



DISCLOSURES

- Industry: Consultant/speaker/honoraria: none
- Spousal: Abbott labs
- Editor duties: JAMA Cardiology, *Deputy Editor*; Journal of the American College of Cardiology- *senior associate editor (HF)*; American Journal of Cardiology, American Heart Journal, Circulation; Circulation-Heart Failure- *editorial boards*
- Guideline writing committees: Chair, ACC/AHA, chronic HF; member, atrial fibrillation; hypertrophic cardiomyopathy; syncope guideline committees. Chair, Performance Measures, Sudden Cardiac Death; Chair, ACC HF Consensus Pathways; Chair- Lifelong Learning Competencies for Advanced Heart Failure
- Federal appointments: FDA: Past Chair, Cardiovascular Device Panel; ad hoc consultant; NIH – Past member: Advisory Committee to the Director; Scientific Management and Review Board; AHRQ- ad hoc consultant; NHLBI- consultant; PCORI- founding methodology committee member; IOM/National Academy of Medicine- writing group member; HHS- member, minority health committee
- Volunteer Appointments: American Heart Association- President, American Heart Association, 2009-2010; American College of Cardiology, Varied

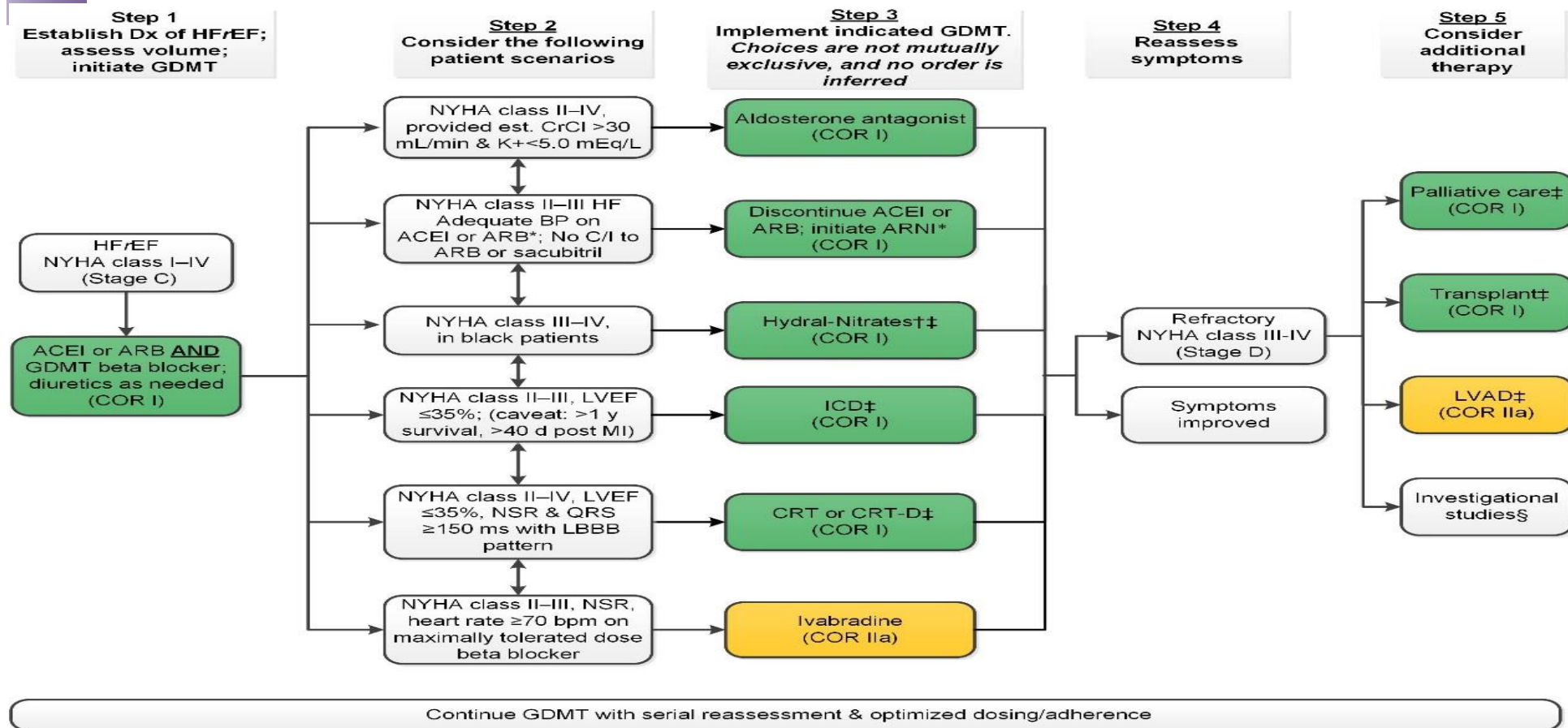


**INOVA Cardiovascular
Symposium
ACC/AHA/HFSA Heart Failure
Guidelines Update
April 27, 2019**

**Clyde W. Yancy, MD, MSc, MACP
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Professor, Medical Social Science
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Northwestern University, FSM
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No relevant disclosures

Treatment of HFrEF Stage C and D



†Hydral-Nitrates green box: The combination of ISDN/HYD with ARNI has not been robustly tested. BP response should be carefully monitored.

