

Expert CONSULT

Activate at [expertconsult.com](http://expertconsult.com)

Searchable Full  
Text Online

BROCKLEHURST'S

TEXTBOOK OF  
**GERIATRIC MEDICINE**  
AND **GERONTOLOGY**

*Seventh Edition*



Howard M. Fillit  
Kenneth Rockwood  
Kenneth Woodhouse

SAUNDERS  
ELSEVIER

# Contents

## Section I: Gerontology

### *Introduction to Gerontology*

- 1 Introduction: Aging, Frailty, and Geriatric Medicine  
Howard M. Fillit, Kenneth Rockwood, and Kenneth Woodhouse
- 2 The Epidemiology of Aging  
Norman Vetter
- 3 The Future of Old Age  
Kenneth G. Manton

### *Biological Gerontology*

- 4 Evolution Theory and the Mechanisms of Aging  
Thomas B. L. Kirkwood
- 5 Methodological Problems of Research in Older People  
Antony Bayer
- 6 Biology of Aging  
Huber R. Warner, Felipe Sierra, and LaDora V. Thompson
- 7 Genetic Mechanisms of Aging  
Chao-Qiang Lai, Laurence D. Parnell, and Jose M. Ordovas
- 8 Cellular Mechanisms of Aging  
Robert Santer
- 9 Physiology of Aging  
Edward J. Masoro
- 10 A Clinico-Mathematical Model of Aging  
Kenneth Rockwood and Arnold Mitnitski

### *Medical Gerontology*

- 12 Connective Tissues and Aging  
Nicholas A. Kefalides and Zahra Ziae
- 13 Clinical Immunology: Immune Senescence and the Acquired Immune Deficiency of Aging  
Mohan K. Tummala, Dennis D. Taub, and William B. Ershler
- 14 Effects of Aging on the Cardiovascular System  
Susan E. Howlett

15	Age-Related Changes in the Respiratory System Gwyneth A. Davies and Charlotte E. Bolton	97
16	Neurologic Signs in the Elderly Rawan Tarawneh and James E. Galvin	101
17	Geriatric Gastroenterology: Overview Richard C. Feldstein, Robert E. Tepper, and Seymour Katz	106
18	Aging of the Urinary Tract Phillip P. Smith and George A. Kuchel	111
19	Bone and Joint Aging Celia L. Gregson	117
20	Aging and the Endocrine System Harvinder S. Chahal and William M. Drake	123
21	Aging and the Blood Michael A. McDevitt	127
22	Aging and the Skin Emma C. Veysey and Andrew Y. Finlay	133
23	The Pharmacology of Aging David R. P. Guay	138
24	Antiaging Medicine John E. Morley, Ligia J. Dominguez, and Mario Barbagallo	145
42	<i>Neurogerontology</i>	
51	25 The Neurobiology of Aging: Free Radical Stress and Metabolic Pathways Tomohiro Nakamura, Malene Hansen, Sean M. Oldham, and Stuart A. Lipton	150
59	26 Allostasis and Allostatic Overload in the Context of Aging Bruce S. McEwen	158
66	27 Neuroendocrinology of Aging Roberta Diaz Brinton	163
73	28 Normal Cognitive Aging Jane Martin and Michelle Gorenstein	170
82	29 The Aging Personality and Self: Diversity and Health Issues Julie Blaskewicz Boron, K. Warner Schaie, and Sherry L. Willis	178

