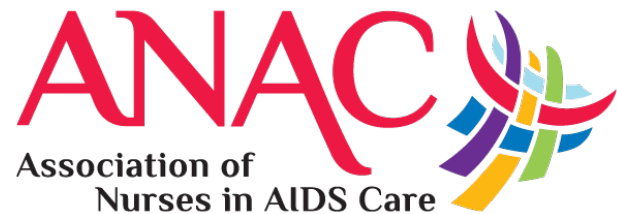


Caring for the Person Living & Aging with HIV: it's complicated & it's the future

W. David Hardy, MD Whitman Walker Health HVMA
Jeffrey Kwong, DNP Columbia University ANAC

Moderator: Carole Treston
USCA September 9, 2017



HIV and Aging: What Do We Know? Where Are We Now? What Can We Do?

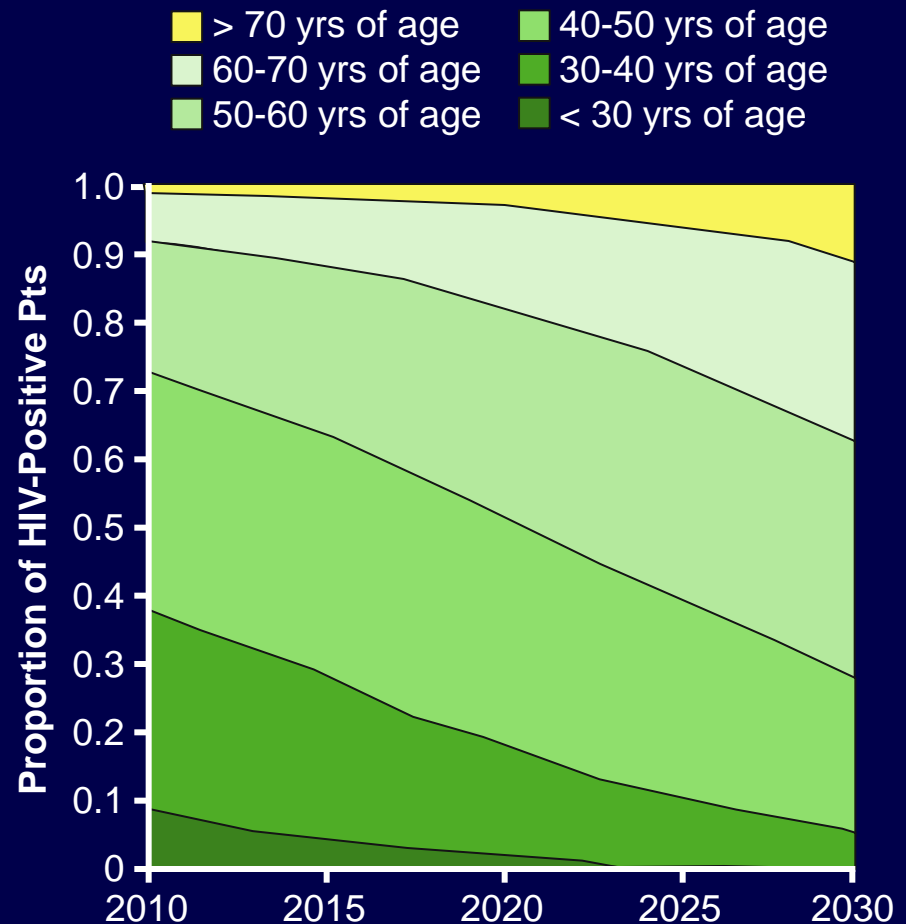
W. David Hardy, MD
Senior Director, Evidence-based Practices
Whitman-Walker Health
Adjunct Professor of Medicine
Johns Hopkins University
School of Medicine

Aging With HIV Infection

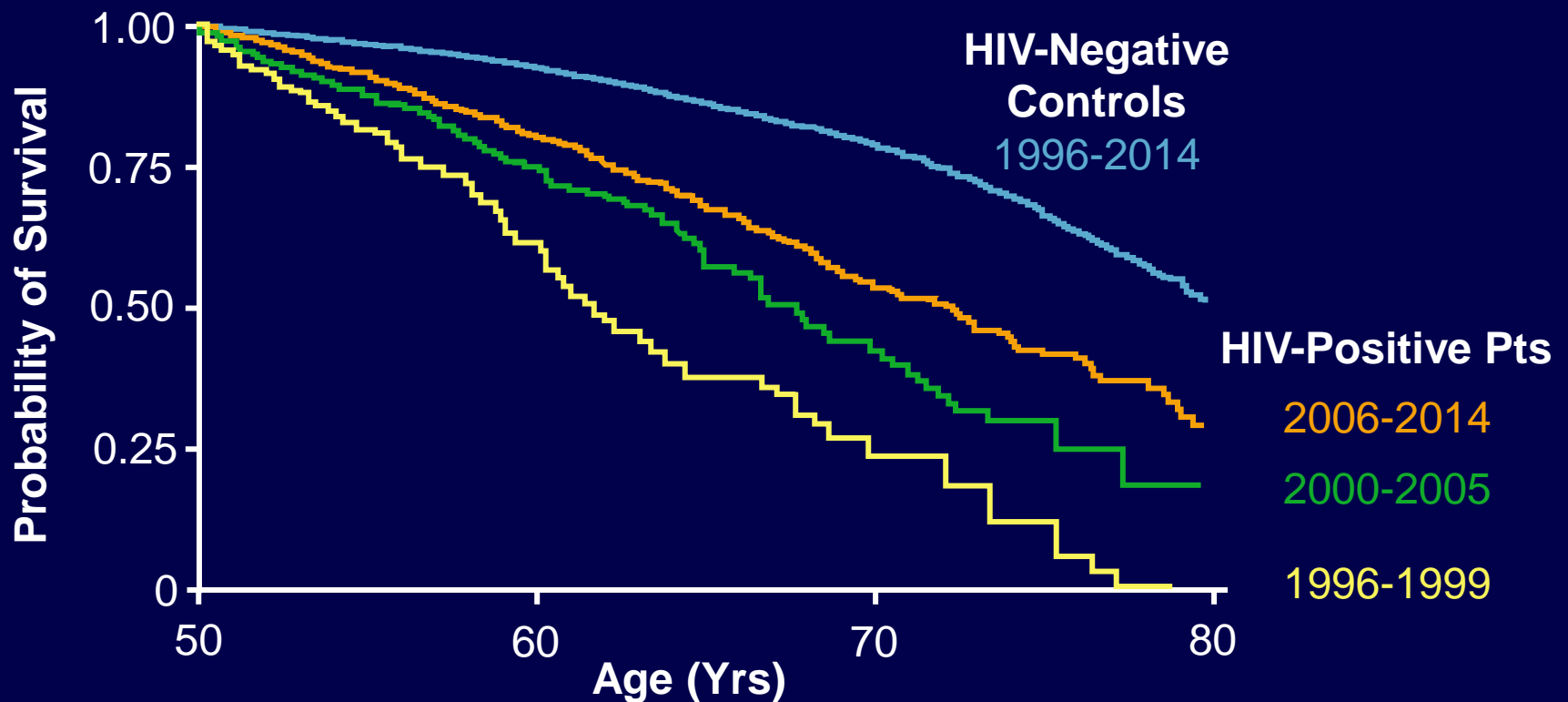
- **The Numbers:** Epidemiology of aging among those with HIV infection
- **The Reasons:** Drivers of aging and frailty
- **The Response:** Practical approaches to prevent/minimize age-related conditions and avoid frailty

ATHENA: Older Patients Becoming More Common in the HIV-Positive Population

- ATHENA: observational cohort of 10,278 HIV-positive pts in the Netherlands
- Modeling study projections:
 - Proportion of HIV-positive pts ≥ 50 yrs of age to increase from 28% in 2010 to 73% in 2030
 - Median age of HIV-positive pts on combination ART to increase from 43.9 yrs in 2010 to 56.6 yrs in 2030



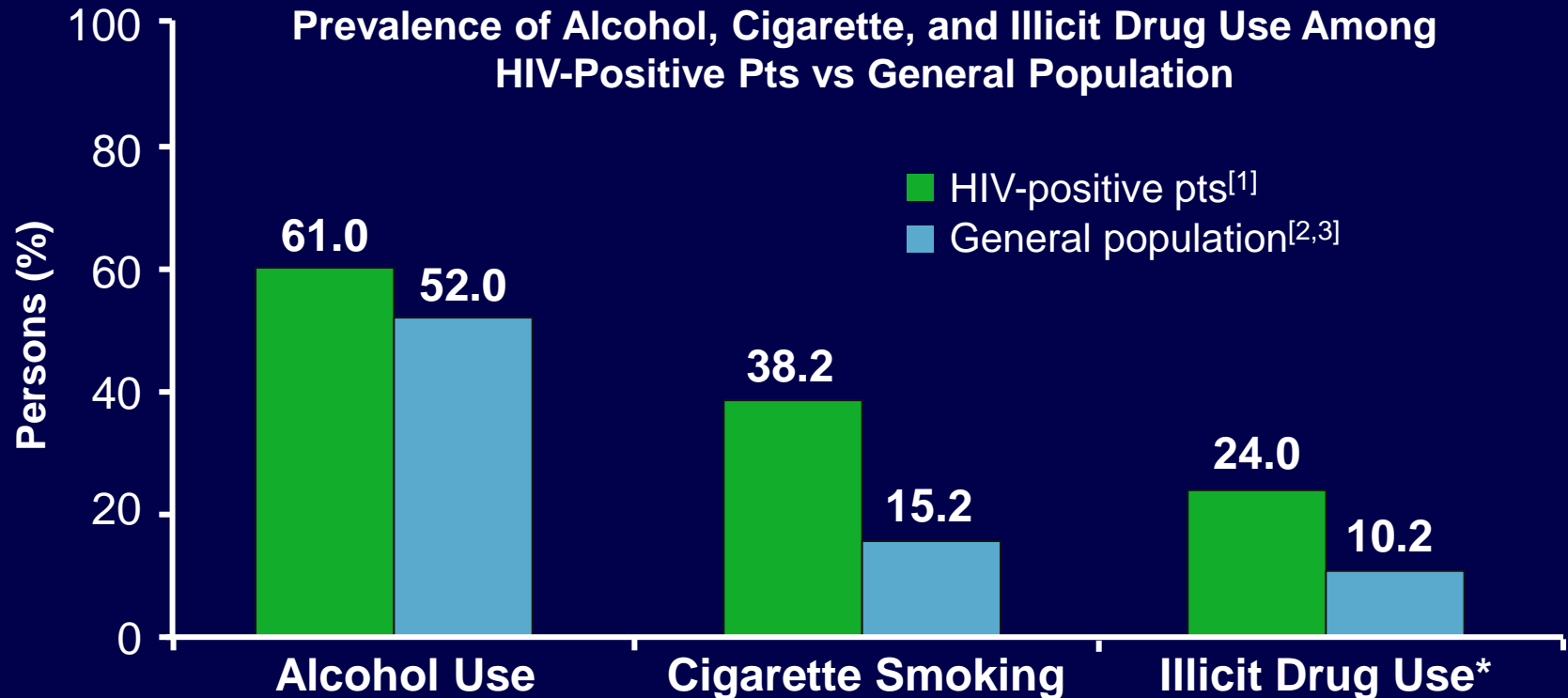
Decreased Life Expectancy in Older HIV+ Adults in Modern ART Era



