

Cystic Fibrosis Research News

Title:

A Multiple Reader Scoring System for Nasal Potential Difference Parameters

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What was your research question?

We wanted to find out how different expert readers of nasal potential difference (NPD) tests scored various NPD tracings using a standardized method for interpreting the results.

Why is this important?

There is variability in NPD testing for diagnosing cystic fibrosis (CF) and determining if drugs that activate the CF protein (CFTR) are working. We previously standardized the methodology for measuring NPDs. Therefore, in this study we wanted to understand how accurate different expert readers were at scoring the NPD tracings.

What did you do?

First, we devised a method for standardizing the scoring of NPD tracings based on the confidence of the tracing quality and if it was worthy of interpretation. We then asked six experts from all over the world to read the same 50 tracings from people with CF and without CF to determine how closely they followed the scoring system. Finally, we assessed whether the expert readers agreed on their individual confidence and the overall level of quality of the tracings to interpret the NPD.



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What did you find?

We found that the expert readers agreed very much in terms of the quality of tracings for scoring (interpretability) but we found that the expert readers didn't agree about their individual confidence in the tracing. The actual scores of the tracings agreed across the expert readers when the tracings were interpretable but differed when the readers were unconfident in the tracing.

What does this mean and reasons for caution?

This means that we need to ask more than one expert reader to score NPDs tracings when we use this test to determine if a drug works to turn on the CF protein. This will ensure accurate results and reduce concern over confusing tracings. This study also means that we must exercise caution about tracings with divergent levels of interpretability and/or confidence when using NPD for CF clinical trials.

What's next?

We will use this scoring system in several clinical trials to assess if drugs that activate the CF protein are working.

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