

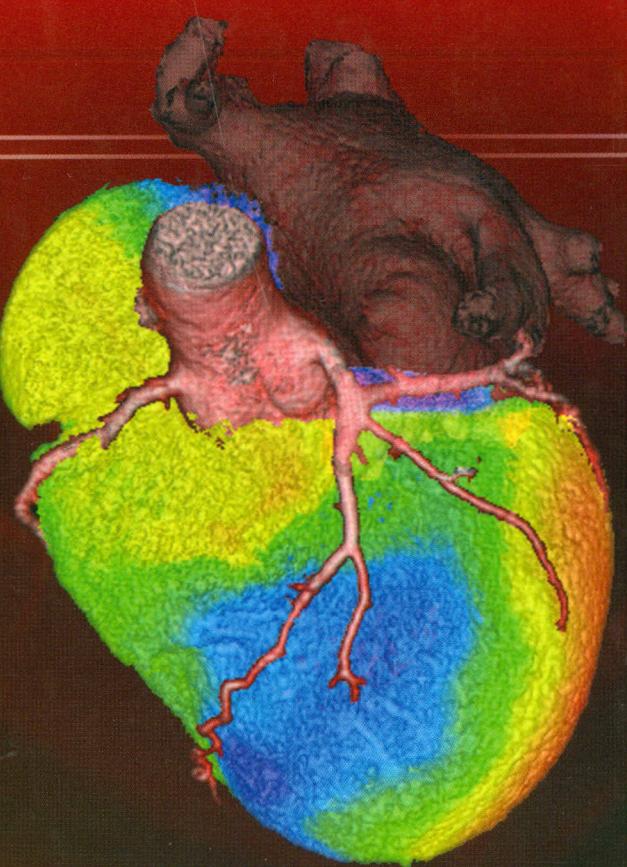
151335

Volume 2

BRAUNWALD'S

HEART DISEASE

A TEXTBOOK OF CARDIOVASCULAR MEDICINE



LIBBY

BONOW

MANN

ZIPES

EIGHTH
EDITION

SAUNDERS
ELSEVIER

Part I ■ Fundamentals of Cardiovascular Disease 1

CHAPTER 1

Global Burden of Cardiovascular Disease 1

J. Michael Gaziano

CHAPTER 2

Heart Disease in Varied Populations 23

Clyde W. Yancy

CHAPTER 3

Economics and Cardiovascular Disease 35

Mark A. Hlatky • Daniel B. Mark

CHAPTER 4

Clinical Decision-Making in Cardiology 41

Harlan M. Krumholz

CHAPTER 5

Measurement and Improvement of Quality of Cardiovascular Care 49

Thomas H. Lee

CHAPTER 6

The Principles of Drug Therapy 57

Dan M. Roden

Part II ■ Molecular Biology and Genetics 67

CHAPTER 7

Principles of Cardiovascular Molecular Biology and Genetics 67

Elizabeth G. Nabel

CHAPTER 8

General Principles of Genetic Factors in Cardiovascular Disease 85

Reed E. Pyeritz • Christine E. Seidman

CHAPTER 9

Genetics of Cardiac Arrhythmias 101

Silvia G. Priori • Carlo Napolitano • Peter J. Schwartz

CHAPTER 10

Genetic Factors in Myocardial Disease 111

Jonathan G. Seidman • Reed E. Pyeritz • Christine E. Seidman

Part III ■ Evaluation of the Patient 125

CHAPTER 11

The History and Physical Examination: An Evidence-Based Approach 125

James C. Fang • Patrick T. O'Gara

CHAPTER 12

Electrocardiography 149

David M. Mirvis • Ary L. Goldberger

GUIDELINES: Electrocardiography 190

Thomas H. Lee

CHAPTER 13

Exercise Stress Testing 195

Bernard R. Chaitman

GUIDELINES: Exercise Stress Testing 220

Thomas H. Lee

CHAPTER 14

Echocardiography 227

Heidi M. Connolly • Jae K. Oh

GUIDELINES: Use of Echocardiography 314

Thomas H. Lee

CHAPTER 15

The Chest Radiograph in Cardiovascular Disease 327

Michael A. Bettmann

CHAPTER 16

Nuclear Cardiology 345

James E. Udelson • Vasken Dilsizian • Robert O. Bonow

GUIDELINES: Nuclear Cardiology 389

Thomas H. Lee • James E. Udelson

CHAPTER 17

Cardiovascular Magnetic Resonance 393

Dudley Pennell

GUIDELINES: Appropriateness Guidelines:

