PREFACE	
DEDICATION	i
LIST OF CONTRIBUTORS	ii
CHAPTER 1 THE BASIS OF GERIATRIC MEDICINE	3
Jeremy W. Grabbe	
HISTORY OF GERIATRIC MEDICINE	3
BASIS OF AGING	4
FUTURE DIRECTIONS	5
CONFLICT OF INTEREST	6
ACKNOWLEDGEMENTS	
REFERENCES	6
CHAPTER 2 HEALTH AND ECONOMIC CONSEQUENCES OF AGING IN US	7
Rashmita Basu	
INTRODUCTION	7
Formal versus Informal Care	9
Availability of Informal Caregivers and Constraints	9
Dual Pressures of Informal Caregiving and Employment	10
Caregiving With and Without Dementia	11
Economic Consequences of Aging	12
Economic Burden of LTSS	13
Characteristics of LTCI Market	13
Risks of using LTSS and Financial Challenges	15
Economic Consequences of Aging: Social Security and Income Security after Retirement	17
Uncertainty and Its Implications	18
Financial Resources of Future Retirees	19
Social Security, Health and Labor Market Behavior	21
Conclusion-Future Agenda	
CONFLICT OF INTEREST	
ACKNOWLEDGEMENTS	
REFERENCES	23
CHAPTER 3 PHYSICAL CHANGES IN AGE	25
Daniela Fabiani-Longo, Kayla Bishop, James Mullen, Caitlin Murphy, Jesselee Allen, Virginia Cornelius,	
Jocelyn Dismore, Kathyrn McGeoch and Jeremy W. Grabbe	
INTRODUCTION	25
Muscular Skeletal System	
Mobility	
Cardio-Vascular System	
Respiratory System	
Excretory System	
Female Reproductive System	28
Male Reproductive System	
Digestive System	29
Autonomic Nervous System	30
Sensory Systems	
Visual System	
Hearing	
Gustation and Olfaction	
Tactile Perception	
Endocrine System	35
Immune System	
CONCLUSION	
CONFLICT OF INTEREST	37

## CONTENTS

ACKNOWLEDGEMENTS	
REFERENCES	
CHAPTER 4 COGNITIVE CHANGES IN AGING	
Ann McCarthy and Jeremy W. Grabbe	
INTRODUCTION	
AGING AND CONGNITIVE CHANGES	42
ATTENTION	
MEMORY	45
INFORMATION PROCESSING MODELS	46
IMMEDIATE MEMMORY	47
IMPLICIT AND EXPLICIT MEMORY	
LONG-TERM MEMORY	
RETROSPECTIVE VS. PROSPECTIVE MEMORY	
INTELLIGENCE AND WISDOM	
INTELLIGENCE	
FLUID VS. CRYSTALLIZED INTELLIGENCE	
WISDOM AND EVERYDAY INTELLIGENCE/SOCIAL COGNITION	
NORMAL VS. ABNORMAL COGNITIVE LOSS	55
CONCLUSION	
CONFLICT OF INTEREST	
ACKNOWLEDGEMENTS	56
REFERENCES	
CHAPTER 5 OSTEOPOROSIS	60
Tamara Pobocik	
INTRODUCTION	60
Pathology	
Risk Factors of Osteoporosis	
Common Presentations	
Cost of Osteoporosis	65
Interventions	
Diet Considerations	66
Treatment	
Psychological Information	
Importance of Collaboration	
CONCLUSION	
CONFLICT OF INTEREST	
ACKNOWLEDGEMENTS	
REFERENCES	
CHAPTER 6 VISION CHANGES AND OCULAR DISORDERS	
Jeremy W. Grabbe	
NORMAL CHANGES	
OCULAR DISORDERS	
Cataracts	
Glaucoma	
Macular Degeneration	
Diabetes: Diabetic Retinopathy and Diabetic Macular Edema	
Use of Vision Aids Prescription	
Types of LVAs	
Treatments for Diabetic Retinopathy	
CONCLUSION	
CONFLICT OF INTEREST	
ACKNOWLEDGEMENTS	
REFERENCES	

CHAPTER 7 DISORDERED SLEEP AMONG OLDER ADULTS	
Robert E. Davis and Paul D. Loprinzi	94
INTRODUCTION	
ASSOCIATION BETWEEN SLEEP AND NEGATIVE HEALTH CONDITIONS	
Cardiovascular Health	
Cognition and Mental Health	
Physical Functioning and Chronic Pain	
EFFICACY OF DIFFERENT TREATMENT METHODS FOR SLEEP DISTURBANCES	
Sleep Hygiene	
Pharmacology	
Exercise & Sleep	
CONCLUSION	
CONFLICT OF INTEREST	
ACKNOWLEDGEMENTS	
REFERENCES	
CHAPTER 8 SPEECH LANGUAGE PATHOLOGY AND THE AGING POPULATION	
INTRODUCTION	
MIT Treatment Procedure: Step 1 (Elementary Level)	
Step 1: Humming	
Step 2: Unison Singing	
Step 3: Unison Singing with Fading	
Step 4: Immediate Repetition	
Step 5: Response to a Probe Question	
Treatment Procedure: Step 2 (Intermediate Level)	104
Step 1: Phrase introduction	
Step 2: Unison with Fading	104
Step 3: Delayed Repetition	105
Step 4: Response to a Probe Question	105
Treatment Procedure: Step 3 (Advance Level)	105
Step 1: Delayed Repetition	
Step 2: Introducing Sprechgesang	
Step 3: Sprechgesang with Fading	
Step 4: Delayed Spoken Repetition	
Step 5: Respond to a Probe Question	
Level A Question	
Level B Question	
VAT: Sequence Level 1- Real Object:	
CONCLUSION	
CONFLICT OF INTEREST	
ACKNOWLEDGEMENTS	
REFERENCES	
CHAPTER 9 END OF LIFE CARE IN OLDER ADULTS	
Susan E. Lowey	
INTRODUCTION	123
HISTORICAL PERSPECTIVES	
Death in Contemporary Society	
Illness Trajectories in End of Life Care	125
Types of Illness Trajectories	126
Conversations about Goals of Care	
Organized Models of End of Life Care	
Palliative Care	
Hospice Care	
Similarities and Differences between Hospice and Palliative Care	130
Management of Pain & Symptoms at the End of Life	
Physiological Health	
Pain	121
Shortness of Breath	
Shorribo of Dicum	134

33
33
34
34
34
35
35
35
35
36
36
37
38
39
43
43
43
43
46