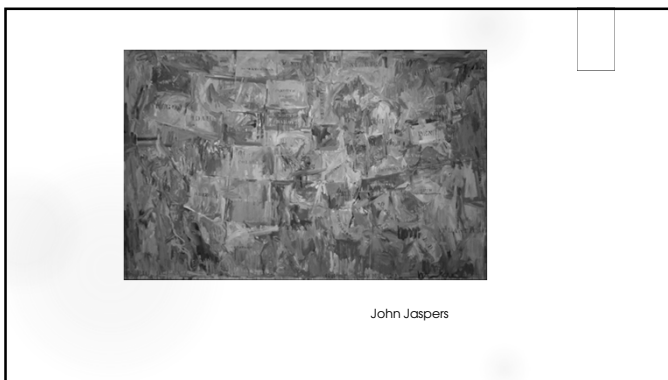
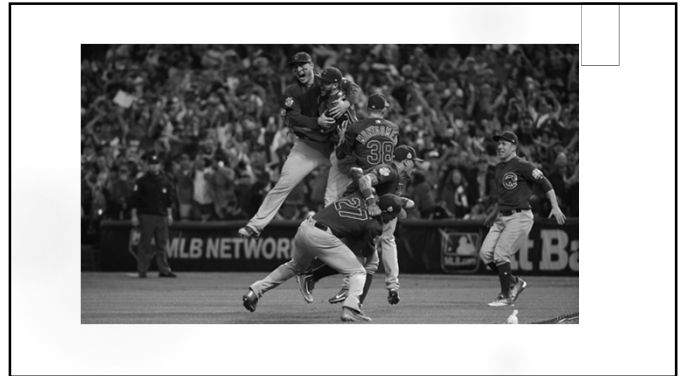



## Annual Wellness Exam for Elderly

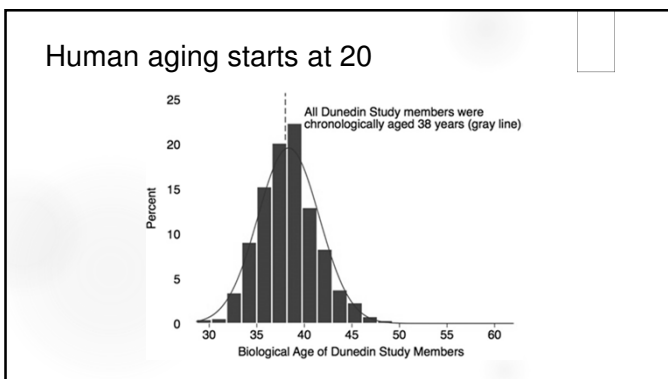

DONALD JURIVICH, DO  
EVA GILBERTSON PROFESSOR AND CHAIR OF GERIATRICS  
UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE

Ansel Adams

## Goals

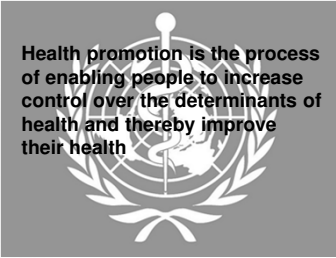
- ▶ What are the assessment tools for Geriatric Health Promotion and Wellness ?
- ▶ What are the controversies and evidenced – based approaches to healthy lifespans ?

## What is preventive medicine ?


- ▶ Promotion, protection and maintenance of health and well being
- ▶ Prevention of disease, disability and premature death in defined populations.

### What is health promotion ?



**Health promotion is the process of enabling people to increase control over the determinants of health and thereby improve their health**

### Health Promotion competencies



- ▶ Enable change
- ▶ Health Advocacy
- ▶ Mediate through partnership
- ▶ Work with individuals, groups, & communities to improve health and reduce health inequities.
- ▶ Advocate health and well being. Help build capacity for health promotion action

### Health promotion in contemporary medical practice




<p><b>Standard care</b></p> <ul style="list-style-type: none"> <li>▶ Symptom driven encounters.</li> <li>▶ Tell patient to change their lifestyle</li> <li>▶ Hand outs insensitive to health literacy &amp; cultural competency</li> <li>▶ No regularly scheduled follow up</li> </ul>	<p><b>New approach</b></p> <ul style="list-style-type: none"> <li>▶ Collaborate to establish lifestyle action plan                             <ul style="list-style-type: none"> <li>▶ e.g. structured counseling</li> </ul> </li> <li>▶ Intentional Follow up                             <ul style="list-style-type: none"> <li>▶ e.g., health coach follow up</li> </ul> </li> </ul>
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### Skip the annual checkup ?