The Facts About Aging With HIV

- People living with HIV now have life expectancies that are very close to that of people without HIV
- But people with HIV have a greater risk for conditions that are associated with getting older
- The reasons why HIV-positive people suffer more from these conditions are debated, but all agree that lifestyle plays a role
- Although aging with HIV is inevitable, the course of aging can be influenced by actions
 - *eg, healthy diet, exercise*

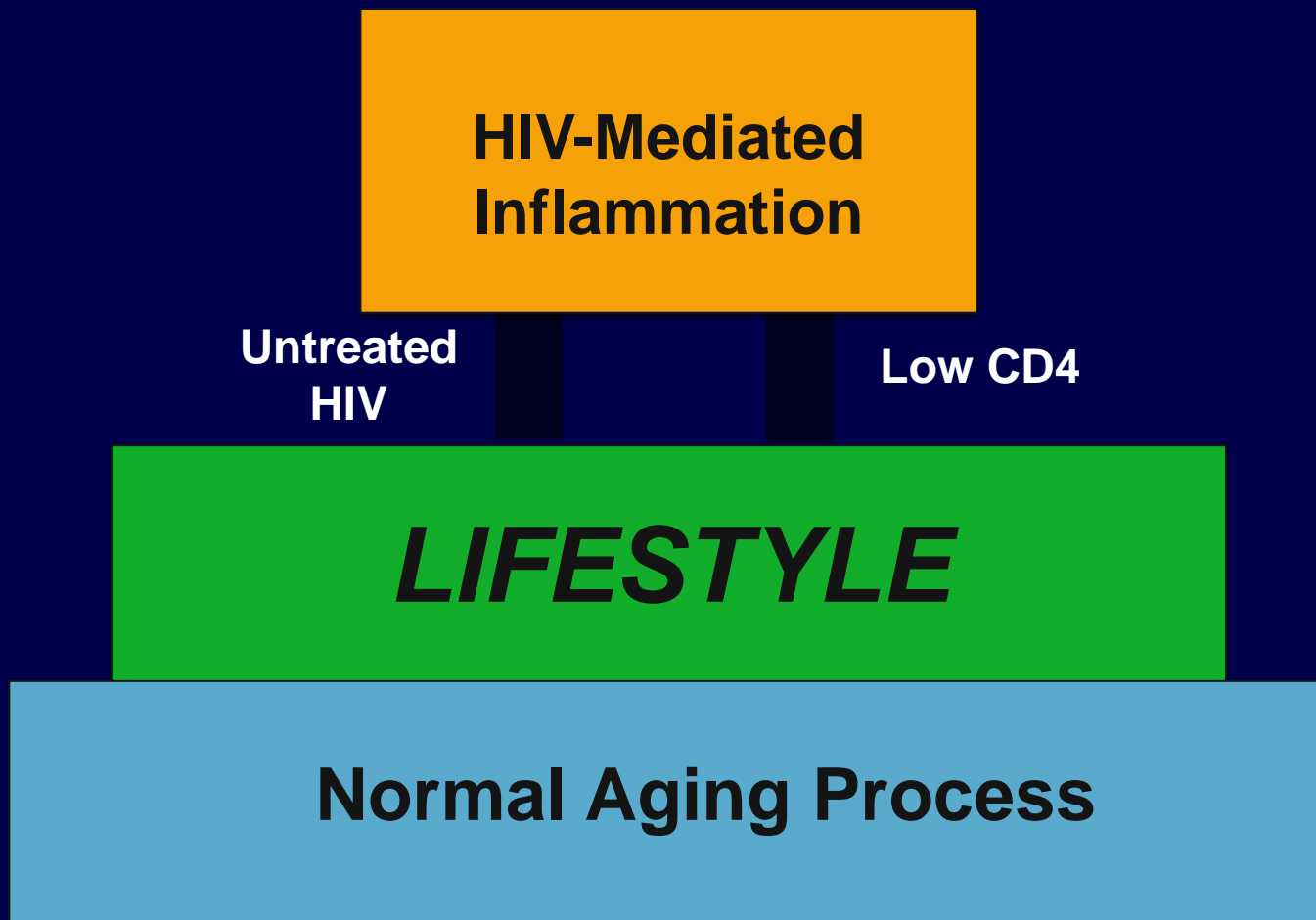
High Risk Behaviors in Persons With HIV Infection



*24% noninjection, 1.7% injection drug use in HIV-positive pts; illicit drug use for general population included marijuana, cocaine, heroin, hallucinogens, inhalants, and nonmedical use of prescription-type pain relievers, tranquilizers, stimulants, and sedatives.

1. CDC. Behavioral and Clinical Characteristics of Persons Receiving Medical Care for HIV Infection—Medical Monitoring Project, United States, 2013 Cycle (June 2013–May 2014).
2. CDC. Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2015.
3. Center for Behavioral Health Statistics and Quality. (2015). Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health.

Aging With HIV: Factor Stacking



Inflammation Predicts Disease in Treated HIV Infection

- Mortality^[1-4]
- Cardiovascular disease^[5]
- Cancer^[6,7]
- Venous thromboembolism^[8]
- Type II diabetes^[9]
- Radiographic emphysema^[10]
- Renal disease^[11]
- Bacterial pneumonia^[12]
- Cognitive dysfunction^[13]
- Depression^[14]
- Functional impairment^[15]

1. Kuller LH, et al. PLoS Med. 2008;5:e203.

2. Tien PC, et al. J Acquir Immune Defic Syndr. 2010;55:316-322.

3. Justice AC, et al. Clin Infect Dis. 2012;54:984-994.

4. Hunt PW, et al. J Infect Dis. 2014;210:1228-1238.

5. Duprez DA, et al. Atherosclerosis. 2009;207:524-529.

6. Breen EC, et al. Cancer Epidemiol Biomarkers Prev. 2011;20:1303-1314.

7. Borges ÁH, et al. AIDS. 2013;27:1433-1441.

8. Musselwhite LW, et al. AIDS. 2011;25:787-795.

9. Brown TT, et al. Diabetes Care. 2010;33:2244-2249.

10. Attia EF, et al. Chest. 2014;146:1543-1553.

11. Gupta SK, et al. HIV Med. 2015;16:591-598.

12. Bjerk SM, et al. PLoS One. 2013;8:e56249.

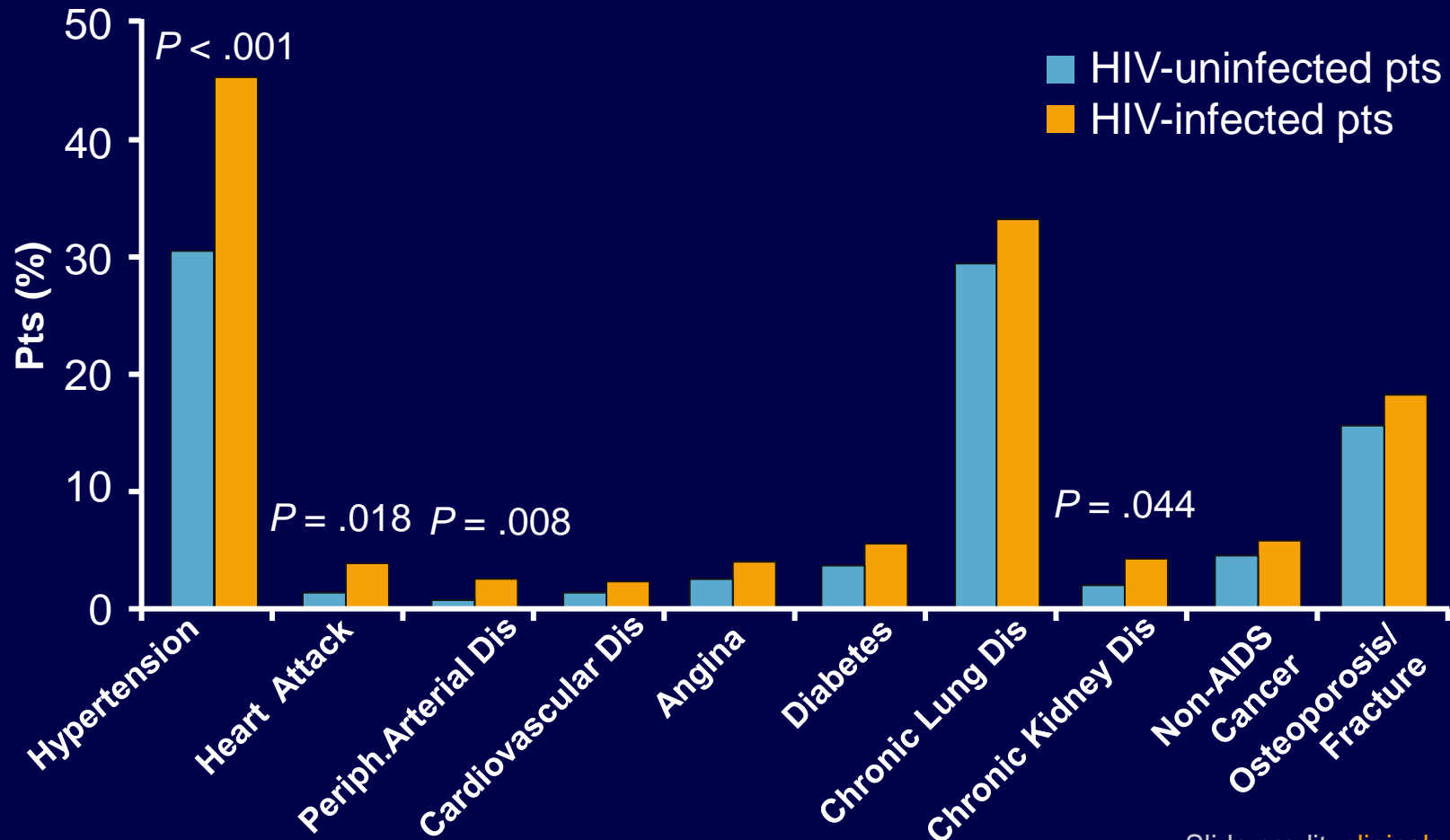
13. Burdo TH, et al. AIDS. 2013;27:1387-1395.

