

Statin Therapy of Older Adults: *Evolving Concepts of Management*

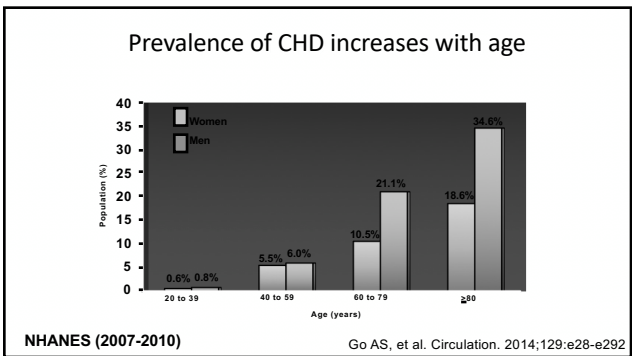
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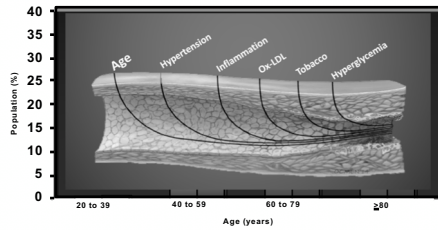


Disclosures

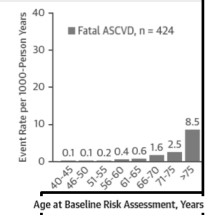
- No Conflicts of Interest



Strong Rationale To Slow CHD Progression Before and During Old Age

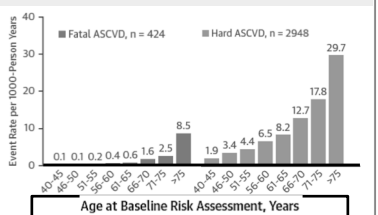


What is relevant risk??



Mortensen MB, Falk E, J Am Coll Cardiol. 2018;71: 87-94

What is relevant risk??



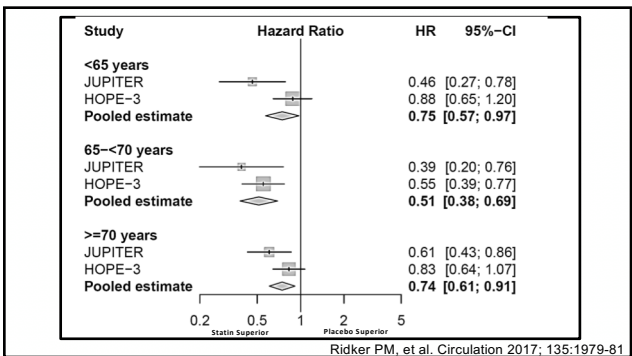
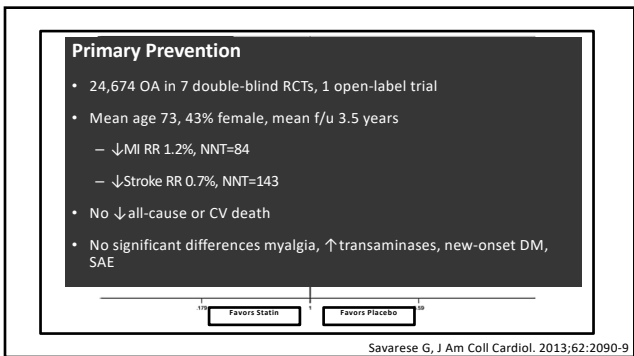
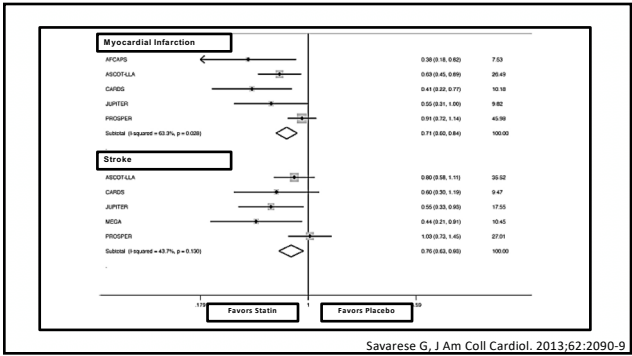
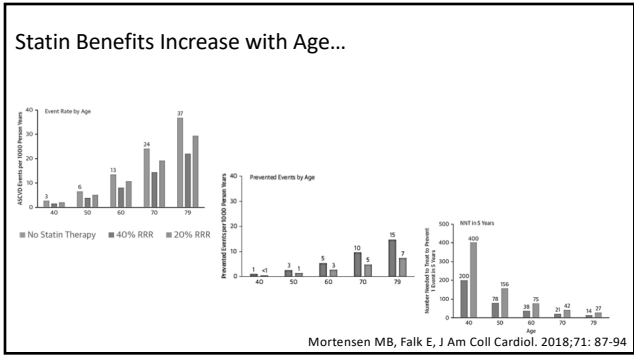
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Rationale: Statins Reasonable Rx Consideration For Many

