Just Do It: Overcoming Clinical Inertia to Improve Heart Health



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IAS–USA

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Financial Relationships With Ineligible Companies (Formerly Described as Commercial Interests by the ACCME) Within the Last 2 Years

Dr Longenecker reported serving as an advisor to Gilead Sciences, Inc. (Updated November 10, 2025)

Slide 2

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Learning Objectives

After attending this presentation, learners will be able to:

- Describe the epidemiology of cardiovascular disease in adults aging with HIV
- Apply risk prediction tools to guide shared decision making with patients about statin therapy
- Manage blood pressure using a risk-based approach
- List factors to consider when prescribing aspirin for adults aging with HIV

Slide 3

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- 65 years old
- HIV+ 2002; on ART since
- Nadir/Current CD4+ 20/600
- BP 140/70 on amlodipine 10mg daily
- LDL 100mg/dl on atorvastatin 40mg daily



- 65 years old
- HIV-negative
- BP 150/90
- LDL 160mg/dl

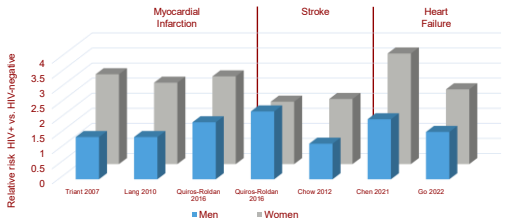


- 65 years old
- HIV+ 2010; on ART since
- Nadir/Current CD4+ 600/1000
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- LDL 100mg/dl on atorvastatin 40mg daily

Slide 4

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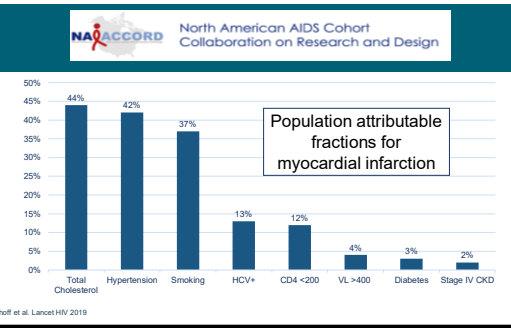
HIV is a risk factor for cardiovascular disease



