Update On The Latest Issues In Senior Health

Primary Care Conference 2016: LECOM Health LIGHT
James Lin, DO, MHSA, MS(MedEd)
VP Senior Services & Adult Living
Director, LECOM Institute for Successful Aging

Latest Issues In Senior Health:

- Discuss the Explosion of Aging Population: Crisis in Shortages of Geriatric Work Force
- Update and Review Vitamin D Treatment
- ReviewFeeding Tubes in Advanced Dementia: AGS Position Statement
- Review the Update 2015 Guidelines from American Geriatric Society

Growth in Elderly Population

- Person 65 or older: 44.7 million 2013
- Represent 14.1% of US population
- 1 out of 7 Americans
- Expected to grow to 21.7% by 2040
- Over 70 million by 2030
- Over 98 million by 2060

Administration on Aging: US Department of Health and Human Services.

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Shortages in ric Work Force

- Only 7,000 certifi tricians. Roughly half the number curre ded. This number is falling.
- 55,000 social workers currently need in long-term care.
- 2050, this number will nearly double to 109,000 (DHHS, 2006)
- 75% of licensed social worker work with older adults, only 2.8% BSW and 6.7% MSW complete specialization in aging. Only 5% across all social work graduates.

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Mo  News..

- 2010, physical therapists and physical therapist assistants had demonstrated vacancy rates of 18.6% and 16.6%, respectively in skilled nursing facility setting
- Only 3% of practicing psychologist devote majority of their practice to older adults
- In 2001, there were about 2,600 geriatric psychiatrists, in 2005, number reduced to 2100.
- By 2020, the nursing workforce is expected to drop 20 percent below projected requirements
  - Eldercareworkforce.org

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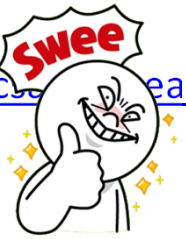
US Department of Health and Human Services: Health Resources and Service Administration (HRSA)

- 2015, HRSA awarded $35 million dollars to 44 organizations in 29 states
- Geriatric Workforce Enhancement Program.

http://bhpr.hrsa.gov/grants/geriatrics/ealth/0715awards.html



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Aims of GWEP

- Change clinical training environments into integrated geriatrics and primary care delivery system.
- Training providers who can assess and address the needs of older adults and their families and population levels.
- Delivering community-based programs that will provide patients, families, and caregivers with the knowledge and skills to improve health outcomes and the quality of care for older adults.

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Awardees 44

UNIVERSITY OF ILLINOIS	Chicago	IL
TRUSTEES OF INDIANA UNIVERSITY	Indianapolis	IN
UNIVERSITY OF LOUISVILLE	Louisville	KY
BAYSTATE MEDICAL CENTER, INC.	Spri	MA
THE JOHNS HOPKINS UNIVERSITY	Balti	
SAINT LOUIS UNIVERSITY	St L	
UNIVERSITY OF MONTANA SYSTEM	Miss	
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	Cha	
DUKE UNIVERSITY	Durh	
EAST CAROLINA UNIVERSITY	Gree	
TRUSTEES OF DARTMOUTH COLLEGE	Han	
RU SCHOOL OF OSTEOPATHIC MEDICINE	Stra	
NEW YORK UNIVERSITY	New	
SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH	New York	NY
UNIVERSITY OF ROCHESTER	Rochester	NY
SUMMA HEALTH SYSTEM	Akron	OH
LEHIGH VALLEY HOSPITAL, INC.	Allentown	PA
LAKE ERIE COLLEGE OF OSTEOPATHIC MEDICINE	Erie	PA
TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA	Philadelphia	PA
THE UNIVERSITY OF PITTSBURGH	Pittsburgh	PA
UNIVERSITY OF RHODE ISLAND	Kingston	RI
THE HEALTHCARE INSTITUTE LLC	Memphis	TN
UNIVERSITY OF NORTH TEXAS HEALTH SCIENCE CENTER AT FORT		

