National Heart, Lung,
and Blood Institute

National Asthma Education
and Prevention Program

Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma

Full Report 2007

U.S. Department of Health and Human Services
National Institutes of Health
National Heart, Lung, and Blood Institute

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ACKNOWLEDGMENTS AND FINANCIAL DISCLOSURES

External Review and Comment Overview

In response to a recommendation by the National Asthma Education and Prevention Program (NAEPP) Coordinating Committee, an Expert Panel was convened by the National Heart, Lung, and Blood Institute (NHLBI) to update the asthma guidelines.

Several measures were taken in the development of these asthma guidelines to enhance transparency of the evidence review process and to better manage any potential or perceived conflict of interest. In addition to using a methodologist to guide preparation of the Evidence Tables, several layers of external content review were also embedded into the guidelines development process. Expert Panel members and consultant reviewers completed financial disclosure forms that are summarized below. In addition to review by consultants, an early draft of the guidelines was circulated to a panel of guidelines end-users (the Guidelines Implementation Panel) appointed specifically for their review and feedback on ways to enhance guidelines utilization by primary care clinicians, health care delivery organizations, and third-party payors. Finally, a draft of the guidelines was posted on the NHLBI Web Site for review and comment by the NAEPP Coordinating Committee and to allow opportunity for public review and comment before the guidelines were finalized and released.

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ACRONYMS AND ABBREVIATIONS

AAI	acute asthma index
A. artemisiifolia	*Ambrosia artemisiifolia*
ABG	arterial blood gas
ABPA	allergic bronchopulmonary aspergillosis
ACE	angiotensin converting enzyme
ACIP	Advisory Committee on Immunization Practices (CDC)
ACT	Asthma Control Test
AHRQ	Agency for Healthcare Research and Quality
ALT	alanine aminotransferase (enzyme test of liver function)
Amb a 1	*Ambrosia artemisiifolia*
AQLQ	asthma-related quality of life questionnaire
ATAQ	Asthma Therapy Assessment Questionnaire
ATS	American Thoracic Society
BDP	beclomethasone dipropionate
Bla g1	*Blattella germanica 1* (cockroach allergen)
BMD	bone mineral density
BPT	bronchial provocation test
CAMP	Childhood Asthma Management Program
CBC	complete blood count
CC	Coordinating Committee
CDC	Centers for Disease Control and Prevention
CFC	chlorofluorocarbon (inhaler propellant being phased out because it harms atmosphere)
CI	confidence interval
COPD	chronic obstructive pulmonary disease
COX-2	cyclooxygenase (an enzyme)
CPAP	continuous positive airway pressure
CT	computer tomography
Der f	*Dermatophagoides farinae* (American house-dust mite)
Der p	*Dermatophagoides pteronyssinus* (European house-dust mite)
DEXA	dual energy x-ray absorptiometry
DHHS	U.S. Department of Health and Human Services
DPI	dry powder inhaler
EBC	exhaled breath concentrate
ECP	eosinophilic cationic protein
ED	emergency department
EIB	exercise-induced bronchospasm
EMS	emergency medical services
eNO	exhaled nitric oxide
EPR	Expert Panel Report EPR 1991, EPR 1997 (EPR—2), EPR—Update 2002, EPR—3: Full Report 2007 (this 2007 guidelines update)
ER	emergency room
ERS	European Respiratory Society
ETS	environmental tobacco smoke

FC□RI	high-affinity IgE receptor
FDA	U.S. Food and Drug Administration
FEF	forced expiratory flow
$FEF_{25–75}$	forced expiratory flow between 25 percent and 75 percent of the vital capacity
FeNO	fractional exhaled nitric oxide
FEV_1	forced expiratory volume in 1 second
FEV_6	forced expiratory volume in 6 seconds
FiO_2	fractional inspired oxygen
FRC	functional residual capacity
FVC	forced vital capacity
GERD	gastroesophageal reflux disease
GINA	Global Initiative for Asthma
GIP	Guidelines Implementation Panel (at NHLBI)
GM-CSF	granulocyte-macrophage colony-stimulating factor
HEPA	high-efficiency particulate air (a type of filter)
HFA	hydrofluoroalkane (inhaler propellant)
HMO	health maintenance organization
HPA	hypothalamic-pituitary-adrenal (usually used with “axis”)
HRT	hormone replacement therapy
ICS	inhaled corticosteroid(s)
ICU	intensive care unit
IFN-□	interferon-gamma
IgE	immunoglobulin E (and similar types, such as IgG)
IL-4, IL-12, etc.	interleukin-4, interleukin-12 (and similar)
IL-4R	interleukin-4 receptor (and similar)
INR	international normalized ratio
IVIG	intravenous immunoglobulin
IVMg	intravenous magnesium sulfate
LABA/LABAs	long-acting $beta_2$-agonist(s)
LTRA	leukotriene receptor antagonist
Mab or MAb	monoclonal antibody
MDC	macrophage-derived chemokines
MDI	metered-dose inhaler
MDI/DED	metered-dose inhaler (MDI) with delivery enhancement device (DED)
MeSH	Medical Subject Headings (in MEDLINE)
MIP	macrophage inflammatory protein
NAEPP	National Asthma Education and Prevention Program
NCHS	National Center for Health Statistics
NHANES	National Health and Nutrition Examination Survey (with roman numeral)
NHIS	National Health Information Survey
NHLBI	National Heart, Lung, and Blood Institute
NIH	National Institutes of Health
NK	natural killer cells

