

# Aging, Health and Dementia

John Daly MD

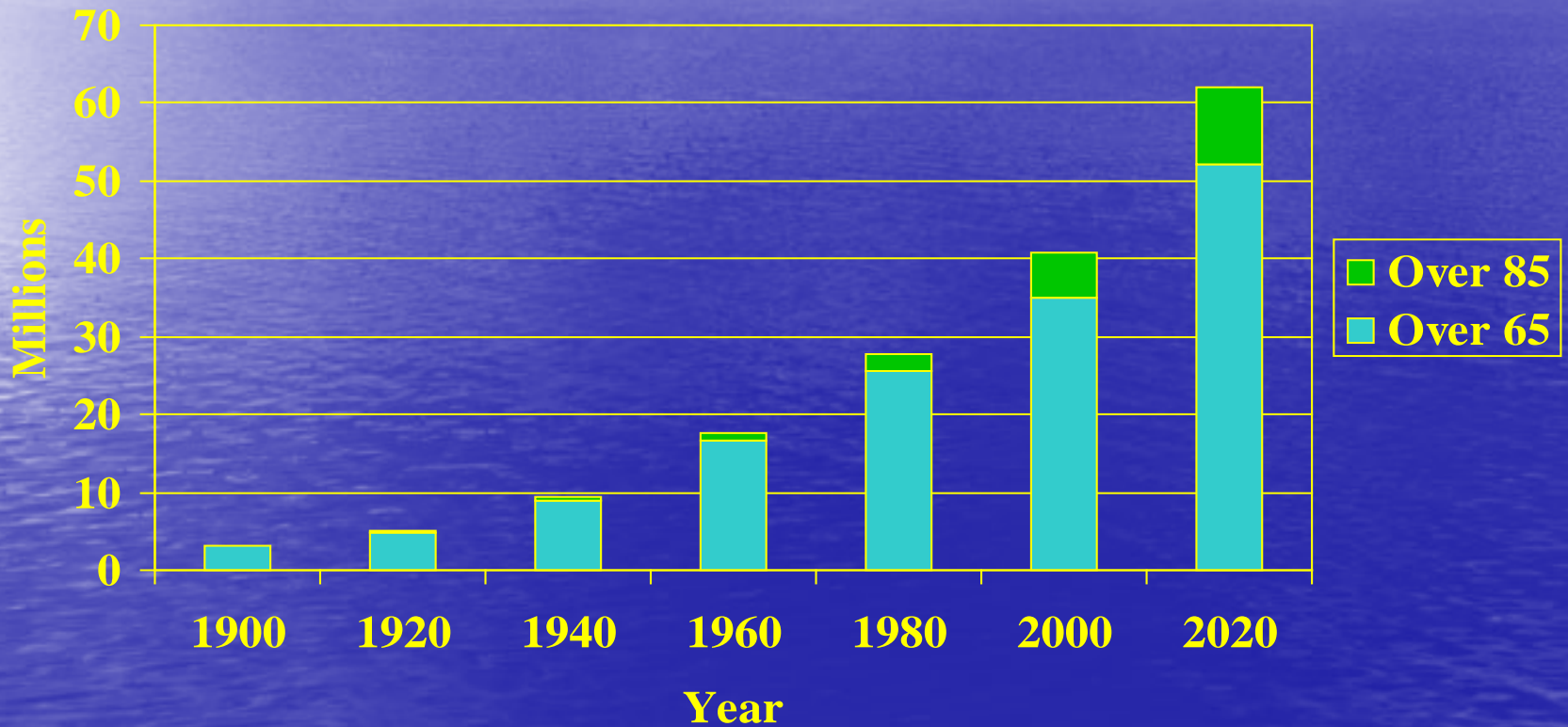
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Geriatric Medicine

# Aging Well

The older the violin the sweeter  
the music

# Number of persons over 65 in US





The study of aging is a very  
young science

At no other point in human history  
has such a large proportion of the  
population achieved a full life  
span



# What is aging?

- Changes due to “normal” aging process
  - Do we know what normal is?
- Changes due to the effect of disease
  - This is the usual stereotype of aging
- Environmental influences
  - The “cohort affect”
- Lifestyle and psychosocial factors

# Changes due to the effects of "normal" aging are:

- Universal and occur in all members of a species
- Not due to illness or external environmental forces
- Progressive, but the rate of change varies widely among individuals