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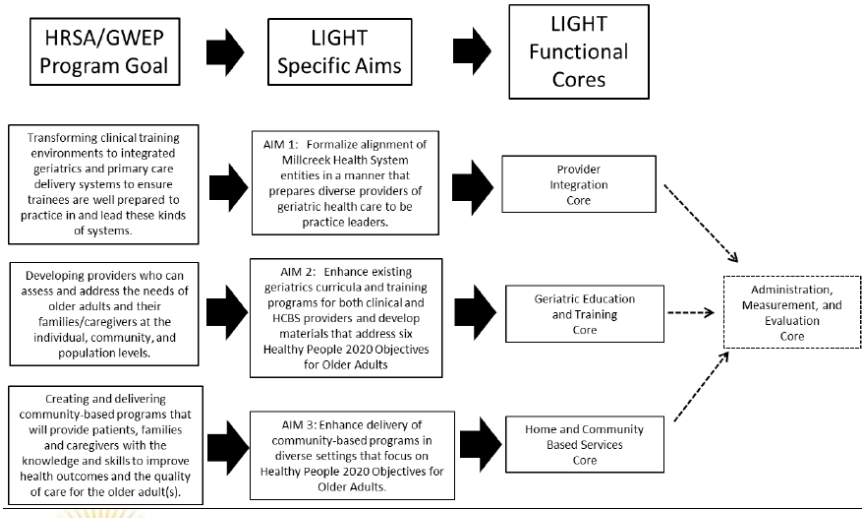
Relationship among HRSA Program Objectives, LIGHT's Specific Aims and LIGHT's Functional Cores



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Partners

LIGHT Program

- March 4th, 2016 LIGHT Program:

"This project is/was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number U1QHP28711 and the Geriatrics Workforce Enhancement Program for $749,312 and is not financed with nongovernmental sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government."

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Vitamin D: What is the Deal?

- Bischoff-Ferrari: Monthly High –Dose Vitamin D Treatment for the Prevention of Functional Decline . JAMA 2016 Vol 176, number 2

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Objective:

- To determine the effectiveness of high-dose vitamin D in lowering the risk of functional decline

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Design:

- One year, double-blinded, randomized clinical trail in Zurich, Switzerland. Participants were 200 community-dwelling men and women 70 years and older with a prior fall.

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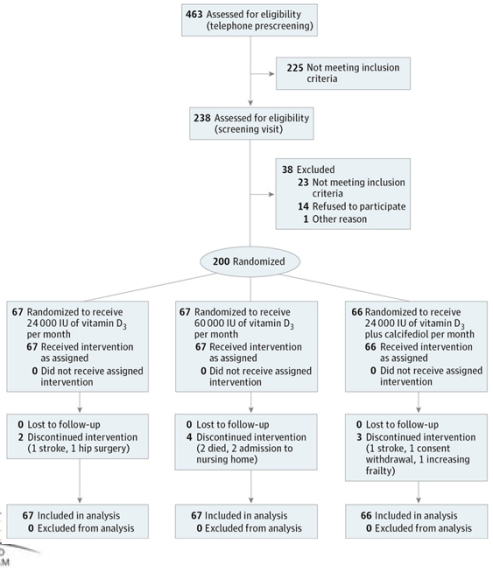
Design/Interventions



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Demographics

Table 1. Demographics by Treatment Group[a]

Variable	24 000 IU of Vitamin D_3 per Month (n = 67)	60 000 IU of Vitamin D_3 per Month (n = 67)	24 000 IU of Vitamin D_3 Plus Calcifediol per Month (n = 66)
Age, mean (SD) [range], y	78.0 (5.0) [71-90]	78.0 (5.3) [71-92]	77.0 (4.7) [71-90]
Female sex, No. (%)	45 (67.2)	45 (67.2)	44 (66.7)
25(OH)D level, mean (SD), ng/mL	18.7 (9.8)	20.9 (9.2)	18.4 (7.6)
Intact parathyroid hormone level, mean (SD), pg/mL	53.1 (18.9)	50.6 (23.4)	51.6 (18.0)
BMI, mean (SD)	26.4 (3.7)	26.1 (4.5)	26.2 (3.9)
Height, mean (SD), cm	162.2 (8.2)	161.2 (7.8)	163.3 (8.8)
Weight, mean (SD), kg	69.2 (9.8)	68.0 (13.8)	69.9 (11.5)
Prevalence of sarcopenia, No. (%)[b]	11 (16.4)	14 (20.9)	10 (15.2)
Arm muscle mass based on iDXA, mean (SD), g	4493.3 (1049.1)	4365.2 (1157.3)	4643.0 (1296.1)
Leg muscle mass based on iDXA, mean (SD), g	13 694.6 (2266.3)	13 571.3 (2984.3)	14 100.6 (2900.2)
Charlson Comorbidity Index, mean (SD)	0.58 (0.86)	0.65 (1.16)	0.52 (0.79)
MMSE score, mean (SD)	28.6 (0.9)	28.5 (1.0)	28.7 (1.9)
Physical activity, mean (SD), METs per mo[46]	91.2 (72.5)	112.1 (176.1)	92.4 (76.4)
SPPB score, mean (SD)	9.96 (1.53)	9.81 (1.60)	9.34 (1.57)

Abbreviations: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); iDXA, intelligent dual x-ray absorptiometry (GE Healthcare); METs, metabolic equivalent tasks; MMSE, Mini-Mental State Examination; SPPB, Short Physical Performance Battery; 25(OH)D, 25-hydroxyvitamin D.

