SARCOPENIA AND LOSS OF FUNCTION: Rapid Aging in the Hospital

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OBJECTIVES

• Describe the expected decline in strength and function in older adults

• Predict the impact of illness and hospitalization on older adults

• Identify basic strategies for maximizing strength and function
BODY COMPOSITION AND AGING: MALE

Mean age 73
Mean duration 4.7 yr

BODY COMPOSITION AND AGING: FEMALE

Mean age 70
Mean duration 4.7 yr

PHYSIOLOGIC CAPACITY DECLINES WITH AGE

- Objective measures of physiologic capacity reliably decline as a function of age
  - Aerobic capacity
  - Maximum HR
  - Oxygen delivery

- The rate of decline accelerates with each decade of age

MUSCLE MASS AND STRENGTH

Muscle Synthesis and Breakdown

PROPOSED MECHANISMS

Figure 3. Etiology of the age-associated loss of strength (dynapenia). Figure summarizes the influence of multiple factors that may lead to dynapenia. IGF-1 = insulin-like growth factor 1; DHPR = dihydropyridine receptors; TNF-α = tumor necrosis factor-α; IL-6 = interleukin 6.

CYCLIC DECLINE:
THE SLIPPERY SLOPE

FUNCTIONAL DECLINE AFTER HOSPITALIZATION

• Decline in ADLs during hospitalization is common

  ➢ Independence in specific ADLs declined 40-75% when studied in a general inpatient geriatric population

10 DAYS OF BEDREST AND HEALTHY ELDERS

- 12% loss in aerobic capacity is equivalent to a decade of usual physiologic decline
BARRIERS TO ACTIVITY IN HOSPITAL

• Delirium

• Foley catheters and other tethers

• Physician orders
  ➢ Nursing time is a zero-sum game

• Nursing priorities

• Patient/family reluctance
MITIGATING FUNCTIONAL DECLINE

• Activity/exercise
• Length of stay
• Nutrition
• Avoiding complications of inpatient therapy
• Pain control
CONCLUSIONS

• Remove barriers to activity
• Avoid overtreatment of medical issues
• Get patient out of bed and out of hospital
• Nutritional support
THANK YOU FOR YOUR TIME!

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