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The Music Teacher National Association’s 13th Pedagogy Saturday
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Pianist from Little Rock, Arkansas with scholarship to the Cincinnati Conservatory of Music in 1930

Music major at Murray State University in Kentucky

Piano teacher and church organist in Baytown, Texas for over 50 years

At 94, she still plays in the dementia care unit where she resides.

Dedicated to Margaret Lassiter King (1914- )
Francisco de Goya’s inscription on this lithograph (c. 1826), presumably a self-portrait at age 80, translates to “I am still learning.”

Goya was one of the first lithographers in the art world.
Learning Objectives for You

At the end of this talk, you should be able to answer questions like these:

- Why do we age?
- What are the three major essentials I need to know to live long and well?
- How can ghrelins, exercise, technology, the arts, emergency preparedness, and good fiscal health help me achieve that goal?
Three Essentials for You …

- Accept that you, your family members, and your students are aging persons.

- Know as much as possible about actions you can take to have a good old age;

- Advocate healthy living for all persons in your community.
Age-related Changes

- Our immune systems are compromised due to decreases in Thymus size and production of Thymic hormones.
- Our Pituitary glands secrete less GF, resulting in loss of energy and lean muscle mass.
- Our cells can only duplicate 50 times before becoming senescent cells – i.e., they stop functioning.
- Our reserve capacity = the number of functioning cells/organ.
- Our ability to cope with stressors of all kinds is <
Biblical Quotes on Aging

- Leviticus 19:32 – “You shall rise up before gray hairs, and honor the face of an old man.”
- Isaiah 46:4 – “Even in old age, I am He, and to gray hairs I will carry you.”
- Proverbs 16:31 – “White hairs are a crown of glory.”

Source: http://www.activitytherapy.com/spirit.htm; accessed 01/04/02.
My Favorite Quote on Aging…

“Old age is like everything else in America. To make a success of it, you’ve got to start young!”

– Theodore Roosevelt
When it’s your turn...

There are only four kinds of people:

- Those who have been caregivers;
- Those who are currently caregivers;
- Those who will be caregivers; and
- Those who will need caregivers.

– Rosalyn Carter
Close your eyes, relax, and fast forward 30-40 years from now to a sunny Sunday afternoon. What do you want to be doing, where, and with whom?

The goal of this talk is to help you get there.
Aging – it isn’t a disease…

It’s a biopsychosocial complex.
Biopsychosocial Outcomes

- Age-related changes
- Environmental factors
- Coping mechanisms
Age-related Changes

- Normal changes with age
- Common geriatric problems
Vitality

- Ability to respond to stress = reserve capacity
- ≥ number functioning cells/organ = reserve capacity
Environmental Factors

- Income
- Living arrangements
- Support network
Coping Mechanisms

- Losses
- Role changes
- Adapting
Scarlett O’Hara in 1915

“I’m sorry, Rhett, but now I don’t give a damn.”
Principles of Aging, II

- So what?
- The answer: Use it or lose it…
- George Burns on benefits of turning 100: “less peer pressure,”…
Hippocrates said it best...

“If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have found the safest way to health.”
Said Phil Harris...

“If I’d known I was going to live this long, I’d taken better care of myself,” – quipped the famous bandleader known for living life in the fast lane.
Low-tech Solutions – Exercise and Diet
People Over 65 Who Exercise

- Men, 26%; Women, 18%
- Only 12% perform strengthening exercise
- Percent obesity – men, 26 %, women, 31%
Resistance Weight Training

Benefits

- Decreases age-related loss of lean muscle mass (sarcopenia)
- 10% < in sarcopenia would save $1.1 billion in health care costs annually
- Better quality of life due to stronger bodies – lifting things, dancing, playing a musical instrument!
Age-related Changes in Ability-to-Play Among Pianists*

- Split evenly among amateurs and professionals, older pianists (age 52-68) vs. younger ones (age 21-30) performed slower on finger tapping speed and reaction time.

- On musical measures like varying tempo and loudness of phrases playing complex compositions, there were no differences between younger and older expert pianists.

