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A ten-year old boy, 58 inches tall, 80 lbs., had a two-year history of nasal allergies and asthma. According to the mother, the asthma occurred primarily with exercise and during the evening when nasal allergies were accompanied by coughing. Medications: Cetirizine for nasal allergies and fluticasone propionate-salmeterol oral inhaler were used haphazardly as symptoms arose. Specifically, the inhaler was only used when he was symptomatic, not as directed for maintenance.

A physical examination showed boggy nares with clear secretions and inflamed tonsils. Spirometry showed FEV1 levels of 87 and ratio 76%, peakflow was 98%, and skin testing showed allergies to cats and dust mites. Otherwise, the physical exam was normal. ACT score normal.

NIOX showed FeNO of 45, an elevated normal level. Questioned about the inconsistent use of the inhaled medication, the mother expressed concern about inhaled steroids. Montelukast was prescribed, and triamcinolone acetonide nasal spray/inhaler once a day per nostril, with fluticasone propionate-salmeterol. The family resolved to limit exposure to family cat.

At a subsequent visit six weeks later, nasal allergies had increased. Nasocort and Singulair were used daily, but no fluticasone propionate-salmeterol. Spirometry was 94 and ratio 93%, ACT was unchanged, and physical examination was unremarkable. An additional allergy, to shellfish, was discovered on skin testing. FeNO, measured with NIOX, was up to 99.6.

Because of the elevated FeNO levels and continued symptoms, Dr. Lanz persuaded the mother to enforce twice-a-day use of inhaled steroids and to remove the cat. Montelukast was discontinued, but triamcinolone acetonide nasal inhalation was increased to twice per day.

At follow-up visit, the child was asymptomatic, and the FeNO level was down to 24ppb. The mother was finally convinced that inhaled steroids were both safer and more effective and removing the cat was beneficial.

The precise NIOX reading was crucial. Dr. Lanz says, "Having an objective number is very helpful, like a sugar level or a cholesterol number. It helps the patient and the family make the decision to act and to follow through." He also says NIOX is useful for fine tuning dosages and taking patients off medications altogether if indicated clinically.