SI conversion factors: To convert 25(OH)D level to nanomoles per liter, multiply by 2.496; to convert parathyroid hormone level to nanograms per liter, multiply by 1.0.

[a] None of the baseline variables varied significantly among the 3 treatment groups.

[b] Sarcopenia was assessed based on appendicular muscle mass alone according to work by Baumgartner et al[38] and by Bischoff-Ferrari et al.[47]

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Main Outcomes and Measures:

- Primary end point: improving lower extremity function (Short Physical Performance Battery) and achieving at least 30ng/mL at 6 and 12 months
- Secondary End point was monthly reported falls
- Adjusted for Age, Sex, and BMI

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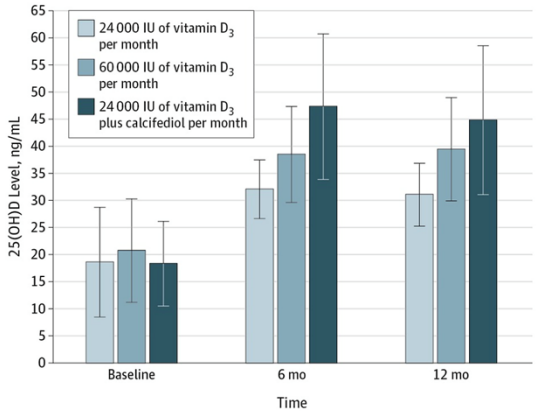
Levels of 25(OH)D

Primary End Point:

Achieving at least 30ng/ML 6 months, 12 months



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Results:

Primary End Point:

- Mean changes in the SPPB score did not differ significantly among treatment group (p=.26)
- Interestingly, for 1 of the 3 SPPB score components (5 successive chair stands), there was a significant difference between the treatment groups, with less improvement in the 2 high-dose groups compared with the 24,000 IU group (P=.04)

Table 2. Treatment Effect on the Prevention of Functional Decline and Falls[a]

Variable	24 000 IU of Vitamin D_3 per Month (n = 67)	60 000 IU of Vitamin D_3 per Month (n = 67)	24 000 IU of Vitamin D_3 Plus Calcifediol per Month (n = 66)	*P* Value for Difference Between Treatments in Change Over Time
Primary End Point of Participants With Achieved 25(OH)D Levels ≥30 ng/mL, % (95% CI)				
Unadjusted at baseline	14.9 (8.2 to 25.6)	19.4 (11.6 to 30.6)	12.1 (6.2 to 22.4)	.51[b]
Adjusted at 6 mo	63.8 (50.7 to 75.1)	83.0 (71.3 to 90.5)[c]	93.5 (84.5 to 97.4)[c]	<.001[b]
Adjusted at 12 mo	54.7 (41.6 to 67.2)	80.8 (68.5 to 89.1)[c]	83.3 (71.4 to 90.9)[c]	.001[b]
Primary End Point of Mean SPPB Functional Decline Score				
Unadjusted at baseline, mean (SD)	9.96 (1.53)	9.81 (1.60)	9.34 (1.57)	
Adjusted change (95% CI) at 6 mo	0.17 (−0.06 to 0.41)	0.16 (−0.08 to 0.40)	0.16 (−0.08 to 0.40)	.26[d]
Adjusted change (95% CI) at 12 mo	0.38 (0.07 to 0.68)	0.10 (−0.21 to 0.41)	0.11 (−0.19 to 0.43)	
At 0-6 mo	35.0 (24.3 to 47.5)	39.5 (28.1 to 52.0)	49.0 (36.9 to 61.2)	.26[b]
At 7-12 mo	26.6 (17.3 to 38.6)	41.3 (29.8 to 53.9)	38.5 (27.4 to 50.9)	.17[b]
At 0-12 mo	47.9 (35.8 to 60.3)	66.9 (54.4 to 77.5)[c]	66.1 (53.5 to 76.8)[c]	.048[b]
Adjusted mean No. of falls				
At 0-6 mo	0.52 (0.26 to 0.79)	0.86 (0.50 to 1.12)	0.67 (0.40 to 0.93)	.19[b]
At 7-12 mo	0.46 (0.20 to 0.72)	0.69 (0.43 to 0.95)	0.71 (0.45 to 0.97)	.31[b]
At 0-12 mo	0.94 (0.60 to 1.29)	1.47 (1.13 to 1.82)[c]	1.24 (0.89 to 1.58)	.09[b]

Abbreviations: BMI, body mass index; SPPB, Short Physical Performance Battery; 25(OH)D, 25-hydroxyvitamin D.