<i>Social Gerontology</i>																																																																																															
30 Successful Aging: The Centenarians Thomas T. Perls	184	47 Vascular Surgery Arnab Bhowmick and Charles N. McCollum	348																																																																																												
31 Social Gerontology Paul Higgs and James Nazroo	187	48 Venous Thromboembolism in the Elderly Hamsaraj G. M. Shetty, Ian A. Campbell, and Philip A. Routledge	356																																																																																												
32 Productive Aging Robert N. Butler	193	<i>The Respiratory System</i>																																																																																													
33 Social Vulnerability in Old Age Melissa K. Andrew	198			49 Asthma and Chronic Obstructive Pulmonary Disease Sidney S. Braman and Muhammed Abu-Hijleh	362	<b>Section II: Geriatric Medicine</b>		50 Nonobstructive Lung Disease and Thoracic Tumors Katie Pink and Ben Hope-Gill	376	<i>Evaluation of the Geriatric Patient</i>				34 Presentation of Disease in Old Age Sonja Rosen, Brandon Koretz, and David B. Reuben	205	<i>The Nervous System</i>		35 Multidimensional Geriatric Assessment Laurence Z. Rubenstein and Lisa V. Rubenstein	211			51 Dementia Diagnosis Richard Camicioli and Kenneth Rockwood	385	36 Laboratory Medicine in Geriatrics Alexander Lapin	218			52 Presentation and Clinical Management of Dementia Antony Bayer	392	37 Social Assessment of Geriatric Patients Rosalie A. Kane	223			53 Neuropsychology in the Diagnosis and Treatment of Dementia Margaret C. Sewell, Andrew Vigario, and Mary Sano	402	38 Surgery and Anesthesia in Old Age D. Gwyn Seymour	230			54 Alzheimer's Disease Martin R. Farlow	411	39 Measuring Outcomes of Multidimensional Interventions Paul Stolee	245			55 Vascular Cognitive Impairment Paige A. Moorhouse and Kenneth Rockwood	421	<i>Cardiovascular System</i>				56 Frontotemporal Dementia Kristel Sleegers and Christine Van Broeckhoven	428	40 Chronic Cardiac Failure Neil D. Gillespie, Miles D. Witham, and Allan D. Struthers	272			57 Functional Psychiatric Illness in Old Age Cornelius Katona, Gill Livingston, and Claudia Cooper	433	41 Diagnosis and Management of Coronary Artery Disease Wilbert S. Aronow	286			58 The Older Adult with Intellectual Disability John M. Starr	445	42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498
		49 Asthma and Chronic Obstructive Pulmonary Disease Sidney S. Braman and Muhammed Abu-Hijleh	362																																																																																												
<b>Section II: Geriatric Medicine</b>		50 Nonobstructive Lung Disease and Thoracic Tumors Katie Pink and Ben Hope-Gill	376																																																																																												
<i>Evaluation of the Geriatric Patient</i>																																																																																															
34 Presentation of Disease in Old Age Sonja Rosen, Brandon Koretz, and David B. Reuben	205	<i>The Nervous System</i>																																																																																													
35 Multidimensional Geriatric Assessment Laurence Z. Rubenstein and Lisa V. Rubenstein	211			51 Dementia Diagnosis Richard Camicioli and Kenneth Rockwood	385	36 Laboratory Medicine in Geriatrics Alexander Lapin	218			52 Presentation and Clinical Management of Dementia Antony Bayer	392	37 Social Assessment of Geriatric Patients Rosalie A. Kane	223			53 Neuropsychology in the Diagnosis and Treatment of Dementia Margaret C. Sewell, Andrew Vigario, and Mary Sano	402	38 Surgery and Anesthesia in Old Age D. Gwyn Seymour	230			54 Alzheimer's Disease Martin R. Farlow	411	39 Measuring Outcomes of Multidimensional Interventions Paul Stolee	245			55 Vascular Cognitive Impairment Paige A. Moorhouse and Kenneth Rockwood	421	<i>Cardiovascular System</i>				56 Frontotemporal Dementia Kristel Sleegers and Christine Van Broeckhoven	428	40 Chronic Cardiac Failure Neil D. Gillespie, Miles D. Witham, and Allan D. Struthers	272			57 Functional Psychiatric Illness in Old Age Cornelius Katona, Gill Livingston, and Claudia Cooper	433	41 Diagnosis and Management of Coronary Artery Disease Wilbert S. Aronow	286			58 The Older Adult with Intellectual Disability John M. Starr	445	42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																		
		51 Dementia Diagnosis Richard Camicioli and Kenneth Rockwood	385																																																																																												
36 Laboratory Medicine in Geriatrics Alexander Lapin	218			52 Presentation and Clinical Management of Dementia Antony Bayer	392	37 Social Assessment of Geriatric Patients Rosalie A. Kane	223			53 Neuropsychology in the Diagnosis and Treatment of Dementia Margaret C. Sewell, Andrew Vigario, and Mary Sano	402	38 Surgery and Anesthesia in Old Age D. Gwyn Seymour	230			54 Alzheimer's Disease Martin R. Farlow	411	39 Measuring Outcomes of Multidimensional Interventions Paul Stolee	245			55 Vascular Cognitive Impairment Paige A. Moorhouse and Kenneth Rockwood	421	<i>Cardiovascular System</i>				56 Frontotemporal Dementia Kristel Sleegers and Christine Van Broeckhoven	428	40 Chronic Cardiac Failure Neil D. Gillespie, Miles D. Witham, and Allan D. Struthers	272			57 Functional Psychiatric Illness in Old Age Cornelius Katona, Gill Livingston, and Claudia Cooper	433	41 Diagnosis and Management of Coronary Artery Disease Wilbert S. Aronow	286			58 The Older Adult with Intellectual Disability John M. Starr	445	42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																								
		52 Presentation and Clinical Management of Dementia Antony Bayer	392																																																																																												
