

Cystic Fibrosis Research News

Title:

FEASIBILITY AND ACCURACY OF AT-HOME GLUCOSE TOLERANCE TESTS FOR CYSTIC FIBROSIS RELATED DIABETES SCREENING

Lay Title:

Could glucose tolerance tests used to detect cystic fibrosis related diabetes be performed at home?

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What was your research question?

We aimed to find out if oral glucose tolerance tests (OGTT) used to detect Cystic Fibrosis Related Diabetes (CFRD) were feasible at home. We compared how well home tests worked against the usual in-hospital OGTT and asked people with cystic fibrosis (pwCF) about side effects and their overall experience.

Why is this important?

CFRD affects 30 to 50% of pwCF and causes high blood sugar, weight loss and reduced lung function. Fortunately, detecting and treating CFRD early can help with these issues. The traditional way to detect CFRD is the OGTT, where blood sugar is measured before and after drinking a sugary drink. The problem with this test is that it is time-consuming and can sometimes cause headaches or nausea.

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What did you do?

We recruited 36 pwCF from a Canadian CF clinic. All participants did 3 types of OGTTs within 2 weeks:

- A standard OGTT with a glucose drink in a hospital.
- An at-home OGTT with the same glucose drink.
- An at-home OGTT using candies (about 38 jellybeans) with the same amount of glucose as the glucose drink.

Participants were classified into different “glucose tolerance categories” based on their test results. They rated side effects like headaches and nausea for each type of OGTT on a scale from 0 to 10. Additionally, they rated their overall experience with each test.

What did you find?

97% of participants performed the tests correctly. Glucose tolerance categories matched between the in-hospital OGTT and the at-home glucose drink test for 59% of participants, and between the in-hospital OGTT and the at-home candy test for 75% of participants. However, even the hospital-based OGTT is not always reproducible.

Side effects were very mild with all types of OGTTs. However, participants found that the jelly-bean candies in the at-home test were hard to eat within the 5 minutes limit. Around 65% of participants preferred the at-home drink test, 29% preferred the at-home candy test, and only 6% preferred the hospital OGTT.

What does this mean and reasons for caution?

We found that at-home OGTTs are easier and more convenient than the traditional hospital test. Although the at-home tests’ results sometimes differ from the hospital test, this may be acceptable since the hospital test can also vary. Doing the test at home could be a good option for those who have difficulty going to the hospital or in areas where hospital testing is hard to organize. While at-home OGTTs may delay some diagnoses, higher adherence to screening recommendations could help offset missed diagnoses.

What’s next?

More research with a larger group of participants is needed to confirm the findings of this pilot study.

Original manuscript citation in PubMed

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