Kentoffio et al, Curr Opin HIV/AIDS 2023

Slide 5

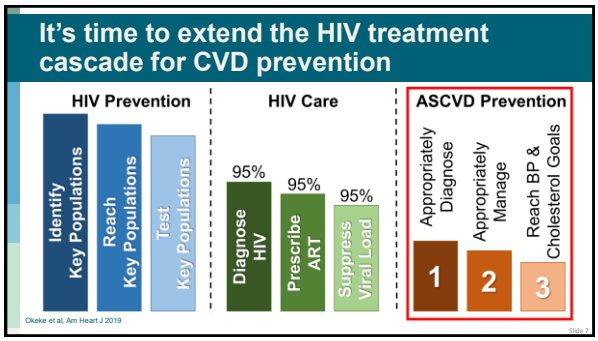
5



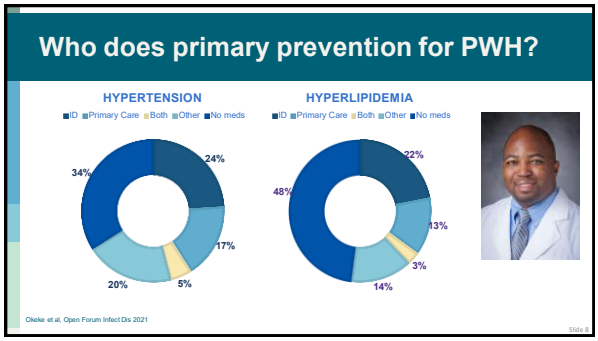
Althoff et al. Lancet HIV 2019

Slide 6

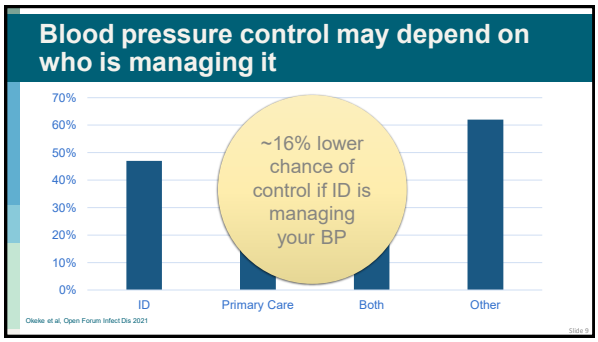
6


It's time to extend the HIV treatment cascade for CVD prevention
HIV Prevention
Identify Key Populations
Reach Key Populations
Test Key Populations
HIV Care
95%
Diagnose HIV
95%
Prescribe ART
95%
Suppress Viral Load
ASCVD Prevention
Appropriately Diagnose
Appropriately Manage
Reach BP & Cholesterol Goals
1
2
3
Okeke et al, Am Heart J 2019

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Who does primary prevention for PWH?
HYPERTENSION
ID Primary Care Both Other No meds
24%
34%
17%
20%
5%
HYPERLIPIDEMIA
ID Primary Care Both Other No meds
22%
48%
13%
3%
14%
Okeke et al, Open Forum Infect Dis 2021

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Blood pressure control may depend on who is managing it
70%
60%
50%
40%
30%
20%
10%
0%
~16% lower chance of control if ID is managing your BP
ID
Primary Care
Both
Other
Okeke et al, Open Forum Infect Dis 2021

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Risk prediction to guide shared decision making on statins

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Clinical Case

- 59 yo man with HIV (CD4 800, VL UD on DTG/TDF/FTC) and avid smoker referred to cardiology after a low-dose chest CT for lung cancer showed 3 vessel coronary calcification.
- Risk factors:
  - smoker (50 pack years, currently 1ppd)
  - high cholesterol (Total 178, LDL 95, HDL 38)
  - Father had coronary bypass @ 60
- Meds: DTG/TDF/FTC, atorvastatin 20, testosterone, albuterol
- BP 142/80
- Other Labs: basic metabolic panel and liver function normal

VL UD=viral load undetectable; DTG=dolutegravir, TDF=tenofovir disoproxil fumarate; FTC=emtricitabine; CT=computed tomography; HDL=high density lipoprotein

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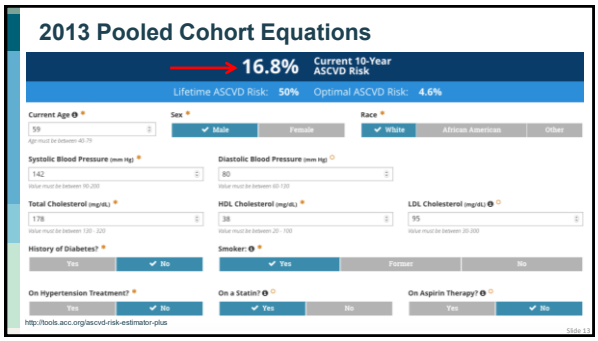
2018 ACC/AHA Cholesterol Guidelines

1	Clinical ASCVD	Very High Risk / High Risk
2	LDL > 190mg/dL	High dose statin
3	Diabetes Age 40-75	Mod-high dose statin
4	>7.5% estimated risk Age 40-75	Consider additional risk factors and calcium score

