Interpreting FeNO

$FeNO_{50}$	LOW	INTERMEDIATE	HIGH
> 12 yrs, Non-smoking / Smoking	< 25 ppb /18 ppb	< 25-50ppb / 18-36ppb	> 50 ppb / 36ppb
2 -12 yrs	< Age+8, ppb	< Age+8 - Age+23, ppb	> Age+23, ppb
<2 yrs, Tidal breathing	< 10 ppb	≥ 10 ppb	≥ 10 ppb
Diagnosis for steroid-naive patients • Aid in diagnosis • Predict likelihood of corticosteroid responsiveness Return visit in 1-4 weeks	**Large airway non-type 2 inflammation** • Infectious bronchitis or pneumonia • Chronic cough (CVA, UACS, PIC, GERC), asthma or COPD with large airway non-type 2 inflammation **Unlikely to benefit from ICS** (Consider small airway inflammation through $FeNO_{200}$/CaNO test)	**Be cautious and evaluate clinical context, probably large airway type 2 inflammation (Allergic / eosinophilic / allergic + eosinophilic)** • Bronchitis or pneumonia, chronic cough (NAEB, CVA, UACS, AC, PIC), asthma or COPD with large airway type 2 inflammation **Evaluate clinical context and probably to benefit from ICS** consider possible upper airway inflammation through FnNO test	**Large airway type 2 inflammation (Allergic or/and Eosinophilic)** • Bronchitis or pneumonia, chronic cough (NAEB, CVA, UACS, AC, PIC), asthma or COPD with large airway type 2 inflammation **Likely to benefit from ICS** (consider upper airway inflammation through FnNO test)
Monitoring steroid-treated patients • Management of ICS-responsive inflammatory airway disease • Indicate risk of exacerbation Return visit in 1-4 weeks	• If symptoms are relieved, consider step-down ICS dose. Do not stop medication util FeNO values return to stable level. • If symptoms persist, consider $FeNO_{200}$/CaNO measurement to assess small airway inflammatory disease.	• Evaluate clinical context. If symptoms are relieved, consider maintaining or step- up ICS dose until FeNO values return to stable level. • Evaluate clinical context. If symptoms persist, identify ICS non-adherence. Consider FnNO measurement to assess possible upper airway inflammatory disease.	• If symptoms are relieved, consider maintaining or step- up ICS dose until FeNO values return to stable level. • If symptoms persist, identify ICS non-adherence. Consider FnNO measurement to assess upper airway inflammatory disease. FeNO > 50ppb indicates risk of exacerbation.

Interpreting $FeNO_{200}$/CaNO Readings

$FeNO_{200}$/CaNO		LOW	HIGH
$FeNO_{200}$/CaNO	> 12 yrs	< 10 ppb / 5 ppb	≥ 10 ppb / 5 ppb
	≤12 yrs	< 8 ppb / 3 ppb	≥ 8 ppb / 3 ppb
Diagnosis for steroid-naive patients • Aid in diagnosis • Predict likelihood of corticosteroid responsiveness Return visit in 1-4 weeks		**Small airway non-type 2 inflammation** • Infectious bronchitis or pneumonia • Chronic cough (CVA, UACS, PIC, GERC), asthma or COPD with small airway non-type 2 inflammation **Unlikely to benefit from ICS**	**Small airway type 2 inflammation (Allergic or/and Eosinophilic)** • Eosinophilic bronchitis or pneumonia, chronic cough (NAEB, CVA, UACS, AC, PIC), asthma or COPD with small airway type 2 inflammation **Likely to benefit from extra-fine particle ICS, OCS or/and LTRA** (Consider upper airway inflammation through FnNO test)
Monitoring steroid-treated patients • Management of ICS-responsive inflammatory airway disease • Indicate risk of exacerbation Return visit in 1-4 weeks		• If symptoms are relieved, consider step-down ICS dose. Do not stop medication until $FeNO_{200}$/CaNO results return to stable level. • If symptoms persist, consider alternative diagnoses	• If symptoms are relieved, consider maintaining or step-up ICS dose until $FeNO_{200}$/CaNO results return to stable level. • If symptoms persist, identify ICS non-adherence. $FeNO_{200}$ > 20ppb / CaNO > 10ppb indicates risk of exacerbation.

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Interpreting FnNO Readings

$FnNO_{10}$	LOW	INTERMEDIATE	HIGH
≥12 yrs	<250 ppb	250-500 ppb	>500 ppb
11 yrs	<238 ppb	238-488 ppb	>488 ppb
10 yrs	<226 ppb	226-476 ppb	>476 ppb
9 yrs	<214 ppb	214-464 ppb	>464 ppb
8 yrs	<202 ppb	202-452 ppb	>452 ppb
7 yrs	<190 ppb	190-440 ppb	>440 ppb
6 yrs	<178 ppb	178-428 ppb	>428 ppb
Diagnosis for steroid-naive patients • Aid in diagnosis • Predict likelihood of corticosteroid responsiveness Return visit in 1-4 weeks	• Infectious (acute) or allergic (chronic) sinusitis / nasal polyps with obstructed sinus ostia (UACS, or combined with asthma) • FnNO will increase after antibiotics/ NICS / LTRA (or antihistamines) treatment	• Be cautious, and evaluate clinical context • Initial diagnosis and treatment according to non allergic rhinitis / sinusitis	• Allergic rhinitis/ chronic sinusitis with unobstructed sinus ostia (UACS, or combined with asthma) • FnNO will decrease after NICS / LTRA (or antihistamines) treatment
Monitoring steroid-treated patients • Management of ICS-responsive inflammatory airway disease • Indicate risk of exacerbation Return visit in 1-4 weeks	• If symptoms are relieved, continue treatment until FnNO return to normal range • If symptoms persist, consider alternative treatment or endoscopic sinus surgery	• If symptoms are relieved, continue treatment • If symptoms persist, consider NICS/antihistamines treatment	• If symptoms are relieved, continue treatment until FnNO returned to normal range • If symptoms persist, check treatment adherence or consider step-up ICS treatment

Note: According to reference 7, FnNO decreased by 12 ppb per year for children less than 12 yrs old.

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