- Expert pianists acquire capacities enabling them to work around cognitive and motor limitations arising later in life.

Benefits of Brain Exercise*

- Older adults who had 10 sessions of mental training had long-lasting gains in memory, reasoning, and speed of processing.

- 5 years later, those with mental training performed better than those without the special sessions.

* ACTIVE Study published in J. Am. Medical Assoc. 12/20/06
Geragogy and you...

- Teaching frail elders under conditions of compromised health*
- Teaching cognitively impaired elders via spaced retrieval**
- Going around the dementia using procedural memory

Source *Martha Johns, Ed.D. and **Cameron Camp, Ph.D.
It’s Never Too Late to Learn: Matty Kahn at the Cello at 89
Vladimir Horowitz Performing in Moscow at 83

Source accessed 3.22.09 as a fair use citation: http://en.wikipedia.org/wiki/Vladimir_Horowitz
Benefits of Music Therapy: Things you Know That I Just Learned

- Pythagoras’s interest in music, mathematics, and philosophy influenced Plato and his brother Glaucon (Riedweg, 2005)

- In Plato’s *The Republic*, Socrates says to Glaucon, “musical training is a more potent instrument than any other, because rhythm and harmony find their way into the inward places of the sound, on which they mightily fasten, imparting grace, and making the soul of him who is rightly educated graceful…we can ever become musical until we …know the essential forms of temperance, courage, liberality, magnanimity, and their kindred, as well as the contrary forms and can recognise their images wherever they are found, not slighting them either in small things or great, but believing them all to be within the sphere of one art and study…for what should be the end of music if not the love of beauty?

- 1st Music Therapy program in U.S. at Michigan State in 1944. Practitioners with MT-BC credentials can help the “troubled souls” of young and old alike.

Trends in Aging

- Evolutionary trends
- Revolutionary trends
Evolutionary Trends

- Demographics
- Concomitant societal changes
Global Aging

• 1.2 billion older people projected worldwide in the year 2025;
• Net increase of one million people 60 years of age monthly now;
• 1st of 78 million U.S. boomers became eligible for Social Security in January 2008;
• 12,000 boomers turn 62 every day now!
It happens to the best of us…
Paul McCartney is 66!

Still Need Me?
Paul Turns 64
McCartney, other sexagenarian rockers keep rolling along

Photos: Rock’s greatest geezers
Ethnogeriatrics

• Ethnographic approach to patients
• Need cultural competence
The Geriatrics Dilemma

- 37 million older Americans
- Need 30,000 MDs with CAQs in Geriatrics
- <10,000 now
- Need 2,100 academic geriatricians
- Have 1,100 now

- Not all medical schools require geriatrics
- 3.5% elect geriatrics
- Only 218 Geriatric Medicine fellows in US now
- Similar situation exists in other health fields
Good Health Care Can Be Hard to Get

“Dr. Philby no longer sees patients at the office. You have to visit his website.”
Sometimes People Go to the Wrong Doctor

Healthcare Financing Can Also Complicate Matters

“This patient has a rare form of medical insurance.”
It’s not always the doctor’s fault...

"If you ask me, you fellas should shop around for a better HMO."
Even Evidence-based Medicine Isn’t Perfect

"You say it's a sharp, stabbing pain. Hmmm... sharp... stabbing pain."
Health Care Industry Focus on Patient Interest and Demand

Close To Home

"For an extra $25 we can set the surgical lamps on tanning mode."
Sometimes We Go to the Wrong Doctor
Revolutionary Trends

• Research efforts

• Effects on clinical practices

• Technological advances in communications
Research Frontiers

• Restoring vigor
  • Results in lifestyle
  • Societal impact
Hormonal Changes During Aging*

- The frequency and amplitude of hormone release no longer resembles the profiles observed in young adults.

- This is likely a consequence of alterations in signaling from the brain, such that the regulatory feedback pathways controlled by the brain, pituitary gland, and other peripheral tissues become impaired.

- Ghrelin (an amino acid produced in the stomach) appears to be an important modulator of physiological functions relevant to aging.

