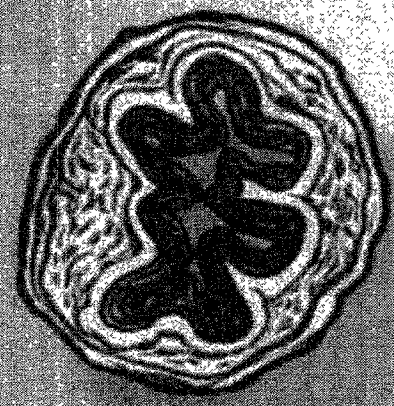
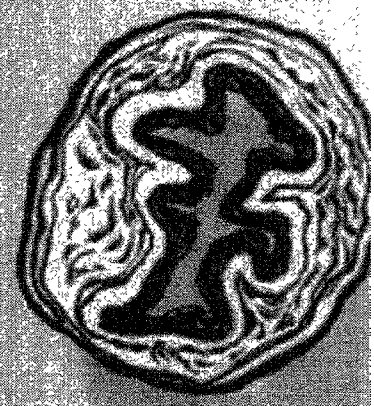
National Asthma Education and Prevention Program

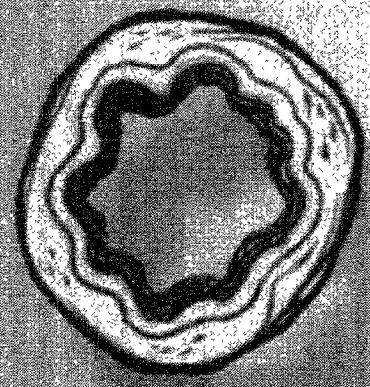
CLINICAL PRACTICE GUIDELINES

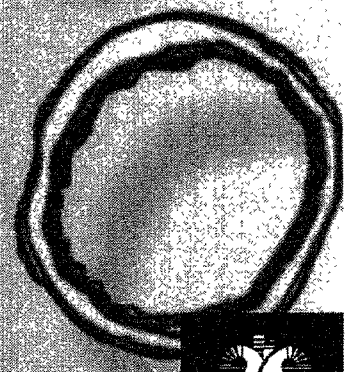


EXPERT PANEL REPORT 2

Guidelines for the Diagnosis and Management of Asthma







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CONTENTS

Second Expert Panel on the Management of Asthma vii

National Asthma Education and Prevention Program Coordinating Committee.....ix

National Asthma Education and Prevention Program Science Base Committee.....x

PREFACE xi

INTRODUCTION 1

METHODS USED TO DEVELOP THIS REPORT.....2

OVERVIEW OF THE REPORT 3
- Pathogenesis and Definition 3
- Component 1: Measures of Assessment and Monitoring 3
  - Initial Assessment and Diagnosis of Asthma.....3
  - Periodic Assessment and Monitoring 4
- Component 2: Control of Factors Contributing to Asthma Severity 4
- Component 3: Pharmacologic Therapy 4
- Component 4: Education for a Partnership in Asthma Care 5

Box 1. Major Events in the Development of EPR-2.....3

REFERENCES.....5

PATHOGENESIS AND DEFINITION.....7
- Key Points 7
- Differences From 1991 Expert Panel Report.....7

AIRWAY PATHOLOGY AND ASTHMA.....8
- Child-Onset Asthma 10
- Adult-Onset Asthma.....10

RELATIONSHIP OF AIRWAY INFLAMMATION AND LUNG FUNCTION.....10
- Airway Hyperresponsiveness 10
- Airflow Obstruction 11

RELEVANCE OF CHRONIC AIRWAY INFLAMMATION TO ASTHMA THERAPY.....11

Figure 1. Mechanisms Underlying the Definition of Asthma 8

Figure 2. Cellular Mechanisms Involved in Airway Inflammation 9

REFERENCES.....12

COMPONENT 1: MEASURES OF ASSESSMENT AND MONITORING 15

INITIAL ASSESSMENT AND DIAGNOSIS OF ASTHMA 15
- Key Points 15
- Differences From 1991 Expert Panel Report.....15