SI conversion factor: To convert 25(OH)D level to nanomoles per liter, multiply by 2.496.

[a] All regression models were adjusted for baseline age, sex, and body mass index. Change over time in our primary study outcome was compared between the 3 study groups using a repeated-measures linear regression model. For the primary and secondary outcomes, we compared the percentage of fallers in a logistic regression model, adjusting for age, sex, and BMI. For the number of falls, we used linear regression, with indicators for treatment group as the main predictors and covariates to adjust for age, sex, and BMI.

[b] *P* values are from a 3-group comparison using linear regression (number of falls) or logistic regression (number of participants with achieved 25(OH)D levels ≥30 ng/mL), adjusting for age, sex, and BMI.

[c] Significant pairwise difference from 24 000 IU. There were no significant pairwise differences between 60 000 IU and 24 000 IU plus calcifediol.

[d] *P* value is from the interaction between treatment group and time, adjusting for baseline SPPB score, age, sex, and BMI. The outcome measures in each model (6-month change and 12-month change) are presented.

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Results

Secondary Endpoints:

- Of the 200 participates, 121 of 200 fell (60.5%) fell during 12 month treatment period.
- Among those, 60,000 IU group and 24,000 IU plus calcifediol group had significantly higher percentages of faller compare to the 24,000 IU group
- Mean number of falls, similar results among these groups

Table 2. Treatment Effect on the Prevention of Functional Decline and Falls[a]

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Adjusted change (95% CI) at 12 mo	0.38 (0.07 to 0.68)	0.10 (−0.21 to 0.41)	0.11 (−0.19 to 0.43)	
Secondary End Point of Prevention of Falls, Value (95% CI)				
Adjusted % of fallers by incidence of first fall				
At 0-6 mo	35.0 (24.3 to 47.5)	39.5 (28.1 to 52.0)	49.0 (36.9 to 61.2)	.26[b]
At 7-12 mo	26.6 (17.3 to 38.6)	41.3 (29.8 to 53.9)	38.5 (27.4 to 50.9)	.17[b]
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Conclusion:

- Compared with a month Standard-of-care dose of 24,000 IU of vitamin D3 to the two monthly higher doses of vitamin D regimen, there is no benefit on the prevention of functional decline and increased falls in senior over the age of 70.

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SO WHAT?

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Vitamin D Basics

- Units: ng/mL vs. nmol/L
  - 2.5 nmol/L = 1 ng/mL
  - If data are in nmol/L, divide by 2.5 for ng/mL
- Rule of thumb
  - For every 100 IU vitamin D3 ingested, blood level of 25-OH-D increases by 1 ng/mL
    - 1 μg of D3 or D2 = 40 IU

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D3 ≠ D2 ≠ 1α,25-di(OH)-D3

- D3 is made in the skin* (or ingested in supplements) – not biologically active
  - Cholecalciferol
- D2 is from plants** (not humans) – only 1/3 as active as D3
  - Ergocalciferol
- 1α,25-di(OH)-D3 is converted in the kidney and other tissues - biologically active
  - "Vitamin D"
  - Calcitriol
- 25-OH-D is the storage form, NOT biol. active

Sources of Vitamin D

- Exposure to sunlight
- Dietary Sources
- Dietary Supplements

Exposure to Sunlight

- 5-10 minutes of direct exposure to the arms and legs = 3000 IU of vitamin D3
- In a study of 69 healthy subjects age 18-29 in Boston, 36% had 25 OH vit D level < 20 ng/ml at the end of winter. The prevalence decreased to 4% by the end of summer. (Tangpricha Am J Med 2002)
- Multiple studies show vitamin D def. common in sunny areas when most of the skin is shielded from the sun (Saudi Arabia, United Arab Emirates, Turkey, India and Lebanon)

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Sources of Vitamin D

Table 1. Dietary, Supplemental, and Pharmaceutical Sources of Vitamins D_3 and D_2.*

