, NPs, PAs, MAs
- Contact Ask the Experts to facilitate staff training
  www.asktheexperts.org
How to best monitor? Clinic vs Home

- Glucometer (HGT)
- HbA1c
- Continuous Glucose Monitor (CGM)
- Oral Glucose Tolerance Test (OGTT)
Home Based Monitoring
Once a week & daily if ill

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy teaching</td>
<td>Resistance</td>
</tr>
<tr>
<td>Accessible</td>
<td>Compliance</td>
</tr>
<tr>
<td>Ownership of monitoring</td>
<td>Not ADA criteria</td>
</tr>
<tr>
<td>Cloud based result sharing</td>
<td></td>
</tr>
<tr>
<td>Inexpensive</td>
<td></td>
</tr>
</tbody>
</table>
Goals of Home Monitoring:

Education:
- T1D autoimmunity
- risk prediction

Emphasize the benefits of monitoring:
- prevent DKA
- treatment options or clinical trials to delay onset

Home glucose testing and monitoring for symptoms

Confirm steps to take if impaired BGs appear
## HOME GLUCOSE TESTING

Test 1 time per week and every day during illnesses

<table>
<thead>
<tr>
<th>TIME blood glucose (BG) was tested</th>
<th>NORMAL BG</th>
<th>ELEVATED BG</th>
<th>HIGH BG</th>
</tr>
</thead>
<tbody>
<tr>
<td>FASTING</td>
<td>Below 100</td>
<td>100 – 124</td>
<td>125 or higher</td>
</tr>
<tr>
<td>Fasting; no food or drinks with any sugar for at least 8 hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PREFERRED METHOD</td>
<td>Below 140</td>
<td>140 – 199</td>
<td>200 or higher</td>
</tr>
<tr>
<td>2 HOURS after meals</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Contact Name:  
Contact Phone:  

If the meter displays “HI” (no number displayed) your blood sugar reading is over 300 mg/dL. This is a life-threatening situation and a medical emergency. Contact your nearest urgent care or emergency department.
Home Glucose Testing Reminders

- A HIGH blood glucose (BG) on home testing is not sufficient to diagnose diabetes; it should be confirmed by a health care provider.

- If your child has a HIGH BG level, wash the child’s hands with soap and water again and retest.

- If the BG is still HIGH, follow the instructions in this chart (see reverse).

Remember to Monitor for Symptoms of T1D

Most common symptoms include:

- Excessive thirst
- Frequent urination or getting up at night to urinate
- Wetting the bed in a child who was previously dry
- Unexplained weight loss or poor weight gain
- Change in appetite

Additional symptoms people experience include: low energy, blurred vision, yeast infections, mood changes, behavior changes

Symptoms that require urgent attention include: heavy breathing, vomiting and confusion
Clinic Based Monitoring

- Blood sugar average for the past 3 months
- May not be a good representation of recent BG changes
- Fluctuations can be difficult to interpret

<table>
<thead>
<tr>
<th>T1D Antibodies</th>
<th>Celiac Antibodies</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAD</td>
<td>GAD ECL</td>
</tr>
<tr>
<td>----</td>
<td>-------</td>
</tr>
<tr>
<td>53</td>
<td>0.025</td>
</tr>
<tr>
<td>45</td>
<td>0.025</td>
</tr>
<tr>
<td>24</td>
<td>0.013</td>
</tr>
<tr>
<td>33</td>
<td>0.03</td>
</tr>
<tr>
<td>30</td>
<td>0.011</td>
</tr>
<tr>
<td>27</td>
<td>0.013</td>
</tr>
<tr>
<td>37</td>
<td>0.011</td>
</tr>
<tr>
<td>23</td>
<td>0.015</td>
</tr>
</tbody>
</table>
## CGM (every 3m)

<table>
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<tr>
<td>Easy teaching</td>
<td>Resistance</td>
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<tr>
<td>Accessible</td>
<td>Not ADA criteria</td>
</tr>
<tr>
<td>Ownership of monitoring</td>
<td>Psychological distress</td>
</tr>
<tr>
<td>Real time result sharing</td>
<td></td>
</tr>
<tr>
<td>Results encourage OGTT</td>
<td></td>
</tr>
<tr>
<td>Daily life data</td>
<td></td>
</tr>
</tbody>
</table>
Continuous Glucose Monitor (CGM) Instructions

See reverse

Contact AsktheExperts if you note any of the following T1D symptoms.