<p><b>Pro annual check up</b></p> <ol style="list-style-type: none"> <li>1. Screening assessments                     <ul style="list-style-type: none"> <li>▪ MCI</li> <li>▪ Cancer</li> <li>▪ Function / gait speed</li> </ul> </li> <li>2. Opportunity to evaluate health prevention needs</li> <li>3. Strengthen physician – patient collaboration.</li> </ol>	<p><b>Anti – annual check up</b></p> <ol style="list-style-type: none"> <li>1. Does not reduce rates of illness</li> <li>2. Does not reduce mortality</li> <li>3. Waste of health care resources</li> </ol>
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### Inadequate time to perform preventive services



- ▶ High RVU generating clinics neglect PHE  
J Fam Pract. 1998;46:397–402.
- ▶ 2500 patient panel consumes 1700 + physician hours annually for new and recurrent PHE. Equivalent to 7.4 hours daily.  
Am J Public Health. 2003; 93:635–641


### Conundrum: poor cancer screening

<p><b>&gt; 50 F:</b> only 56% had mammography or breast exam in previous 2 years</p> <p><b>&gt; 50 M &amp; E:</b> only 30 % had fecal occult blood testing in past 3 years, and only 33% ever had colonoscopy.</p>	
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Yarnall et al National Center for Health Statistics. Healthy People 2000 Review. 1998-99. 2003, 93: 4 A. J. Public Health



### Current recommendations

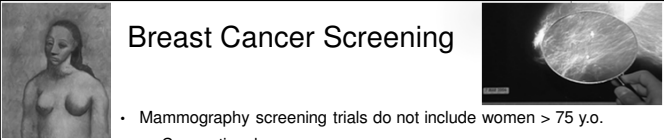


- ▶ Use visit to strengthen Patient – Physician – Community collaboration
- ▶ Use history to focus on symptoms and health risks
- ▶ Focus physical exam in elderly on vitals, neurosensory, mood, cognition, and function.
- ▶ Use check lists for preventive health screens (nutrition, immunizations, chemoprevention)
- ▶ Integrate structured life style counseling
- ▶ Establish life plan / goals
- ▶ Follow up recommendations through scheduled calls
- ▶ Integrate life style recommendations with group visits and community resources.

### Geriatric Preventive Medicine axioms


- ▶ Consider preventive measures relative to Active Life Expectancy, Functional status (physical & cognitive)
  - ▶ e.g., Cholesterol lowering treatment in a 95 year old with active life expectancy of 98.
- ▶ Preventive health measures are both underused and overused in elderly
  - ▶ e.g. overused: cancer screen
  - ▶ e.g. underused: lifestyle changes (exercise)

### Breast Cancer Screening



- Mammography screening trials do not include women > 75 y.o.
  - Conventional
  - Digital: equals conventional, except 40 -49 y/o dense breast tx.
  - 3-D digital: no RCTs versus digital
- Self breast exam: 2 large RCTs found no difference between self exam and no exam
- Clinical breast exam no RCTs

### Breast cancer screening recommendations



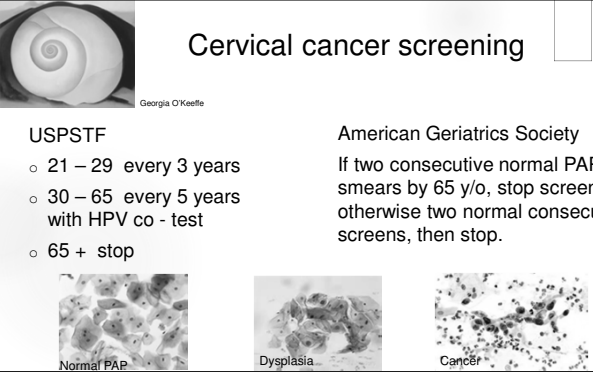
**USPSTE**

- ▶ middle age: start at 50 y/o and repeat every 1 - 2 yrs.
- ▶ 65 – 74: every 1 – 2 years
- ▶ 75 + : stop screening

**American Geriatrics Society**

75 + : except if life expectancy > 5 years, then perform screening mammography every 1 -2 years.

### Cervical cancer screening



**USPSTF**


- 21 – 29 every 3 years
- 30 – 65 every 5 years with HPV co - test
- 65 + stop

**American Geriatrics Society**

If two consecutive normal PAP smears by 65 y/o, stop screening, otherwise two normal consecutive screens, then stop.