Changes in the Pituitary Gland

Amplitude of Pulsatile Growth Hormone Release Declines During Aging

Ghrelins and Mimetics, MK-0677

- Growth Hormone (GH) produced by the pituitary gland

- GH increases production of Insulin-like Growth Factor (IGF-1) produced by liver, muscle, bone, immune cells, and brain cells

- MK-0677 rejuvenator of GH/IGF-1 Axis via activation of a receptor called GHS-R expressed in brain, pituitary gland, and by immune cells

- GHS-R found to be the receptor for the hormone Ghrelin
Benefits of 12 mos. Treatment of Frail Elders with MK-0677

• Restores amplitude of pulsatile growth hormone release and IGF-1 levels to those of young adults (20-28 year old)

• Increases lean mass

• Modest (10-20%) advantage in isokinetic strength at knee and shoulder

• Prevents continued decline in strength

• Well tolerated
Myths & Realities of Aging, 1974 vs. 2000

- Older people reported poor health – 42% in 2000 vs. 54% in 1974
- Feared crime – 36% in 2000, 50% in 1974
- Reported loneliness – 21% in 2000, 36% before

> Rated these 3 things as most important: close relationships with family and friends, good health, & rich spiritual life

Aging Well: How good is your DNA?

• Stem cells linked to life expectancy, say UK researchers – novel and controversial concept
• Stem cells in bone marrow are source of new cells for many tissues – from liver to immune system
• May be possible to alter them to withstand DNA damage, thus extending life

Aging Well: How good are your genes?

- Annibale Puca, Howard Hughes Medical Institute, Boston – genetic linkage analysis
- Studied 137 sets of siblings at least 91-98 y.o.
- Found region on chromosome 4 associated with longevity -- affects aging rate
- Discovering what genes code may lead to interventions that mimic genetic effects

Aging Well: Is the Indy 500 the secret to long life?

• Indy, for “I’m not dead yet,” is gene doubling life span of fruit flies
• Flies carrying 1 copy of mutated Indy gene lived 70 days vs. normal 37
• Indy mimics caloric restriction associated with longevity
• Discovery adds to evidence that factors affecting metabolism affect aging

Aging Well: Is “C” a Good Grade?

• Not usually but *C. elegans* may get an A+
• *C. elegans*, a roundworm with only 959 cells and lifespan of a week, is easy to study
• Rutgers University biologist Monica Driscoll discovered the worms lose muscle cells (sarcopenia) when they age just like people
• This is due to an enzyme called PI3 kinase
• Without the enzyme, no sarcopenia

Says George Vaillant…

• “Our choices play a significant role in happy aging.” He studied 724 Harvard freshmen for 60 years.

• Those who did best used alcohol moderately, did not smoke, had stable marriages, exercised regularly, maintained appropriate weight, had positive coping mechanisms, obtained higher education, were actively involved in extended family, and had no depressive illness.
Says Charles Hillman…

• “Executive control function, the ability to choose quickly among several possible actions, usually declines with age.”

• When the electrical brain activities of physically active seniors were compared with young adults, there was little difference in ability to process information. Moderately active seniors’ performance lagged behind.
Want to get 7.5 more years of life?

• “Get happy, or get a more positive self-perception of your own aging,” say researchers at Yale and Miami Universities.

• Controlling for age, gender, SES, loneliness, and functional health, persons with positive attitudes about aging measured up to 23 years earlier, lived 7.5 years longer than did those with less positive attitudes!
Current Trends in Disability among Older Adults in the U.S.

- 20% have chronic disabilities
- 7-8% have severe cognitive impairments
- 20% have vision problems
- 33% have hearing problems
- Cost of care for disabled OP 3x that of nondisabled older people
- Cost of LTC for older disabled persons in 2000 = $123 billion

When the rules don’t apply: Aging with disabilities
When rules work: 1st Macy’s Thanksgiving Day Queen, Helen Gross, 101, shown 80 years ago in NYC and again on 11/23/06!

Source: New York Times, 11/24/06, photo by Michelle V. Agins
$\text{, a Sign of the Times}


"Let me get this straight: Between my 401(k) and your defaulted pension we’ll have to work another eight years—and your mother is moving in."
Scary sign of the times – Bioterrorism!

