

Eating and feeding: management pitfalls in the elderly

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Age changes

- Decreased energy expenditure
- Decreased calorie requirements
- Decreased thirst in response to dehydration
- Decreased protein reserves
- Muscle - decreased mass
- Skin - loss of elastic tissue

Body Mass Index (BMI) (weight kg/height m²)

Impact of age-related changes?

- Loss of height
 - Begins at age 30
 - Accelerates with age

Cumulative height loss and aging, Caucasians (N=2084)

| Age | Men | Women |
|-----------|-------|-------|
| 30-70 | -3 cm | -5 cm |
| By age 80 | -5 cm | -8 cm |

$$\text{BMI} = \frac{\text{wt in kg}}{\text{ht in m}^2}$$

*Sorkin J et al. Am J Epidemiol 1999;150:969

Impact of height loss on BMI, artefactual increase (kg/m²)

| Age | Men | Women |
|-----------|-----|-------|
| 30-70 | 0.7 | 1.6 |
| By age 80 | 1.4 | 2.6 |

*Sorkin J et al. Am J Epidemiol 1999;150:969

Body Mass Index (weight kg/height m²)

Net impact of age-related changes?

- Loss of height
- Loss of muscle mass
- Loss of bone

$$\text{BMI} = \frac{\text{wt in kg}}{\text{ht in m}^2}$$

Dysphagia vs. Not Eating

Wanda

Wanda is 88 years old and has chronic renal failure, osteoporosis, kyphosis, and history of hip fractures. She is bed- and chair-bound but has no evidence of cognitive impairment.

Wanda is admitted to the hospital for failure to eat and weight loss. She complains of severe pain when swallowing but denies dysphagia. To the horror of doctors and nurses, the medication regimen includes alendronate.

Mike

Mike has been living at home. There is no family nearby. He seems spry and strong for his 78 years, says he "feels pretty good," but his neighbors think he has lost a lot of weight and say that he is "real forgetful." He is admitted to the hospital where tests are ordered, while living and care arrangements are considered. After a few days the nursing staff document "excellent appetite," and double portions are ordered. Mike eats well.

Concha

Concha is an 85-year-old woman who immigrated from Puerto Rico to live with her daughter's family. Now she has dementia and is in the hospital where she is recovering from an acute illness. She is not eating. Gastroenterology consultant is called to evaluate for "PEG" placement.

Margaret

An 88-year-old nursing home patient with Alzheimer's disease is sent to the hospital because of "decreased p.o. intake and altered mental status." She has pneumonia and is difficult to arouse. Intravenous fluid and antibiotics are administered and over the next 36 hours she becomes alert. Nursing staff attempts to feed her but she eats little and pushes the spoon away.

Reversible causes of "not eating"

- Inability to obtain food
- Depression
- Failure to address food preferences
- Medical illness
- Drug toxicity
- Age-related delay in changing set point for food intake (e.g. after undereating)...

Behavior following experimental dietary change in healthy men

| | Young | Old |
|-----------------------------|-------|-----|
| Overfeeding (mean 17days) | | |
| Underfeeding (mean 21 days) | | |

Roberts et al. JAMA 1994;272(20)

Behavior following experimental dietary change in healthy men

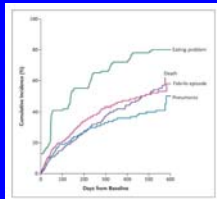
| | Young | Old |
|-----------------------------|---|---|
| Overfeeding (mean 17days) | Spontaneous hypophagia and weight loss | Delayed return to normal eating; no weight loss |
| Underfeeding (mean 21 days) | Spontaneous hyperphagia and weight gain | immediate weight gain or loss |

Roberts et al. JAMA 1994;272(20)

Margaret (3 months later)

Margaret still resides in the nursing home and has had progressive problems eating when she is fed. She is losing weight. Nursing reports that often she "pockets" food in her mouth and sometimes makes no attempt to eat when the spoon is placed in her mouth. She is bed-bound and can't remain upright in bed unless held in a sitting position.

Overall Mortality and the Cumulative Incidences of Pneumonia, Febrile Episodes, and Eating Problems among 323 Nursing Home Residents with Advanced Dementia



Mitchell SL, et al. N Engl J Med 2009;361:1529-1538.



Functional Assessment Staging Tool (FAST): dementia

1. Normal function
2. Forgetful
3. Decreasing job or domestic function
4. Difficulty with IADL
5. Difficulty with ADL
6. Progressive difficulty with ADL
7. End stage

Reisberg 1988

Functional Assessment Staging Tool

- 6d Urinary incontinence
- 6e Fecal incontinence
- 7a Speech limited to a few words
- 7b Speech limited to a word or less
- 7c Can't walk without assistance
- 7d Can't sit up without assistance
- 7e Unable to smile
- 7f Unable to hold head up independently

Failure to Eat

- Aversive feeding disorders
- Oral dyspraxia/apraxia