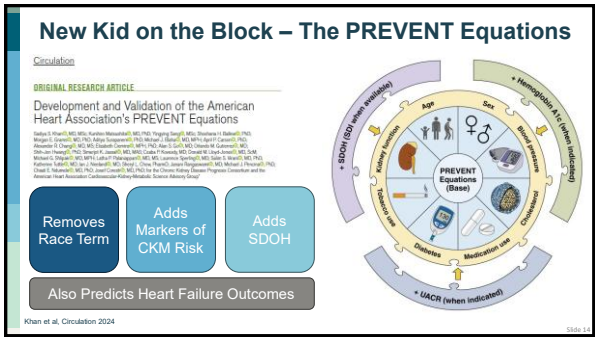
Grundy et al, Circulation 2018

Slide 12

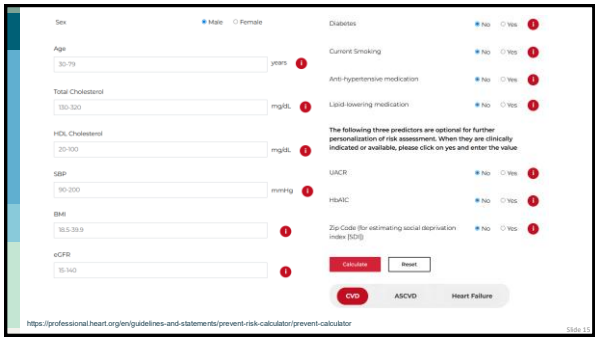
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2013 Pooled Cohort Equations
16.8%
Current 10-Year ASCVD Risk
Lifetime ASCVD Risk: 50%
Optimal ASCVD Risk: 4.6%
Current Age
Sex
Male
Female
Race
White
African American
Other
Systolic Blood Pressure (mm Hg)
Diastolic Blood Pressure (mm Hg)
Total Cholesterol (mg/dL)
HDL Cholesterol (mg/dL)
LDL Cholesterol (mg/dL)
History of Diabetes?
Smoker:
Yes
Former
No
On Hypertension Treatment?
On a Statin?
On Aspirin Therapy?
http://tools.acc.org/ascvd-risk-estimator-plus

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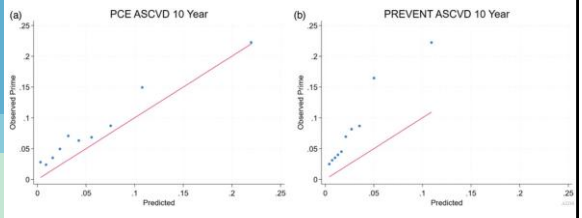

New Kid on the Block – The PREVENT Equations
Circulation
ORIGINAL RESEARCH ARTICLE
Development and Validation of the American Heart Association's PREVENT Equations
Removes Race Term
Adds Markers of CKM Risk
Adds SDOH
Also Predicts Heart Failure Outcomes
PREVENT Equations (Base)
Age
Sex
Blood Pressure
Cholesterol
Medication use
Diabetes
Smoking
Kidney function
+ SDOH (SDI) (when available)
+ Hemoglobin A1c (when indicated)
+ UACR (when indicated)
Khan et al, Circulation 2024

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Sex
Male
Female
Age
30-79
years
Total Cholesterol
130-320
mg/dL
HDL Cholesterol
20-100
mg/dL
SBP
90-200
mmHg
BMI
18.5-39.9
eGFR
15-140
Diabetes
Current Smoking
Anti-hypertensive medication
Lipid-lowering medication
The following three predictors are optional for further personalization of risk assessment. When they are clinically indicated or available, please click on yes and enter the value
UACR
HbA1C
Zip Code (for estimating social deprivation index (SDI))
Calculate
Reset
CVD
ASCVD
Heart Failure
https://professional.heart.org/en/guidelines-and-statements/prevent-risk-calculator/prevent-calculator

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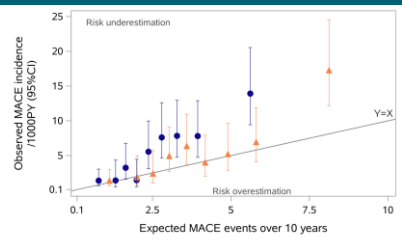
PREVENT underestimates risk in the multicenter CNICS cohort



Durstenfeld et al, AIDS 2025

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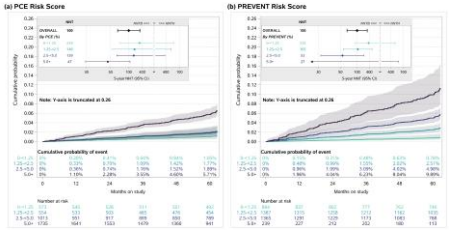
…and in the REPRIEVE trial