14. Martinez P, et al. J Acquir Immune Defic Syndr. 2014;65:456-462.

15. Erlandson KM, et al. J Infect Dis. 2013;208:249-2

AGE_nIV: Comorbidity Distribution

- Cross-sectional analysis of comorbidity prevalence in prospective cohort study of HIV-infected pts (n = 540) vs controls (n = 524) ≥ 45 yrs of age



Diabetes Mellitus: African Americans and Hispanics—2014

- 29.1 million Americans (9.3%) have diabetes
 - Death rates in persons with diabetes are 1.5x those in persons without diabetes
- Age-adjusted prevalence \geq 20 yrs of age
 - 13.2% of all African Americans
 - 12.8% of all Hispanics/Latinos
 - Cubans: 9.3%
 - Mexican Americans: 13.9%
 - Puerto Ricans: 14.8%
 - 7.6% of all non-Hispanic whites

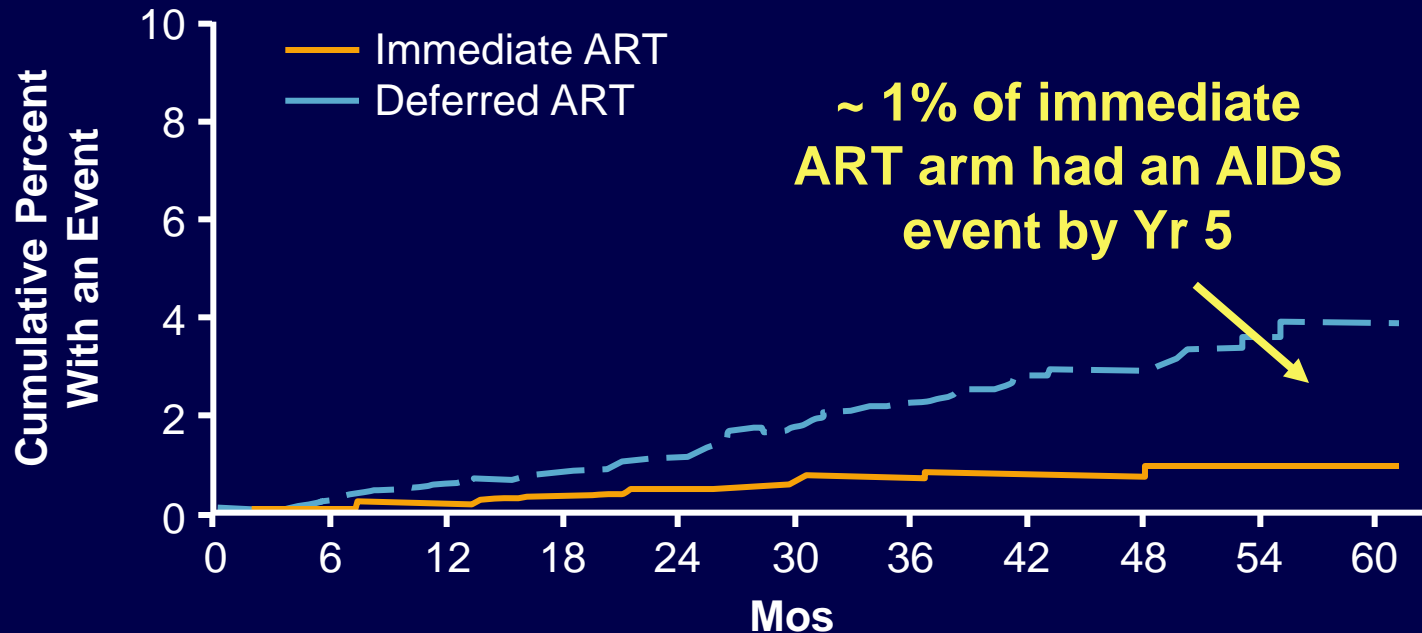
Cardiovascular Disease Risk in the United States

- Cardiovascular disease is the number 1 killer of Americans
 - Nearly 2200 Americans die of cardiovascular disease each day
- Prevalence
 - **Black men and women: 46.0% and 47.7%**
 - White men and women: 37.7% and 35.1%
 - Hispanic men and women: 31.3% and 33.3%

HIV/AIDS-Associated Nephropathy (HIVAN) in Black Patients

- HIVAN is the third leading cause of end-stage renal failure for blacks aged 20-64 yrs
- Among those with ESRD secondary to HIV/AIDS
 - 88.4%: black
 - 7.7%: white
- Familial clustering of ESRD among blacks with HIV disease

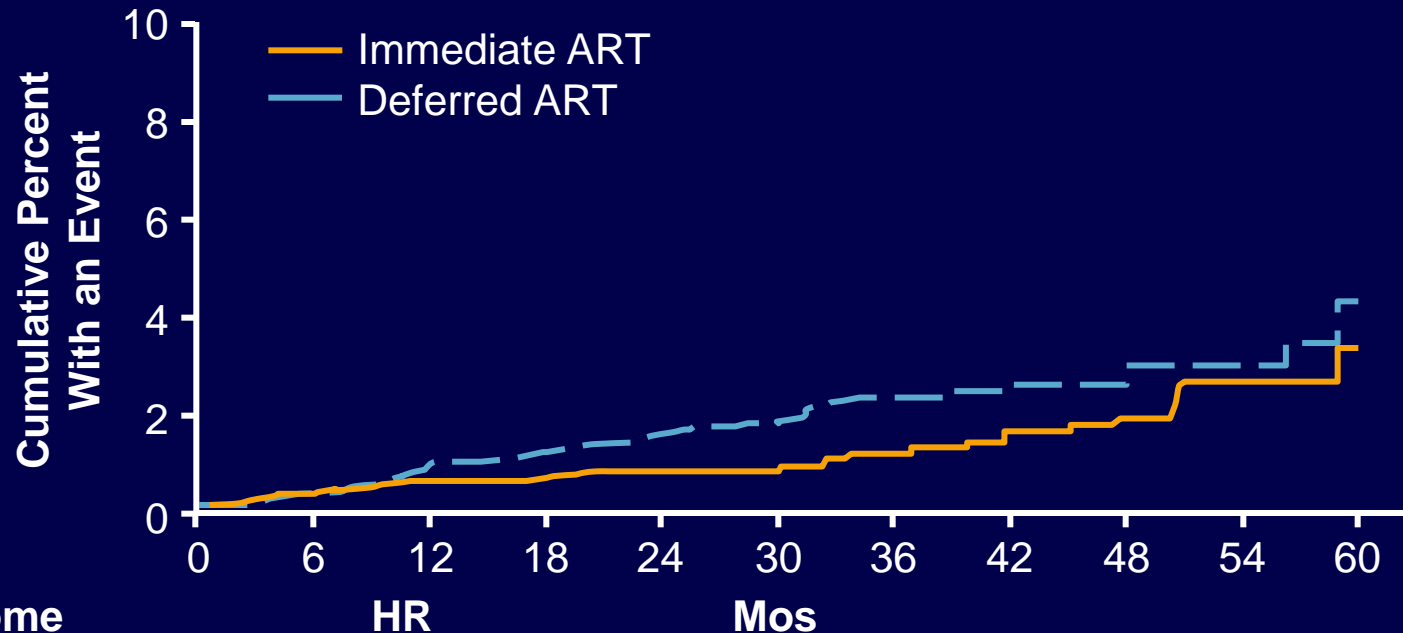
START: Reduced but Persistently High Risk of AIDS Event With Early ART



- 72% reduced risk of serious AIDS events with immediate ART

START: Serious Non-AIDS Events

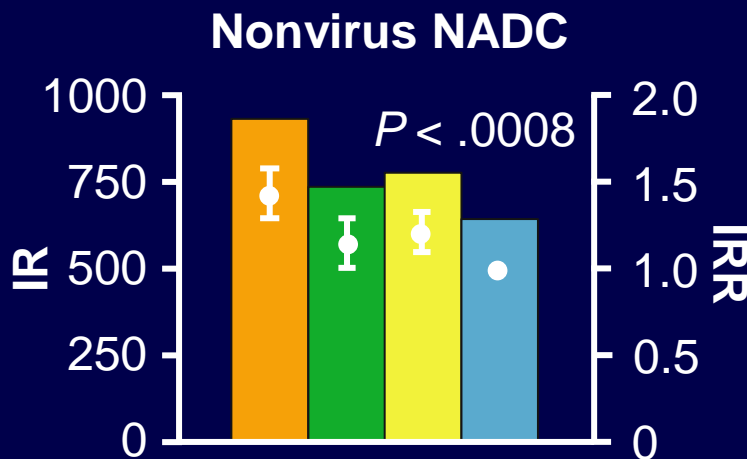
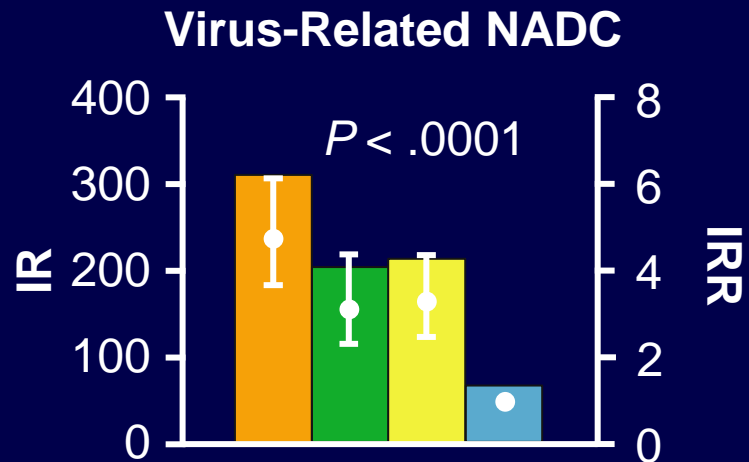
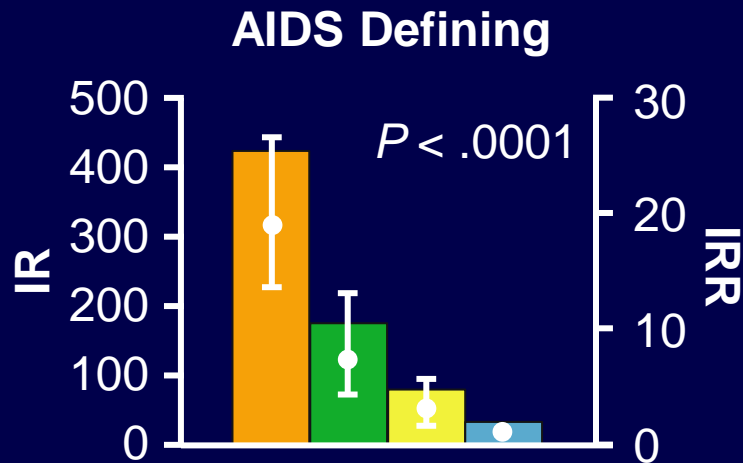
- 39% reduced risk of serious non-AIDS events with immediate ART



Outcome	HR
TB	0.29
Bacterial infection	0.38
KS	0.09
Lymphoma	0.30
Non-AIDS cancer	0.50

INSIGHT START Study Group. N Engl J Med. 2015;373:795-807.
Lundgren J, et al. IAS 2015. Abstract MOSY0302.