Normal PAP      Dysplasia      Cancer

### Prostate cancer screening: PSA

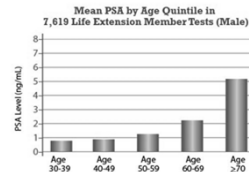


- ▶ Two large RCTs
  - ▶ Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial (US)
  - ▶ European Randomized Study of Screening for Prostate Cancer (EUR)
- ▶ No reduced mortality benefit over all age groups
- ▶ ERSPC found 20% prostate cancer mortality decrease in 55 – 64 y/o (most had radical prostatectomies)
- ▶ USPSTF recommends against PSA screening

## Prostate screening

### Digital rectal exam

- ▶ High false positive,
- ▶ only 1/3 biopsy ( + )



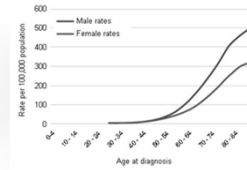
### New approaches

- ▶ PSA velocity: serial PSA levels relative to ultrasound prostate volume
- ▶ Age – adjusted PSA nomograms (PSA increases with age)

## Colon cancer screening



Maria Elena Vieira da Silva



- Screening test: colonoscopy and fecal occult blood
- Prevalence: 1 – 2 out of 100 at age 60 will get colon cancer by age 70
- Problem: high mortality and morbidity
- Impact: 10,000 preventable deaths annually
- Recommendations
  - Colonoscopy every 10 years, stop at 75 y/o
  - FOB annually up to 75 y/o
  - Caveat: if active life expectancy > 10 yrs, screen

## Disease Screening



Claude Cahun, 1936

- ▶ Polypharmacy
- ▶ Thyroid
- ▶ HTN
- ▶ DM
- ▶ AAA
- ▶ Osteoporosis
- ▶ HL

## Polypharmacy

16% of elderly hospitalizations due to Adverse Drug Events

--Pharm World Sci (2002) 24:46

Most susceptible: frail and over 80 years old

Systematic and regular review of medications with slow tapering  
Beers Criteria



Gustav Klimt

## Screening for thyroid disease



Man Ray


- Screening test: serum TSH
- 1 : 100 elderly with hyperthyroidism
- 1: 50 elderly with hypothyroidism
- Insidious onset
- AGS: screen q 2 – 5 years (e.g., memory loss)
- USPSTF: neither for / against
- Watch for atypical manifestations of disease in elderly !

## Hypertension



Katsushika Hokusai

- Screening: sit or stand measurement. Use manual cuff with palpation if cardiac arrhythmia !
- Prevalence: HTN increases with increasing age (NHANES = 67%)
- Intervention reduces stroke, CAD, and total mortality
- Screening recommendations unclear about frequency: minimum biannually.
- Positive screen: two elevated reading on two separate visits over several weeks.



### Diabetes


Andy Wharhol

- Screening: Hemoglobin A1c (> 6.5%), FBS x 2 > 126 mg / dL, 2 HR post load glucose
- Prevalence: 26.9 %
- USPSTF recommends screening asymptomatic adults with BP > 135 / 80 mmHg (treated and non – treated).

### Odds ratio for antibiotic associated hypoglycemia in elderly taking sulfonylureas

Antibiotic	Odds ratio	94% CI
Clarithromycin	3.96	2.42-6.49
Levofloxacin	2.50	2.15-3.10
Sulfamethoxazole-trimethoprim	2.56	2.12 – 3.47
Metronidazole	2.11	1.28-3.47
Ciprofloxacin	1.62	1.33-1.97

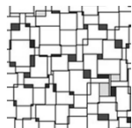
JAMA 2014 174: 1602 -1612



### Vascular screening: AAA

Henri Matisse

- Screen: abdominal ultrasound
- Prevalence in HTN elderly:
  - 4-8% M and 2% F, smoking 5x risk (Ann R Coll Surg Engl 1996, 78(6): 501-504).
- Problems
  - 1:3 rupture (5.5cm)
  - Most AAA asymptomatic & symptoms non - specific:
    - Throbbing or deep pain in back or side.
    - Pain in the buttocks, groin, or legs
- Recommendation
  - USPSTF recommends screening at least once all > 65 M who smoked > 100 cigarettes. No screen for F.