Source	Vitamin D Content
Natural sources	
Salmon	
Fresh, wild (3.5 oz)	About 600–1000 IU of vitamin D_3
Fresh, farmed (3.5 oz)	About 100–250 IU of vitamin D_3 or D_2
Canned (3.5 oz)	About 300–600 IU of vitamin D_3
Sardines, canned (3.5 oz)	About 300 IU of vitamin D_3
Mackerel, canned (3.5 oz)	About 250 IU of vitamin D_3
Tuna, canned (3.6 oz)	About 230 IU of vitamin D_3
Cod liver oil (1 tsp)	About 400–1000 IU of vitamin D_3
Shiitake mushrooms	
Fresh (3.5 oz)	About 100 IU of vitamin D_2
Sun-dried (3.5 oz)	About 1600 IU of vitamin D_2
Egg yolk	About 20 IU of vitamin D_3 or D_2
Exposure to sunlight, ultraviolet B radiation (0.5 minimal erythemal dose)†	About 3000 IU of vitamin D_3
Fortified foods	
Fortified milk	About 100 IU/8 oz, usually vitamin D_3
Fortified orange juice	About 100 IU/8 oz vitamin D_3
Infant formulas	About 100 IU/8 oz vitamin D_3
Fortified yogurts	About 100 IU/8 oz, usually vitamin D_3
Fortified butter	About 50 IU/3.5 oz, usually vitamin D_3
Fortified margarine	About 430 IU/3.5 oz, usually vitamin D_3
Fortified cheeses	About 100 IU/3 oz, usually vitamin D_3
Fortified breakfast cereals	About 100 IU/serving, usually vitamin D_3
Supplements	
Prescription	
Vitamin D_2 (ergocalciferol)	50,000 IU/capsule
Drisdol (vitamin D_2) liquid supplements	8000 IU/ml
Over the counter	
Multivitamin	400 IU vitamin D, D_2, or D_3‡
Vitamin D_3	400, 800, 1000, and 2000 IU

* IU denotes international unit, which equals 25 ng. To convert values from ounces to grams, multiply by 28.3. To convert values from ounces to milliliters, multiply by 29.6.
† About 0.5 minimal erythemal dose of ultraviolet B radiation would be absorbed after an average of 5 to 10 minutes of exposure (depending on the time of day, season, latitude, and skin sensitivity) of the arms and legs to direct sunlight.
‡ When the term used on the product label is vitamin D or calciferol, the product usually contains vitamin D_2; cholecalciferol or vitamin D_3 indicates that the product contains vitamin D_3.

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Vitamin D and Fracture Risk

- Among 3270 elderly French women given 1200 mg calcium and 800 IU of vit D3 daily for 3 years, the risk of hip fracture and nonvertebral fracture decreased by 43% and 32% respectively (Chapuy, NEJM 1992)
- In 389 subjects over 65 years old, 700 IU of vit D3 and 500 mg per day of calcium decreased nonvertebral fracture by 58% compared to placebo. (Dawson-Hughes, NEJM 1997)

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TABLE 5. NUMBER OF FIRST NONVERTEBRAL FRACTURES AMONG ALL SUBJECTS, ACCORDING TO SKELETAL SITE.

SITE OF FRACTURE	PLACEBO GROUP (N=202)	CALCIUM–VITAMIN D GROUP (N=187)
Face	1	1
Shoulder, humerus, or clavide	4	3
Radius or ulna	5	1
Hand	1	1
Ribs	2	2
Pelvis	2	0
Hip	1	0
Tibia or fibula	1	1
Ankle or foot	7	2
Multiple sites	2	0
Total	26	11

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The NEW ENGLAND JOURNAL of MEDICINE

Vitamin D and Fracture Risk

- A meta-analysis of 7 RCT's evaluating fracture risk in pts given 400 IU of vit D3 per day revealed little benefit. In studies using 700-800 IU of of vitamin D3 per day, the RR of hip fracture and nonvertebral fracture were reduced by 26% and 23% respectively compared to calcium and placebo. (Bischoff-Ferrari, Am J Clin Nutr 2006)

Vitamin D and Hypertension

- In a study of hypertensive patients who were exposed to ultraviolet B radiation three times per week for 3 months, 25 OH vitamin D levels increased by approximately 180% and both SBP and DBP were reduced by 6 mm Hg. (Krause, Lancet 1998)
- Proposed mechanism: The 1,25 OH vitamin D produced in the kidney enters the circulation and down regulates renin production in the kidney

End Point is Important:

- Fall prevention is to prevent fractures
- Data on Vitamin D and fracture rate inversely related
- Recommendations:
  - Generally, 800 IU daily (IOM) at least keep levels at >30ng/mL.