Grinspoon et al, Clin Inf Disease *In Press*

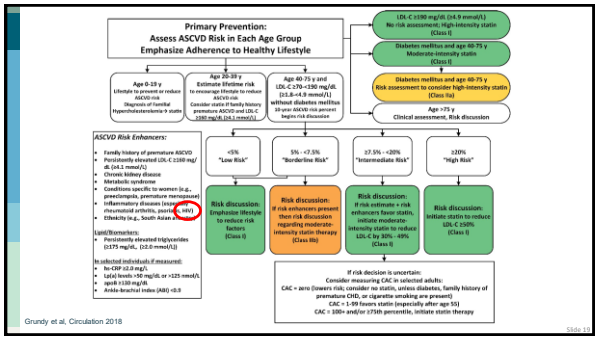
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PREVENT discriminated lower levels of risk better than PCE

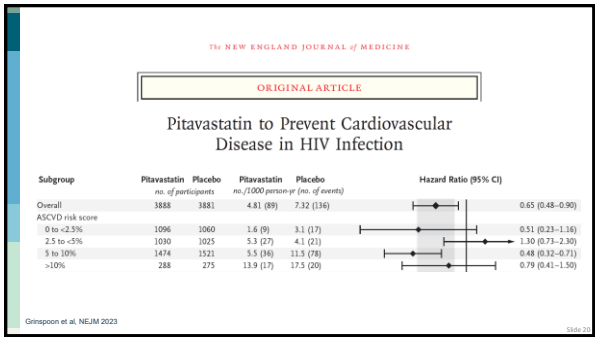


Grinspoon et al, Clin Inf Disease *In Press*

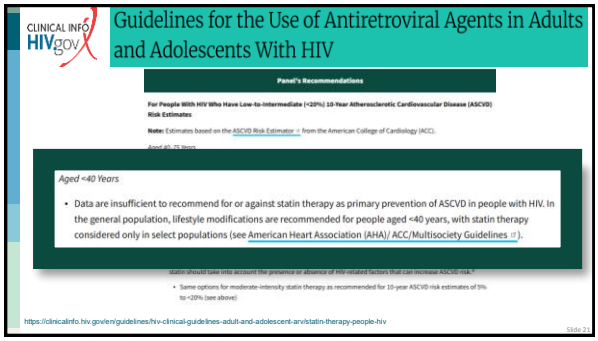
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Primary Prevention:
Assess ASCVD Risk in Each Age Group
Emphasize Adherence to Healthy Lifestyle
Age 0–19 y
Age 20–39 y
Age 40–75 y and
Diabetes mellitus and age 40–75 y
Age >75 y
Clinical assessment, Risk discussion
ASCVD Risk Enhancers:
<5%
"Low Risk"
5% - <7.5%
"Borderline Risk"
≥7.5% - <20%
"Intermediate Risk"
≥20%
"High Risk"
Risk discussion:
Risk discussion:
Risk discussion:
Risk discussion:
If risk decision is uncertain:
Consider measuring CAC in selected adults:
Grundy et al, Circulation 2018
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The NEW ENGLAND JOURNAL of MEDICINE
ORIGINAL ARTICLE
Pitavastatin to Prevent Cardiovascular Disease in HIV Infection
Subgroup
Pitavastatin
Placebo
Pitavastatin
Placebo
Hazard Ratio (95% CI)
no. of participants
no./1000 person-yr (no. of events)
Overall
3888
3881
4.81 (89)
7.32 (136)
0.65 (0.48–0.90)
ASCVD risk score
0 to <2.5%
1096
1060
1.6 (9)
3.1 (17)
0.51 (0.23–1.16)
2.5 to <5%
1030
1025
5.3 (27)
4.1 (21)
1.30 (0.73–2.30)
5 to 10%
1474
1521
5.5 (36)
11.5 (78)
0.48 (0.32–0.71)
>10%
288
275
13.9 (17)
17.5 (20)
0.79 (0.41–1.50)
Grinspoon et al, NEJM 2023
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CLINICAL INFO
HIV.gov
Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents With HIV
Panel's Recommendations
For People With HIV Who Have Low-to-Intermediate (<20%) 10-Year Atherosclerotic Cardiovascular Disease (ASCVD) Risk Estimates
Note: Estimates based on the ASCVD Risk Estimator from the American College of Cardiology (ACC).
Aged <40 Years
Data are insufficient to recommend for or against statin therapy as primary prevention of ASCVD in people with HIV. In the general population, lifestyle modifications are recommended for people aged <40 years, with statin therapy considered only in select populations (see American Heart Association (AHA)/ ACC/Multisociety Guidelines).
Same options for moderate-intensity statin therapy as recommended for 10-year ASCVD-risk estimates of 5% to <20% (see above)
https://clinicalinfo.hiv.gov/en/guidelines/hiv-clinical-guidelines-adult-and-adolescent-arv/statin-therapy-people-hiv
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Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents With HIV