### Screening Osteoporosis

Piet Mondrian

- Prevalence: 16% F and 4% M with 50% of women > 80 y.o.
- Problem: 4 of 10 F will have hip, spine, or axial fracture
- Recommendation:
  - USPSTF recommends bone mineral density screen through dual x-ray absorptiometry in 60 + with risk and all 65 + women.
  - AGS: recommends screening to include men > 80 or androgen RX
- NNS to prevent one hip fx = 731 for 65 – 69 y/o and 143 for 75 – 79 y/o
- Medicare pays q 2 year.

### FRAX score for osteoporosis and fracture risk.

### Screening: Hyperlipidemia

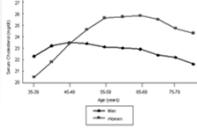
Josef Albers


Prevalence:

- If total cholesterol > 260 mg/dL 42% women, 34% men
- Based on LDL > 130 mg/dL = 30%
- Cholesterol levels plateau with increasing age

Screening test: fasting HDL and total cholesterol

- If HDL-C < 40 mg/dL men and < 50 mg/dL women, repeat and take average values for risk screening.
- Screening interval: 5 years.





## Geriatric functional assessment


Leonardo Da Vinci

## Assessment of frailty / vulnerability

Tool	Measures
Vulnerability Evaluation Scale (VES-13)	
SF36	Wellness and functionality
Fried Frailty Scale	Frailty and Frailty risk
Gait speed	Risk for falls, dementia, hospitalization, death
ADL / IADL	Functional dependency (full or partial)

## Functional Assessment

### Activities of Daily Living



### Instrumental Activities of Daily Living

IADL Function	Independent	Needs help	Dependent	Cannot Do
Shopping				
Cooking				
Managing medications				
Using the phone and looking up numbers				
Doing housework				
Driving a vehicle				
Driving or using public transportation				
Managing finances				


\*Special management should be done by the same person or a proxy only.

## Fried Frailty Scale

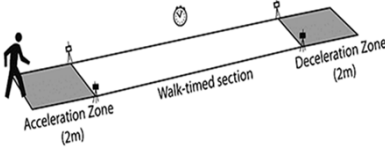
Criteria that Define Frailty (3 indicates frailty)

<b>Height loss</b>	Meets criteria for frailty if: Lost >10 pounds unintentionally last year
<b>Education</b>	Meets criteria for frailty if answer: Has that everything I did was an effort to live with or could not get going in the week last week or had to stop or most of the year last year. (1) Yes that everything I did was an effort in the last week: - Same or less of the time (1 to 2 days) - Moderate amount of time (3 to 4 days) - Most of the time (2) I could not get going in the last week: - Same or less of the time (1 to 2 days) - Moderate amount of time (3 to 4 days) - Most of the time
<b>Slimness</b>	Meets criteria for frailty if time to walk 15 feet (4.57 meters) is: <b>Men:</b> 27 seconds for height <173 cm (58 inches) 38 seconds for height >173 cm (68 inches) 38 seconds for height >173 cm (68 inches) - 38 seconds for height >190cm (63 inches) Requires a meter or tape to measure at 3x3 meters & 15 meters. Participant will walk 15-foot length twice in his or her usual pace. Use average of 2 trials.
<b>Low Activity Level</b>	Meets criteria for frailty if: <170 kcal of physical expenditure on activity each per week (18 min*)
<b>Weakness</b>	Meets criteria for frailty if grip strength (average of 3 trials, dominant hand) is: <b>Men:</b> <25 kg for BFR <24 <30 kg for BFR 24-26 <35 kg for BFR 26-28 <42 kg for BFR >28 <b>Women:</b> <17 kg for BFR <23 <17.5 kg for BFR 23-26 <18 kg for BFR 26-28 <21 kg for BFR >28 Requires 1cm hand dynamometer Participant attempts to squeeze the dynamometer maximally 3 times with the dominant hand.

\*Walking for exercise moderately intensive household chores, swimming or riding the bike, gardening, lifting, mowing, lifting, aerobic cycle, strength training, bowling, golf, singles or doubles tennis, racquetball, volleyball, aerobics. To complete trials, respondent may walk on the treadmill at speed of 0.5 m/s (1.6 ft/s) for 10 min. 1) [Days per week] x [minutes per session] x [60 min] = [Daily weight (kg)] x [Number of sessions in the last 7 wk] = [2] x [Number of minutes per day] = [Total weight (kg)].  
BFR=Body Fat Ratio. \*Data from Fried et al. J Am Geriatr Soc. 2001;49(11):1581-1592.