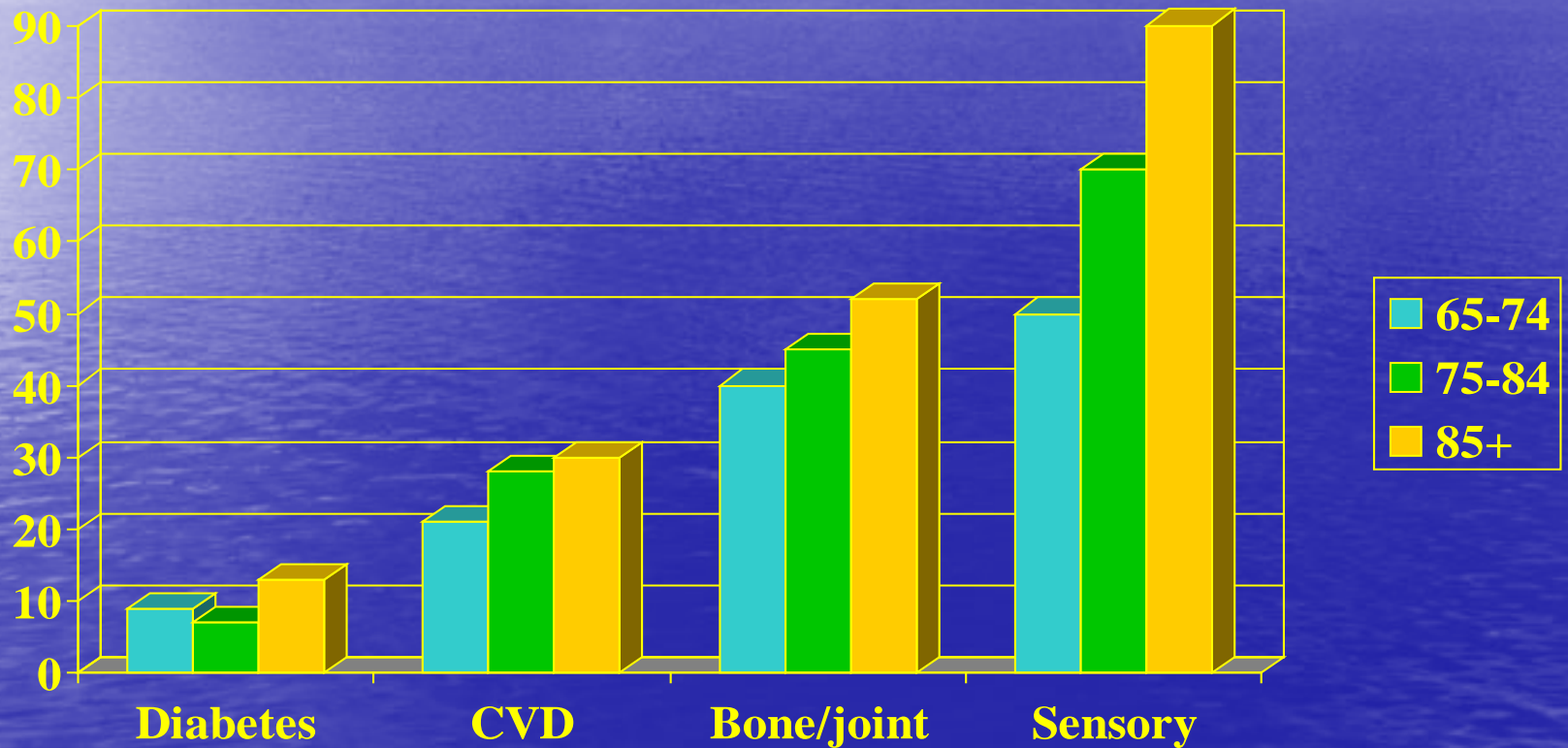


# Changes in physiology with aging

- Decrease in lean muscle mass
- Change in hormones: decrease in estrogen, testosterone and growth hormone
- Decline in maximal oxygen consumption, maximal heart rate and basal metabolic rate
- Changes in connective tissue: increased cross linking of collagen and loss of elastin



# Percent older persons with chronic conditions



# Common age-associated conditions

- Arthritis
- Cardiovascular disease
- Stroke
- Diabetes
- Dementia
- Osteoporosis
- Malignancy
- Gait abnormalities and falls

Aging is *not* for sissies



"You know you're getting old  
when all the names in your  
black book have MD after them"

Arnold Palmer



# Bio-functional changes associated with aging

- Diminished reserve in most organ systems
- Decline in many sensory functions
- Altered metabolism or physiologic response to many pharmacological agents
- Increased prevalence of chronic illness



"The great secret that all old people share is that you really haven't changed in 70 or 80 years. Your body changes, but you don't. And that, of course, causes great confusion"