Cardiovascular Magnetic Resonance 412

Thomas H. Lee

Самарский областной медицинский
информационно-аналитический центр
ОБЛАСТНАЯ НАУЧНАЯ



CHAPTER 18

Computed Tomography of the Heart 415

Stephan Achenbach • Werner G. Daniel

 **GUIDELINES:** Appropriateness Guidelines: Cardiac Computed Tomography 436
Thomas H. Lee

CHAPTER 19

Cardiac Catheterization 439

Charles J. Davidson • Robert O. Bonow

CHAPTER 20

Coronary Arteriography and Intravascular Imaging 465

Jeffrey J. Popma

 **GUIDELINES:** Coronary Arteriography 501

Thomas H. Lee

Part IV ■ Heart Failure 509

CHAPTER 21

Mechanisms of Cardiac Contraction and Relaxation 509

Lionel H. Opie

CHAPTER 22

Pathophysiology of Heart Failure 541

Douglas L. Mann

CHAPTER 23

Clinical Assessment of Heart Failure 561

Otto M. Hess • John D. Carroll

CHAPTER 24

Diagnosis and Management of Acute Heart Failure 583

John R. Teerlink

CHAPTER 25

Management of Heart Failure Patients with Reduced Ejection Fraction 611

Douglas L. Mann

CHAPTER 26

Heart Failure with Normal Ejection Fraction 641

Margaret M. Redfield

 **GUIDELINES:** Management of Heart Failure 657

Thomas H. Lee

CHAPTER 27

Surgical Management of Heart Failure 665

Patrick M. McCarthy

CHAPTER 28

Assisted Circulation in the Treatment of Heart Failure 685

Yoshifumi Naka • Eric A. Rose

CHAPTER 29

Emerging Therapies and Strategies in the Treatment of Heart Failure 697

Stefanie Dimmeler • Douglas L. Mann • Andreas M. Zeiher

CHAPTER 30

Care of Patients with End-Stage Heart Disease 717

Linda L. Emanuel • Robert O. Bonow

Part V ■ Arrhythmias, Sudden Death, and Syncope 727

CHAPTER 31

Genesis of Cardiac Arrhythmias: Electrophysiological Considerations 727

Michael Rubart • Douglas P. Zipes

CHAPTER 32

Diagnosis of Cardiac Arrhythmias 763

John M. Miller • Douglas P. Zipes

CHAPTER 33

Therapy for Cardiac Arrhythmias 779

John M. Miller • Douglas P. Zipes

 **GUIDELINES:** Ambulatory Electrocardiographic and Electrophysiological Testing 823
Thomas H. Lee

CHAPTER 34

Cardiac Pacemakers and Cardioverter-Defibrillators 831

David L. Hayes • Douglas P. Zipes

 **GUIDELINES:** Cardiac Pacemakers and Cardioverter-Defibrillators 854
Thomas H. Lee

CHAPTER 35

Specific Arrhythmias: Diagnosis and Treatment 863

Jeffrey E. Olgin • Douglas P. Zipes

 **GUIDELINES:** Atrial Fibrillation 923
Thomas H. Lee

CHAPTER 36

Cardiac Arrest and Sudden Cardiac Death 933

Robert J. Myerburg • Agustín Castellanos

**CHAPTER 37****Hypotension and Syncope** 975

Hugh Calkins • Douglas P. Zipes

Part VI ■ Preventive Cardiology 985**CHAPTER 38****The Vascular Biology of Atherosclerosis** 985