Table 11a. Estimated NNT for MACE Prevention With Pitavastatin in People With HIV Based on REPRIEVE[a]

10-Year ASCVD Risk Score	N	NNT_5
>10%	563	34
5% to 10%	2,995	53
2.5% to 5.0%	2,055	130
0% to <2.5%	2,156	187
Overall	7,769	100

Pooled Cohort Equations

https://clinicalinfo.hiv.gov/en/guidelines/hiv-clinical-guidelines-adult-and-adolescent-arv/statin-therapy-people-hiv

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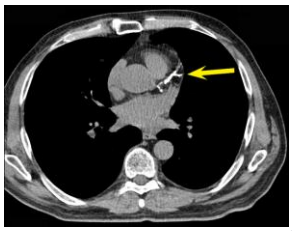
Can we further refine risk to identify PWH who would benefit the most from statin therapy?

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Coronary Artery Calcium (CAC) Scoring

- Non-contrast, ***ECG-gated*** CT scan of the chest
- Different than CT angiography which requires IV contrast
- Result typically expressed as whole heart Agatston score



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CAC scoring improves assessment of absolute CVD risk

Calcium score	10-year risk for CVD event	Risk interpretation
0	<1%	Very low
1-99	4%	Low
100-399	13%	Moderate
400 or greater	24%	High

www.uhhospitals.org. Data from MESA cohort study.

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Back to our case…

- CAC score:
  - LAD 1004
  - LCx 41
  - RCA 445
  - Total **1490 (VERY High)**
- Invasive coronary angiography
  - Proximal LAD 60%
  - Mid LAD 80%
  - Proximal-Mid RCA 80% + 90%

Lp(a)
Another option to stratify risk

LAD=left anterior descending artery; LCx=left circumflex artery; RCA=right coronary artery

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Importance of Shared Decision Making with Aging PLHIV

- Consider a decision support tool to aid comprehension:
  - https://statindecisionaid.mayoclinic.org/
- Reinforce the importance of lifestyle factors
- Include patient costs of therapy in the discussion
- Make sure that the patient feels heard, has a chance to ask questions, and owns decisions that are made

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Statin Intensity

	High Intensity	Moderate Intensity	Low Intensity
LDL-C lowering†	≥50%	30%–49%	<30%
Statins	**Atorvastatin (40 mg‡) 80 mg** **Rosuvastatin 20 mg (*40 mg***	**Atorvastatin 10 mg** (20 mg) **Rosuvastatin** (5 mg) **10 mg** **Simvastatin 20–40 mg§**	Simvastatin 10 mg
	…	**Pravastatin 40 mg** (80 mg) **Lovastatin 40 mg** (80 mg) Fluvastatin XL 80 mg **Fluvastatin 40 mg BID** Pitavastatin 1–4 mg	**Pravastatin 10–20 mg** **Lovastatin 20 mg** Fluvastatin 20–40 mg

† LDL-C lowering that should occur with the dosage listed below each intensity.
‡ Evidence from 1 RCT only; down titration if unable to tolerate atorvastatin 80 mg in the IDEAL (Incremental Decrease through Aggressive Lipid Lowering) study.
§ Although simvastatin 80 mg was evaluated in RCTs, initiation of simvastatin 80 mg or titration to 80 mg is not recommended by the FDA because of the increased risk of myopathy, including rhabdomyolysis.

