

Diagnosis

Guide to Interpretation of F_{ENO} Values in Symptomatic Steroid Naïve Patients

Do not use this guide if the patient is a smoker. Data are inconclusive for current smokers.

F_{ENO} values are complementary to spirometry values in the diagnosis and assessment of airway disease.

	LOW	NORMAL	INTERMEDIATE	HIGH
Eosinophilic inflammation	Unlikely	Unlikely	Present, but mild	Significant
ADULTS				
F _{ENO} (ppb)*	< 5	5–25	25–50	> 50
	<p>Consider: Smoker (besides considerations in children)</p>	<p>Consider: Neutrophilic asthma Anxiety/hyper-ventilation Vocal cord dysfunction Rhinosinusitis Gastro-oesophageal reflux Cardiac disease</p>	<p>Interpretation based on clinical presentation</p>	<p>Consider: Atopic asthma if the history is appropriate If FEV₁ < 80% predicted, diagnosis of asthma is very likely Eosinophilic bronchitis Churg-Strauss syndrome A positive response to a trial of inhaled or oral steroid is likely In ex-smokers with COPD this may also be true</p>
CHILDREN (<12 years)				
F _{ENO} (ppb)*	< 5	5–20	20–35	> 35
	<p>Consider: Primary ciliary dyskinesia (check nasal NO) Cystic fibrosis Chronic lung disease of prematurity</p>	<p>Consider: Wheezy bronchitis Gastro-oesophageal reflux ENT disorders Neutrophilic asthma Vocal cord dysfunction Anxiety/hyper-ventilation Immunodeficiencies</p>	<p>Interpretation based on clinical presentation</p>	<p>If combined with any objective evidence of reversible airway obstruction, asthma is very likely and a positive response to a trial of inhaled or oral steroids is likely</p>

For references and information of exhaled NO in asthma see the Scientific Background – Exhaled Nitric Oxide, A Noninvasive Marker for Inflammation, issued by Aerocrine.

*At 50 mL/s flow rate.

Partly based on Taylor DR, Pijnenburg MW, Smith AD, De Jongste JC. Exhaled nitric oxide measurements: clinical application and interpretation. *Thorax* 2006;61:817-27.

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– Improving management and care of patients with inflammatory disorders

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Management

Guide to Interpretation of F_{ENO} Values in Anti-Inflammatory Treated Patients

Do not use this guide if the patient is a smoker. Data are inconclusive for current smokers.

F_{ENO} values are complementary to spirometry values in the diagnosis and assessment of airway disease.

	LOW	NORMAL	INTERMEDIATE	HIGH
Eosinophilic inflammation	Unlikely	Unlikely	Present, but mild	Significant
ADULTS				
F _{ENO} (ppb)*	< 5	5–25	25–50	> 50 Or a rise of 60% or more since previous measurement
	<p>Consider: Smoker (besides considerations in children)</p>	<p>If symptomatic, review diagnosis: Neutrophilic asthma Anxiety/hyperventilation Vocal cord dysfunction Rhinosinusitis Gastro-oesophageal reflux</p> <p>If asymptomatic: Implies good compliance with treatment. Reduce dose or, in case of low ICS dose, even withdraw ICS altogether</p>	<p>If symptomatic, consider: Infection as reason for worsening High levels of allergen exposure Adding in other therapy apart from ICS (e.g. long acting b-agonist) Consider ICS dose increase</p> <p>If asymptomatic: No change in ICS dose, if patient is stable</p>	<p>If symptomatic, consider: Inadequate ICS treatment: (1) check compliance (2) check for poor inhaler technique (3) inadequate ICS dose Continuous high level allergen exposure Imminent exacerbation or relapse depending on history of individual patient (more likely if ICS dose is zero) Steroid resistance (rare)</p> <p>If asymptomatic: No change in ICS dose, if patient is stable</p>
CHILDREN (<12 years)				
F _{ENO} (ppb)*	< 5	5–20	20–35	> 35 Or a rise of 60% or more since previous measurement
	<p>Consider: Primary ciliary dyskinesia Cystic fibrosis Chronic lung disease</p>	<p>If symptomatic, review diagnosis: Wheezy bronchitis Gastro-oesophageal reflux ENT disorders Neutrophilic asthma Vocal cord dysfunction Anxiety/hyperventilation Immunodeficiencies</p> <p>If asymptomatic: Implies good compliance with treatment. Reduce dose or, in case of low ICS dose, even withdraw ICS altogether</p>	<p>If symptomatic (besides considerations in adults), consider: Possible inadequate ICS treatment: (1) check compliance (2) check for poor inhaler technique and consider metered dose inhaler and spacer if patient is currently using a dry powder device</p> <p>If asymptomatic: No change in ICS dose, if patient is stable</p>	<p>If symptomatic (besides considerations in adults), consider: Metered dose inhaler and spacer if patient is currently using a dry powder device</p> <p>If asymptomatic: No change in ICS dose, if patient is stable</p>

For references and information of exhaled NO in asthma see the Scientific Backgrounder – Exhaled Nitric Oxide, A Noninvasive Marker for Inflammation, issued by Aerocrine.

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