# Youth and parent feelings about type 1 diabetes (T1D) management technologies

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## BACKGROUND & AIMS

- Use of T1D management technologies, including insulin pumps & continuous glucose monitors (CGM), is rapidly growing.
- Little research has evaluated technology users’ experiences. One survey reported adults with T1D had both positive and negative experiences, and those with more negative feelings also had higher diabetes distress⁴.
- The current study aimed to qualitatively explore youth and parent feelings about using diabetes technologies.
- Understanding how parents and youth perceive diabetes technologies may help guide clinical strategies to support optimal diabetes management, such as improved glycemic control & reduced diabetes-related stress or burden in families.

## METHODS

- As part of a larger qualitative study on diabetes-related quality of life, 43 people (age 12-89 yrs.) with T1D and 37 of their parents or partners were interviewed.
- Interviews addressed many domains of quality of life including: social, family, mood, and daily management issues.
- Interviews were recorded and transcribed verbatim.
- Three psychologists and three research staff reviewed transcripts to develop thematic codes, which were applied using NVivo (25% double-coded).
- A subset of 36 interviews (15 youth age 8-17 years, 22 parents of youth age 4-17 years) were analyzed for themes related to T1D management technologies.

## RESULTS

### Youth Race/Ethnicity

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Percent (n)</th>
<th>Mean ± SD</th>
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</thead>
<tbody>
<tr>
<td>Youth Age, years</td>
<td></td>
<td>10.8±3.6</td>
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<tr>
<td>Youth Gender, female</td>
<td>36% (8)</td>
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<tr>
<td>Parent Gender, female</td>
<td>86% (19)</td>
<td></td>
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<td>Insurance, private</td>
<td>45% (10)</td>
<td></td>
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<tr>
<td>Insulin Regimen, pump</td>
<td>50% (11)</td>
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<tr>
<td>Duration of T1D, years</td>
<td>3.8±2.9</td>
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<tr>
<td>Hemoglobin A1c, %</td>
<td>8.9±1.6</td>
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### Convenience

- “The pump really makes it easier so I don’t have to be taking a lot of shots” -12yo female
- “Of course being on the insulin pump is slightly easier in the aspect that most of the time everything is with you but you need to bring some back up things just in case” -13yo male

### Spontaneity & Flexibility

- “We would never be able to do this without CGM. Now when she’s sleeps at friends’ house, it alerts me on the phone and I’ll call the mom and say can you please wake her up & give her some juice” –Mother of 11yo female
- “She’s on the pump. She was on shots initially and it was just a nightmare. Like it’s 5:30, wherever we are we’ve got to leave or we’ve got to go eat. And there was no flexibility…So it’s much more flexible now. But when we were on shots it was very restrictive.”–Mother of 5yo male

### Improved Quality of Life

- “We started using the continuous glucose monitor and we’re getting better sleep now.” –Mother of 15yo female
- “We’re probably gonna move and do the CGMs, because with the Bluetooth capability I think that will decrease a lot of my daily stress of when I’m not with him” –Mother of 5yo male

### Hope

- “I know they have a bionic pancreas almost there, we saw the prototype at a conference…you wouldn’t have to prick your finger, it would be so much easier” -11yo female
- “I think about new technology that will be out like when I’m older, and a cure for diabetes one day” -11yo female

## CONCLUSIONS

- Families reported themes about diabetes technology use:
  - Convenience
  - Spontaneity & flexibility
  - Improved quality of life
  - Hope for future technological advance
- When asked about diabetes technology use, families focused solely on positive outcomes. No reports of negative implications or pain associated with technology use were described.
- Discussing how diabetes technology use has or could impact daily self-management can inform pediatric psychologists’ care of families living with T1D and help providers support family decisions about using diabetes technologies.
- Healthcare providers and psychologists may want to ask about families’ perspectives on and expectations for technology to help them maximize their experience using each device for diabetes self-management.
- With more in-depth studies of these topics, a nuanced understanding of the benefits and possible downsides of using these technologies may guide behavioral interventions to help increase technology uptake/adherence.

## References


## Notes

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