Grundy et al, Circulation 2018

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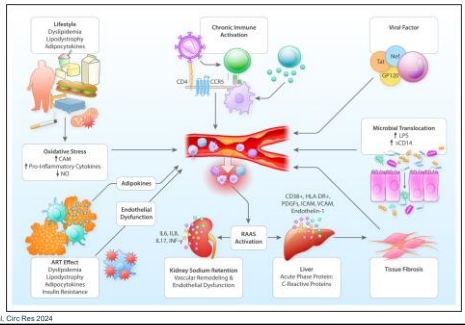
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Hypertension in PLHIV

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Prakash et al, Circ Res 2024

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New Guidelines on the Block

CLINICAL PRACTICE GUIDELINES

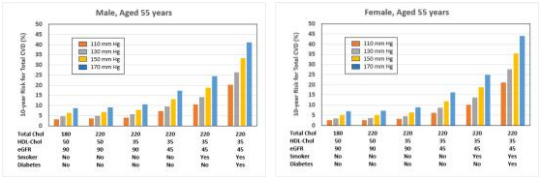
2025 AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA/SGIM Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines

Jones et al, Hypertension 2025

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The absolute risk of hypertension depends on absolute risk of total CVD

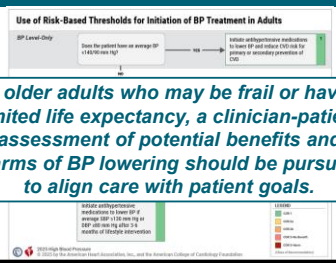


Jones et al, Hypertension 2025

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Therefore, a risk-based approach to treatment is recommended



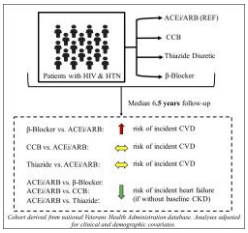
In older adults who may be frail or have a limited life expectancy, a clinician-patient assessment of potential benefits and harms of BP lowering should be pursued to align care with patient goals.

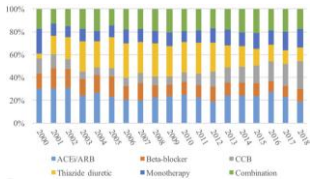
Jones et al, Hypertension 2025

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Initiation of beta-blockers is associated with worse outcomes in PLWH





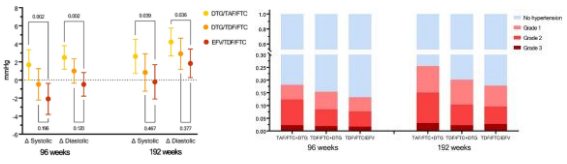
Beta-blockers associated with 90% increased risk of incident CVD (vs. ACE/ARB)

Rethy et al, Hypertension 2021

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Blood pressure change and treatment emergent hypertension in ADVANCE



Differences between regimens were attenuated after adjustment for changes in BMI

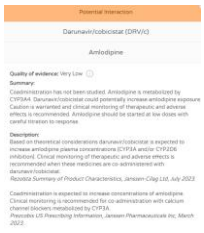
Manne-Goehler et al, J Int AIDS Soc 2024

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Hypertension management and ART pearls

- ART raises blood pressure
  - Differences between drugs/regimens is extremely modest
- Hypertension rarely merits switch in ART
- Beware clinically relevant drug interactions with boosted ART
  - Amlodipine (modest)
  - Carvedilol (weak)



hiv-druginteractions.org/checker

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How to overcome clinical inertia?

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Original Investigation | Infectious Diseases

March 5, 2024

Nurse-Led Strategy to Improve Blood Pressure and Cholesterol Level Among People With HIV

A Randomized Clinical Trial

Christopher T. Longenecker, MD[1]; Kelley A. Jones, PhD[2]; Corrilynn O. Hileman, MD[3,4]; et al

Author Affiliations | Article Information

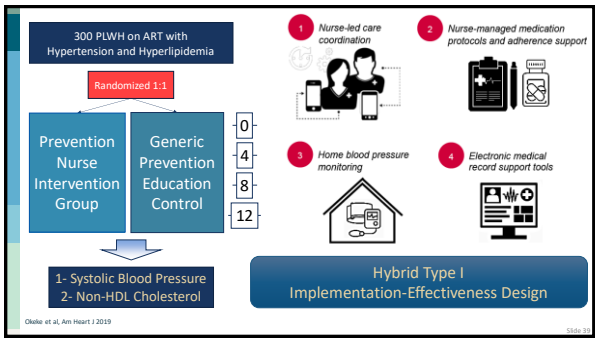
JAMA Netw Open. 2024;7(3):e2356445. doi:10.1001/jamanetworkopen.2023.56445