Doris Lessing

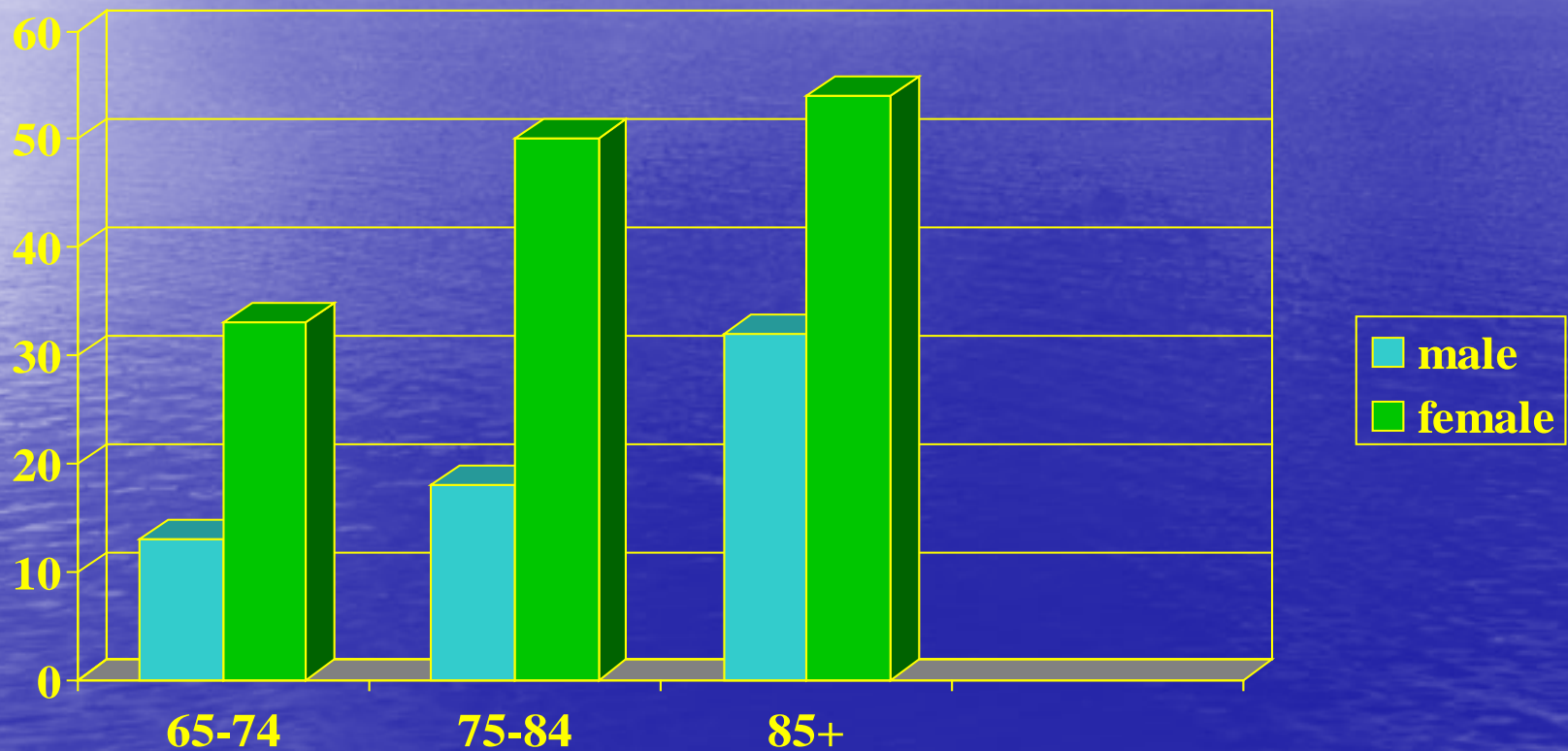




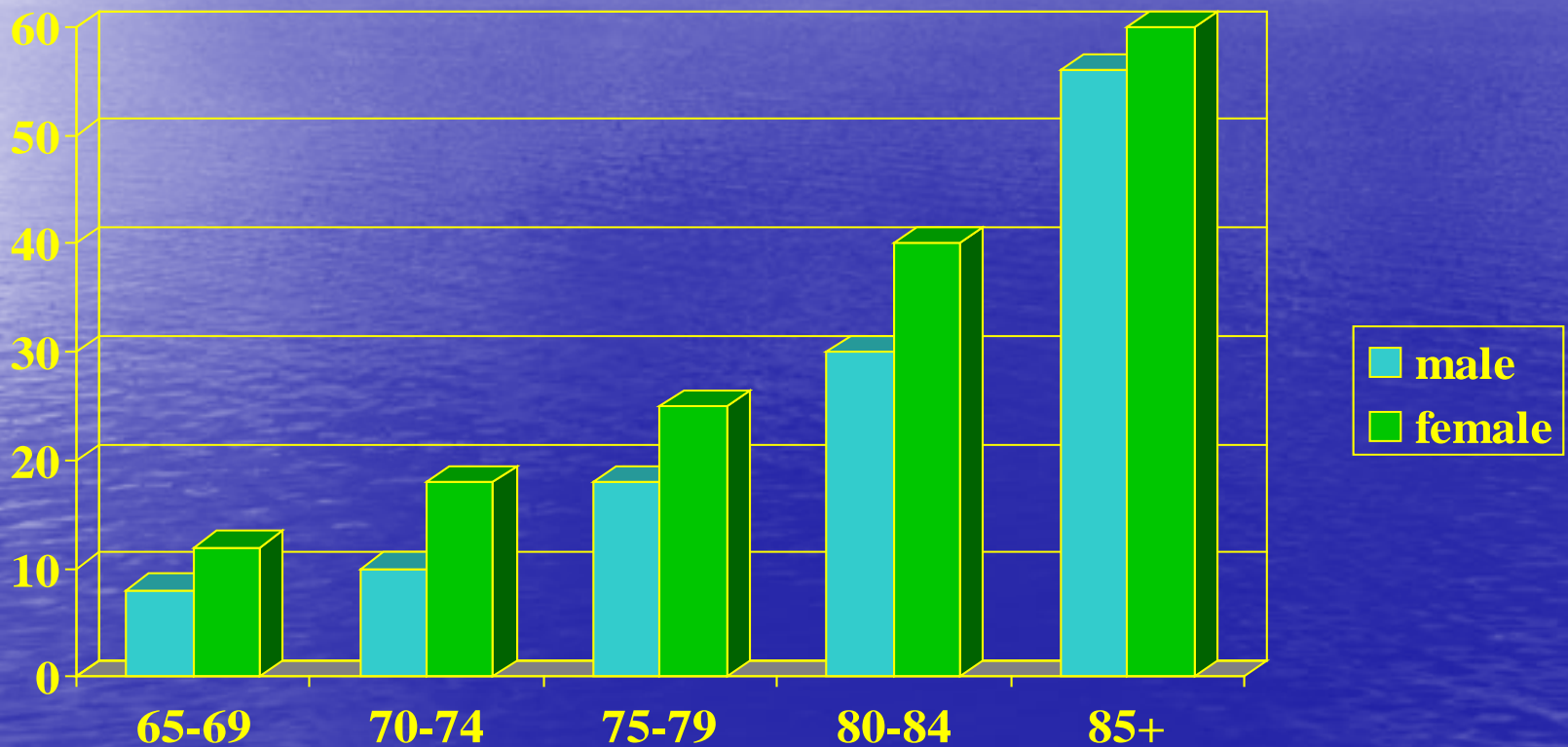
# Social impact of an aging society

- Older individual is more likely to experience a greater need for social support at a time in life when personal support systems may have diminished
- By 2030 one in 5 Americans will be over age 65