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To Feed or Not to Feed…

- AGS: Feeding Tubes in Advanced Dementia Position Statement

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REVIEW ARTICLE

International Journal of Geriatric Psychiatry

Survival in dementia and predictors of mortality: a review

Stephen Todd , Stephen Barr , Mark Roberts and A Peter Passmore

Int J Geriatr Psychiatry 2013; **28**: 1109–1124

Key points

- Dementia and Alzheimer's disease are associated with significantly increased mortality.
- Median survival from diagnosis ranges from 3.2 to 6.6 years.
- Increased age and male gender are consistent predictors of mortality in dementia.

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SPECIAL ARTICLES

American Geriatrics Society Feeding Tubes in Advanced Dementia Position Statement

American Geriatrics Society Ethics Committee and Clinical Practice and Models of Care Committee

J Am Geriatr Soc. United States; 2014;62(8):1590-3

Recommendations:

- Feeding tubes are not recommended for older adults with advanced dementia. Careful hand feeding should be offered;
  - hand feeding is at least as good as tube feeding for the outcomes of death, aspiration pneumonia, functional status, and comfort.
  - tube feeding is associated with agitation, greater use of physical and chemical restraints, greater healthcare use due to tube-related complications, and development of new pressure ulcers.

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AGS Position Statement Recommendations *ctd*:

2. Efforts to enhance oral feeding by altering the environment and creating individual-centered approaches to feeding should be part of usual care for older adults with advanced dementia
3. Tube feeding is a medical therapy that an individual's surrogate decision-maker can decline or accept in accordance with advance directives, previously stated wishes, or what it is thought the individual would want
4. It is the responsibility of all members of the healthcare team caring for residents in long-term care settings to understand any previously expressed wishes of the individual (through review of advance directives and with surrogate caregivers) regarding tube feeding and incorporate these wishes into the care plan
5. Institutions such as hospitals, nursing homes, and other care settings should promote choice, endorse shared and informed decision-making, and honor individuals' preferences regarding tube feeding. They should not impose obligations or exert pressure on individuals, or providers to institute tube feeding

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Symposium review

J R Coll Physicians Edinb 2014; 44:232–7
http://dx.doi.org/10.4997/JRCPE.2014.310

Feeding decisions in advanced dementia

RH Harwood
Consultant Geriatrician, Professor of Geriatric Medicine, Nottingham University Hospitals NHS Trust and University of Nottingham, Nottingham

- Tube feeding will rarely be appropriate as it does not prevent aspiration, prolong life or improve function
- Continuing careful and adapted oral feeding is probably as safe, maintains food enjoyment and social interaction during meals and will be the most appropriate course in most cases.
  - This may not meet conventional nutritional requirements
- Patients should not be made 'nil by mouth' if they wish to try to eat

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Box 3 The case against artificial nutrition in advanced dementia

Merel S, et al. Palliative care in adv. dementia. Clin Geriatr Med; 2014;30(3):469-92.

Feeding tubes in patients with advanced dementia:

Are risky and associated with morbidity, mortality, and frequent hospitalization.

- Periprocedural mortality of patients with dementia is estimated at 6% to 28%[113]
- 64% mortality in the year after placement with a median survival of 56 days[114]
- Approximately 20% require replacement or repositioning, within a median of 145 days after placement[114]
- Nursing home residents with dementia and feeding tubes have an average of 9 hospitalized days per patient in the year after placement[114]

Do not improve survival, nutrition, quality of life, or the risk of aspiration pneumonia.

- Meaningful improvement in nutritional parameters has not been proven[113]
- Tube feeding does not improve survival or the risk of aspiration pneumonia[25]
- No evidence that tube feeding improves quality of life[25,31]

Cause harm and suffering.