- ↑Longevity: Soaring Demographics:
 - ↑CHD: ↑43% (~5 million cases) by 2030
 - ↑Costs: ↑198% (~70 billion dollars) by 2030
 - ↑↑↑ Systemic Effects of Atherosclerotic Disease



- Statins (3-hydroxy-3-methyl-glutaryl-CoA reductase):
 - ↑ Potential for effective, inexpensive prevention
 - ↓↓CHD, CVA, PAD, and ? disability/cognition/frailty



Jupiter: 5695 subjects aged ≥ 70 years (32% of the study population); incurred 55% of the atherosclerotic CV events. (**Rosuvastatin 20**)

- 39% risk reduction of the CV events and trend towards reduction of all-cause mortality.

HOPE-3: 3086 enrollees aged ≥ 70 years (24% of the study population); incurred 43% of the atherosclerotic CV events. (**Rosuvastatin 10**)

- 17% risk reduction of the combined CV endpoint, and 9% risk reduction of all-cause mortality; but neither of these changes were statistically significant.

Meta-analysis combined data from Jupiter and HOPE-3:

- 26% relative risk reduction for those ≥ 70 years for the endpoint nonfatal MI, nonfatal stroke, or CV death

Ridker PM, et al. Circulation 2017; 135:1979-81

Statin in US Veterans ≥ 75 years and free of ASCVD at baseline

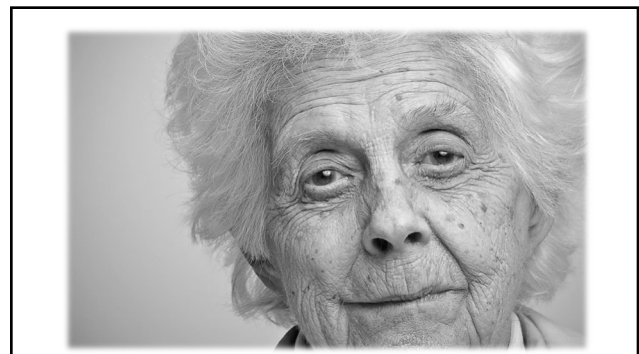
Outcome	# events/# at risk	Hazard Ratio (95% CI)	p-value
All-Cause Mortality	218,506/306,192	0.69 (0.68-0.70)	<0.0001
All CVD Death	57,442/306,192	0.73 (0.71-0.74)	<0.0001
CV Composite*	69,510/306,192	0.84 (0.82-0.85)	<0.0001
Myocardial Infarction	23,061/306,192	0.89 (0.86-0.92)	<0.0001
Stroke	33,632/306,192	0.87 (0.85-0.89)	<0.0001
CABG	65,053/306,192	0.83 (0.81-0.85)	<0.0001