HIV-1 RNA Suppression and Cancer



- HIV positive, unsuppressed
- HIV positive, early suppressed
- HIV positive, long-term suppressed
- HIV negative
- IRR

Park LS et al. 2015 International Conference on Malignancies in AIDS and Other Acquired Immunodeficiencies. Oral presentation.

Frailty, Disability, and Functional Impairment in Older HIV+ Patients

Impairment (body function):

Osteoarthritis



Limitations (activity):

Slow chair rise time,
slow gait



Frailty (vulnerability):

Slow walking speed,
low activity, fatigue



Disabilities (participation):

Requires cane but ramp into
home and no stairs in home



Impairment:

History, exam, x-ray

Limitations:

Short Physical Performance
Battery Timed walk

Frailty:

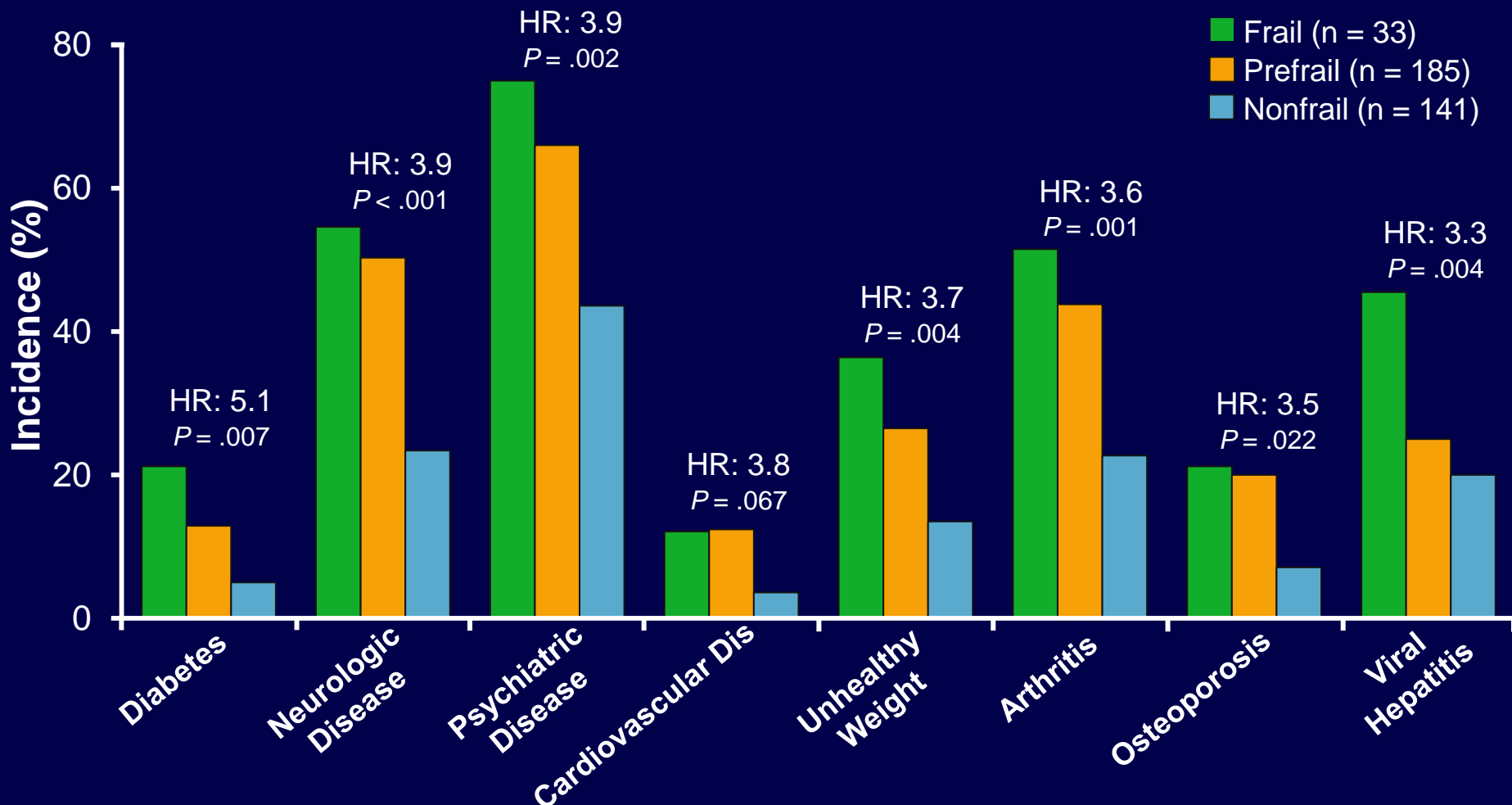
Fried's frailty phenotype

Disability:

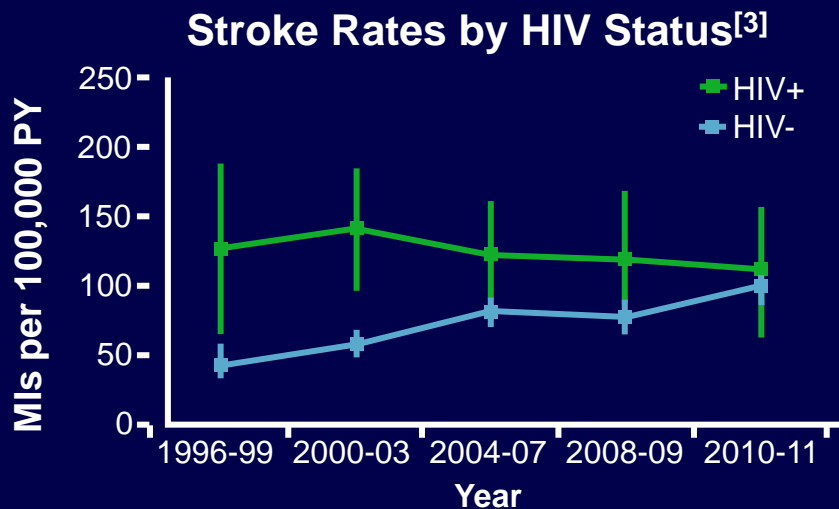
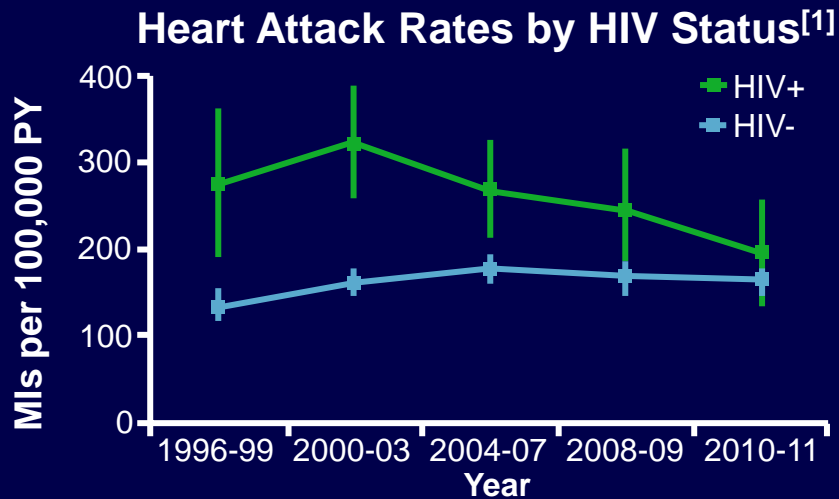
Activities of daily living,
independent activities of
daily living

Frailty Risk Factors in Aging HIV-Positive Patients

Risk Factors (OR: Frail vs Nonfrail)



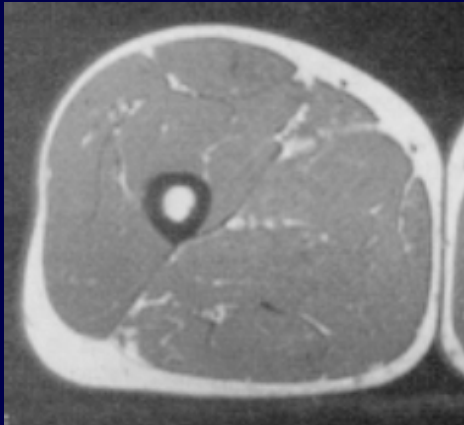
Relative Risk of Heart Attack or Stroke Declining for HIV Patients in Recent Years



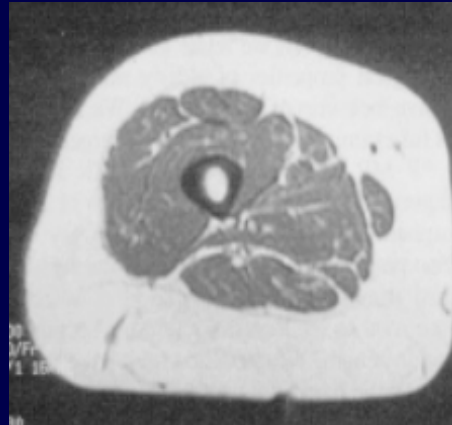
- Kaiser Permanente cohort in California (N = 282,368)
- Lower MI incidence likely due to CVD risk factor reduction, lipid-friendly ART, reduced immunodeficiency^[1,2]
- HIV+ pts with recent CD4+ cell count ≥ 500 c/mm³ or HIV-1 RNA < 500 c/mL not at significantly greater risk vs HIV- individuals after adjustment for stroke risk factors^[3,4]
 - However, recent CD4+ cell count < 200 c/mm³ associated with increased risk