37 Social Assessment of Geriatric Patients Rosalie A. Kane	223			53 Neuropsychology in the Diagnosis and Treatment of Dementia Margaret C. Sewell, Andrew Vigario, and Mary Sano	402	38 Surgery and Anesthesia in Old Age D. Gwyn Seymour	230			54 Alzheimer's Disease Martin R. Farlow	411	39 Measuring Outcomes of Multidimensional Interventions Paul Stolee	245			55 Vascular Cognitive Impairment Paige A. Moorhouse and Kenneth Rockwood	421	<i>Cardiovascular System</i>				56 Frontotemporal Dementia Kristel Sleegers and Christine Van Broeckhoven	428	40 Chronic Cardiac Failure Neil D. Gillespie, Miles D. Witham, and Allan D. Struthers	272			57 Functional Psychiatric Illness in Old Age Cornelius Katona, Gill Livingston, and Claudia Cooper	433	41 Diagnosis and Management of Coronary Artery Disease Wilbert S. Aronow	286			58 The Older Adult with Intellectual Disability John M. Starr	445	42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																														
		53 Neuropsychology in the Diagnosis and Treatment of Dementia Margaret C. Sewell, Andrew Vigario, and Mary Sano	402																																																																																												
38 Surgery and Anesthesia in Old Age D. Gwyn Seymour	230			54 Alzheimer's Disease Martin R. Farlow	411	39 Measuring Outcomes of Multidimensional Interventions Paul Stolee	245			55 Vascular Cognitive Impairment Paige A. Moorhouse and Kenneth Rockwood	421	<i>Cardiovascular System</i>				56 Frontotemporal Dementia Kristel Sleegers and Christine Van Broeckhoven	428	40 Chronic Cardiac Failure Neil D. Gillespie, Miles D. Witham, and Allan D. Struthers	272			57 Functional Psychiatric Illness in Old Age Cornelius Katona, Gill Livingston, and Claudia Cooper	433	41 Diagnosis and Management of Coronary Artery Disease Wilbert S. Aronow	286			58 The Older Adult with Intellectual Disability John M. Starr	445	42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																				
		54 Alzheimer's Disease Martin R. Farlow	411																																																																																												
39 Measuring Outcomes of Multidimensional Interventions Paul Stolee	245			55 Vascular Cognitive Impairment Paige A. Moorhouse and Kenneth Rockwood	421	<i>Cardiovascular System</i>				56 Frontotemporal Dementia Kristel Sleegers and Christine Van Broeckhoven	428	40 Chronic Cardiac Failure Neil D. Gillespie, Miles D. Witham, and Allan D. Struthers	272			57 Functional Psychiatric Illness in Old Age Cornelius Katona, Gill Livingston, and Claudia Cooper	433	41 Diagnosis and Management of Coronary Artery Disease Wilbert S. Aronow	286			58 The Older Adult with Intellectual Disability John M. Starr	445	42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																										
		55 Vascular Cognitive Impairment Paige A. Moorhouse and Kenneth Rockwood	421																																																																																												
<i>Cardiovascular System</i>				56 Frontotemporal Dementia Kristel Sleegers and Christine Van Broeckhoven	428	40 Chronic Cardiac Failure Neil D. Gillespie, Miles D. Witham, and Allan D. Struthers	272			57 Functional Psychiatric Illness in Old Age Cornelius Katona, Gill Livingston, and Claudia Cooper	433	41 Diagnosis and Management of Coronary Artery Disease Wilbert S. Aronow	286			58 The Older Adult with Intellectual Disability John M. Starr	445	42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																																
		56 Frontotemporal Dementia Kristel Sleegers and Christine Van Broeckhoven	428																																																																																												
40 Chronic Cardiac Failure Neil D. Gillespie, Miles D. Witham, and Allan D. Struthers	272			57 Functional Psychiatric Illness in Old Age Cornelius Katona, Gill Livingston, and Claudia Cooper	433	41 Diagnosis and Management of Coronary Artery Disease Wilbert S. Aronow	286			58 The Older Adult with Intellectual Disability John M. Starr	445	42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																																						
		57 Functional Psychiatric Illness in Old Age Cornelius Katona, Gill Livingston, and Claudia Cooper	433																																																																																												
41 Diagnosis and Management of Coronary Artery Disease Wilbert S. Aronow	286			58 The Older Adult with Intellectual Disability John M. Starr	445	42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																																												
		58 The Older Adult with Intellectual Disability John M. Starr	445																																																																																												
42 The Frail Elderly Patient with Heart Disease George A. Heckman and Kenneth Rockwood	295			59 Epilepsy Khalid Hamandi	453	43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																																																		
		59 Epilepsy Khalid Hamandi	453																																																																																												
43 Hypertension John F. Potter	300			60 Headache and Facial Pain Gerry J. F. Saldanha	466	44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																																																								
		60 Headache and Facial Pain Gerry J. F. Saldanha	466																																																																																												
44 Valvular Heart Disease Wilbert S. Aronow	312			61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478	45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																																																														
		61 Stroke: Epidemiology and Pathology Amanda G. Thrift and Velandai K. Srikanth	478																																																																																												
45 Cardiac Arrhythmias Wilbert S. Aronow	327			62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484	46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																																																																				
		62 Stroke: Clinical Presentation, Management and Organization of Services Velandai K. Srikanth and Thanh G. Phan	484																																																																																												
46 Syncope Rose Anne Kenny	338			63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																																																																										
		63 Disorders of the Autonomic Nervous System Horacio Kaufmann and Italo Biaggioni	498																																																																																												

