

# Assessment of Airway Inflammation Using Exhaled Nitric Oxide (FeNO) in Pediatric Asthma and Its Impact on Treatment Decisions

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## INTRODUCTION

- Pediatric asthma continues to be challenging, including significant rates of misdiagnosis and patients who are poorly controlled
- Periodic clinical assessment together with objective tests helps to improve the diagnosis and management of asthma
- FeNO is an accurate biomarker of T2 airway inflammation and helps to identify patients at risk for an asthma exacerbation (1)
- Incorporating FeNO into asthma care can reduce the risk for future events (2)

## OBJECTIVE

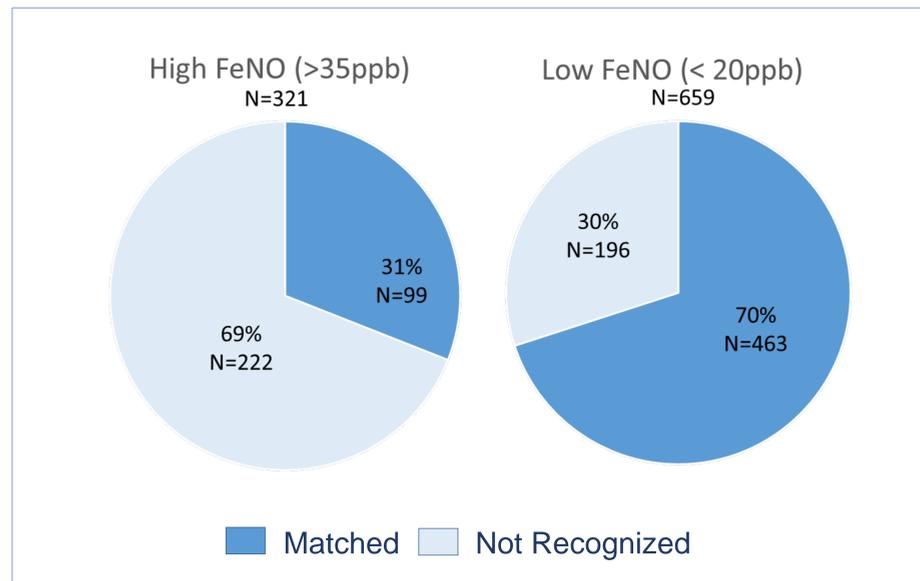
- Explore the real world impact of the clinical use of FeNO on physician's treatment decisions in pediatric asthma

## METHODS

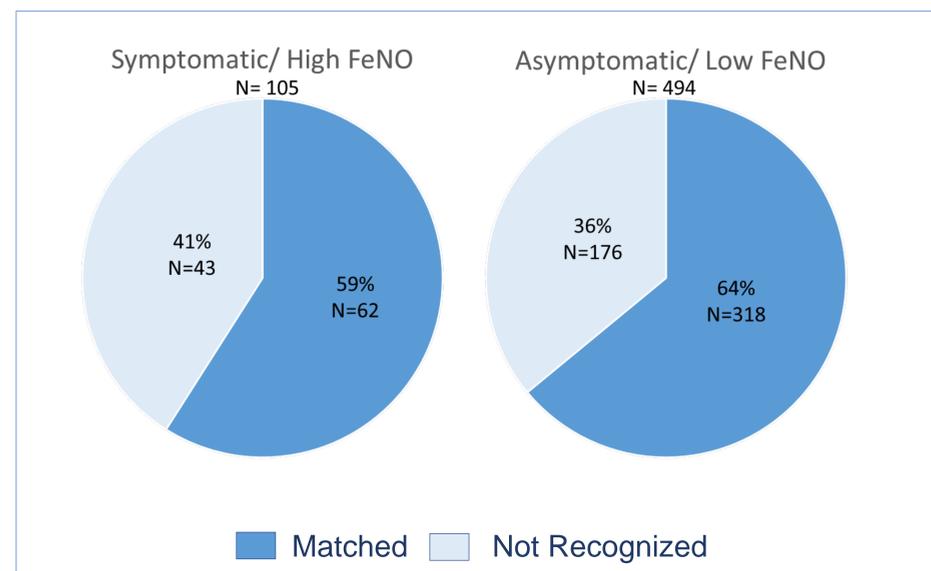
- Physicians were invited to participate in a survey to evaluate the impact of measuring FeNO on treatment decisions
- Before measuring FeNO, physicians recorded presence of symptoms, medication use, assessed the likelihood of significant airway inflammation and made a preliminary treatment plan
- FeNO was then measured and based on the result, physicians recorded what changes in drug therapy were necessary from their original assessment

## RESULTS

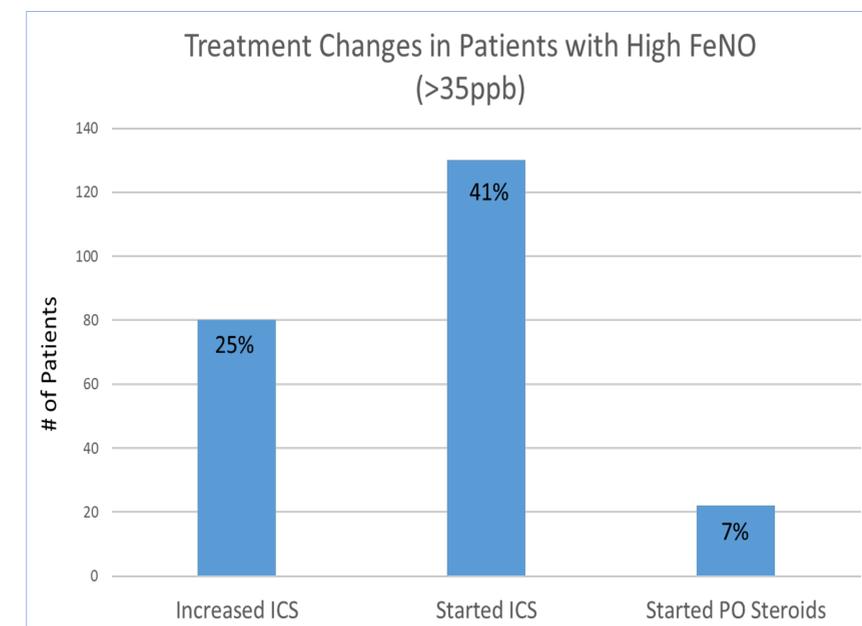
- Survey data was obtained from 149 asthma specialists who evaluated the impact of using FeNO among 1,237 patients <12 yrs of age
- The clinical assessment of airway inflammation more closely matched the measured FeNO when the FeNO was low (5-19 ppb) compared to when the FeNO was high (37-273 ppb):



- Presence of symptoms influenced the likelihood that the clinical assessment of airway inflammation matched the FeNO:



- Measuring FeNO resulted in treatment changes in 39% of patients (481/1,237)
- Changes in treatment were made more frequently when FeNO was high (77%, 248/321) vs when FeNO was low (17%, 114/659)
- Steroids were stepped up in response to a high FeNO measurement:



## CONCLUSION

- Recognition of airway inflammation in children with asthma was improved by measuring FeNO compared to usual care.
- Knowledge of FeNO, as an indicator of T2 airway inflammation, resulted in significant changes in asthma treatment.
- Specifically, when physicians became aware of a high FeNO, corticosteroid treatment was stepped up.

## References

1. Kupczyk M. Clin Exp Allergy 2014;44:212-224
2. Petsky H. Cochrane Reviews 2016;11:Art. No.: CD011439