# Percent of community elderly living alone

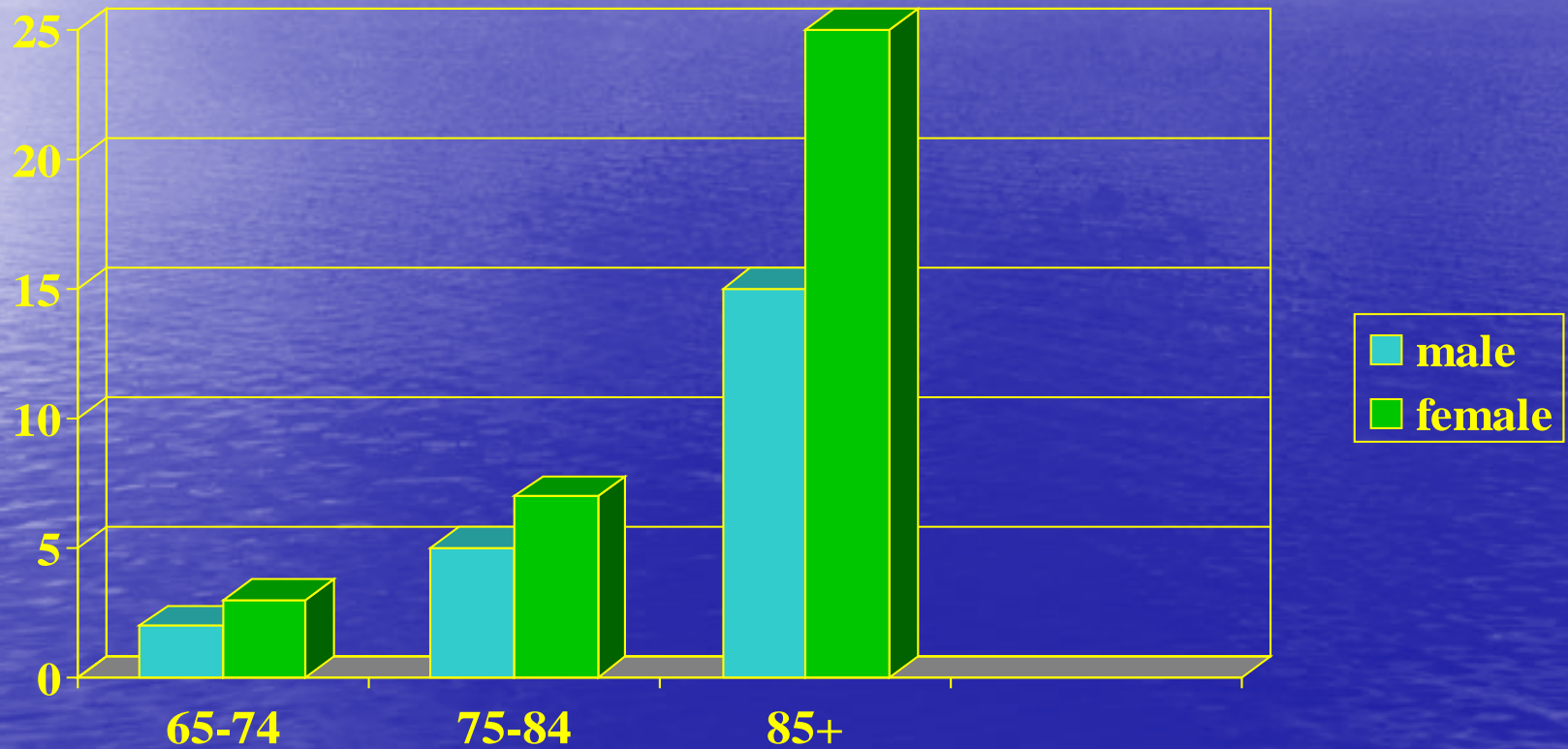


# Prevalence of at least 1 ADL difficulty among older individuals in the community

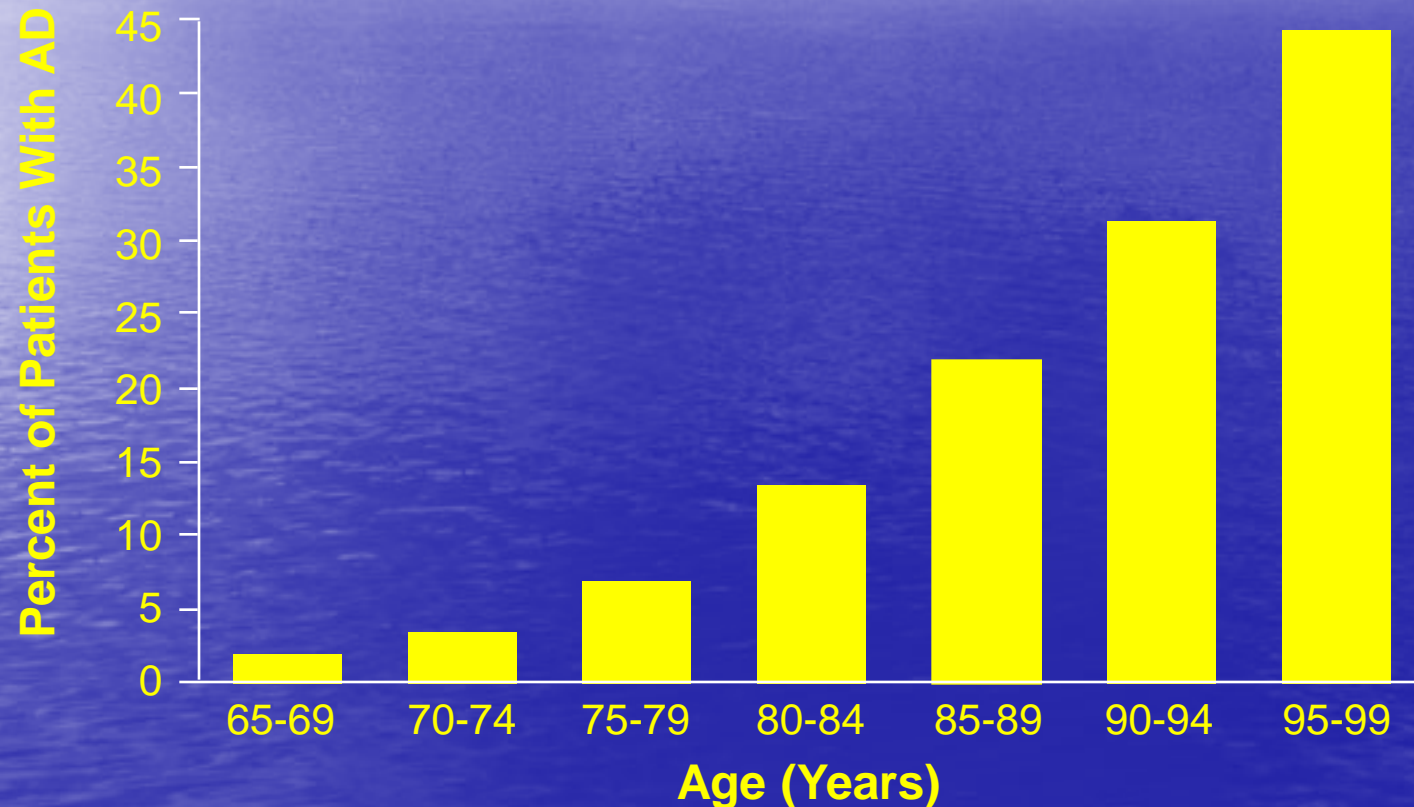




# Nursing home use increases with age



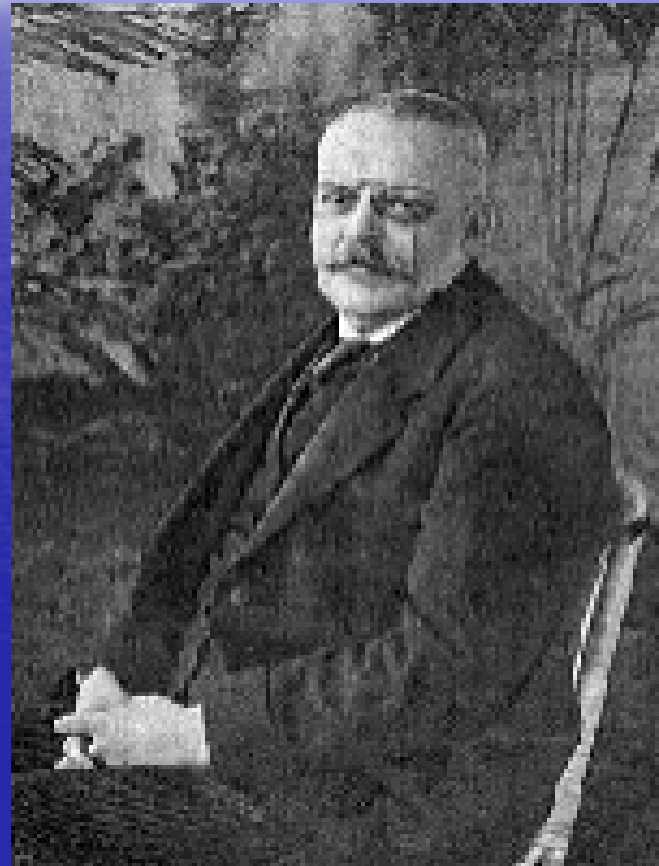
# PREVALENCE OF ALZHEIMER'S DISEASE WITH INCREASING AGE



Adapted from Ritchie K, Kildea D. *Lancet*. 1995;346:931-934.

# Alzheimer's Disease

- First described in 1906 by Dr. Alois Alzheimer
- Initial case report was a 51 year old woman with a progressive dementia





# Classification of Dementia 1906-1976

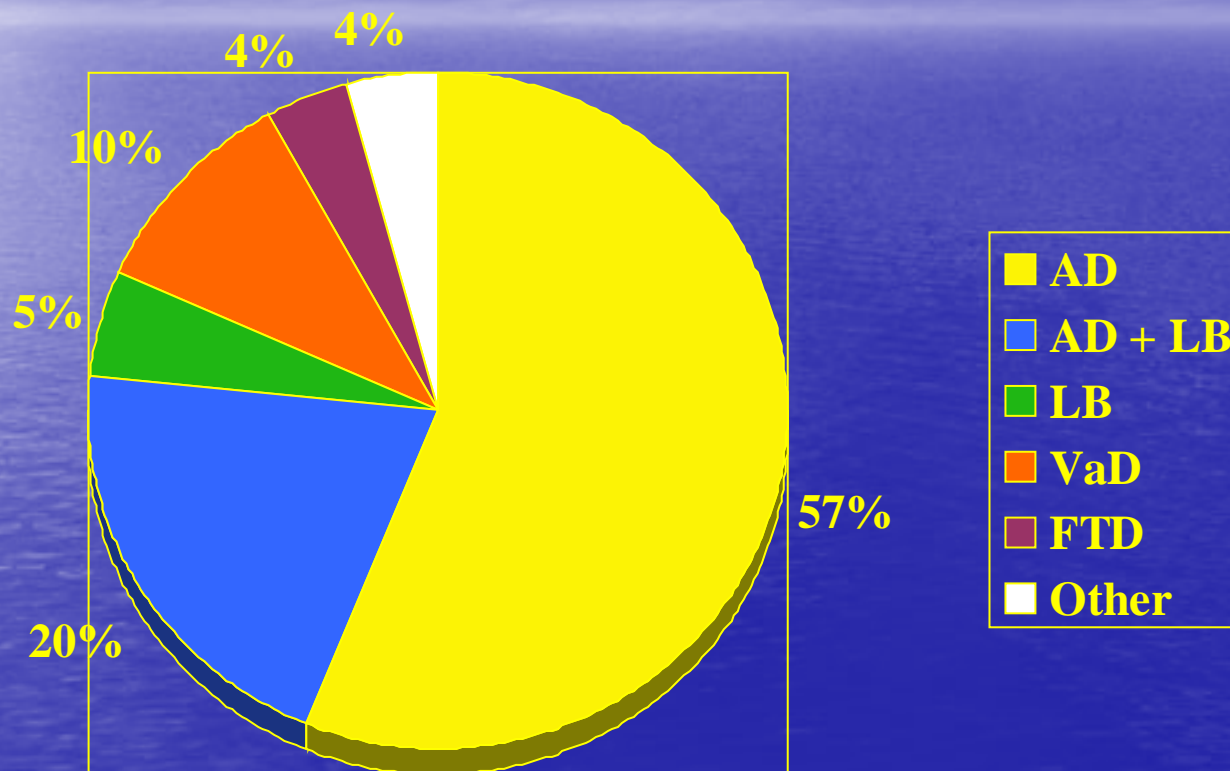
- Prior to 1976 dementia was classified as either senile or "pre-senile" dementia
- Senile dementia was considered to be an expected consequence of aging
- "Pre-senile" dementia was attributed to Alzheimer's disease, which was believed to be a relatively rare condition causing dementia in younger people

