

# Cystic Fibrosis Research News

## Title:

CHARACTERIZATION OF ADULTS WITH CYSTIC FIBROSIS PRESENTING AN INDETERMINATE GLUCOSE TOLERANCE (INDET)

## Authors:

Adèle Coriati MSc<sup>a,b</sup>, Sophie Ziai BSc<sup>a,b</sup>, Mirna Azar MD<sup>d</sup>, Yves Berthiaume MD<sup>a,c,d</sup> and Rémi Rabasa-Lhoret MD<sup>a,b,c,d</sup>

## Affiliations:

<sup>a</sup> Institut de Recherches Cliniques de Montréal, Montréal, Québec, Canada, H2W 1R7

<sup>b</sup> Department of Nutrition, Université de Montréal, Montréal, Québec, Canada, H3T 1A8

<sup>c</sup> Cystic Fibrosis Clinic of the Centre hospitalier de l'Université de Montréal, Montréal, Québec, Canada, H2W1T8

<sup>d</sup> Department of Medicine, Université de Montréal, Montréal, Québec, Canada, H3T1J4

## What was your research question?

Cystic Fibrosis (CF)-related diabetes (CFRD) is a major complication of CF and is associated with a significantly higher death rate. Our goal was to characterize in adults with CF a newly proposed pre-diabetes group: the indeterminate group (INDET: high blood sugar at 1-hour after a oral glucose tolerance test (OGTT) but normal value at 2-hour). The OGTT is the standard screening medical test to diagnose CFRD. This test determines how quickly sugar is cleared from the blood after a sugar drink.

## Why is this important?

Identifying the INDET group has become important for several reasons. For instance, a study in children with CF has shown that those in the INDET group were more likely to have worse lung function. Moreover, a recent study identified the INDET group as a predictor of future risk for CFRD. Up to now, no study has characterized the medical and physical conditions of INDET adults with CF (lung function, weight, body mass index, mutation profile, insulin levels, etc.).

## What did you do?

# Cystic Fibrosis Research News

Our study involved more than 250 adults without known CFRD from the Montreal CF clinic. All participants underwent a 2-hour OGTT where blood samples were taken every 30 minutes. We then measured in these samples both glucose (a sugar) and insulin (the hormone which lowers blood sugar) levels. During their visit, clinical values were taken such as weight and lung function. Based on their glucose values during the OGTT, participants were classified in different pre-diabetes groups including the newly proposed INDET category. These pre-diabetes groups were then compared for weight, lung function and other clinical markers.

## What did you find?

We observed that all pre-diabetes groups, including the INDET group, displayed similar age, genotype background as well as body mass index. Our main finding was that the INDET group displayed lowered lung function similar to the newly diagnosed CFRD group but that the other pre-diabetic group (impaired glucose tolerance) did not display such abnormalities. Detailed analysis did not identify a causal relationship between either glucose or insulin values and lower lung function, suggesting that insulin and/or glucose are not a direct major cause of this lower lung function but could still be a marker of risk for future lower lung function.

## What does this mean and reasons for caution?

Being able to identify the INDET group is important since CFRD is preceded by a long phase of glucose abnormalities, a time during which some people, even children and adolescents, are at higher risk for a more rapid clinical deterioration (loss of weight and lung function) and/or progress quickly to CFRD. Therefore, identification of higher risk individuals is important. Our findings suggest that the 1-hour OGTT blood sample could be a good clinical marker of such risk.

## What's next?

How the INDET group evolves with time will identify whether this group is indeed at a higher risk for a more rapid clinical decline and/or develop CFRD. If this is confirmed, preventive measures (lifestyle or medical) will have to be tested.

## Original manuscript citation in PubMed



# Cystic Fibrosis Research News

[http://ac.els-cdn.com/S1569199315000557/1-s2.0-S1569199315000557-main.pdf?\\_tid=fa9ce4b8-fee5-11e4-94c1-00000aab0f01&acdnat=1432122623\\_530fc887dac48233bca0a87ba66bbb38](http://ac.els-cdn.com/S1569199315000557/1-s2.0-S1569199315000557-main.pdf?_tid=fa9ce4b8-fee5-11e4-94c1-00000aab0f01&acdnat=1432122623_530fc887dac48233bca0a87ba66bbb38)

**Cystic Fibrosis Research News**

[cfresearchnews@gmail.com](mailto:cfresearchnews@gmail.com)