Activity Preserves Lean Mass and Function

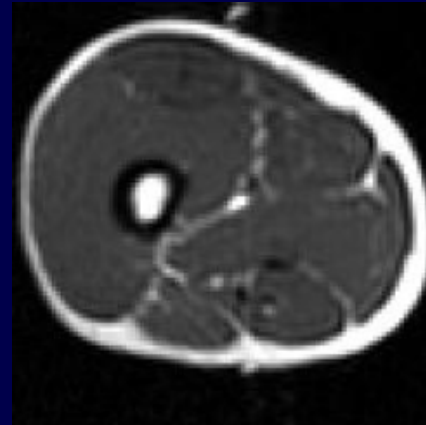
40-yr-old



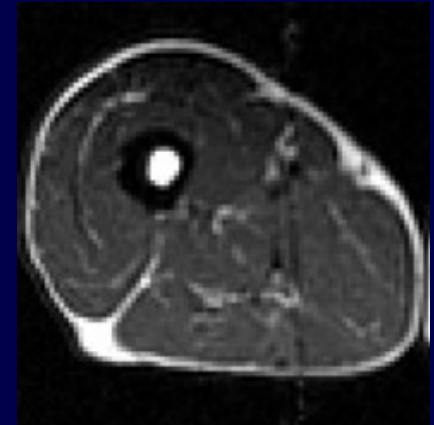
70-yr-old
sarcopenic



66-yr-old
runner

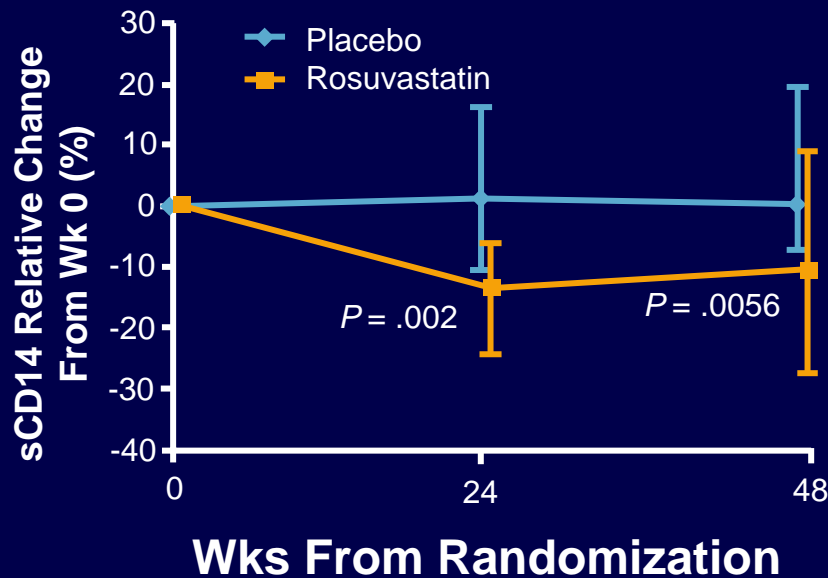


76-yr-old
farmer

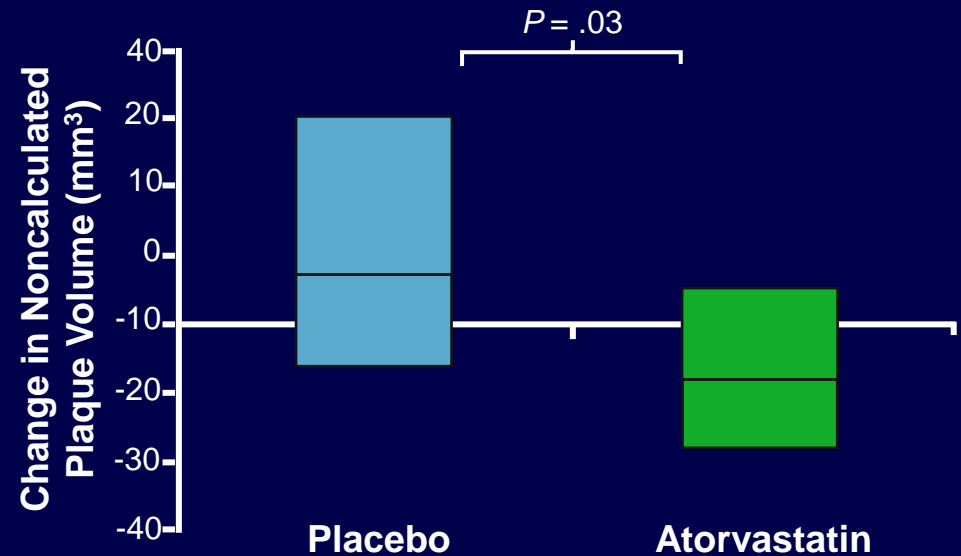


Statins Decrease Immune Activation and Aortic Plaque in Treated HIV Infection

sCD14 Declines With Rosuvastatin^[1]



Plaque Regression With Atorvastatin^[2]



- REPRIEVE: double-blind, randomized phase IV trial of pitavastatin (planned N = 6500) now enrolling^[3]

1. Funderburg NT, et al. J Acquir Immune Defic Syndr. 2015;68:396-404.

2. Lo J, et al. Lancet HIV. 2015;2:e52-e63.

3. ClinicalTrials.gov. NCT02344290.

ART Considerations in Older Patients

- Comorbidities
- Polypharmacy
 - Drug–drug interaction, dosing, adherence challenges
- Renal or hepatic impairment
 - Alterations in pharmacokinetics, potential for drug toxicity
- Challenges with single-tablet regimens
 - Inability to alter single component dosing
 - Difficulty swallowing large tablets

DHHS: Key Considerations When Caring for Older HIV-Infected Pts

- DHHS has included older adult pts as a separate special population with the following recommendations:
 - ART is recommended in all pts, regardless of CD4+ T cell count, but is especially important in older pts
 - ART-associated adverse effects may occur: must monitor bone, kidney, metabolic, cardiovascular, and liver health
 - Increased risk of drug–drug interactions between ARV drugs and other medications
 - HIV experts and primary care providers should work together to manage complex comorbidities
 - Counseling to prevent secondary transmission of HIV

July 2016 Updates on Recommended Regimens for First-line ART

Regimen	DHHS ^[1]	IAS-USA ^[2]
DTG/ABC/3TC	Preferred/recommended	Preferred/recommended
DTG + TAF/FTC	Preferred/recommended	Preferred/recommended
DTG + TDF/FTC	Preferred/recommended	Alternative
EVG/COBI/TAF/FTC	Preferred/recommended	Preferred/recommended
EVG/COBI/TDF/FTC	Preferred/recommended	Alternative
RAL + TAF/FTC	Preferred/recommended	Preferred/recommended
RAL + TDF/FTC	Preferred/recommended	Alternative
DRV + RTV + TAF/FTC	Preferred/recommended	Alternative
DRV + RTV + TDF/FTC	Preferred/recommended	Alternative

■ Preferred/recommended ■ Alternative

- DHHS^[1]
 - Recommended regimens include 3 INSTIs and 1 boosted PI
 - Primary change since Jan 2016 update is addition of TAF/FTC
- IAS-USA^[2]
 - All recommended regimens include INSTI + TAF/FTC or ABC/3TC
 - Major changes since 2014 update include removal of NNRTIs, boosted PIs, and TDF

1. DHHS Guidelines. July 2016.

2. Günthard HF, et al. JAMA. 2016;316:191-210.

DHHS Considerations for Initial ART Based on Age-Related Comorbidity

Scenario	ART-Specific Consideration	
	Consider Avoiding	Options
Chronic Kidney Disease (CKD) (eGFR < 60 mL/min)	<ul style="list-style-type: none"> TDF, especially in RTV-containing regimens 	<ul style="list-style-type: none"> TAF (if eGFR > 30 mL/min) ABC/3TC (if HLA-B*5701 negative; if HIV-1 RNA > 100,000 c/mL, do not use with EFV or ATV/RTV; 3TC dose adjustment if CrCl < 50 mL/min) DRV/RTV + RAL (if HIV-1 RNA < 100,000 c/mL and CD4+ cell count > 200 cells/mm³) LPV/RTV + 3TC (3TC dose adjustment if CrCl < 50 mL/min)
Osteoporosis	<ul style="list-style-type: none"> TDF 	<ul style="list-style-type: none"> TAF ABC/3TC (if HLA-B*5701 negative; if HIV-1 RNA > 100,000 c/mL, do not use with EFV or ATV/RTV)
Cardiovascular Disease (CVD)	<ul style="list-style-type: none"> ABC LPV/RTV 	
Hyperlipidemia	<ul style="list-style-type: none"> PI/RTV or PI/COBI EFV EVG/COBI 	<ul style="list-style-type: none"> DTG RAL Consider TDF over ABC or TAF

Drugs for Common Conditions in the Aging That May Interact With ART

Comorbidity	Comorbidity Drugs	Interacting ARVs
Diabetes	Metformin	DTG/3TC/ABC , ^[1] DTG + FTC/TDF or FTC/TAF , ^[2-4] EVG/COBI/FTC/TDF , ^[5] EVG/COBI/FTC/TAF ^[6]
Gastric Reflux	Antacid Proton Pump Inhibitor (PPI)	All ^[1-8] ATV/RTV + FTC/TDF or FTC/TAF , ^[3,4,9] DRV/RTV + FTC/TDF or FTC/TAF ^[3,4,10] RPV + FTC/TDF or FTC/TAF ^[11,12]
Cardiovascular Disease	Statin, Anti-arrhythmic	EVG/COBI/FTC/TDF , ^[5] EVG/COBI/FTC/TAF ^[6] ATV/RTV + FTC/TDF or FTC/TAF , ^[9,3,4] DTG/3TC/ABC ^[1]
Chronic Lung Disease	Beta-agonist Glucocorticoid	EVG/COBI/FTC/TDF , ^[5] EVG/COBI/FTC/TAF ^[6] ATV/RTV + FTC/TDF or FTC/TAF , ^[2,3,9] DRV/RTV + FTC/TDF or FTC/TAF ^[3,4,10]

4 Fundamental Components of Geriatric Primary Care

- Comprehensive assessment
- Creation, implementation, and monitoring of plan of care
- Communication among and coordination with care providers
- Promotion of active engagement in care (pt and family caregiver)

Conclusions

- Aging is a natural and expected process
- For many reasons, people living with HIV have a higher risk for many age-related health problems
- However, many of these comorbid conditions can be prevented or reversed by actions taken by the patient and the provider
- HIV care must start to incorporate principles of geriatric medicine to meet needs of older patients
- Recognition of drivers of frailty (physical, mental, chemical) is essential to applying appropriate interventions
- ART selection should take into account the pt's comorbidities and potential for drug interactions and adverse events

Helping Our Patients Age Well:

Considerations for HIV Providers

Jeffrey Kwong, DNP

Associate Professor of Nursing - Columbia University

President-Elect, ANAC

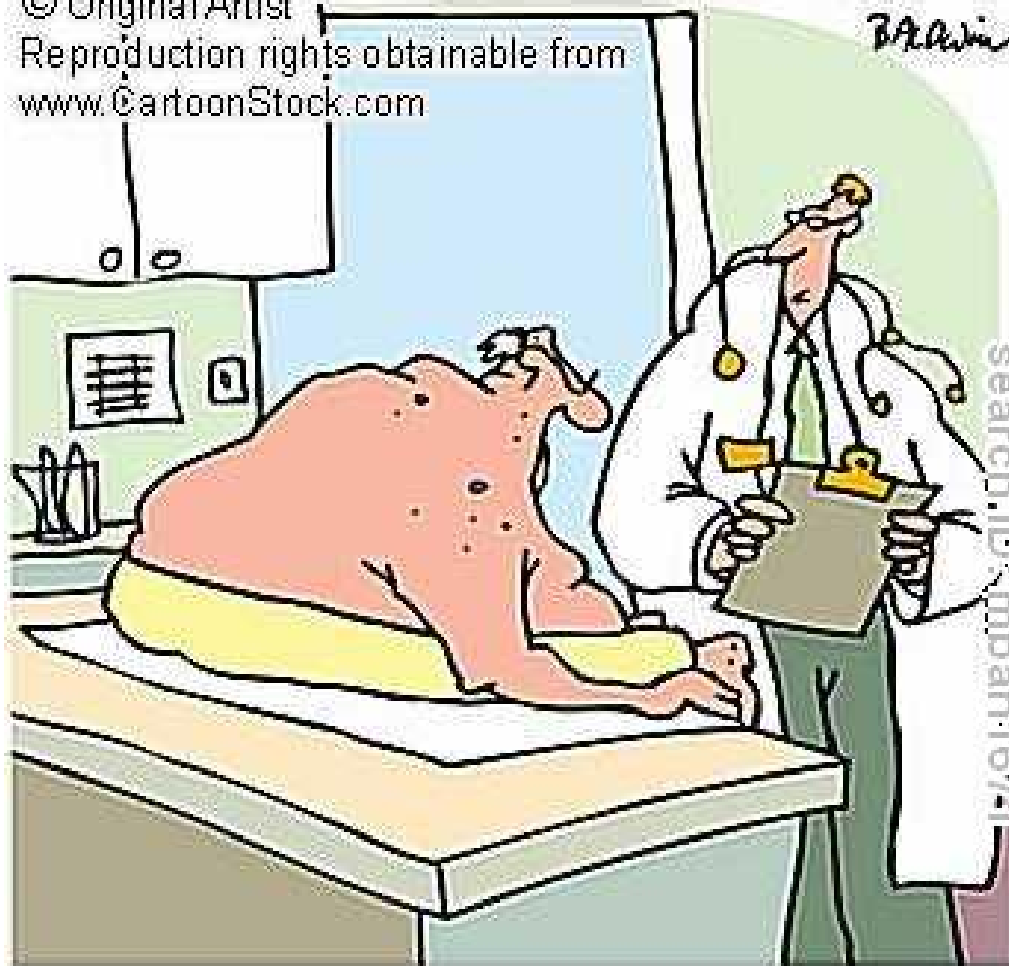
USCA 2017 Conference

Washington, DC

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B. Baldwin



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“There are some things they don’t teach you in medical school. I think you’ve got one of those things.”

Aging, Depression, and Mental Health

The Aging of the HIV Epidemic in the US

CDC Surveillance Data



Source: ACRIA

Depression in Older Adults

- 1.5% in older adults with
 - 11.5% in older hospitalized patients.
- Rates of Depression significantly higher in older persons living with HIV in care.**

Etiology

- Biological factors
- Social factors
- Psychological factors

Biological factors

- Genetic
- Medical Illness
- Vascular changes in the brain
- Chronic or severe pain
- Previous history of depression
- Substance abuse

Social factors

- Double stigma and invisibility
- Loneliness, isolation
- Recent bereavement
- Lack of a supportive social network
- Decreased mobility
- Financial barriers

Psychological factors

- Traumatic experiences
- Damage to body image
- Fear of death
- Frustration with memory loss
- Role transitions

Depression in Older Adults

- Often under-diagnosed.
- 50% of those with major depression receive treatment.

NOT a normal part of aging.

Depression in Older Adults: Why is it missed?

- Symptoms not the same as younger adults.
- Erroneously perceived as a normal part of aging process by clinicians.
- Co-morbid with other medical conditions.
- Can be result of multiple medications.

Depression Co-morbidity

- Alcohol/Drug Abuse
- Infections
- Cancer
- Nutritional Deficiencies
- Vision/Hearing Loss
- Chronic Pain & Inflammatory diseases
- Cerebrovascular Disease
- Endocrine Diseases
- Neurological Diseases: (MS&Parkinson's Disease)
- Neurocognitive Disorders (Alzheimer's Disease, Vascular etc.)

Suicide and Older Adults

- People age 65 and older accounted for 18% of suicide deaths.
- Men over 75 had the highest rates of suicide among all age and gender groups (38.8 per 100,000).
- Important for clinicians to assess for suicide risk in older patients.

Pain

- Pain increases with age.
- Persistent pain associated with:
 - Depression
 - Impaired cognitive function
 - Impaired physical function
 - Sleep disturbance
 - Agitation
 - Decreased socialization.


Alcohol Use

Increased risk of:

- Stroke
- Impaired motor skills (e.g., driving) at low level use
- Injury (falls, accidents)
- Sleep disorders
- Suicide
- Interaction with dementia symptoms

Drinking Guidelines for Older Adults

- No more than 1 standard drink per day
- No more than 2-3 drinks on any drinking day
- Limits for older women should be somewhat less than for older men

12 oz. of beer or cooler	8-9 oz. of malt liquor 8.5 oz. shown in a 12-oz. glass that, if full, would hold about 1.5 standard drinks of malt liquor	5 oz. of table wine	3-4 oz. of fortified wine (such as sherry or port) 3.5 oz. shown	2-3 oz. of cordial, liqueur, or aperitif 2.5 oz. shown	1.5 oz. of brandy (a single jigger)	1.5 oz. of spirits (a single jigger of 80-proof gin, vodka, whiskey, etc.) Shown straight and in a highball glass with ice to show level before adding mixer
						
12 oz.	8.5 oz.	5 oz.	3.5 oz.	2.5 oz.	1.5 oz.	1.5 oz.

Note: People buy many of these drinks in containers that hold multiple standard drinks. For example, malt liquor is often sold in 16-, 22-, or 40 oz. containers that hold between two and five standard drinks, and table wine is typically sold in 25 oz (750 ml.) bottles that hold five standard drinks.

HIV, Aging, and the Brain

- More than half will have some impairment
 - Asymptomatic neurocognitive impairment
 - HIV-associated neurocognitive disorder (HAND)
- HAND accelerates in aging
- Chronic inflammation and cerebral flow

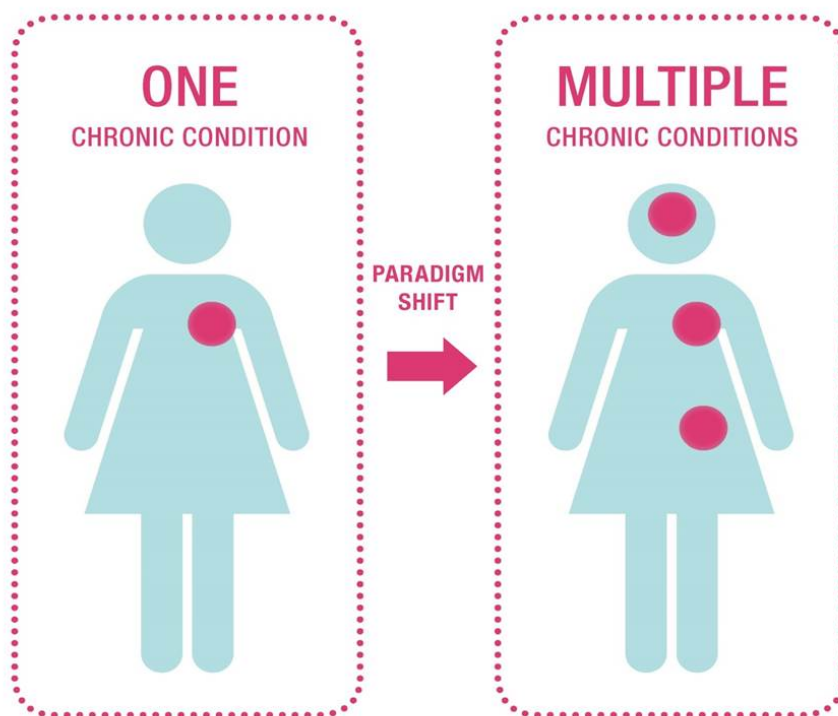
Screening Tools for Depression and Cognition

- Geriatric Depression Scale
- PHQ-9
- MoCA
- Mini-Mental, Mini-Cog

Keeping Patients Healthy: LIVING with HIV



“The most common chronic condition experienced by adults is multimorbidity, the coexistence of multiple chronic diseases or conditions.”



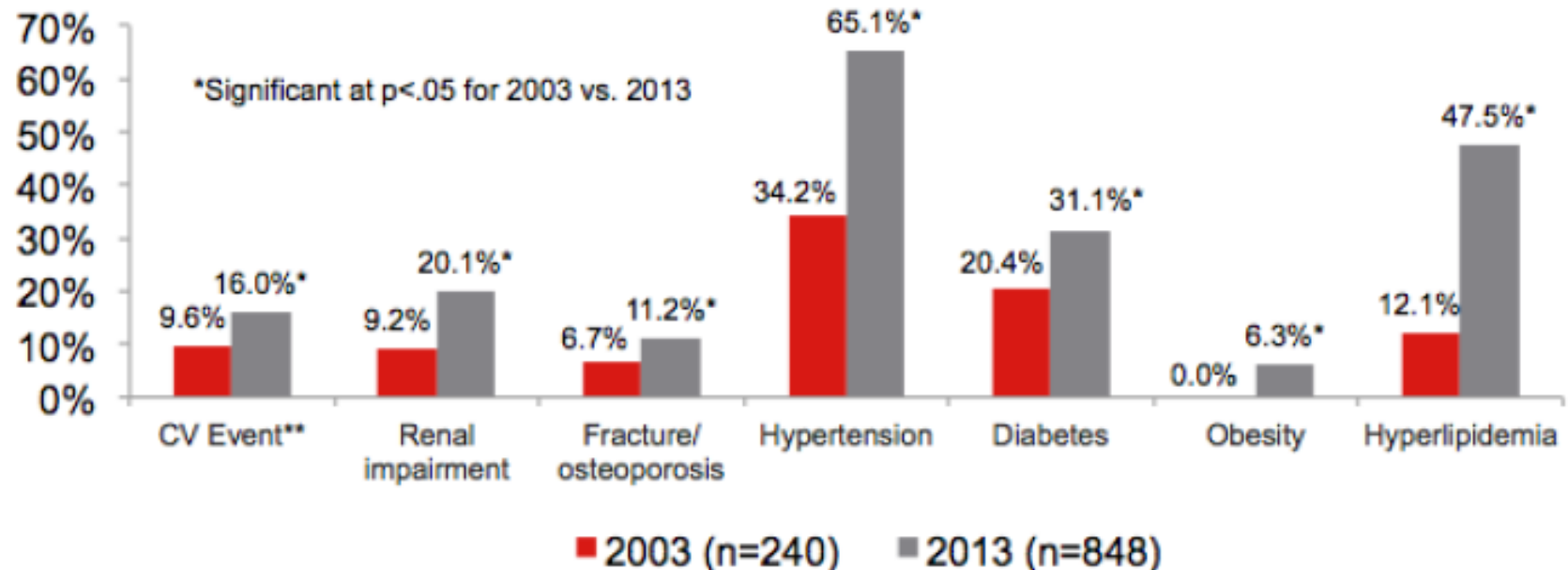
Multimorbidity

- More than 50% of older adults will have 3 or more chronic conditions
- Higher Rates of Death & Disability
- Institutionalization
- Poorer quality of life
- Adverse effects of treatment or interventions