# Senile Dementia and Alzheimer's Disease

- In his landmark article in 1976 Dr. Robert Katzman demonstrated that the majority of senile dementia was in fact Alzheimer's disease



# Etiologies of Dementia





# Features that make diagnosis of Alzheimer's disease uncertain or unlikely

- Sudden onset, rapid progression
- Focal neurological findings
  - Hemiparesis, sensory deficits, visual field defects, loss of coordination early in disease
- Seizures or gait disorder at onset or early in the disease

# Dementia vs. Delirium

- Dementia

- Insidious onset
- Chronic course
- Attention usually normal
- Few motor signs
- Usually no autonomic signs

- Delirium

- Onset acute or sub-acute
- Fluctuating course
- Impaired attention
- Often hyperactive or hypoactive
- Increased sympathetic activity common
- Triggering event/drug may be apparent

# Aging and delirium

- Older individuals are at a much higher risk of developing delirium as a result of an acute illness
- Delirium presents as alterations in level of consciousness, attention, cognitive status or perception



# Causes of delirium

- ***Any*** acute medical condition from a simple urinary tract infection to heart failure or stroke. It may be the only symptom of illness.
- ***Any*** adverse drug reaction, including reactions to some commonly available over the counter medications
  - (if the label says PM: Beware)

# Causes of delirium

- Metabolic
- Infection
- Cardiovascular
- Cerebral vascular
- Pulmonary Disease
- Drugs / intoxication
- Anemia
- Fecal impaction
- Urinary retention
- Acute psychosis
- Altered or impaired sensory input
- Hypo or hyperthermia
- Trauma

# Delirium and mortality

- 6 month mortality of elderly patients admitted to post acute care facility
  - With delirium: 25.0%
  - With sub-syndrome delirium: 18.3%
  - Without delirium: 5.7%
- (Marcantonio et al. JAGS #6, June 2005:963-9)



# Ten warning signs of dementia

- Memory problems that affect job
- Difficulty with familiar tasks
- Language problems
- Disorientation to time and place
- Judgment problems
- Problems with abstract thinking
- Misplacing things
- Changes in mood or behavior
- Changes in personality
- Loss of initiative

# Dementia is.....

- Loss of memory and other cognitive functions
- A decline in the ability to perform usual daily tasks
- Changes in behavior and personality
- Loss of ability for self care and self determination

# Risk factors for AD

- Age
- Genetics
- Co-morbid illness
  - Diabetes
  - Hypertension
  - Stroke
  - Head trauma/ brain injury



# Dementia and aging

- Knowledge and education are our best weapon against this illness
- Ignorance and denial of the condition lead to disastrous outcomes
- Time to come out of the closet into the light of day

# The diagnostic evaluation

- Medical history and physical
- Neurological evaluation
- Cognitive testing
- Brain imaging
- Laboratory tests
- Psychiatric evaluation

# Evidence supports the following tests in routine dementia evaluation

- CBC
- Metabolic panel
  - Glucose, electrolytes, BUN, creatinine, liver function test
- B-12 level
- Thyroid function tests
- Structural brain image MRI or CT
- Depression screening
- Substance abuse screening