- Increase social isolation by removing the necessity for patients to participate in mealtime
- Are associated with increased use of physical and chemical restraints[115]
- Are associated with an increased risk of developing a new pressure ulcer[27]
- Respondents whose loved ones died with a feeding tube were less likely to report excellent end-of-life care than those whose loved ones did not have a feeding tube[31]

Challenges/Barriers In LTC Setting

Staff Challenges

- staffing ratios
- increasing patient needs as death nears – may be rapid
- training/comfort with palliative meds
- difficult conversations with families

System/Administrative

- availability of medications
- policy/procedure support
- overall resources to support comprehensive end-of-life care

Physician Challenges

- comfort with aggressive use of opioids for dyspnea, pain
- familiarity with current palliative approaches to variety of issues (e.g. alternate medication routes, complex pain, opioids in renal insufficiency, bowel obstruction)
- availability for contact by staff and family, timely responsiveness, on-site assessment 24/7
- time commitment for discussions with patient/family

Patient/Family Issues

- "treat the treatable" approach
- may have unrealistic expectations
- addressing goals of care

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Role of the Health Care Team

- **Anticipate** changes and challenges
- **Communicate** with patient/family regarding potential concerns:
  - What can we expect? What are the options?
  - Not eating/drinking; sleeping too much
  - How do we know they are comfortable?
  - Are medications making things worse?
  - Would things be different in hospital?
- **Prepare** a plan for addressing predictable issues, including:
  - Health Care Directive / Advance Care Plan, *particularly addressing*:
    1. artificial nutrition and hydration?
    2. treatment of life-threatening pneumonia at end of life
    3. transfer to acute care
  - Medications by appropriate routes for potential symptoms

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WRHA ACP Levels

Comfort Care - Goals of Care and interventions are directed at maximal comfort, symptom control and maintenance of quality of life ***excluding*** attempted resuscitation

Medical Care - Goals of Care and interventions are for care and control of the Patient/Resident/Client condition The Consensus is that the Patient/Resident/Client may benefit from, and is accepting of, any appropriate investigations/ interventions that can be offered ***excluding*** attempted resuscitation

Resuscitation - Goals of Care and interventions are for care and control of the Patient/Resident/Client condition The Consensus is that the Patient/Resident/Client may benefit from, and is accepting of, any appropriate investigations/ interventions that can be offered ***including*** attempted resuscitation

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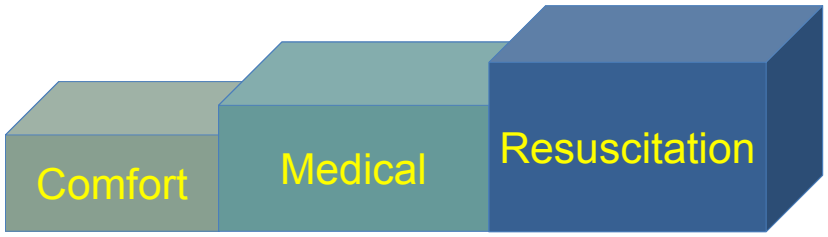
The three ACP levels are simply starting points for conversations about goals of care when a change occurs



Displacing the Decision Burden

"If he could come to the bedside as healthy as he was a month ago, and look at the situation for himself now, what would he tell us to do?"

Or

"If you had in your pocket a note from him telling you that to do under these circumstances, what would it say?"

Clinical Course of Advanced Dementia

- NEJM Oct 15, 2009
- Mitchell et al.

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Methods

- 323 nursing home residents with advanced dementia and their health care proxies for 18 months in 22 nursing homes

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Results:

- Over 18 months, 54.8% of the residents died
- 41.1% died of Pneumonia
- 44.5% died of a febrile illness
- 38.6% associated with eating problem.
- In the last 3 months of life, 40.7% of resident underwent at least one burdensome intervention (hospitalization, ER, parental therapy, or tube feeding)

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Results:

- Residents whose proxies had an understanding of the poor prognosis and clinical complications expected in advanced dementia were much less likely to have burdensome interventions in the last 3 months of life

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Conclusion:

- Pneumonia, febrile episodes, and eating problems are frequent complications in patients with advanced dementia, and these complications are associated with high 6 month mortality rate.
- Distressing symptoms and burdensome interventions are also common among such patients.
- Patients with health care proxies who have an understanding of the prognosis and clinical course are likely to receive less aggressive care near the end of life.