Longenecker et al, JAMA Network Open 2024

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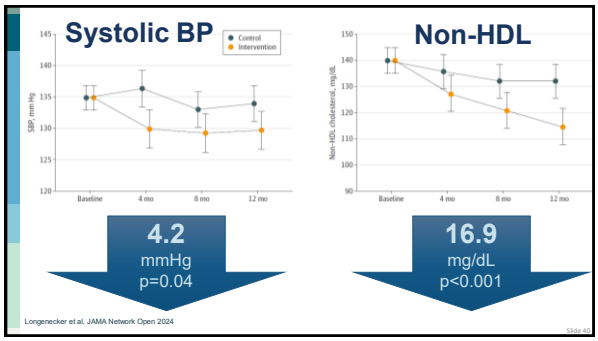
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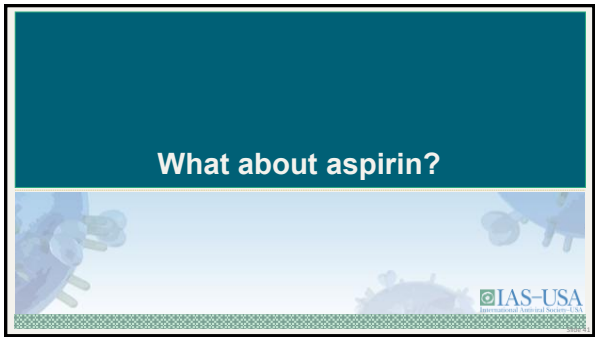
Okeke et al, Am Heart J 2019

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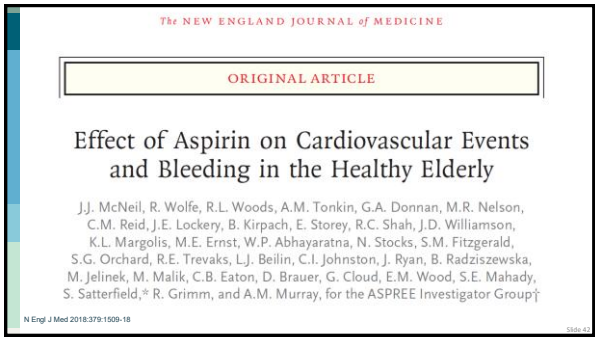
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Systolic BP
Control
Intervention
SBP, mm Hg
145
140
135
130
125
120
Baseline
4 mo
8 mo
12 mo
Non-HDL
Non-HDL cholesterol, mg/dL
150
140
130
120
110
100
90
Baseline
4 mo
8 mo
12 mo
4.2
mmHg
p=0.04
16.9
mg/dL
p<0.001
Longenecker et al, JAMA Network Open 2024
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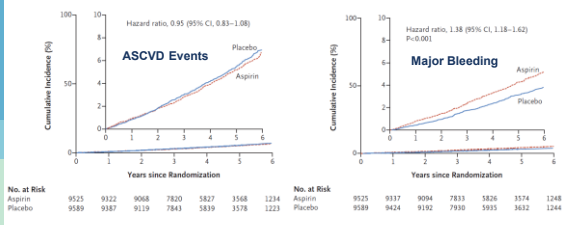

What about aspirin?
IAS–USA

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The NEW ENGLAND JOURNAL of MEDICINE
ORIGINAL ARTICLE
Effect of Aspirin on Cardiovascular Events and Bleeding in the Healthy Elderly
J.J. McNeil, R. Wolfe, R.L. Woods, A.M. Tonkin, G.A. Donnan, M.R. Nelson, C.M. Reid, J.E. Lockery, B. Kirpach, E. Storey, R.C. Shah, J.D. Williamson, K.L. Margolis, M.E. Ernst, W.P. Abhayaratna, N. Stocks, S.M. Fitzgerald, S.G. Orchard, R.E. Trevaks, L.J. Beilin, C.I. Johnston, J. Ryan, B. Radziszewska, M. Jelinek, M. Malik, C.B. Eaton, D. Brauer, G. Cloud, E.M. Wood, S.E. Mahady, S. Satterfield,* R. Grimm, and A.M. Murray, for the ASPREE Investigator Group†
N Engl J Med 2018;379:1509-18
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Benefit vs. Risk in ASPREE



