

# Cystic Fibrosis Research News

## Title:

A provider survey assessing fetal impact of CFTR modulator use in males with CF during assisted and unassisted reproduction and partner pregnancy

## Lay Title:

A survey to understand if it is harmful for the baby when a male with CF uses CFTR modulators during assisted reproduction for pregnancy with his partner

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## What was your research question?

Most males with cystic fibrosis (CF) are infertile. However, males can use their sperm to have children through assisted reproductive techniques (ART), combining sperm and egg in a dish and inserting them into the uterus. We wondered if it is safe for males with CF to continue modulators during ART.

## Why is this important?

Approximately 90% of people with CF are eligible for modulators. We know that suddenly stopping modulators may lead to pulmonary exacerbations. We also know that levels of drugs in semen are approximately the same as in blood, and drugs can be absorbed through the vagina during sex. In animal models, individual modulators were tested to determine if they caused harm to sperm or developing infants; no harm was seen at normal human doses.

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However, there is no published human data to say if it is safe for males with CF to continue modulators during ART or during their partner's pregnancy.

## **What did you do?**

We sent an anonymous survey (no names or birthdates for males with CF were collected) to CF care providers around the world. We asked providers if males with CF under their care continued or discontinued modulators during ART and the pregnancy of the males' partners. The survey also asked questions about the lung function of the male with CF, whether he continued his modulator [ivacaftor (Kalydeko), lumacaftor-ivacaftor (Orkambi), tezacaftor-ivacaftor (Symdeko/Symkevi) or elexacaftor-tezacaftor-ivacaftor (Trikafta/Kaftrio)] during ART and his partner's pregnancy, and whether there were problems for the mom or the baby during and after pregnancy.

## **What did you find?**

We found that most males with CF continued their modulators during ART and their partner's pregnancies. The males who did not use modulators during ART and/or partner pregnancy had high baseline lung function. One of the four males who stopped modulators before ART had a pulmonary exacerbation. The miscarriage rate for partners of males with CF who continued modulators was about the same as the miscarriage rate in people without CF. There was not a high number of problems during the males' partners' pregnancies. There were no birth defects in the infants of males with CF who continued modulators.

## **What does this mean and reasons for caution?**

The results of this international study are the first to show that it is probably safe for males with CF to continue modulators during ART and their partners' pregnancies. However, we collected this data based on information in CF clinic charts. Therefore, it is possible that some information about the partners and children of males with CF may have been missing from the chart and not included in the data we collected. We also do not know what advice males with CF received from their care providers about continuing or discontinuing modulators because we did not ask for that information.

## **What's next?**

Males with CF should talk with their care providers about whether they should continue or discontinue modulators during ART and their partner's pregnancy. We hope to do a larger study that collects detailed information about modulator use for males with CF during ART and partner pregnancy.



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**Original manuscript citation in Pubmed**

<https://pubmed.ncbi.nlm.nih.gov/37953181/>

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