American Geriatrics Society, 2012
DOI: 10.1111/j.1532-5415.2012.04188.x
Medicare data

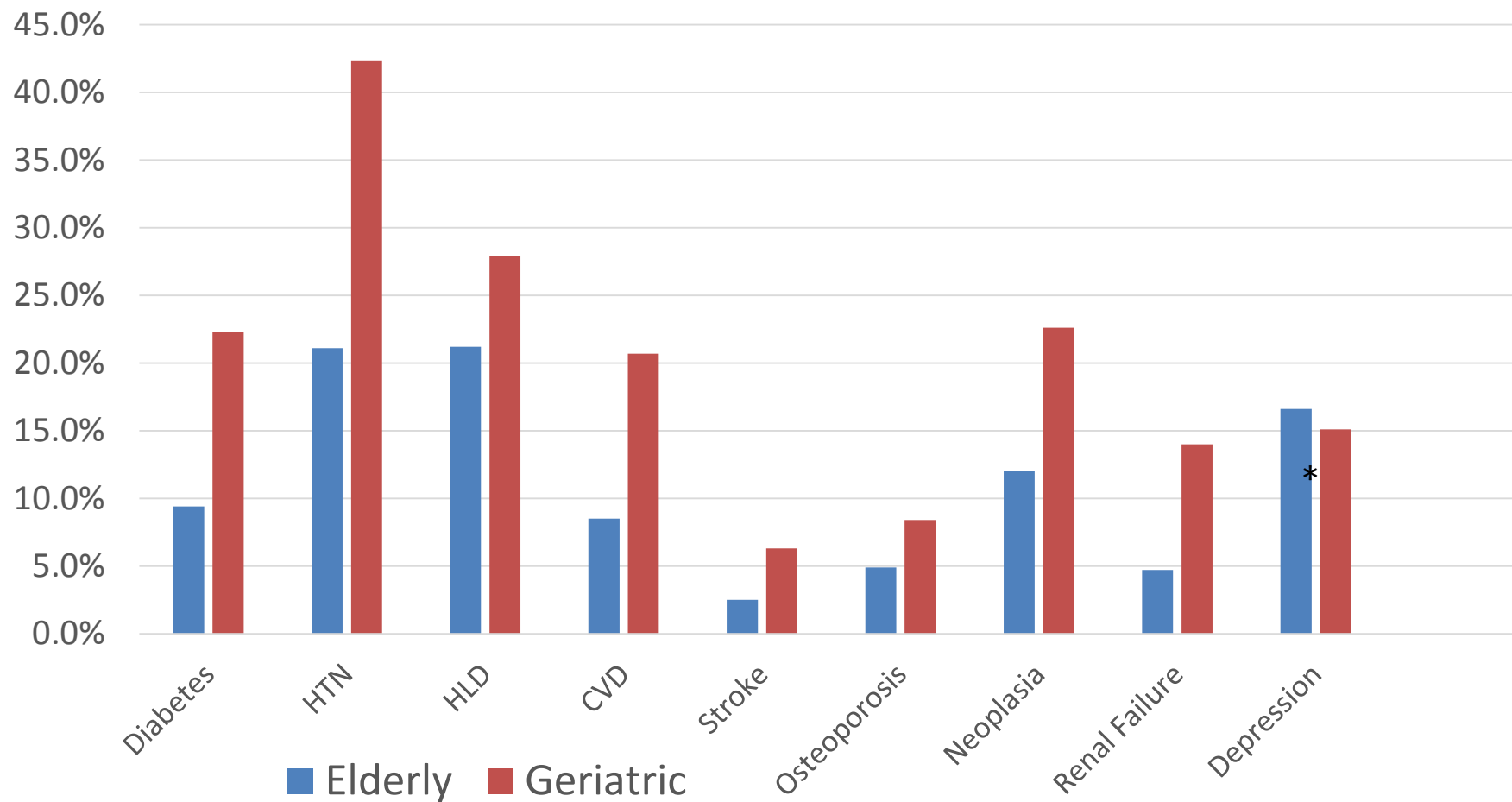
Comorbidity Prevalence among HIV infected Persons Is Increasing

Trends in Comorbid Conditions: Medicare HIV Patients



Co-Morbidities:

Elderly (50-75 yrs) vs Geriatric (75+yrs) (n=16,233; n=654)





Recommended Screenings

Component	Frequency
Blood Pressure Check	Annually
Digital Prostate Exam	Annually
Ophthalmologic Exam	Every 6-12 months in CD4 < 50 cells/mm ³
Depression Screening	Annually
Fasting glucose	Every 6-12 months
Fasting Lipids	Every 6-12 months
Colonoscopy	Age 50 and every 10 years, earlier or more frequent in persons at risk
Mammography	Age 50
Cervical Cancer	After 2 normal Paps 6 months apart may perform annually
Bone Densitometry	Post-menopausal women 65 years or older and in persons > 50 with >1 risk factor for premature bone loss
Abdominal Aortic Aneurysm	Men 65-75 who have ever smoked

Cancer

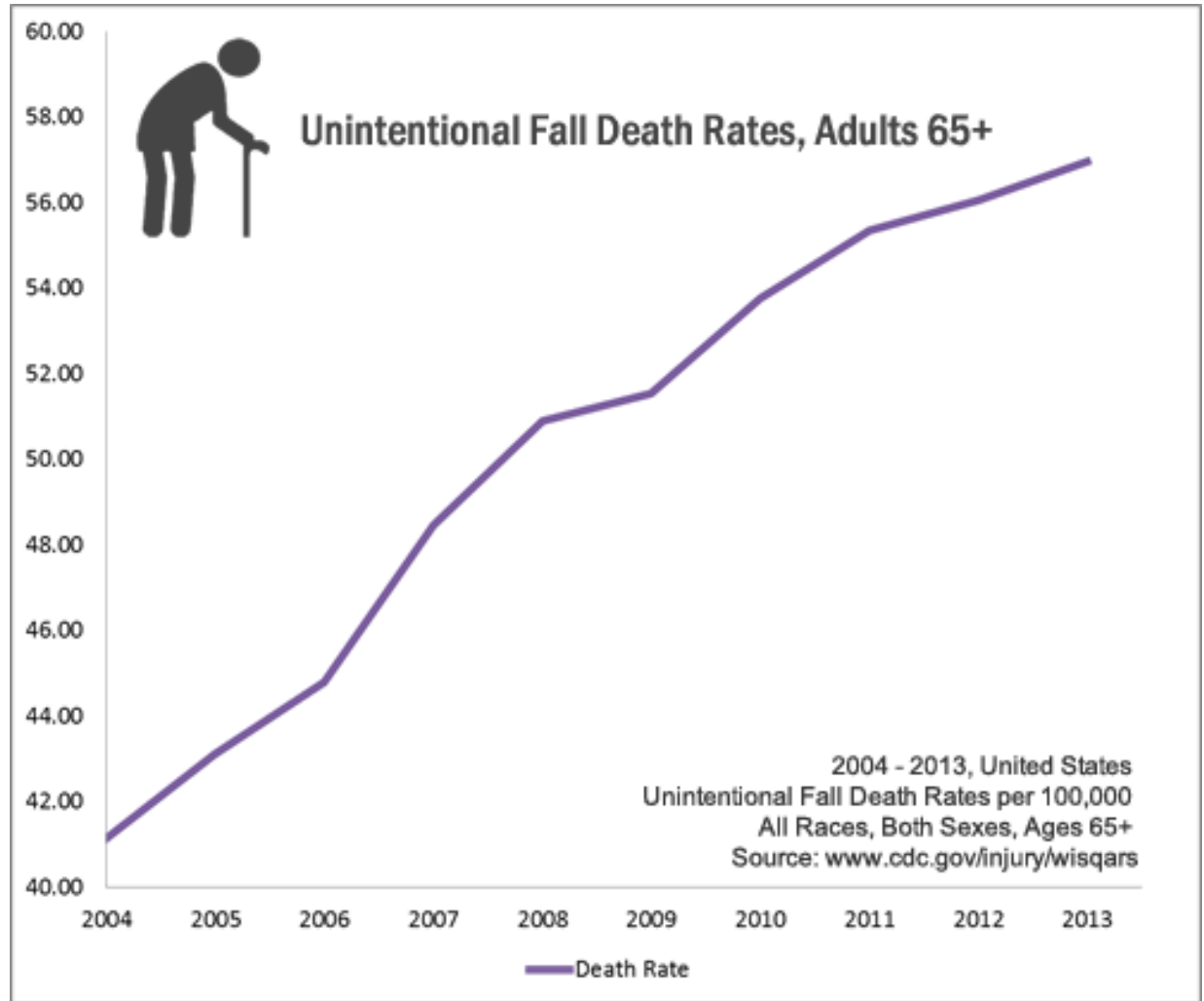
- Cancer risk elevated in older persons living with HIV vs non-HIV-infected.
- Lung, prostate, colorectal, breast cancer most common.
- Tobacco cessation and early detection are critical.

Lung Cancer Screening

Annual screening with low-dose computed tomography (LDCT) in adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years. (*GRADE B*)



Falls



2.5 million are treated in the Emergency Department for Falls

Frailty

- Unintentional weight loss
- Exhaustion
- Muscle weakness
- Slowness while walking
- Low levels of activity

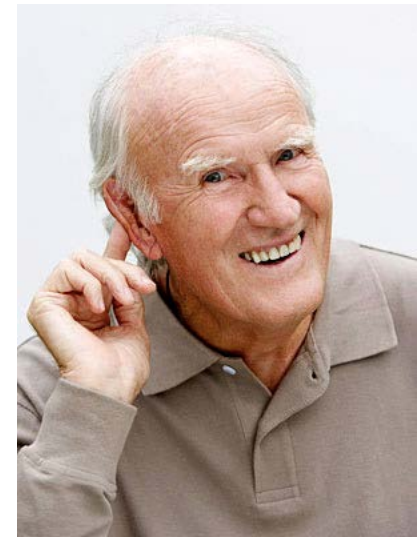
Frail Patients
Have
Higher Risk of:

FALLS
WORSENING MOBILITY
WORSENING ADL DISABILITY
DEATH

Fried et al. (2001)

Vision, Hearing, & Oral Health

- Vision screening every 1-2 years after age 65
-American Academy of Ophthalmology
- Screen for hearing loss every 2 years
- Older adults at risk for poor oral hygiene, tooth decay, and xerostomia



Improving Cognitive Health

- ART
- Engaging in exercise
- Good sleep hygiene
- Stress Reduction
- Diet
- Avoiding substances, including tobacco
- Treating Mood Disorders



Exercise!