MEDICAL HISTORY 17

PHYSICAL EXAMINATION 17

PULMONARY FUNCTION TESTING (SPIROMETRY).....17

ADDITIONAL STUDIES.....19

DIFFERENTIAL DIAGNOSIS OF ASTHMA.....22

GENERAL GUIDELINES FOR REFERRAL TO AN ASTHMA SPECIALIST.....23

Box 1. Key Indicators for Considering a Diagnosis of Asthma 16

Box 2. Importance of Spirometry in Asthma Diagnosis ...20

Figure 1-1. Suggested Items for Medical History.....18

Figure 1-2. Sample Questions for the Diagnosis and Initial Assessment of Asthma.....19

Figure 1-3. Classification of Asthma Severity.....20

Figure 1-4a. Sample Spirometry Volume Time and Flow Volume Curves.....21

Figure 1-4b. Report of Spirometry Findings Pre and Post Bronchodilator.....21

Figure 1-5. Differential Diagnostic Possibilities for Asthma 22

REFERENCES.....23

PERIODIC ASSESSMENT AND MONITORING: ESSENTIAL FOR ASTHMA MANAGEMENT 25
Key Points 25
Differences From 1991 Expert Panel Report 25

GOALS OF THERAPY 26

ASSESSMENT MEASURES 26
Monitoring Signs and Symptoms of Asthma 26
Monitoring Pulmonary Function 28
Spirometry 28
Peak Flow Monitoring 28
Monitoring Quality of Life/Functional Status 34
Monitoring History of Asthma Exacerbations 35
Monitoring Pharmacotherapy 35
Monitoring Patient-Provider Communication and Patient Satisfaction 35

ASSESSMENT METHODS 35
Clinician Assessment 35
Patient Self-Assessment 38
Population-Based Assessment 38

Box 1. Peak Flow Monitoring Literature Review 31
Box 2. Differences in Peak Flow Across Racial and Ethnic Populations 34
Figure 1-6. Components of the Clinician's Followup Assessment: Sample Routine Clinical Assessment Questions 27
Figure 1-7. How To Use Your Peak Flow Meter (Patient Handout) 29
Figure 1-8. Sample Patient Self-Assessment Sheet for Followup Visits 36
Figure 1-9. Patient Self-Assessment: Example of Patient Diary 37

REFERENCES 38

COMPONENT 2:
CONTROL OF FACTORS CONTRIBUTING TO ASTHMA SEVERITY 41

Key Points 41
Differences From 1991 Expert Panel Report 41

INHALANT ALLERGENS 42
Diagnosis—Determine Relevant Inhalant Sensitivity 42
Management—Reduce Exposure 43
Immunotherapy 47
Assessment of Devices That May Modify Indoor Air 48

OCCUPATIONAL EXPOSURES 48

IRRITANTS 49
Environmental Tobacco Smoke 49
Indoor/Outdoor Air Pollution and Irritants 49

OTHER FACTORS THAT CAN INFLUENCE ASTHMA SEVERITY 50
Rhinitis/Sinusitis 50
Gastroesophageal Reflux 50
Aspirin Sensitivity 50
Sulfite Sensitivity 51
Beta-Blockers 51
Infections 51

PREVENTING THE ONSET OF ASTHMA 51

Box 1. The Strong Association Between Sensitization to Allergens and Asthma: A Summary of the Evidence 42
Box 2. Rationale for Allergy Testing for Perennial Indoor Allergens 45
Figure 2-1. Assessment Questions for Environmental and Other Factors That Can Make Asthma Worse 44
Figure 2-2. Comparison of Skin Tests With In Vitro Tests 45
Figure 2-3. Patient Interview Questions for Assessing the Clinical Significance of Positive Allergy Tests 46
Figure 2-4. Summary of Control Measures for Environmental Factors That Can Make Asthma Worse 47
Figure 2-5. Evaluation and Management of Work-Aggravated Asthma and Occupational Asthma 49

