Learning Objectives

MedBridge

Medical Complexity Part 2: Defining Frailty and Age-Related Changes

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Course Objectives:

- Develop an understanding of what "frailty" encompasses from a systems approach and understand the implications of frailty on functional outcomes.
- Describe screening and therapeutic interventions that address prevention of frailty in the elderly.
- Develop an understanding of how to evaluate and prescribe exercise and activities that enhance functional capabilities in the frailest of frail elderly patients.
- Develop an understanding of how multi-pharmacy and poor nutrition impact functional outcomes in the elderly.
- Develop an advanced knowledge of the anatomic, physiologic, motor control, and functional mechanisms of aging that influence frailty in the elderly.
- Develop an understanding of the principles of geriatric rehabilitation related to screening, assessment of risk factors and interventions for frailty
- Develop an understanding of the use of complementary therapies and the integration of these therapies into traditional rehabilitation programs to enhance function in the frail elderly.
- Gain knowledge in implementing screening and exercise programs for frail elderly in all levels of care across the health care spectrum.
- Understand and integrate outcome research studies for screening, evaluation, and development of individual and group exercise programs.

Chapter 1: Neurosensory System

- Describe the central nervous system changes in the older adult
- Understand transmitter competence and conduction velocity and its relationship to delayed response and falling
- List the structural and physiologic changes at the cellular level in the peripheral nervous system
- Describe how the sensory system changes with age, and how the integumentary, visual, auditory, somatosensory, vestibular, and gustatory systems are impacted
- List the components of a neuro-sensory evaluation of the older adult, and some of the tools needed to test light touch, sharp/dull, and vibration

Chapter 2: Cardiopulmonary & Cardiovascular Systems

- Describe the normal structural and physiologic changes to the cardiac system in the aging adult
- Understand the normal structural and physiologic changes to the respiratory system in the aging adult.
- Describe how the circulatory system changes as adults age
- Appreciate how these changes, in the presence of inactivity, can lead to frailty
- Understand the cardiopulmonary evaluation and the important measures needed to test baseline and activity capacity in the clinical setting
- Understand abnormal cardiac pathology and guidelines for testing and possible referral for further work up

- Understand circulatory testing, and how the Buerger-Allen Test Protocol can help screen for peripheral vascular disease
- Understand the components of testing the respiratory system
- Appreciate how functional testing in the clinic can also give a glimpse at the cardiopulmonary status, as demonstrated during the patient demo video

Chapter 3: Neuroendocrine Systems

- Appreciate the neuroendocrine causes of frailty and the relationship of the hypothalamic-pituitary-adrenal axis to the regulation of homeostasis
- List the varied responsibilities of the hypothalamus in the body
- Understand the concept of homeostasis in the context of the neuroendocrine system
- Describe how thermal regulation is impacted by the aging process, and its clinical significance
- Appreciate how hormonal balance is impacted by the aging system.
- Appreciate the impact of decreased homeostasis due to declining neuroendocrine function on the syndrome of frailty
- Describe the age-related changes to the immune system and how dysfunction can lead to frailty.

Chapter 4: Cognitive Changes

- Understand how sleep depth affects memory and function, and know the important questions to ask about sleep quality
- Understand the potential problems that manifest when sleep time is decreased, and the possible side effects related to poor sleep
- Understand that pathology, and not aging, has more relevance for memory and intelligence impairment
- Appreciate the components of the Mini-Mental State Examination (MMSE) and the Mental Status Questionnaire, what they can tell the treating clinician, and their limitations in diagnosing mental impairment.

Chapter 5: Metabolic Changes

- Understand the major systems involved as the renal system ages
- Understand the basic physiology of the renal system
- Understand the effects of aging on the renal system, both physiologically and what might be seen in the clinic
- List the systems involved in renal failure, and the resulting signs and symptoms associated with this
- Understand the signs and symptoms related to metabolic dysfunction and obesity
- Understand the concept of resting metabolic rate
- Understand exercise tolerance in obesity