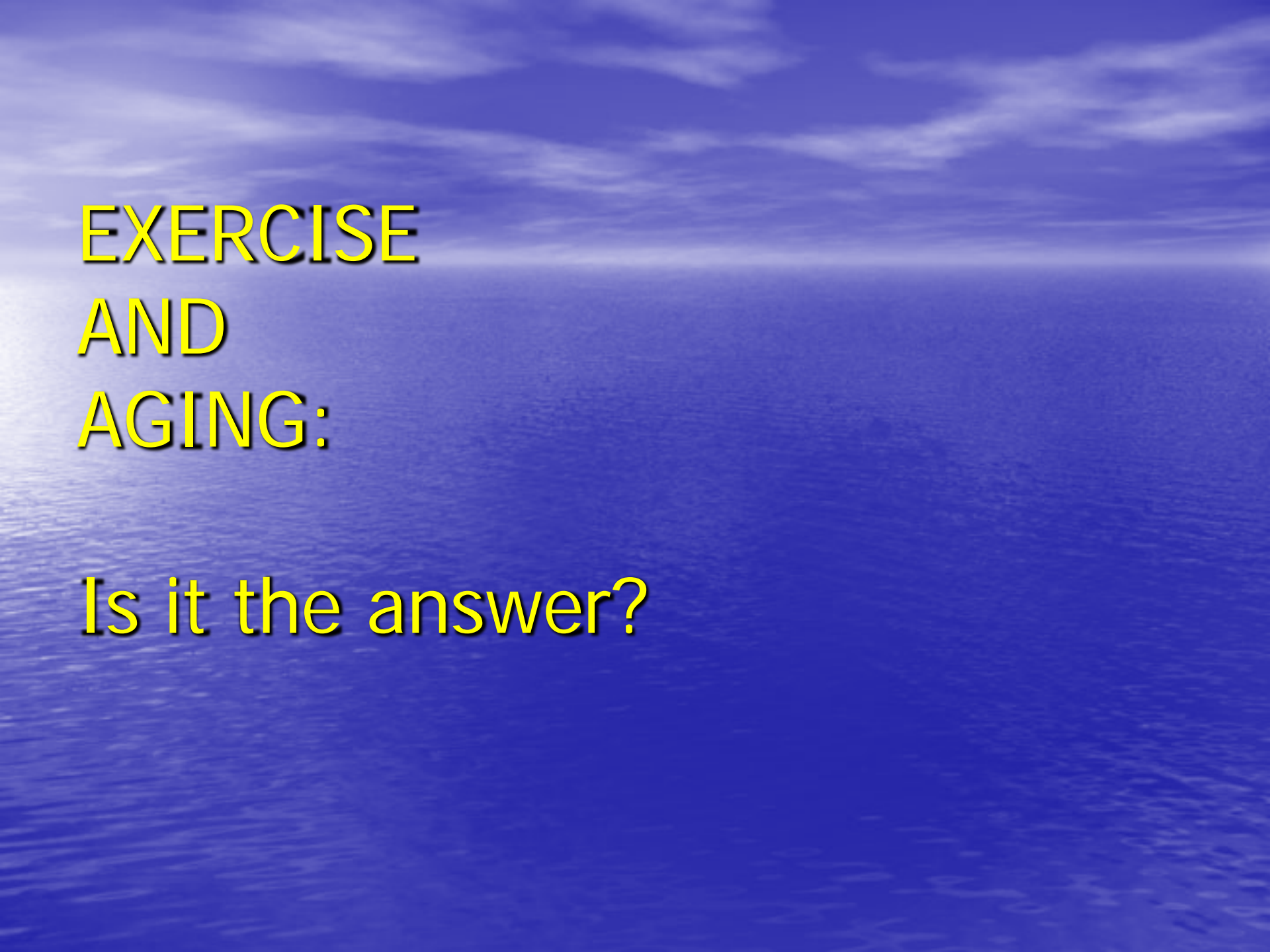


# Issues to cover at diagnosis

- Effect of disease
- Disease progression
- Ability to perform daily tasks
- Available medications
- Difficult behaviors
- Where to find help and services
- Caregiver information
- Financial and legal planning issues
- Driving

# Goals of management

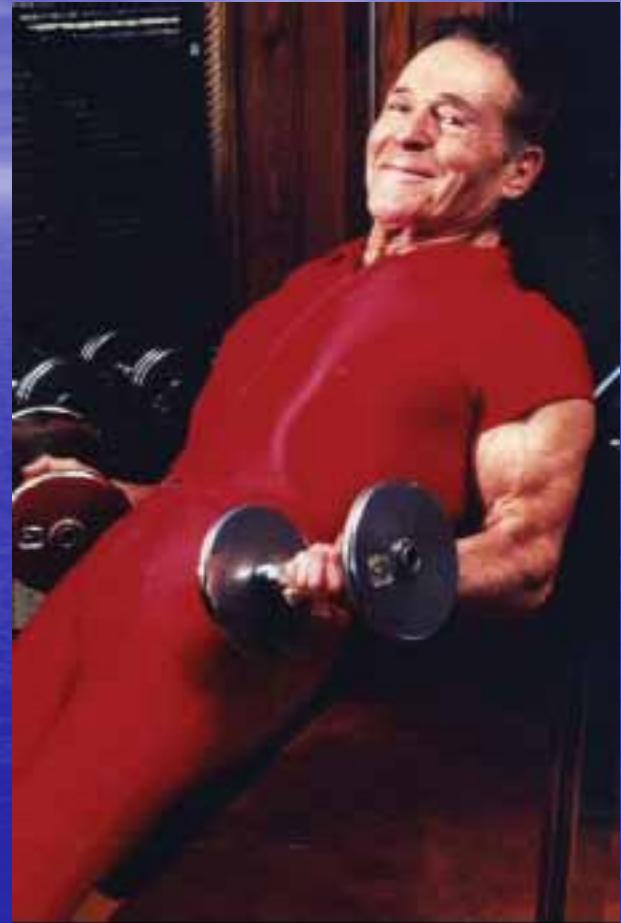
- Slow disease progression
- Stabilize functional status
- Symptom management
- Provide safety and security
- Adequate support to family and caregivers
- Preservation of dignity

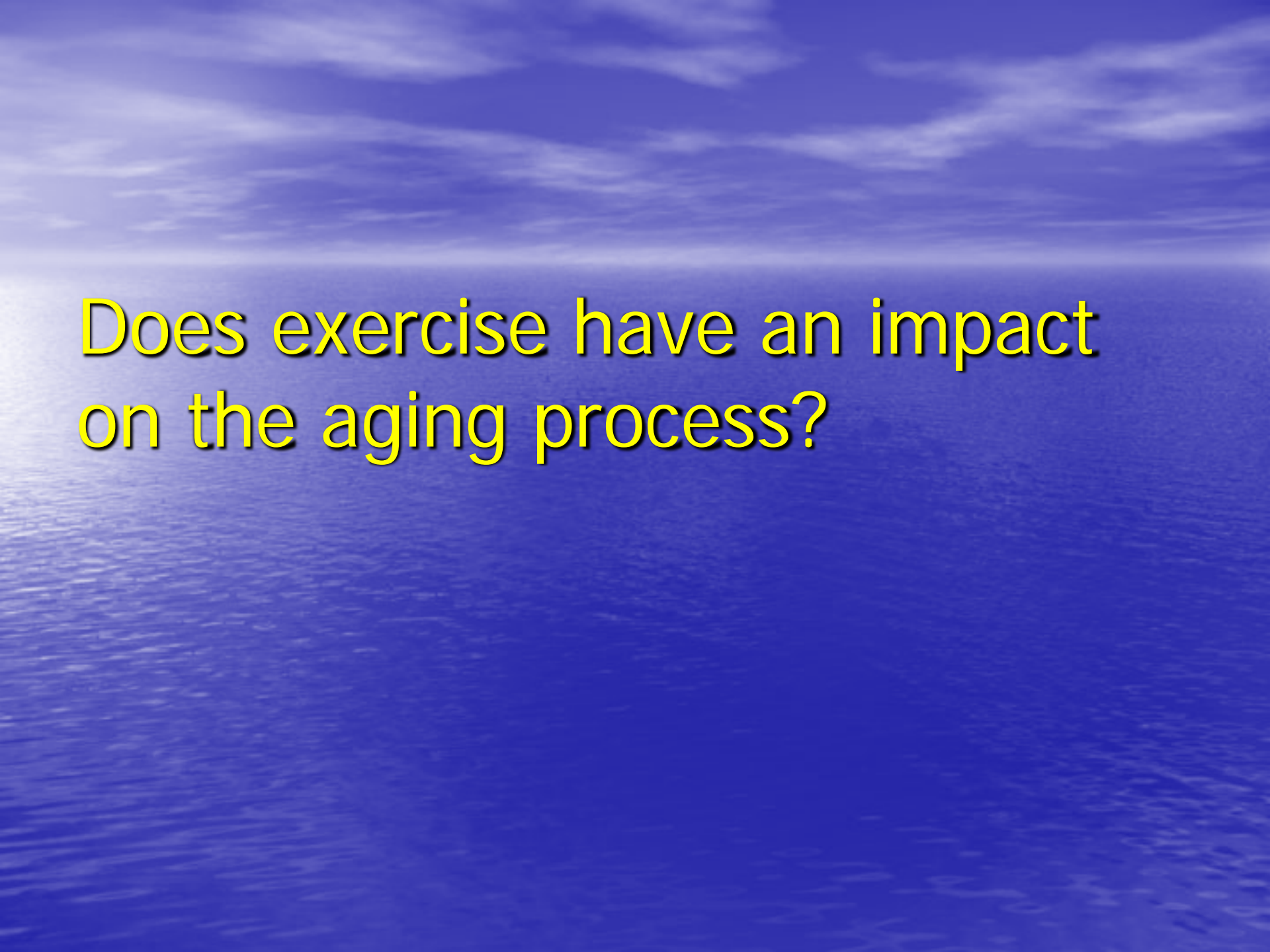


# EXERCISE AND AGING:

Is it the answer?