## Gait Speed




Giacometti

## Gait and balance screening: Sharpened Romberg


Feet together



Semi-tandem



Tandem



Balance (Sharpened Romberg test). Patient stands with feet together, semi-tandem, and tandem. With eyes open for 10 seconds then closed for 10 seconds in each position.





## Mood and behavioral assessment

### Patient Health Questionnaire

**PHQ-2**

Over the past two weeks, how often have you been bothered by any of the following problems?

Little interest or pleasure in doing things.

0 = Not at all  
1 = Several days  
2 = More than half the days  
3 = Nearly every day

Feeling down, depressed, or hopeless.

0 = Not at all  
1 = Several days  
2 = More than half the days  
3 = Nearly every day

Total point score: \_\_\_\_\_

Score interpretation:

PHQ-2 score	Probability of major depressive disorder (%)	Probability of any depressive disorder (%)
0	15.4	38.9
1	21.5	48.3
2	38.4	75.0
3	45.5	81.2
4	56.4	84.6
5	78.6	92.9

Information from Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. Med Care 2003; 41:1284-92.



## Screening for lifestyle issues

- ▶ Alcoholism
- ▶ Smoking
- ▶ Sexual dysfunction
- ▶ HIV
- ▶ Sedentary life

### The Aging of the HIV Epidemic in the US

CDC Surveillance Data



**AUDIT ALCOHOL SCREENING TOOL**

1 point is awarded for each of the following 10 questions. Total score of 0-7 indicates low risk of alcohol problems, 8-15 indicates moderate risk, and 16 or more indicates high risk of alcohol problems.

The following drinks have been used as units:

- 1 = 12 oz. beer
- 1 = 5 oz. wine
- 1 = 1.5 oz. 40% alcohol spirits

Questions:

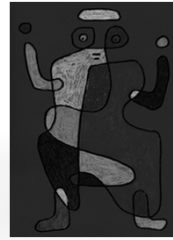
Question	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
How often do you have a drink containing alcohol?	Never	1-2 times a week	3-4 times a week	5-6 times a week	7-9 times a week	10-14 times a week	15-16 times a week	17-19 times a week	20-24 times a week	25-29 times a week	30-34 times a week	35-39 times a week	40-44 times a week	45-49 times a week	50-54 times a week	55-59 times a week	60-64 times a week	65-69 times a week	70-74 times a week	75-79 times a week	80-84 times a week	85-89 times a week	90-94 times a week	95-99 times a week	100-104 times a week	105-109 times a week	110-114 times a week	115-119 times a week	120-124 times a week	125-129 times a week	130-134 times a week	135-139 times a week	140-144 times a week	145-149 times a week	150-154 times a week	155-159 times a week	160-164 times a week	165-169 times a week	170-174 times a week	175-179 times a week	180-184 times a week	185-189 times a week	190-194 times a week	195-199 times a week	200-204 times a week	205-209 times a week	210-214 times a week	215-219 times a week	220-224 times a week	225-229 times a week	230-234 times a week	235-239 times a week	240-244 times a week	245-249 times a week	250-254 times a week	255-259 times a week	260-264 times a week	265-269 times a week	270-274 times a week	275-279 times a week	280-284 times a week	285-289 times a week	290-294 times a week	295-299 times a week	300-304 times a week	305-309 times a week	310-314 times a week	315-319 times a week	320-324 times a week	325-329 times a week	330-334 times a week	335-339 times a week	340-344 times a week	345-349 times a week	350-354 times a week	355-359 times a week	360-364 times a week	365-369 times a week	370-374 times a week	375-379 times a week	380-384 times a week	385-389 times a week	390-394 times a week	395-399 times a week	400-404 times a week	405-409 times a week	410-414 times a week	415-419 times a week	420-424 times a week	425-429 times a week	430-434 times a week	435-439 times a week	440-444 times a week	445-449 times a week	450-454 times a week	455-459 times a week	460-464 times a week	465-469 times a week	470-474 times a week	475-479 times a week	480-484 times a week	485-489 times a week	490-494 times a week	495-499 times a week	500-504 times a week	505-509 times a week	510-514 times a week	515-519 times a week	520-524 times a week	525-529 times a week	530-534 times a week	535-539 times a week	540-544 times a week	545-549 times a week	550-554 times a week	555-559 times a week	560-564 times a week	565-569 times a week	570-574 times a week	575-579 times a week	580-584 times a week	585-589 times a week	590-594 times a week	595-599 times a week	600-604 times a week	605-609 times a week	610-614 times a week	615-619 times a week	620-624 times a week	625-629 times a week	630-634 times a week	635-639 times a week	640-644 times a week	645-649 times a week	650-654 times a week	655-659 times a week	660-664 times a week	665-669 times a week	670-674 times a week	675-679 times a week	680-684 times a week	685-689 times a week	690-694 times a week	695-699 times a week	700-704 times a week	705-709 times a week	710-714 times a week	715-719 times a week	720-724 times a week	725-729 times a week	730-734 times a week	735-739 times a week	740-744 times a week	745-749 times a week	750-754 times a week	755-759 times a week	760-764 times a week	765-769 times a week	770-774 times a week	775-779 times a week	780-784 times a week	785-789 times a week	790-794 times a week	795-799 times a week	800-804 times a week	805-809 times a week	810-814 times a week	815-819 times a week	820-824 times a week	825-829 times a week	830-834 times a week	835-839 times a week	840-844 times a week	845-849 times a week	850-854 times a week	855-859 times a week	860-864 times a week	865-869 times a week	870-874 times a week	875-879 times a week	880-884 times a week	885-889 times a week	890-894 times a week	895-899 times a week	900-904 times a week	905-909 times a week	910-914 times a week	915-919 times a week	920-924 times a week	925-929 times a week	930-934 times a week	935-939 times a week	940-944 times a week	945-949 times a week	950-954 times a week	955-959 times a week	960-964 times a week	965-969 times a week	970-974 times a week	975-979 times a week	980-984 times a week	985-989 times a week	990-994 times a week	995-999 times a week	1000-1004 times a week	1005-1009 times a week	1010-1014 times a week	1015-1019 times a week	1020-1024 times a week	1025-1029 times a week	1030-1034 times a week	1035-1039 times a week	1040-1044 times a week	1045-1049 times a week	1050-1054 times a week	1055-1059 times a week	1060-1064 times a week	1065-1069 times a week	1070-1074 times a week	1075-1079 times a week	1080-1084 times a week	1085-1089 times a week	1090-1094 times a week	1095-1099 times a week	1100-1104 times a week	1105-1109 times a week	1110-1114 times a week	1115-1119 times a week	1120-1124 times a week	1125-1129 times a week	1130-1134 times a week	1135-1139 times a week	1140-1144 times a week	1145-1149 times a week	1150-1154 times a week	1155-1159 times a week	1160-1164 times a week	1165-1169 times a week	1170-1174 times a week	1175-1179 times a week	1180-1184 times a week	1185-1189 times a week	1190-1194 times a week	1195-1199 times a week	1200-1204 times a week	1205-1209 times a week	1210-1214 times a week	1215-1219 times a week	1220-1224 times a week	1225-1229 times a week	1230-1234 times a week	1235-1239 times a week	1240-1244 times a week	1245-1249 times a week	1250-1254 times a week	1255-1259 times a week	1260-1264 times a week	1265-1269 times a week	1270-1274 times a week	1275-1279 times a week	1280-1284 times a week	1285-1289 times a week	1290-1294 times a week	1295-1299 times a week	1300-1304 times a week	1305-1309 times a week	1310-1314 times a week	1315-1319 times a week	1320-1324 times a week	1325-1329 times a week	1330-1334 times a week	1335-1339 times a week	1340-1344 times a week	1345-1349 times a week	1350-1354 times a week	1355-1359 times a week	1360-1364 times a week	1365-1369 times a week	1370-1374 times a week	1375-1379 times a week	1380-1384 times a week	1385-1389 times a week	1390-1394 times a week	1395-1399 times a week	1400-1404 times a week	1405-1409 times a week	1410-1414 times a week	1415-1419 times a week	1420-1424 times a week	1425-1429 times a week	1430-1434 times a week	1435-1439 times a week	1440-1444 times a week	1445-1449 times a week	1450-1454 times a week	1455-1459 times a week	1460-1464 times a week	1465-1469 times a week	1470-1474 times a week	1475-1479 times a week	1480-1484 times a week	1485-1489 times a week	1490-1494 times a week	1495-1499 times a week	1500-1504 times a week	1505-1509 times a week	1510-1514 times a week	1515-1519 times a week	1520-1524 times a week	1525-1529 times a week	1530-1534 times a week	1535-1539 times a week	1540-1544 times a week	1545-1549 times a week	1550-1554 times