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Beers Criteria

- Published by American Geriatric Society
- Most widely used consensus criteria for drug appropriateness in the elderly
- Lists of potentially inappropriate medications in older adults
  - Divided into 5 categories
  - Describes which medications to avoid, when to avoid them, and why
- Originally published in 1997, revised in 2002, 2012, and 2015
- Criteria developed through expert consensus from literature review and questionnaire
- Used by CMS for nursing home regulation

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2015 Beers Criteria Categories

- **Potentially Inappropriate Medications (PIMS)** in Older Adults
- PIMS in Older Adults due to **Drug-disease Interactions** that may Exacerbate the Disease or Syndrome
- Drugs to be **Used with Caution** in Older Adults
- Potentially Clinically Important Non-anti-infective **Drug-drug Interactions** that should be Avoided in Older Adults
  - Added in 2015
- Potentially Clinically Important Non-anti-infective Drugs that Should be Avoided or Dose Reduced with Varying Levels of **Kidney Function** in Older Adults
  - Added in 2015

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2015 Beers Criteria Updates

Added recommendations regarding PIMs in older adults

- Hypnotics (zolpidem, eszopiclone, and zaleplon) should be avoided regardless of duration
- Proton pump inhibitor use >8 weeks should be avoided unless justification
  - Increased risk of *c. dif*, bone loss, and fractures
- Desmopression should be avoided for treatment of nocturia or nocturnal polyuria due to risk of hyponatremia
- First generation antihistamine, meclizine, added to list of anticholinergics to avoid

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2015 Beers Criteria Updates

Changed recommendations regarding PIMs in older adults

- Nitrofurantoin previously not recommended when CrCl <60mL/min → changed to <30mL/min
- Estrogen rationale for avoidance modified to clarify carcinogenic potential, lack of cardioprotective effects, and poor cognitive effects
  - Avoid oral and topical patches
  - Vaginal creams or suppositories are acceptable in low-doses
- Meperidine rationale for avoidance modified to emphasize higher risk of adverse effects (neurotoxicity, delirium) than other opioids
- Indomethacin and ketorolac; previously recommended to avoid chronic use→ changed to avoid all together
  - Increased risk of side effects (GI bleed, nephrotoxicity, peptic ulcer disease) compared to other NSAIDs
- Insulin slide scale more clearly defined

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2015 Beers Criteria Updates

Removed recommendations regarding PIMs in older adults

- Avoidance of anti-arrhythmic drugs (class Ia, Ic, and III) as first-line treatment removed due to evidence suggesting rhythm control may have outcomes as good as or greater than rate control
  - First-line use of amiodarone still to be avoided unless heart failure or left ventricular hypertrophy
  - Dronedarone still to be avoided in individuals with permanent atrial fibrillation
  - Disopyramide still avoided due to anticholinergic effects
  - Digoxin still avoided due to increased mortality. Not prescribe > 0.125mg for any indication.
- Mesoridazine and chloral hydrate removed as these are no longer marketed in the U.S.
- Trimethobenzamide removed

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2015 Beers Criteria Updates

Added recommendations regarding Drug-Disease PIMs

- Hypnotics added to list of drugs to avoid in patients with cognitive impairment
- Opioids added to list of CNS medications that should be avoided in patients with history of falls or fractures
- Armodafinil and modafinil added to list of medications to avoid in insomnia

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2015 Beers Criteria Update

Changed recommendations regarding Drug-Disease PIMs

- Antipsychotics rationale for avoidance clarified
  - Avoid as first-line treatment of delirium due to conflicting evidence on effectiveness and potential adverse effects
  - Should only be used for behavioral disturbances secondary to dementia when nonpharmacologic measures fail and patient as risk of harming self or others
- Rationale & quality of evidence modified for heart failure, epilepsy, and Parkinson's disease
  - Potentially inappropriate drugs in these categories unchanged

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2015 Beers Criteria Updates

Removed recommendations regarding Drug-Disease PIMs

- Drug-disease category of constipation removed
  - Constipation is common in the elderly and relevant drugs to avoid are not specific to older adults
- Inhaled anticholinergics removed from list of medications to avoid in patients with lower urinary tract symptoms (I.e. BPH)

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2015 Beers Criteria Updates

Added/changed/ removed recommendations regarding Drugs to be used with Caution

- No changes were made to this section

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2015 Beers Criteria

- Strengths
  - Evidence based
  - Considers drug-drug interactions, drug-disease interactions, renal dosing
  - Updated multiple times since original publication (recently)
  - **Effective tool for informing clinicians on which medications to re-evaluate for appropriate use and/or to avoid initially**

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2015 Beers Criteria

- Limitations:
  - Older adults often underrepresented in trials
  - Search strategies used may have missed some studies, including unpublished reports
  - Does not address therapeutic duplication
  - Does not address needs of those receiving palliative and hospice care when symptom control is often more important than avoidance of PIMs
  - **Does not replace patient-specific considerations or clinical judgment!**

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Thank You!

- Jlin@lecomslc.org

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