N= 306,192; 81,124.2 years

Orkaby A, et al. AHA Scientific Session, 2019

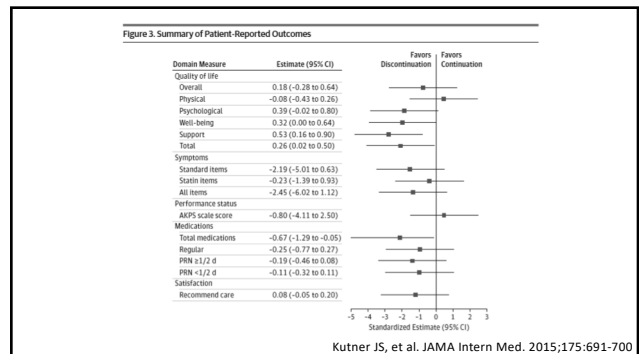
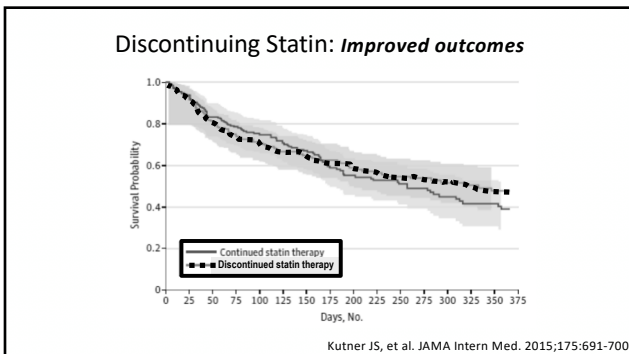
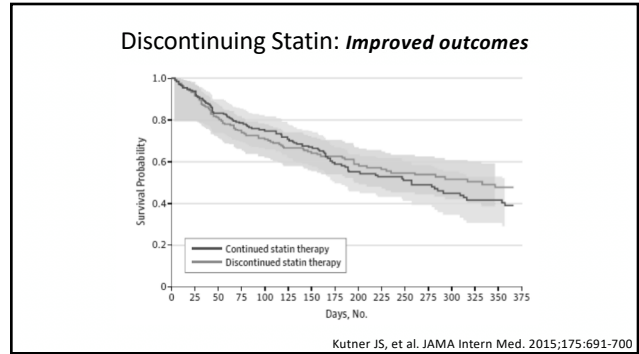
Outcome	Age group	HR	95% CI	p-value
All-Cause Mortality	75-79	0.67	0.65-0.68	<0.0001
	80-84	0.70	0.69-0.72	<0.0001
	85-89	0.76	0.74-0.78	<0.0001
	90+	0.73	0.68-0.79	<0.0001
All CVD Death	75-79	0.73	0.70-0.76	<0.0001
	80-84	0.74	0.72-0.77	<0.0001
	85-89	0.77	0.72-0.82	<0.0001
CV Composite	75-79	0.82	0.79-0.84	<0.0001
	80-84	0.85	0.83-0.88	<0.0001
	85-89	0.90	0.85-0.95	<0.0001
Myocardial Infarction	75-79	0.84	0.79-0.90	0.012
	80-84	0.90	0.86-0.95	<0.0001
	85-89	1.00	0.91-1.10	1.0
	90+	1.01	0.77-1.32	0.95
Stroke	75-79	0.84	0.80-0.87	<0.0001
	80-84	0.84	0.84-0.85	<0.0001
	85-89	0.95	0.83-1.07	0.24
	90+	0.97	0.76-1.24	0.97
CABG	75-79	0.85	0.83-0.88	<0.0001
	80-84	0.83	0.81-0.86	<0.0001
	85-89	0.91	0.88-0.96	0.0009
	90+	0.92	0.89-0.97	0.012