64	Parkinsonism and Other Movement Disorders Jolyon Meara	511	82 Nutrition in Aging C. Shanthi Johnson and Gordon Sacks	678
65	Neuromuscular Disorders Timothy J. Doherty and Michael W. Nicolle	520	83 Obesity Krupa Shah and Dennis T. Villareal	685
66	Intracranial Tumors David H. Rosenbaum, Michael L. Gruber, and Mary V. MacNeil	533	<i>The Urinary Tract</i>	
67	Disorders of the Spinal Cord and Nerve Roots Sean D. Christie and Richard A. Cowie	539	84 Diseases of the Aging Kidney Latana A. Munang and John M. Starr	690
68	Infections of the Central Nervous System Steven L. Berk and James W. Myers	546	85 Disorders of Water, Electrolyte, and Mineral Ion Metabolism M. Shawkat Razzaque	697
<i>Musculoskeletal System</i>				
69	Metabolic Bone Disease Roger M. Francis	553	86 The Prostate Nicholas J. R. George	701
70	Arthritis in the Elderly David L. Scott	566	<i>Women's Health</i>	
71	Connective Tissue Diseases Anthony J. Freemont	577	87 Gynecologic Disorders in the Elderly Tara K. Cooper and Oliver Milling Smith	716
72	Orthopedic Geriatrics Robert Victor Cantu and Kenneth J. Koval	583	88 Cancer of the Breast in the Elderly Lodovico Balducci	726
73	Sarcopenia Yves Rolland and Bruno Vellas	587	<i>Endocrinology</i>	
74	Podiatry Katherine Ward, Mark A. Kosinski, and Bryan Markinson	594	89 Adrenal and Pituitary Disorders Paul E. Belchetz and Peter Hammond	730
<i>Gastroenterology</i>				
75	Geriatric Dentistry: Maintaining Oral Health in the Geriatric Population Andrea Schreiber and Robert Glickman	599	90 Disorders of the Thyroid Myron Miller	737
76	The Upper Gastrointestinal Tract David A. Greenwald and Lawrence J. Brandt	608	91 Disorders of the Parathyroid Glands Jane Turton, Michael Stone, and David E. C. Cole	755
77	The Pancreas Ceri Beaton and Malcolm C. A. Puntis	626	92 Diabetes Mellitus Alan J. Sinclair and Simon C. M. Croxson	760
78	The Liver Joanna Hurley and John Trevor Green	635	<i>Hematology and Oncology</i>	
79	Biliary Tract Diseases Elias Xirouchakis and Andrew K. Burroughs	645	93 Blood Disorders in the Elderly Bindu Kanapuru and William B. Ersler	775
80	The Small Bowel Christopher A. Rodrigues	652	94 Geriatric Oncology Margot A. Gosney	791
81	The Large Bowel Arnold Wald	661	<i>Skin and Special Senses</i>	
			95 Skin Disease and Old Age Gopal A. Patel, Gangaram Ragi, W. Clark Lambert, and Robert A. Schwartz	801
			96 Aging and Disorders of the Eye Scott E. Brodie	810
			97 Disorders of Hearing Barbara E. Weinstein	822