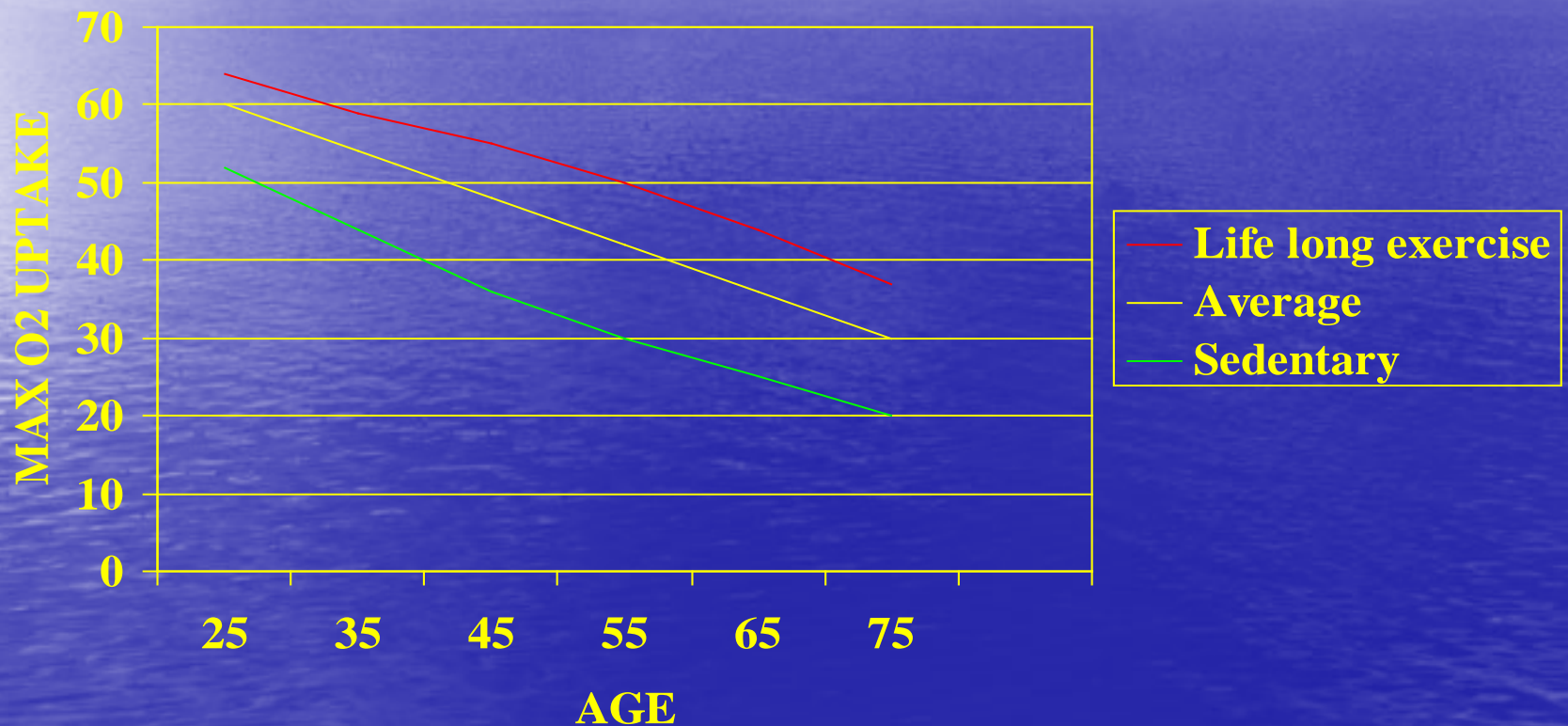






Does exercise have an impact  
on the aging process?

# Effect of exercise on maximal oxygen uptake





"Old age is like anything else.  
To make a success of it you've  
got to start young"

Fred Astaire



It is not too late to start  
exercise



# So what is a geriatrician?





# Geriatrics defined:

- Branch of medicine that focuses on health promotion, and the prevention and treatment of disease and disability in later life.

American Geriatrics Society

# Geriatric syndromes

- Geriatric pharmacology
- Gait disorders and falls
- Osteoporosis
- Arthritis
- Incontinence
- Dementia and delirium
- Frailty
- Multiple chronic illness
- Elder abuse
  - Physical and financial

# Geriatrics team approach

- Geriatrician
- Nurse
- Social worker
- Nutritionist
- Geriatric psychiatrist
- Physical therapist
- Occupational therapist
- Consultant pharmacist



# Which patients benefit most from care by a geriatrician? AGS survey

- Age 85 or older
- Individuals with frailty or functional decline
- Multiple diagnoses or complex medical conditions
- Geriatric syndromes

# Geriatric pharmacology and poly-pharmacy

One pill makes you larger and one pill makes you small. Ask Alice  
(Jefferson Airplane)



# Drug use in the over 65 population

- Age group represents 17% of the population
- 30% of all prescription drug use
- 40% of all non-prescription drug use



# Rates of drug use increase with age

- 66% men and 81% women over 65 use at least one prescription drug weekly
- 1 in 8 men and 25% of women use 5 or more prescription drugs weekly
- For OTC drugs 89% men and 94% women use at least one product weekly, and 11% to 12% use 10 or more weekly





# Adverse drug reactions (ADRs) in the elderly

- 10% to 17% of acute geriatric admissions are for adverse drug reactions
- In Outpatients
  - 18% of elderly outpatients suffer ADRs
  - 35% of high risk (i.e. those taking 5 or more medications) suffer ADRs



# MD means More Drugs

- 75% Of office visits by geriatric patients are associated with continuation or initiation of a drug prescription
  - -From Report 5 of the Council on Scientific Affairs; Improving the quality of geriatric pharmacology. 2002



# A few words of caution on supplements, herbals etc.

- Have same potential for adverse reactions and side effects as drugs, but less testing and regulation
- Do NOT have to prove efficacy before marketing
- Do NOT have ongoing monitoring of purity or composition of ingredients.
- Limited knowledge of interactions with prescription medications

# US population stats as of 2007

- Number 65 and older 39 million
- Number 85 and older 5.5 million
- Number of geriatricians in US 9,000
- That's one geriatrician for every 4,333 persons over age 65



# So what is happening in health care while the population is aging?

- There are currently 9,000 geriatric specialist with an estimated need for 20,000.
- The number of practicing geriatric specialists is in decline
- There is a decrease in applicants to geriatric training programs

# Communicating with your doctor about age related concerns

- How do *you* make yourself *heard*?
- How do *you* become an effective *partner* with your doctor?
- What do *you* need to *bring* to the encounter to make the appointment more productive.

# The reality of the health care system

- Most physicians practice in an incentive and productivity based reimbursement environment
  - The more patients seen, the shorter the visit time, the greater the reward.