N= 306,192

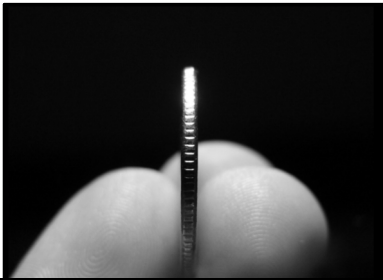




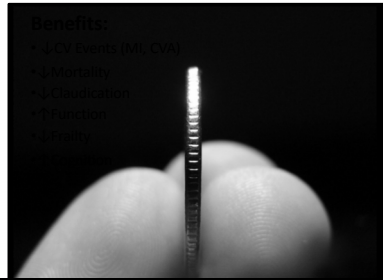
- **Prone to atherosclerotic disease**
- **But also prone to:**
 - Multimorbidity
 - Geriatric Syndromes
 - Polypharmacy
 - Frailty
 - Sarcopenia
 - Limited life expectancy
 - ? Predisposing to myalgias, weakness, cognitive impairment, diabetes, falls...



2 sides of the same coin



2 sides of the same coin



2 sides of the same coin



2 sides of the same coin



4.4.4.1. Older Adults

Additional recommendations for adults >75 years of age are included in Section 4.1. (Secondary ASCVD Prevention) and Section 4.3. (Diabetes Mellitus in Adults).

Recommendations for Older Adults
Referenced studies that support recommendations are summarized in Online Data Supplement 7.

COR	LOE	Recommendations
IIb	B-R	1. In adults > 75 years of age with LDL-C of 70 to 189 mg/dL (1.7 to 4.8 mmol/L), initiating a moderate-intensity statin may be reasonable (1-8)

2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA
Guideline on the Management of Blood Cholesterol:
Circulation. 2019;139:e1082-e1143

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III	II-R	2. In adults > 75 years of age, it may be reasonable to stop statin therapy when functional decline (physical or cognitive), multimorbidity, frailty or reduced life expectancy limit the potential benefits of statin therapy. (9).

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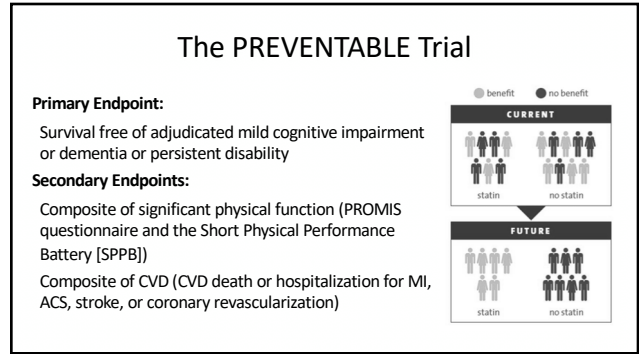
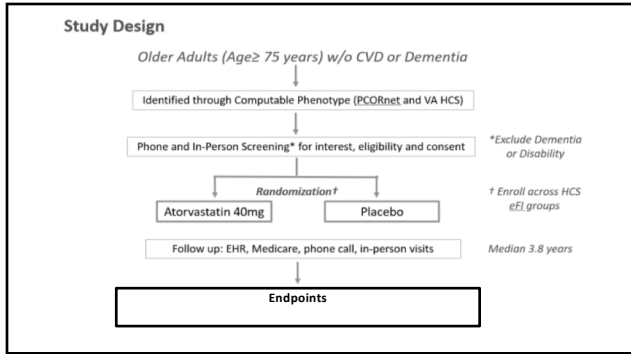
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Equipoise

The PREVENTABLE Trial:
PRagmatic Evaluation of evENTs And Benefits of Lipid-lowering in oldEr Adults

Duke: Karen Alexander MD, Adrian Hernandez MD
Wake Forest: Walter Ambrosius PhD, Jeff Williamson MD
Proposal Development Team: Kevin Roddy, Lauren Cohen, Kathy Hijek & Tammy Reece



Primary Prevention Statins in Older Adults: Personalized Care for a Heterogeneous Population

David L. Frank, MD, PhD, Neil Kumar, MD, and David L. Brown, MD*

Abstract

The 2013 American College of Cardiology/American Heart Association guideline for the management of blood cholesterol is a landmark recommendation for the primary prevention of cardiovascular disease in older adults. These guidelines recommend for most adults, age 40 and older, the use of statins to reduce the risk of cardiovascular disease. However, the clinical consequences of statin therapy in older adults are less clear. In this review, we discuss the potential benefits and risks of statin therapy in older adults, and we propose a personalized approach to statin therapy in this population. We discuss the potential benefits and risks of statin therapy in older adults, and we propose a personalized approach to statin therapy in this population. We discuss the potential benefits and risks of statin therapy in older adults, and we propose a personalized approach to statin therapy in this population.