- In 2002, $\geq 300,000$ Internet citations on BTP – none on special needs of frail elders exposed to weaponized biological, chemical or radiological agents
- Syndromic surveillance – precautionary monitoring and upstream approaches
- Health care workers need special training
Emergency Preparedness Issues

- Even robust elders don’t fare as well in natural disasters as do younger people – e.g., Hurricanes Katrina, Rita, and Wilma
- Few health care professionals have had training in GEP&R
- Need to know who needs help for what, where, when, and how?
Global Communicating
WWW Growth

- 1st site, Christmas Day 1990
- 130 sites, June 1993
- 4,389,131 sites in March 1999
- 35,543,105 sites in December 2002
- 70,392,567 Sites in August 2005
- 353,284,187 computers with IP addresses

e-Problems

"Today, I'm not going to talk about my damn mother. I'm going to talk about my damn e-mail!"

CHRONICLE OF HIGHER EDUCATION

RICK HICKS AND I
"Bob, time to say good-bye to your little friends on the World-Wide Web and come to the meeting."
e-Health on the Web

- Number of Web sites in aging > 8,000 -- up from only 25 in Feb. ’95
- 52 million U.S. adults use Web for health information…70% say online information influences decision to seek treatment
- 86% concerned about unreliable sources
- Great majority find information through searches on the 17,000 health Web sites in U.S. rather than being directed by a knowledgeable health professional...

Source: Pew Internet & American Life Project, November 26, 2000
Seniors Online Survey Results*

- 15% of persons 65+ go online vs. 51% aged 50-64

- However, those 65+ are coming online at faster rates than other age groups, especially older women

- 65% of experienced online seniors vs. 61% of all Internet users seek health information from Web sites

*Source: Seniors Online, Data courtesy Susannah Fox, Director of Research, Pew Internet & American Life Project*
Where’s the beef?

- Design features are great, but content is paramount
- “good and bad information light up just as brightly on computer screens”…. Former Surgeon General C. Everitt Koop, MD
- “we must write information prescriptions for peer-reviewed Web sites”…. the late John Eisenberg, MD, former head, Agency for Healthcare Research and Quality
Too few sites with verifiable elements

Need “filterable” elements for searches

4 Elements Needed for Rx: authorship, attribution, disclosure, and currency*

5th Element: high general usability features

Eisenberg’s notion of an Rx for Web Sites geriatrics professionals review and recommend…

Why? Older people present differently than younger patients & too few health providers have adequate training in geriatrics…

Teaching older patients and their caregivers to access good information from sites like hcoa.org…
Huffington Center On Aging’s Web Site
The Future? It’s Here Now

- “Information Age” towns and homes…Blacksburg, Virginia and Ennis, Ireland…
- e-Health business & learning
- Gerontotechnology is here…
Let technology be your friend…

• At some time in our lives, we need to be interdependent on people and on services.

• How you view those people and services can help you have a better old age.

• Do you live in a “Smart Home”? 

 
“Smart Home” Telecare

- Smart Sensors
- Only required information leaves home
- Local Intelligence
- Local Processing

- Emergency services (police, fire, medical) connected to the system.
How it works

1. Wireless sensors track senior’s ADL’s
2. Base station uses existing phone line and local dial-up to report key behaviors
3. ADL’s analyzed for deviations from normal behavior
4. Reports generated
5. Alerts issued
6. Caregiver calls senior to check in.