REFERENCES 51

COMPONENT 3:
PHARMACOLOGIC THERAPY 57

Key Points 57
Differences From 1991 Expert Panel Report 58

PHARMACOLOGIC THERAPY: THE MEDICATIONS 59

OVERVIEW OF THE MEDICATIONS 59
Long-Term-Control Medications 59
Corticosteroids 60
Cromolyn Sodium and Nedocromil 60
Long-Acting $Beta_2$-Agonists (Beta-Adrenergic Agonists) 60
Methylxanthines 65
Leukotriene Modifiers 65
Quick-Relief Medications 66
Short-Acting $Beta_2$-Agonists 66
Anticholinergics 66
Systemic Corticosteroids 66
Medications To Reduce Oral Systemic Corticosteroid Dependence 66
Troleandomycin, Cyclosporine, Methotrexate, Gold, Intravenous Immunoglobulin, Dapsone, and Hydroxychloroquine 66
Complementary Alternative Medicine 66

ROUTE OF ADMINISTRATION 67

SPECIAL ISSUES REGARDING SAFETY 67
Short-Acting Inhaled $Beta_2$-Agonists 67
Long-Acting Inhaled $Beta_2$-Agonists 70
Inhaled Corticosteroids 70
Local Adverse Effects 71
Systemic Adverse Effects 71

Figure 3-1. Long-Term-Control Medications 61
Figure 3-2. Quick-Relief Medications 64
Figure 3-3. Aerosol Delivery Devices 68

REFERENCES 73

PHARMACOLOGIC THERAPY: MANAGING ASTHMA LONG TERM 81

STEPWISE APPROACH FOR MANAGING ASTHMA IN ADULTS AND CHILDREN OLDER THAN 5 YEARS OF AGE 81
Gaining Control of Asthma 82
Maintaining Control of Asthma 82
Pharmacologic Steps 87
Intermittent Asthma 92
Persistent Asthma 93

SPECIAL CONSIDERATIONS FOR MANAGING ASTHMA IN DIFFERENT AGE GROUPS 94
Infants and Young Children (5 Years of Age and Younger) 94
Diagnosis 94
Treatment 95
School-Age Children (Older Than 5 Years of Age) and Adolescents 97
Assessment 97
Treatment 97
School Issues 98
Sports 98
Older Adults 98

MANAGING SPECIAL SITUATIONS IN ASTHMA 99
Seasonal Asthma 99
Cough Variant Asthma 99
Exercise-Induced Bronchospasm 100
Diagnosis 100
Management Strategies 100
Surgery and Asthma 100
Pregnancy and Asthma 101
Stress and Asthma 101

Figure 3-4a. Stepwise Approach for Managing Asthma in Adults and Children Older Than 5 Years of Age 83
Figure 3-4b. Stepwise Approach for Managing Asthma in Adults and Children Older Than 5 Years of Age: Treatment 84
Figure 3-5a. Usual Dosages for Long-Term-Control Medications 86
Figure 3-5b. Estimated Comparative Daily Dosages for Inhaled Corticosteroids 88
Figure 3-5c. Estimated Clinical Comparability of Doses for Inhaled Corticosteroids 89
Figure 3-5d. Usual Dosages for Quick-Relief Medications 91
Figure 3-6. Stepwise Approach for Managing Infants and Young Children (5 Years of Age and Younger) With Acute or Chronic Asthma Symptoms ..96