NO or NO_2	nitric oxide
NSAID	nonsteroidal anti-inflammatory drug
OR	odds ratio
OSA	obstructive sleep apnea
PCO_2	partial pressure of carbon dioxide
PCP	primary care provider (or physician)
PD20	20 percent of provocative dose
PEF	peak expiratory flow
PEFR	PEF rate
PI	pulmonary index
PI_{max}	maximal pulmonary inspiration
PICU	pediatric intensive care unit
PIV	parainfluenza virus
PM10	particulate matter ≤10 micrometers
RANTES	Regulated on Activation, Normal T Expressed and Secreted
RCT	randomized controlled trial
RR	relative risk
RSV	respiratory syncytial virus
RV	residual volume
SABA/SABAs	short-acting $beta_2$-agonist(s) (inhaled)
SaO_2	oxygen saturation
SMART	Salmeterol Multicenter Asthma Research Trial
START	Inhaled Steroid Treatment as Regular Therapy in Early Asthma study
TAA	triamcinolone acetonide
TAO	troleandomycin (antibiotic)
Th1, Th2	T cell helper 1, T cell helper 2
TLC	total lung capacity
TNF-□	tumor necrosis factor-alpha
TRUST	The Regular Use of Salbutamol Trial
USDA	U.S. Department of Agriculture
VC	vital capacity
VCD	vocal cord dysfunction
VHC	valved holding chamber
VOC	volatile organic compounds (e.g., benzene)

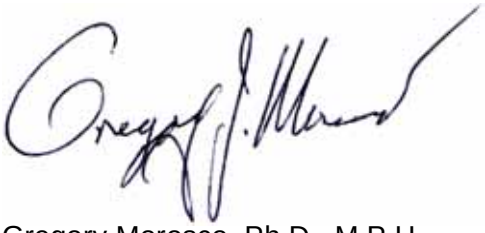
PREFACE

The Expert Panel Report 3 (EPR–3) Full Report 2007: Guidelines for the Diagnosis and Management of Asthma was developed by an expert panel commissioned by the National Asthma Education and Prevention Program (NAEPP) Coordinating Committee (CC), coordinated by the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health.

Using the 1997 EPR–2 guidelines and the 2002 update on selected topics as the framework, the expert panel organized the literature review and updated recommendations for managing asthma long term and for managing exacerbations around four essential components of asthma care, namely: assessment and monitoring, patient education, control of factors contributing to asthma severity, and pharmacologic treatment. Subtopics were developed for each of these four broad categories.

The EPR–3 Full Report has been developed under the excellent leadership of Dr. William Busse, Panel Chair. The NHLBI is grateful for the tremendous dedication of time and outstanding work of all the members of the expert panel, and for the advice from an expert consultant group in developing this report. Sincere appreciation is also extended to the NAEPP CC and the Guidelines Implementation Panel as well as other stakeholder groups (professional societies, voluntary health, government, consumer/patient advocacy organizations, and industry) for their invaluable comments during the public review period that helped to enhance the scientific credibility and practical utility of this document.

Ultimately, the broad change in clinical practice depends on the influence of local primary care physicians and other health professionals who not only provide state-of-the-art care to their patients, but also communicate to their peers the importance of doing the same. The NHLBI and its partners will forge new initiatives based on these guidelines to stimulate adoption of the recommendations at all levels, but particularly with primary care clinicians at the community level. We ask for the assistance of every reader in reaching our ultimate goal: improving asthma care and the quality of life for every asthma patient with asthma.



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