<b>Section III: Problem-Based Geriatric Medicine Prevention and Health Promotion</b>			
98 Health Promotion for the Community-Living Older Adult Maureen F. Markle-Reid, Heather H. Keller, and Gina Browne	835	113 The Mistreatment and Neglect of Older People Anthea Tinker, Simon G. Biggs and Jill Manthorpe	959
99 Preventive and Anticipatory Care James T. Pacala	848	114 Pain in the Older Adult Patricia Bruckenthal	965
100 Sexuality in Old Age Robert N. Butler and Myrna I. Lewis	854	115 Palliative Medicine for the Elderly Patient Ilora Finlay and Margred Capel	973
101 Exercise for Successful Aging William J. Evans	859	116 Ethical Issues in Geriatric Medicine Søren Holm	983
102 Injury in Older People Mujtaba Hasan	865		
103 Rehabilitation: Therapy Techniques Valerie M. Pomeroy and Marion F. Walker	870		
103B Rehabilitation: General Principles Available online only at <a href="http://www.expertconsult.com">www.expertconsult.com</a> John Young		117 The Elderly in Society: An International Perspective Robert N. Butler and Oleg Volkov	988
<i>Geriatric Syndromes</i>		118 Geriatrics in Europe Peter Crome	997
104 Geriatric Pharmacotherapy and Polypharmacy Joseph T. Hanlon, Steven M. Handler, Robert L. Maher, and Kenneth E. Schmader	880	119 Geriatrics in North America David B. Hogan	1005
105 Impaired Mobility Ruth E. Hubbard, Eamonn Eeles, and Kenneth Rockwood	886	120 Geriatrics in the Rest of the World Jean Woo	1010
106 Falls Stephanie A. Studenski	894	121 Geriatrics in Latin America Jorge H. Lopez and Renato Maia Guimarães	1016
107 Delirium Eamonn Eeles and Ravi S. Bhat	903	122 Long-Term Care in the United Kingdom Clive Bowman	1021
108 Constipation and Fecal Incontinence in Old Age Danielle Harari	909	123 Institutional Long-Term Care in the United States Luis F. Samos, Enrique Aguilar, and Joseph G. Ouslander	1026
109 Urinary Incontinence Adrian Wagg	926	124 Education in Geriatric Medicine Ruth E. Hubbard	1032
110 Pressure Sores Bryan D. Struck	939	125 Improving Quality of Care in the United Kingdom David A. Black	1038
111 Sleep, Aging, and Late-Life Insomnia Holly J. Ramsawh, Harrison G. Bloom, and Sonia Ancoli-Israel	943	126 Preserving Medicare Through a "Quality" Focus Richard G. Stefanacci	1046
112 Malnutrition in Older Adults Larry E. Johnson and Dennis H. Sullivan	949	127 Managed Care for Older Americans Richard G. Stefanacci	1057
		128 Telemedicine Applications in Geriatrics Stuti Dang, Adam G. Golden, Herman S. Cheung, and Bernard A. Roos	1064
		Index	1071