REFERENCES 101

PHARMACOLOGIC THERAPY: MANAGING EXACERBATIONS OF ASTHMA ...105

GENERAL CONSIDERATIONS 105

TREATMENT GOALS 106

HOME MANAGEMENT OF ASTHMA EXACERBATIONS 107

PREHOSPITAL EMERGENCY MEDICINE/ AMBULANCE MANAGEMENT OF ASTHMA EXACERBATIONS 110

EMERGENCY DEPARTMENT AND HOSPITAL MANAGEMENT OF ASTHMA EXACERBATIONS ...110
- Assessment 110
- Treatment 114
- Repeat Assessment 116
- Hospitalization 116
- Impending Respiratory Failure 116
- Patient Discharge 117
  - From the Emergency Department 117
  - From the Hospital 119

Figure 3-7a. Risk Factors for Death From Asthma 106
Figure 3-7b. Special Considerations for Infants 106
Figure 3-8. Management of Asthma Exacerbations: Home Treatment 108
Figure 3-9. Classifying Severity of Asthma Exacerbations 109
Figure 3-10. Dosages of Drugs for Asthma Exacerbations in Emergency Medical Care or Hospital 111
Figure 3-11. Management of Asthma Exacerbations: Emergency Department and Hospital-Based Care 112
Figure 3-12. Hospital Discharge Checklist for Patients With Asthma Exacerbations 118

REFERENCES 119

COMPONENT 4:
EDUCATION FOR A PARTNERSHIP IN ASTHMA CARE 123

Key Points 123
Differences From 1991 Expert Panel Report 123

ESTABLISH A PARTNERSHIP 124
- Teach Asthma Self-Management 125
- Jointly Develop Treatment Goals 129
- Provide the Patient With Tools for Self-Management 129
- Encourage Adherence 132
- Tailor Education to the Needs of the Individual Patient 133

MAINTAIN THE PARTNERSHIP 133

SUPPLEMENT PATIENT EDUCATION DELIVERED BY CLINICIANS 134

PROVIDE PATIENT EDUCATION IN OTHER CLINICAL SETTINGS 134

Box 1. Patient Education for Non-CFC Inhalers 125
Figure 4-1. Key Educational Messages for Patients 124
Figure 4-2. Delivery of Asthma Education by Clinicians During Patient Care Visits 126
Figure 4-3. Steps for Using Your Inhaler (Patient Handout) 128
Figure 4-4. Asthma Daily Self-Management Plan (Patient Handout) 130
Figure 4-5. Asthma Action Plan (Patient Handout) 138
Figure 4-6. Promoting Open Communication To Encourage Patient Adherence 132
Figure 4-7. School Self-Management Plan (Patient Handout) 144
Figure 4-8. Sources of Patient Education Programs and Materials 146

REFERENCES 134

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PATHOGENESIS AND DEFINITION

KEY POINTS

- Asthma, whatever the severity, is a chronic inflammatory disorder of the airways. This has implications for the diagnosis, management, and potential prevention of the disease.

- The immunohistopathologic features of asthma include:
  - Denudation of airway epithelium
  - Collagen deposition beneath basement membrane
  - Edema
  - Mast cell activation
  - Inflammatory cell infiltration
    - Neutrophils (especially in sudden-onset, fatal asthma exacerbations)
    - Eosinophils
    - Lymphocytes (TH2-like cells)

- Airway inflammation contributes to airway hyperresponsiveness, airflow limitation, respiratory symptoms, and disease chronicity.

- Airway inflammation also contributes to several forms of airflow limitation, including acute bronchoconstriction, airway edema, mucus plug formation, and airway wall remodeling. These features lead to bronchial obstruction.

- Atopy, the genetic predisposition for the development of an IgE-mediated response to common aeroallergens, is the strongest identifiable predisposing factor for developing asthma.

DIFFERENCES FROM 1991 EXPERT PANEL REPORT

- The critical role of inflammation in asthma has been further substantiated by research. It is recognized that asthma results from complex interactions among inflammatory cells, mediators, and other cells and tissues resident in the airway.

- Evidence indicates that subbasement membrane fibrosis may occur in some patients and that these changes contribute to persistent abnormalities in lung function. The importance of airway remodeling and the development of persistent airflow limitation need further exploration and may have significant implications for the treatment of asthma.