

Abbreviations

ABPA	Allergic bronchopulmonary aspergillosis	IL-4R	Interleukin-4 receptor
Af	<i>Aspergillus fumigates</i>	IL-5	Interleukin-5
AMP	Adenosine monophosphate	ILD	Interstitial lung disease
ATS	American Thoracic Society	iNOS	Inducible nitric oxide synthase
ATT	α 1-anti-trypsin	i.v.	Intravenous
BAL	Bronchoalveolar lavage	LABA	Long-acting β ₂ -agonist
BDP	Beclomethasone dipropionate	LTC4	Leukotriene C4
BMI	Body mass index	MEF _{50%}	Maximum expiratory flow at 50% of forced vital capacity
BOS	Bronchiolitis obliterans syndrome	NF-kappa B	Nuclear factor-kappa B (a transcription factor)
CD4+	Presence of CD4 antigen (on the surface of a lymphocyte)	nNO	Nasal nitric oxide
CF	Cystic fibrosis	NO	Nitric Oxide
cGMP	Cyclic guanine monophosphate	NPV	Negative predictive value
CI	Confidence interval	OB	Obliterative bronchiolitis
cNOS	Constitutive nitric oxide synthase	PCD	Primary ciliary dyskinesia
COPD	Chronic obstructive pulmonary disease	PEF	Peak expiratory flow
CRTh2	Chemoattractant receptor-homologous molecule expressed on Th2 cells	PHT	Pulmonary hypertension
ECP	Eosinophilic cationic protein	PiM	Proto-oncogene that expresses phosphokinase
EIB	Exercise-induced bronchoconstriction	PiZ, PiS	The two most common deficiency alleles of PiM
eNOS	Endothelial nitric oxide synthase	pMDI	Pressurised metered-dose inhaler
ENT	Ear, nose and throat	PPH	Primary pulmonary hypertension
ERS	European Respiratory Society	PPV	Positive predictive value
FE _{NO}	Fractional exhaled nitric oxide	RR	Relative risk
FEV ₁	Forced expiratory volume in 1 second	SIL-2R	Soluble interleukin-2 receptor
FVC	Forced vital capacity	SPH	Secondary pulmonary hypertension
GM-CSF	Granulocyte-macrophage colony-stimulating factor	SSc	Systemic sclerosis
GTP	Guanine triphosphate	STAT-1	A 'signal transducers and transcription activators' protein
HFA	Hydrofluoroalkane	TGF- β	Transforming growth factor beta
HIV	Human immunodeficiency virus	Th1, Th2	The two distinct types of helper T cells
ICS	Inhaled corticosteroid	TNF- α	Tumour necrosis factor alpha
IgE	Immunoglobulin E	uLTE4	Urinary leukotriene E4

I. Foreword

The Scientific Backgrounder discusses our current understanding of exhaled nitric oxide (NO) and its clinical utility, with emphasis on asthma.

This is the eighth edition of this publication, which now includes articles published up to the end of 2006 and some from early 2007. The publication has also been restructured, with material relating to clinical application of NO monitoring appearing first, followed by the scientific rationale, and then research applications. There are also new chapters on immunotherapy and phenotype. Valuable suggestions made during the editing process by Bengt Björkstén, Professor Emeritus of Paediatrics and Allergy Prevention at the Karolinska Institute, Stockholm, Sweden, are gratefully acknowledged.

Key developments during 2006, captured in this edition, include:

- New GINA guidelines were published, highlighting the importance of obtaining asthma control. [Global Initiative for Asthma 2006]
- Exhaled NO monitoring in the home setting was researched, using a handheld device (NIOX MINO®). Two studies demonstrated the feasibility of this approach among children and adolescents with asthma. [Pijnenburg MW *et al.* 2006; Vahlkvist S *et al.* 2006]
- Algorithms were published for interpreting exhaled NO results in day-to-day practice, [Taylor DR *et al.* 2006] while new data confirmed reference values in both a large adult population [Olin AC *et al.* 2006b] and in children. [Malmberg LP *et al.* 2006]
- New data emerged on the prognostic value of exhaled NO, allowing identification of children who will respond to inhaled corticosteroids. [Zeiger RS *et al.* 2006]

Please note, references that are new to this edition are **highlighted** in the text and the reference list.

References

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