- Progressive resistive exercise +/- aerobic exercise 3x/week can lead to improvement in cardiovascular health, body composition and weight in older adults with HIV

Specific Recommendations for Exercise in Older Adults

Aerobic exercise

30 minutes moderate intensity 5 times per week

20 minutes vigorous intensity 3 times per week

Muscle strengthening

2 days per week

Flexibility

2 days per week

Balance

Tai Chi, balance exercises



Nutrition

- 15% of older outpatients and 50%+ of hospitalized older adults are malnourished
- Serial weight measures, assessment of appetite, nutritional screening tool

Vaccines

- Influenza
- Tetanus/Pertussis
- Zoster
- Pneumococcal Disease

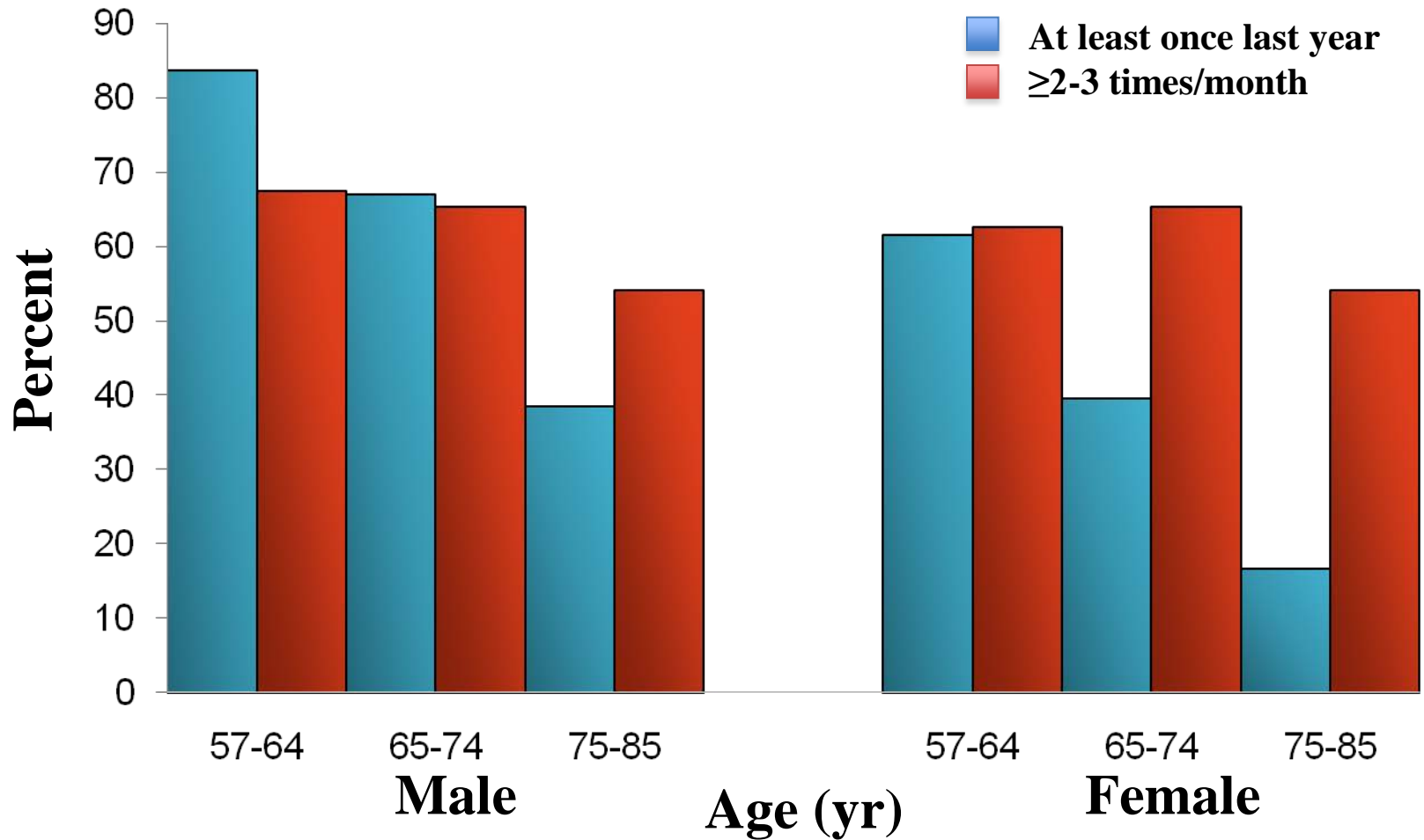


Financial & Social Support





Sexual Activity in Older Americans



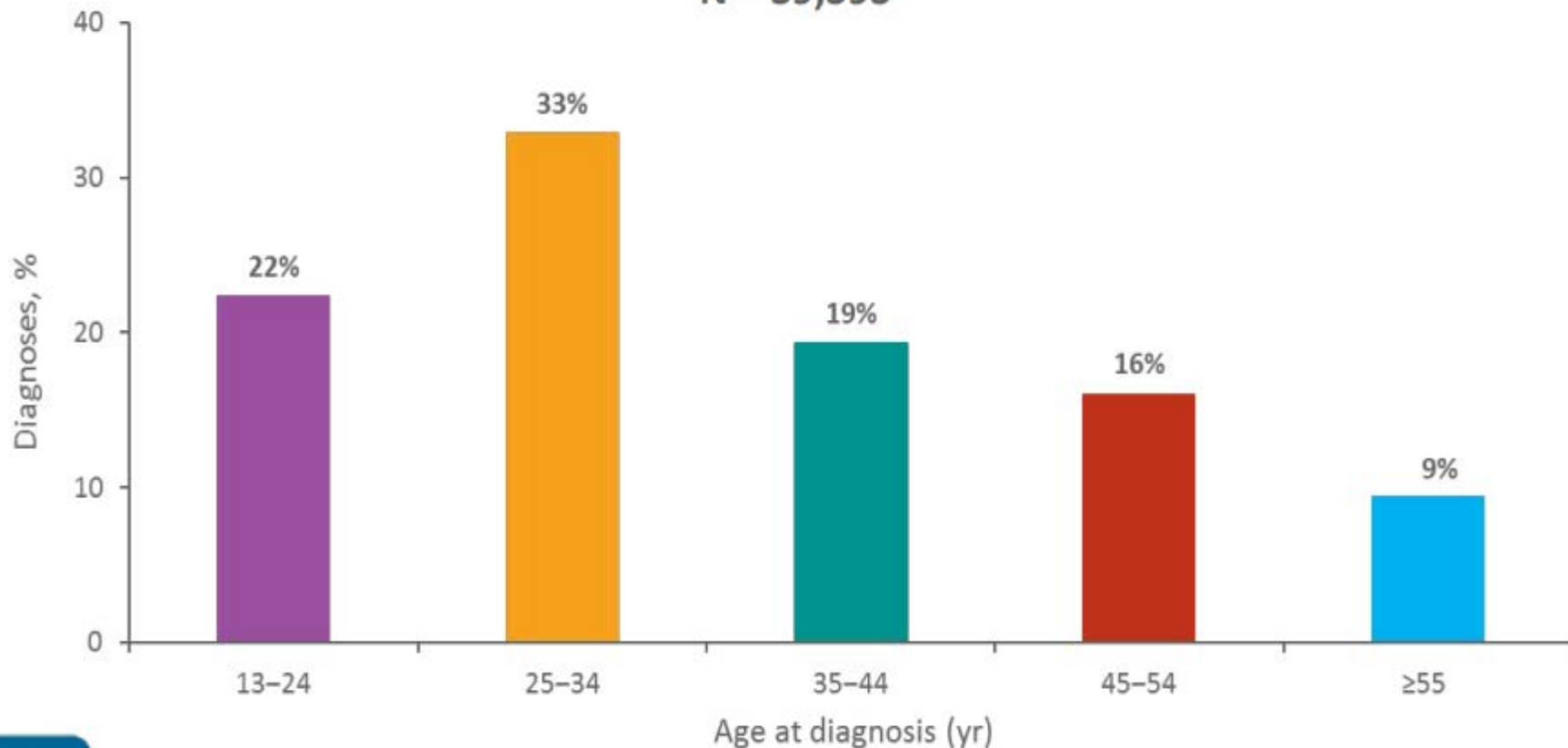
Sexual Health & Aging

HIV infection is underdiagnosed in the elderly include lack of:

- Provider recognition
- Insight and information about HIV prevention and transmission
- HIV-prevention education targeting the elderly
- Disclosure because of the social stigma of HIV infection.

Diagnoses of HIV Infection among Adults and Adolescents by Age at Diagnosis, 2015—United States

N = 39,393



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data for the year 2015 are preliminary and based on 6 months reporting delay.

Prevention

- 38% of men and 22% of women discussed sex with their provider
- Age-related vaginal thinning and dryness

ROMANTIC SEX
CURIOUS SEX
STRAIGHT SEX
GAY SEX
CASUAL SEX

IF YOU
HAVE SEX

AGE IS NOT A CONDOM

Learn more. Be safe. Get tested.
NYS 800-541-AIDS NYC 800-TALK-HIV
800-541-2437 800-825-5448

3CRSA

ageisnotacondom.org

WHEN
IT COMES
TO SEX...

AGE IS NOT A CONDOM

Talk to your doctor about your sex life.
Learn more. Be safe. Get tested.
NYS 800-541-AIDS NYC 800-TALK-HIV
800-541-2437 800-825-5448

ageisnotacondom.org

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The HIV and Aging Consensus Project

Recommended Treatment Strategies for Clinicians Managing Older Patients with HIV

Sponsored by

American Academy of HIV Medicine
AIDS Community Research Initiative of America

Supporting Partner:

American Geriatrics Society

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References & Resources

HIV-Age.org

www.hiv-age.org

HIV and Aging: HIV –NYS Guidelines

<http://www.hivguidelines.org/clinical-guidelines/hiv-and-aging/>

Adults 50 and Over

<http://www.cdc.gov/hiv/group/age/olderamericans/index.html>

Take Home Points

- Providers should become familiar with the unique aspects of aging and HIV.
- Modification of risk factors may improve or reduce the risk for certain co-morbidities.
- Sexual health and risk reduction remain important components of comprehensive care.

Thank You

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