Most common symptoms include:
- Excessive thirst
- Frequent urination or getting up at night to urinate
- Wetting the bed in a child who was previously dry
- Unexplained weight loss or poor weight gain
- Change in appetite

Additional symptoms people experience include:
- Low energy, blurred vision, yeast infections, mood changes, behavior changes

VISIT: AsktheExperts.org

STAGE 1-T1D / Normal blood glucose levels

Wear the CGM once (for about 10 days) every 3-6 months. Try to look at the glucose value 2 hours after your largest meal each day. Set high glucose alert for 300 mg/dL. Do not set a low alert.

HIGH CGM VALUES:
- If CGM glucose is 200 or higher at TWO HOURS after a meal, please wash hands and check finger-stick blood glucose.
- If sensor or blood glucose continues above 200 mg/dL two hours after a meal, TEXT or EMAIL AsktheExperts (see below) the next business day.
- If blood sugar is >300 for more than two hours in a row, contact your health care provider — a blood glucose, ketone and HbA1c level should be checked.

LOW CGM VALUES:
- For sensor glucose values below 55 mg/dL, the CGM will automatically alarm. In people who are not taking insulin, the body has the ability to raise the blood glucose in response to normal lows. However, if your child feels hungry or has symptoms of a low blood glucose, give a small snack.
- Glucose values may run lower at night. In some cases, these lows are caused by compression of the sensor that happens when laying on the sensor site while sleeping. If this is the case, move off of the sensor. It may take up to 20 minutes for the glucose value to appear/increase.
- If you are experiencing lows — blood glucose < 60 mg/dL for more than 2 hrs — more than 2 days in a row, TEXT or EMAIL AsktheExperts the next business day.

TEXT: (720) 326-0430 or EMAIL: Questions@AsktheExperts.org
## Clinic Based Monitoring

<table>
<thead>
<tr>
<th>Pros</th>
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<tbody>
<tr>
<td>ADA Gold Standard</td>
<td>Time consuming</td>
</tr>
<tr>
<td></td>
<td>IV placement</td>
</tr>
<tr>
<td></td>
<td>Intolerance to Glucola</td>
</tr>
<tr>
<td></td>
<td>Results can change from visit to visit</td>
</tr>
</tbody>
</table>

What about home OGTTs?
Next Steps When Glucose Levels are Impaired*

*Random blood glucose 140-199 mg/dl and/or HbA1c 5.7-6.4%

Determine stage of diabetes:
- HbA1c, OGTT, check BG, CGM

Educate on symptoms of hyperglycemia and DKA

Home glucose testing:
- 2-hours post meal 1x/week
- Daily when ill or with symptoms

Follow-up every 3 months to ensure medical safety.
Options for Treatment or Clinical Trials

What are the available options?

Who to contact to determine eligibility?

Where are these options available?
Case Review

- 7y, FDR (FOC Proband), Pennsylvania resident
- Identified as Stage 1 through TrialNet
- MOC contacted Ask the Experts to get additional support with CGMs and HGT
- MOC wanted to collaborate with local HCP to monitor
- Referred to Endocrinology: Completed OGTT with diabetes team CGM prescribed
Resource for healthcare providers and patients and with our national network of clinical and research partners

- Education + support
- Monitoring resources + guidance
- Access to early treatment interventions

Train healthcare providers throughout the United States to be comfortable identifying and managing people in the early stages of type 1 diabetes.
Healthcare Providers: Become a MEMBER to access additional resources

First Name *

Last Name *

Email *

Phone *

City

Region/State/Province

Profession

I am interested in becoming a "Local Expert" partner

Submit
Monitoring Steps: Summary

- Identify at risk individuals through antibody screening and confirmation
- Inform individual of risk
- Explain importance of consistent monitoring
- Engage in monitoring activities
- Identify clinical trials or treatments to delay onset
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Partners

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UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

Autoimmunity Screening for Kids
Ask the Experts