Peter Libby

CHAPTER 39**Risk Factors for Atherothrombotic Disease** 1003

Paul M. Ridker • Peter Libby

CHAPTER 40**Systemic Hypertension: Mechanisms and Diagnosis** 1027

Ronald G. Victor • Norman M. Kaplan

CHAPTER 41**Systemic Hypertension: Therapy** 1049

Norman M. Kaplan

**GUIDELINES: Treatment of Hypertension** 1068

Thomas H. Lee

CHAPTER 42**Lipoprotein Disorders and Cardiovascular Disease** 1071

Jacques Genest • Peter Libby

CHAPTER 43**Diabetes Mellitus, the Metabolic Syndrome, and Atherosclerotic Vascular Disease** 1093

Joshua A. Beckman • Peter Libby • Mark A. Creager

CHAPTER 44**Nutrition and Cardiovascular Disease** 1107

Ronald M. Krauss

CHAPTER 45**Primary and Secondary Prevention of Coronary Heart Disease** 1119

J. Michael Gaziano • JoAnn E. Manson • Paul M. Ridker

CHAPTER 46**Exercise-Based, Comprehensive Cardiac Rehabilitation** 1149

Paul D. Thompson

CHAPTER 47**Complementary and Alternative Approaches to Management of Patients with Heart Disease** 1157

John H. K. Vogel • Rebecca B. Costello • Mitchell W. Krucoff

Part VII ■ Atherosclerotic Cardiovascular Disease 1167**CHAPTER 48****Coronary Blood Flow and Myocardial Ischemia** 1167

John M. Cantly, Jr.

CHAPTER 49**Approach to the Patient with Chest Pain** 1195

Christopher P. Cannon • Thomas H. Lee

CHAPTER 50**ST-Elevation Myocardial Infarction: Pathology, Pathophysiology, and Clinical Features** 1207

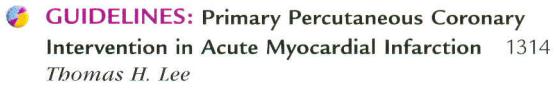
Elliott M. Antman • Eugene Braunwald

CHAPTER 51**ST-Elevation Myocardial Infarction: Management** 1233

Elliott M. Antman

CHAPTER 52**Primary Percutaneous Coronary Intervention in the Management of Acute Myocardial Infarction** 1301

Gary E. Lane • David R. Holmes, Jr.

**GUIDELINES: Primary Percutaneous Coronary Intervention in Acute Myocardial Infarction** 1314

Thomas H. Lee

CHAPTER 53**Unstable Angina and Non-ST Elevation Myocardial Infarction** 1319

Christopher P. Cannon • Eugene Braunwald

**GUIDELINES: Unstable Angina and Non-ST Elevation Myocardial Infarction** 1344

Thomas H. Lee

CHAPTER 54**Chronic Coronary Artery Disease** 1353

David A. Morrow • Bernard J. Gersh

**GUIDELINES: Chronic Stable Angina** 1405

Thomas H. Lee • David A. Morrow



CHAPTER 55

Percutaneous Coronary and Valvular Intervention 1419

Jeffrey J. Popma • Donald S. Baim •
Frederic S. Resnic

 **GUIDELINES:** Percutaneous Coronary and Valvular Intervention 1449
Thomas H. Lee

CHAPTER 56

Diseases of the Aorta 1457

Eric M. Isselbacher

CHAPTER 57

Peripheral Arterial Diseases 1491

Mark A. Creager • Peter Libby

CHAPTER 58

Prevention and Management of Stroke 1515

Larry B. Goldstein

CHAPTER 59

Endovascular Treatment of Noncoronary Obstructive Vascular Disease 1523

Andrew C. Eisenhauer • Christopher J. White

CHAPTER 60

Diabetes and Heart Disease 1547

Richard W. Nesto

Part VIII ■ Diseases of the Heart, Pericardium, and Pulmonary Vasculature Bed 1561