Caregiver:
- Adult child
- ALF or home healthcare provider
- Care manager
Passive monitoring of ADL’s can alert caregivers in realtime…

- Lets caregivers know their loved one is safe
- Functions as an early detection/warning system about possible problems before they become catastrophic – e.g.,
  - Has Mom gotten out of bed?
  - Has she navigated the bathroom safely?
  - Did she eat?
  - Has she taken her medicine?
  - What is her overall activity level?
  - Is she sleeping well?
  - Are her bathroom habits changing?
  - Room temperature alerts for heat and cold

- System + Personal Emergency Response Service provides 24/7 monitoring/ response and a full pro-active/reactive “circle of safety.”
Remember Star Wars? R2D2 is back!
The main points to remember

- If lucky, someday everyone will be an older person;

- What you do or don’t do today may determine how good of an old age you will have;

- Last, and most important, older people contribute to the quality of our lives....
Older Artists on the Web

- 1996 was 1st HCOA Arts in Aging Calendar, a retrospective of Pierre Auguste Renoir (1841-1919)
- Despite decades of arthritis pain, he painted until his death. Renoir’s prolific work is a testament to the contributions older people make to the quality of our lives.
Country Dog Show (from the 1997 Calendar)

- The art of Jean MacLane (1878-1964) from the Toledo Museum of Art, Toledo, Ohio
- The September 1997 selection from Through a Woman’s Eyes: Women Artists Past and Present
65 Winters Old (from the 1999 Calendar)

- The art of Ansgard Thomson (1923-) of Fort Assiniboine, Alberta, Canada
- Enjoy her computer art at this Web site -- http://www.vennercs.com/users/athomson/
The Flower Camellia, Red and White
(from the 1999 Calendar)

- The art of Yuki Ogura (1895-2000) from Kamakura-shi, Kanagawa-ken, Japan
- Japan’s national treasure who resumed painting at age 100 following treatment for depression
Red Dirt Country  (from the 2000 Calendar)

• The art of Tom Ryan (1922-) of Midland, Texas
• Noted artist in The Cowboy Artists of America Museum, painting again following stroke
The Clarinetist  (from the 2001 Calendar)

• The art of Margaret E. Nadeau (1926-) from Comox, BC
• Noted Canadian artist, this work is part of a private collection in Edmonton, Alberta
Needlepoint Rug (from the 1998 Calendar)

- The art of Anne Eldredge Harris (1918-) from Hockessin, Delaware
- Classical artist took up computer art following death of husband…
  www.art.net/studios/visual/Anne/home.htm
Northern Lights (from the 2001 Calendar)

• The art of Shirley Timmreck (1920-) of Homer, Alaska

• Artist, playwright, teacher, this work is in a private collection in Houston, Texas
Creative Expression in Late Life
in the Artists’ Own Words

Anne Harris, 1918-
• “I never think of doing art as therapeutic, yet there is comfort and fulfillment in doing it...more than that, it is a real necessity...”
• Creativity wells up inside me, first forming an image in it's entirety in my mind and then I bring it to life...
• The sensation is like a kind of hunger--which must be fed!”

Shirley Timmreck, 1920-
• “Painting is a great escape into another dimension...sometimes frustrating in awaiting concept, but when I succeed, it becomes a dance of joy for me...”
• My creative drive is actually better at this age...
• Nothing teaches like life itself... I am still learning.”
See all 14 Calendars…

http://www.hcoa.org/newsite/artsinaging/pastyears.asp
Top 10 Things to Have to Live Long and Well

#10 - Have old ancestors
#9 - Have enough $  
#8 - Have gero-docs
#7 - Have friends
#6 - Have BP $\leq140/90$

#5 - Have healthy diet
#4 - Have good weight
#3 - Have daily exercise
#2 - Have plans
#1 - Have fun and good music!
Summary - You can’t stop aging but you make the best of it by:

• Anticipating a good old age…
• Having health care professionals who know you and the aging process…
• Eating well and exercising regularly…
• Getting a good night’s sleep…
• Preparing for emergencies…
Summary (contd.)

- Saving enough $ to enjoy your life...
- Avoiding financial fraud for fiscal health...
- Having a wide circle of friends...
- Learning new things...
- Planning new activities...
- Playing your music...
- Enjoying those Sunday afternoons.
Margaret King at 94, shown with her daughter, Carole Roush
Aging isn’t just for today’s older people…

➢ But for tomorrow’s, too

➢ Like my 7-year-old granddaughter, Carmella, shown here with her mother
Goya Said it Best: “Aún aprendo”

My goal for each of us is, at age 80, to say like he did “I am still learning, still teaching, still playing music.”
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