a week	1555-1559 times a week	1560-1564 times a week	1565-1569 times a week	1570-1574 times a week	1575-1579 times a week	1580-1584 times a week	1585-1589 times a week	1590-1594 times a week	1595-1599 times a week	1600-1604 times a week	1605-1609 times a week	1610-1614 times a week	1615-1619 times a week	1620-1624 times a week	1625-1629 times a week	1630-1634 times a week	1635-1639 times a week	1640-1644 times a week	1645-1649 times a week	1650-1654 times a week	1655-1659 times a week	1660-1664 times a week	1665-1669 times a week	1670-1674 times a week	1675-1679 times a week	1680-1684 times a week	1685-1689 times a week	1690-1694 times a week	1695-1699 times a week	1700-1704 times a week	1705-1709 times a week	1710-1714 times a week	1715-1719 times a week	1720-1724 times a week	1725-1729 times a week	1730-1734 times a week	1735-1739 times a week	1740-1744 times a week	1745-1749 times a week	1750-1754 times a week	1755-1759 times a week	1760-1764 times a week	1765-1769 times a week	1770-1774 times a week	1775-1779 times a week	1780-1784 times a week	1785-1789 times a week	1790-1794 times a week	1795-1799 times a week	1800-1804 times a week	1805-1809 times a week	1810-1814 times a week	1815-1819 times a week	1820-1824 times a week	1825-1829 times a week	1830-1834 times a week	1835-1839 times a week	1840-1844 times a week	1845-1849 times a week	1850-1854 times a week	1855-1859 times a week	1860-1864 times a week	1865-1869 times a week	1870-1874 times a week	1875-1879 times a week	1880-1884 times a week	1885-1889 times a week	1890-1894 times a week	1895-1899 times a week	1900-1904 times a week	1905-1909 times a week	1910-1914 times a week	1915-1919 times a week	1920-1924 times a week	1925-1929 times a week	1930-1934 times a week	1935-1939 times a week	1940-1944 times a week	1945-1949 times a week	1950-1954 times a week	1955-1959 times a week	1960-1964 times a week	1965-1969 times a week	1970-1974 times a week	1975-1979 times a week	1980-1984 times a week	1985-1989 times a week	1990-1994 times a week	1995-1999 times a week	2000-2004 times a week	2005-2009 times a week	2010-2014 times a week	2015-2019 times a week	2020-2024 times a week	2025-2029 times a week	2030-2034 times a week	2035-2039 times a week	2040-2044 times a week	2045-2049 times a week	2050-2054 times a week	2055-2059 times a week	2060-2064 times a week	2065-2069 times a week	2070-2074 times a week	2075-2079 times a week	2080-2084 times a week	2085-2089 times a week	2090-2094 times a week	2095-2099 times a week	2100-2104 times a week	2105-2109 times a week	2110-2114 times a week	2115-2119 times a week	2120-2124 times a week	2125-2129 times a week	2130-2134 times a week	2135-2139 times a week	2140-2144 times a week	2145-2149 times a week	2150-2154 times a week	2155-2159 times a week	2160-2164 times a week	2165-2169 times a week	2170-2174 times a week	2175-2179 times a week	2180-2184 times a week	2185-2189 times a week	2190-2194 times a week	2195-2199 times a week	2200-2204 times a week	2205-2209 times a week	2210-2214 times a week	2215-2219 times a week	2220-2224 times a week	2225-2229 times a week	2230-2234 times a week	2235-2239 times a week	2240-2244 times a week	2245-2249 times a week	2250-2254 times a week	2255-2259 times a week	2260-2264 times a week	2265-2269 times a week	2270-2274 times a week	2275-2279 times a week	2280-2284 times a week	2285-2289 times a week	2290-2294 times a week	2295-2299 times a week	2300-2304 times a week	2305-2309 times a week	2310-2314 times a week	2315-2319 times a week	2320-2324 times a week	2325-2329 times a week	2330-2334 times a week	2335-2339 times a week	2340-2344 times a week	2345-2349 times a week	2350-2354 times a week	2355-2359 times a week	2360-2364 times a week	2365-2369 times a week	2370-2374 times a week	2375-2379 times a week	2380-2384 times a week	2385-2389 times a week	2390-2394 times a week	2395-2399 times a week	2400-2404 times a week	2405-2409 times a week	2410-2414 times a week	2415-2419 times a week	2420-2424 times a week	2425-2429 times a week	2430-2434 times a week	2435-2439 times a week	2440-2444 times a week	2445-2449 times a week	2450-2454 times a week	2455-2459 times a week	2460-2464 times a week	2465-2469 times a week	2470-2474 times a week	2475-2479 times a week	2480-2484 times a week	2485-2489 times a week	2490-2494 times a week	2495-2499 times a week	2500-2504 times a week	2505-2509 times a week	2510-2514 times a week	2515-2519 times a week	2520-2524 times a week	2525-2529 times a week	2530-2534 times a week	2535-2539 times a week	2540-2544 times a week	2545-2549 times a week	2550-2554 times a week	2555-2559 times a week	2560-2564 times a week	2565-2569 times a week	2570-2574 times a week	2575-2579 times a week	2580-2584 times a week	2585-2589 times a week	2590-2594 times a week	2595-2599 times a week	2600-2604 times a week	2605-2609 times a week	2610-2614 times a week	2615-2619 times a week	2620-2624 times a week	2625-2629 times a week	2630-2634 times a week	2635-2639 times a week	2640-2644 times a week	2645-2649 times a week	2650-2654 times a week	2655-2659 times a week	2660-2664 times a week	2665-2669 times a week	2670-2674 times a week	2675-2679 times a week	2680-2684 times a week	2685-2689 times a week	2690-2694 times a week	2695-2699 times a week	2700-2704 times a week	2705-2709 times a week	2710-2714 times a week	2715-2719 times a week	2720-2724 times a week	2725-2729 times a week	2730-2734 times a week	2735-2739 times a week	2740-2744 times a week	2745-2749 times a week	2750-2754 times a week	2755-2759 times a week	2760-2764 times a week	2765-2769 times a week	2770-2774 times a week	2775-2779 times a week	2780-2784 times a week	2785-2789 times a week	2790-2794 times a week	2795-2799 times a week	2800-2804 times a week	2805-2809 times a week	2810-2814 times a week	2815-2819 times a week	2820-2824 times a week	2825-2829 times a week	2830-2834 times a week	2835-2839 times a week	2840-2844 times a week	2845-2849 times a week	2850-2854 times a week	2855-2859 times a week	2860-2864 times a week	2865-2869 times a week	2870-2874 times a week	2875-2879 times a week	2880-2884 times a week	2885-2889 times a week	2890-2894 times a week	2895-2899 times a week	2900-2904 times a week	2905-2909 times a week	2910-2914 times a week	2915-2919 times a week	2920-2924 times a week	2925-2929 times a week	2930-2934 times a week	2935-2939 times a week	2940-2944 times a week	2945-2949 times a week	2950-2954 times a week	2955-2959 times a week	2960-2964 times a week	2965-2969 times a week	2970-2974 times a week	2975-2979 times a week	2980-2984 times a week	2985-2989 times a week	2990-2994 times a week	2995-2999 times a week	3000-3004 times a week	3005-3009 times a week	3010-3014 times a week	3015-3019 times a week	3020-3024 times a week	3025-3029 times a week	3030-3034 times a week	3035-3039 times a week	3040-3044 times a week	3045-3049 times a week	3050-3054 times a week	30