N Engl J Med 2018;379:1509-18

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Daily Low-Dose Aspirin No Longer Recommended by Doctors, if You're Healthy



New guidelines suggest low-dose aspirin should not be recommended to prevent heart attacks in healthy older adults. Patrick Sison/Associated Press

By Laura M. Holson
March 28, 2019

For years, low-dose aspirin has been described as a panacea to ward off heart attacks, strokes and other cardiovascular disease.

History of USPSTF Recommendations on Aspirin for Primary Prevention of Cardiovascular Disease

Year	Recommendation	Grade*
1989	Consider for middle-aged or older men (age, ≥40) with coronary risk factors and low bleeding risk	Not graded
1996	Insufficient evidence to make recommendation for asymptomatic adults	C
2002	Strongly recommend discussion of aspirin chemoprevention with adults at excess risk for coronary disease	A
2009	Recommend aspirin for middle-aged and older men (age range, 45–79) and women (age range, 55–79) when potential benefit outweighs potential harm	A
	Recommend against aspirin for middle-aged men (age, <45) and women (age, <55)	D
	Evidence insufficient for older adults (age, ≥80)	I
2016	Recommend initiating aspirin for middle-aged adults (age, 50–59) with 10-year cardiovascular risk ≥10%	B
	Individualize decision to initiate aspirin for older adults (age range, 60–69) with 10-year cardiovascular risk ≥10%	C
	Evidence insufficient for younger and older adults (age, <50 or >70)	I
2022	Individualize decision to initiate aspirin for middle-aged adults (age range, 40–59) with 10-year cardiovascular risk ≥10%	C
	Recommend against initiating aspirin in older adults (age, ≥60)	D

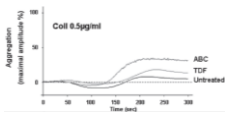
nytimes.com and NEJM Journal Watch May 3, 2022; USPSTF JAMA. 2022;327(16):1577-1584

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What about abacavir and MI risk?

- ABC is associated with MI
  - D:A:D
  - REPRIEVE
- Mechanism?
  - Increased platelet reactivity
- D:A:D analysis of recurrent MI
  - NO increased risk of continued abacavir use after first MI



* **Higher platelet aggregation** by light transmission aggregometry after stimulation in ABC-treated patients compared to TDF

Falcinelli et al, Thromb Haemost 2013; Sabin et al, AIDS 2017

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For whom do I prescribe ASA?

- Individualized decision
- In middle-aged adults with HIV (40-59)
- With 10-year ASCVD risk >10%
- ***Or on abacavir***
- ***Or with significant subclinical coronary disease on CT ("Primary +")***

Generally, avoid aspirin for primary prevention among older adults with HIV (>60 years old)

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What does the future hold?





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In Conclusion

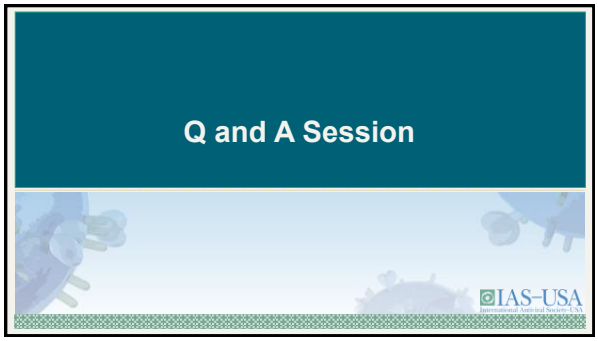
- We have an opportunity in HIV clinics to provide **HIGH** quality CVD prevention care!
- Shared decisions on statins begin with risk prediction
  - *Why? Because magnitude of absolute risk reduction depends on baseline absolute risk*
- Also consider absolute risk when establishing a treatment target for blood pressure
- Be cautious with aspirin in older populations

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