# What you need to bring to the physician encounter

- An *agenda* : a concise list of problems and concerns that identifies the highest priority issues
- Back up: a friend, family member, caregiver
- A *complete list of medications* :
  - Prescription, over the counter, supplements, herbals and "nutraceuticals"
  - Best to bring everything you are taking to an appointment (the brown bag technique)

# Strategies to enhance physician encounter

- Record concerns as they arise between visits
- Prepare list of concerns and questions and bring to appointment
- Have family member or trusted friend accompany you
- Ask questions
  - Clarify instructions
  - Make sure you understand explanations
- Ask for written instructions
- Establish follow up
  - Next appointment
  - Symptoms to prompt earlier return appointment



# What do you want in a physician?

- Knowledgeable
  - About aging
  - About your condition
- Competent
  - Board certification
  - licensing
- Professional
- Approachable
  - Answers questions
  - Willing to discuss concerns
- Communication skills
  - Listens and explains well
- Available
  - Appointments
  - Emergency backup



# Twelve steps to successful aging



# Step one

- Don't smoke, if you do quit
  - Smoking is still the number one preventable cause of early death
  - Smoking is a major cause of disability
  - Stopping smoking is the highest impact healthy life style intervention



# Step two: avoid being overweight

- Avoid concentrated sugars

- Table sugar
- Corn syrup
- Sodas
- Agave syrup
- Honey

Lead  
To

## Obesity

Insulin resistance

Diabetes

High triglycerides

High uric acid

- Avoid excess fat



# Step three: EXERCISE!!!!

- Work some form of exercise into your daily routine:
  - Walk rather than drive when you can
  - Take the stairs
  - Nature walks, bird watching, walking groups
  - Dance, Tai Chi, Yoga, Pilates
  - Swim
  - Get out and enjoy life

# Step four: be socially connected

- Family
- Friends
  - Old and new
- Social organizations
- Special interest groups
- Companionship/ romance

# Step five: be involved

- Community organizations
- Charitable foundations
- Political action groups
- Professional organizations



# Step six: stay mentally active

- Learn new skills
  - Learn a language
  - Study a new field
- Discussion groups
  - Public lectures and seminars
  - Book clubs
- University extension programs
- Challenge yourself

# Step seven: be creative

- Express yourself
  - Write, paint, sing, dance, play music
- Explore yourself
  - Discover new talent
  - Revive old skills

# Step eight: share your experience

- Knowledge BE
- Wisdom A
- Skill Mentor
- Time Teacher
- Insight Advisor



# Step nine: recognize and adapt to changes that may come with aging

- Sensory loss
  - Vision, hearing, balance, taste, smell
- Mobility impairment
- Change in role
- Loss of family, friends, support system
- Change in some activities

# Step ten: avoid falls

- 72% of fall related deaths occur in the 13% of the population over age 65
- 2/3 of all accidental deaths in older adults are due to falls

# Step eleven: reassess driving skills

- Recognize that many age related common conditions may affect driving skills
- Vision problems worse with night driving
- There are driving evaluation programs
- Wear seat belts
- Do not drive under the influence of alcohol, certain medications or *other* substances
- Consider public transportation options



# Step twelve: seek beauty & peace

- Be in Nature
- Enjoy art, music, literature
- Meditation/ spiritual interests
- Time for reflection
- Be "in the moment"



University of California, San Diego

Shiley-Marcos  
Alzheimer's Disease  
Research Center

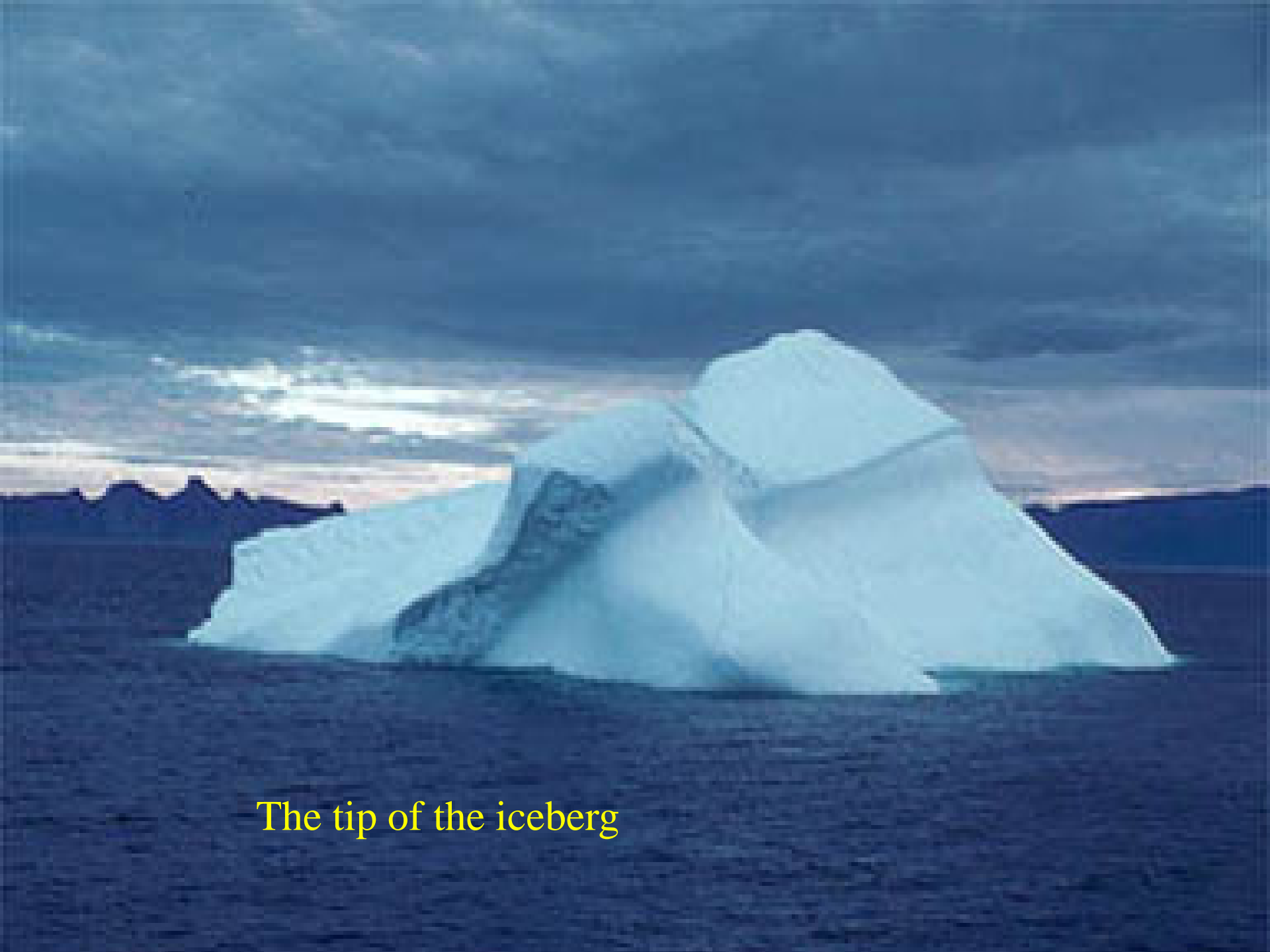
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There are approximately 5.1 million people in the US today with the diagnosis of Alzheimer's dementia





The tip of the iceberg