### Centenarian Diets

	Meat	Fish	Milk / cheese	Beans	Veggies	Fruits	Bread
Sardinia	+	+	++++	++++	++++	++++	++++
Okinawa		+++		++++	++++	++++	++++
Costa Rica	++	+		++++	++++	++++	++++
Loma Linda				++	++++	++++	++



### Cognitively impaired elderly annual exam

Caregiver burnout assessment  
**CASE: Care giver abuse screen**

*Canadian Journal on Aging 2005, 14, 45-60.*

**AMA Caregiver Self-Assessment Questionnaire**

*JAGS 2010, 58(2), 387-388*

Paul Klee

Dual task exercise

### Emerging innovations



Claude Monet

Sleep wave therapy	<ul style="list-style-type: none"> <li>Enhance slow wave period to improve memory</li> </ul>	Neurobiology of Aging (2015) 36:2377.
Nicotinamide ribose	<ul style="list-style-type: none"> <li>Improve bioenergetics</li> </ul>	
Bright Light Therapy	<ul style="list-style-type: none"> <li>Adjuvant to SSRI</li> <li>Reduce agitation</li> <li>Seasonal affective disorder</li> </ul>	JAMA Psych 2016 73(1):56-63 J Clin Psychiatry. 2015 76(5):645-54
High Intensity Interval Training		



Paul Gauguin

### Summary

Integrate geriatrics into primary care

Functional assessment works

Prescribe Healthy lifespan