Key words: statins; older adults; primary prevention

Introduction

The 2013 American College of Cardiology/American Heart Association guideline for the management of blood cholesterol is a landmark recommendation for the primary prevention of cardiovascular disease in older adults. These guidelines recommend for most adults, age 40 and older, the use of statins to reduce the risk of cardiovascular disease. However, the clinical consequences of statin therapy in older adults are less clear. In this review, we discuss the potential benefits and risks of statin therapy in older adults, and we propose a personalized approach to statin therapy in this population. We discuss the potential benefits and risks of statin therapy in older adults, and we propose a personalized approach to statin therapy in this population.

Conclusion

Statin therapy in older adults should be personalized based on individual patient characteristics, including comorbidities, functional status, and patient preferences. A personalized approach to statin therapy in older adults may improve outcomes and reduce adverse effects.

Shared Decision Making: Decision Tools

Current Risk | Intervention | Issues | Notes | Document

Benefits to Decision: according to the patient's health information from ACCORD AND ACCORD-Blood Cholesterol

Current Risk: Current Risk of having a heart attack: About 10% per year (for men who are 65 or older) Measure for heart attack

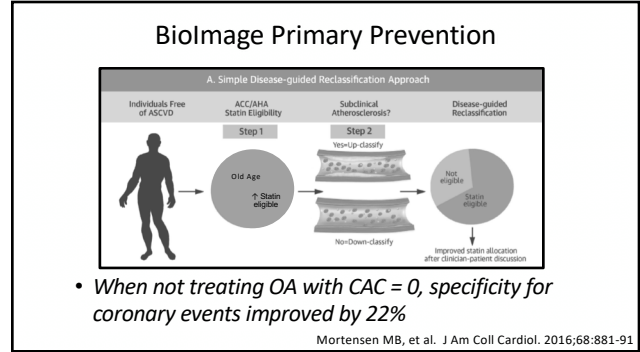
Intervention: Standard dose statin: About 10% per year (for men who are 65 or older) Measure for heart attack

Issues: Cost, Side effects, Muscle aching/difficulties, Lower blood test goes up, Muscular and kidney damage

Notes: The cost of statins reduces your chance risk by about one fifth. Improve patient to stop statins.

Document: Benefits to Decision: according to the patient's health information from ACCORD AND ACCORD-Blood Cholesterol

<http://www.decisionsupporttoolkit.com/patient-decision-support-tools-potential-options>