CHAPTER 61

Congenital Heart Disease 1561

Gary D. Webb • Jeffrey F. Smallhorn •
Judith Therrien • Andrew N. Redington

CHAPTER 62

Valvular Heart Disease 1625

Catherine M. Otto • Robert O. Bonow

 **GUIDELINES:** Management of Valvular Heart Disease 1693
Thomas H. Lee • Robert O. Bonow

CHAPTER 63

Infective Endocarditis 1713

Adolf W. Karchmer

 **GUIDELINES:** Infective Endocarditis 1734
Thomas H. Lee

CHAPTER 64

The Dilated, Restrictive, and Infiltrative Cardiomyopathies 1739

Joshua M. Hare

CHAPTER 65

Hypertrophic Cardiomyopathy 1763

Barry J. Maron

CHAPTER 66

Myocarditis 1775

Peter P. Liu • Heinz-Peter Schultheiss

CHAPTER 67

Cardiovascular Abnormalities in HIV-Infected Individuals 1793

Stacy D. Fisher • Steven E. Lipshultz

CHAPTER 68

Toxins and the Heart 1805

Richard A. Lange • L. David Hillis

CHAPTER 69

Primary Tumors of the Heart 1815

Bruce McManus • Cheng-Han Lee

CHAPTER 70

Pericardial Diseases 1829

Martin M. LeWinter

CHAPTER 71

Traumatic Heart Disease 1855

Matthew J. Wall, Jr. • Danny Chu •
Kenneth L. Mattox

CHAPTER 72

Pulmonary Embolism 1863

Samuel Z. Goldhaber

CHAPTER 73

Pulmonary Hypertension 1883

Stuart Rich • Vallerie V. McLaughlin

CHAPTER 74

Sleep Apnea and Cardiovascular Disease 1915

Apoor S. Gami • Virend K. Somers

Part IX ■ Cardiovascular Disease in Special Populations 1923

CHAPTER 75

Cardiovascular Disease in the Elderly 1923

Janice B. Schwartz • Douglas P. Zipes



CHAPTER 76

Cardiovascular Disease in Women 1955

L. Kristin Newby • Pamela S. Douglas

CHAPTER 77

Pregnancy and Heart Disease 1967

Carole A. Warnes

 **GUIDELINES:** *Pregnancy and Heart Disease* 1979

Thomas H. Lee

CHAPTER 78

Exercise and Sports Cardiology 1983

Gary J. Balady • Philip A. Ades

CHAPTER 79

Medical Management of the Patient Undergoing Cardiac Surgery 1993

Richard J. Gray • Dhun H. Sethna

CHAPTER 80

Anesthesia and Noncardiac Surgery in Patients with Heart Disease 2013

Lee A. Fleisher • Kim A. Eagle

 **GUIDELINES:** *Reducing Cardiac Risk with Noncardiac Surgery* 2028

Thomas H. Lee

Part X ■ Cardiovascular Disease and Disorders of Other Organs 2033

CHAPTER 81

Endocrine Disorders and Cardiovascular Disease 2033

Irwin Klein

CHAPTER 82

Hemostasis, Thrombosis, Fibrinolysis, and Cardiovascular Disease 2049

Barbara A. Konkle • Daniel Simon • Andrew I. Schafer

CHAPTER 83

Rheumatic Fever 2079

B. Soma Raju • Zoltan G. Turi

CHAPTER 84

Rheumatic Diseases and the Cardiovascular System 2087

Brian F. Mandell • Gary S. Hoffman

CHAPTER 85

The Cancer Patient and Cardiovascular Disease 2105

Thomas Force

CHAPTER 86

Psychiatric and Behavioral Aspects of Cardiovascular Disease 2119

Lawson R. Wulsin • Arthur J. Barsky

CHAPTER 87

Neurological Disorders and Cardiovascular Disease 2135

William J. Groh • Douglas P. Zipes

CHAPTER 88

Interface Between Renal Disease and Cardiovascular Illness 2155

Peter A. McCullough

CHAPTER 89

Cardiovascular Manifestations of Autonomic Disorders 2171

Suraj Kapa • Virend K. Somers

Disclosure Index DI-1

Index I-1