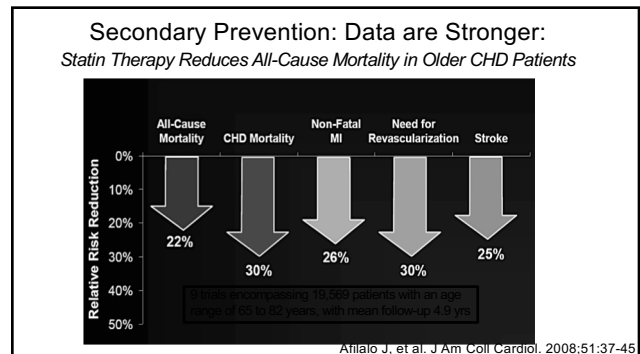


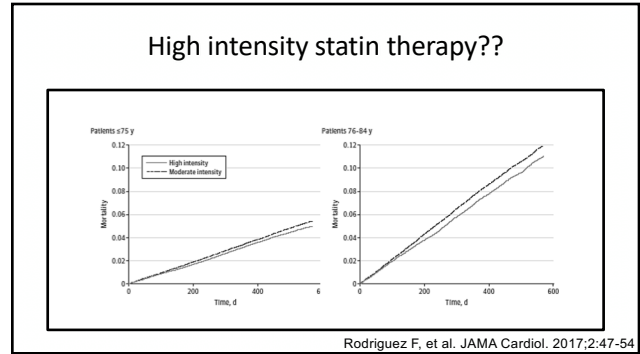
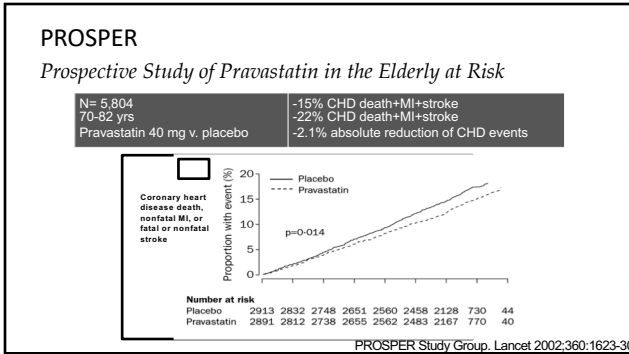
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IIb	B-R	2. In adults > 75 years of age, it may be reasonable to stop statin therapy when functional decline (physical or cognitive), multimorbidity, frailty or reduced life expectancy limit the potential benefits of statin therapy. (9).
IIb	B-R	3. In adults 76-80 years of age with LDL-C of 70 to 189 mg/dL (1.7 to 4.8 mmol/L), it may be reasonable to measure coronary artery calcium (CAC) to reclassify those with CAC = 0 to avoid statin therapy. (10, 11).

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IMPROVE-IT

- Secondary Prevention
 - Population: 18,144 survivors of acute coronary syndrome
 - Intervention: **Simvastatin 40 mg + Ezetimibe 10 mg**
 - Comparator: Simvastatin 40 mg
 - Results: Lowered LDL-C from 69.5 mg/dl to 53.7 mg/dl
↓MI and Stroke
Absolute risk reduction for "hard" ASCVD 1.8
 - Time: Median follow-up was 6 years
- Benefit particularly pronounced in patients in 2,789 patients ≥75 years

Cannon C, et al. NEJM 2015;372:2387-97

4.1. Secondary ASCVD Prevention

Recommendations for Statin Therapy Use in Patients With ASCVD

IIa	B-R	6. In patients with clinical ASCVD older than 75 years, it is reasonable to initiate moderate or high-intensity statin therapy after evaluating the potential for ASCVD risk-reduction, adverse effects, drug-drug interactions, frailty, and patient preferences (18-26).
IIa	C-LD	7. In patients with clinical ASCVD older than 75 years of age who are tolerating high-intensity statin therapy, it is reasonable to continue high-intensity statin therapy after evaluating the potential for ASCVD risk-reduction, adverse effects, drug-drug interactions, frailty, and patient preferences (3, 10, 18, 21, 26-31).

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4.1. Secondary ASCVD Prevention

Recommendations for Statin Therapy Use in Patients With ASCVD

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Conclusions: Tailoring care for older adults

- In adults ≥ 75 yrs, primary prevention with a moderate-intensity statin may be associated with reduced CV events (ACS, CVA, PAD)
- Side effects, particularly myalgias, more concerning in older adults
- Potential for benefit must be weighted in relation to the potential for adverse effects, especially in context of functional decline, multimorbidity, frailty, polypharmacy, cognitive decline, and/or reduced life expectancy
 - Shared decision making between older adults and providers is crucial
- CAC = 0 may help avoid statins for primary prevention when management decision is uncertain (for adults aged 75 to 80 years)

AMERICAN COLLEGE OF CARDIOLOGY
 American Heart Association