‡See 2013 HF guideline.

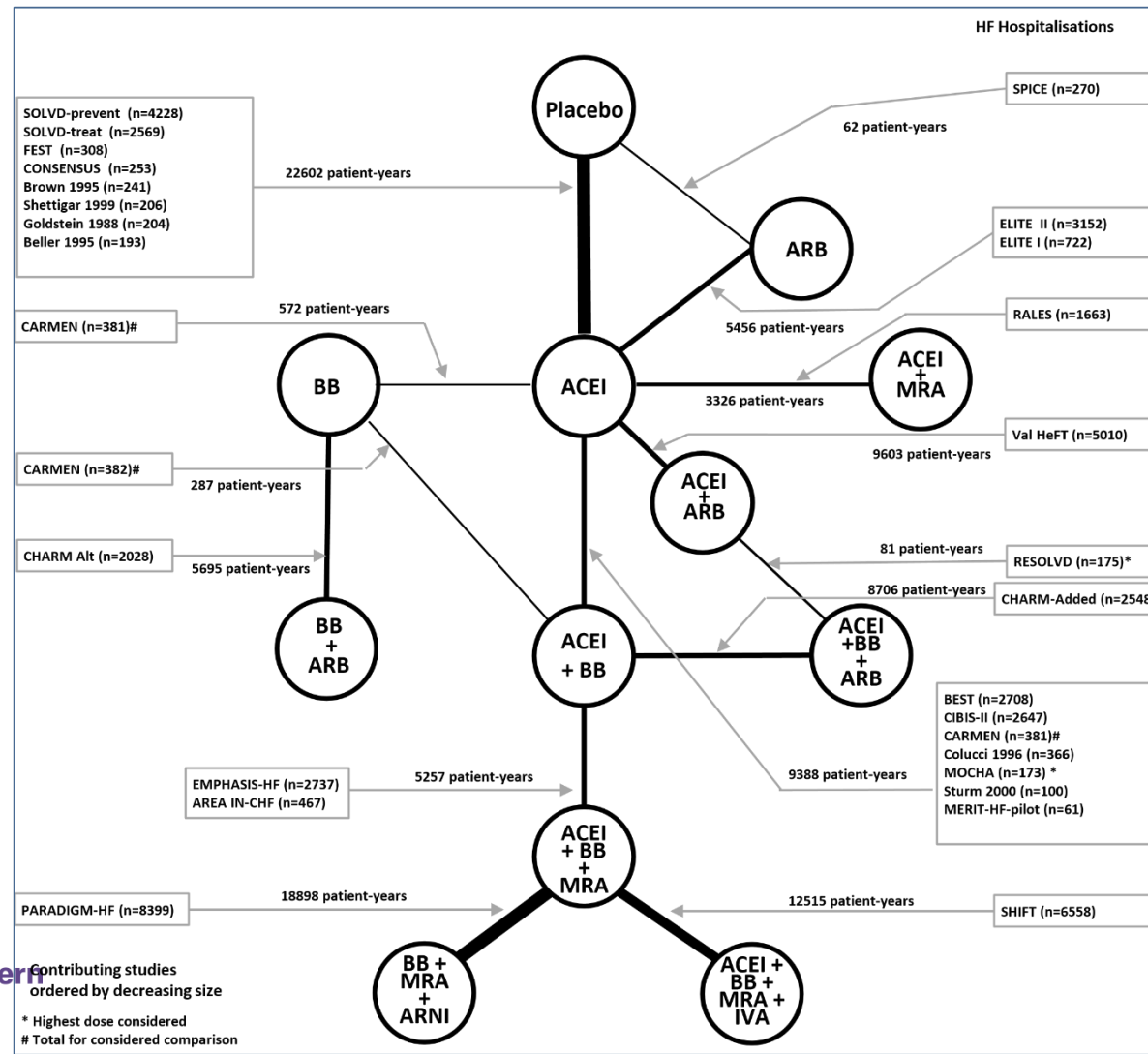
§Participation in investigational studies is also appropriate for stage C, NYHA class II and III HF.

ACEI indicates angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor-blocker; ARNI, angiotensin receptor-neprilysin inhibitor; BP, blood pressure; bpm, beats per minute; C/I, contraindication; COR, Class of Recommendation; CrCl, creatinine clearance; CRT-D, cardiac resynchronization therapy–device; Dx, diagnosis; GDMT, guideline-directed management and therapy; HF, heart failure; HFrEF, heart failure with reduced ejection fraction; ICD, implantable cardioverter-defibrillator; ISDN/HYD, isosorbide dinitrate hydral-nitrates; K+, potassium; LBBB, left bundle-branch block; LVAD, left ventricular assist device; LVEF, left ventricular ejection fraction; MI, myocardial infarction; NSR, normal sinus rhythm; and NYHA, New York Heart Association.

Incremental Benefit of Drug Therapies for HFrEF; a network meta-analysis.

Komajda M. et al. EJ Heart Failure 2018

combination of
ARNI, BB, MRA,
HR. 0.38, mortality



Combination of ACE-I,
BB, MRA
IVA. HR 0.58,
All-cause
hospitalizations

New Heart Failure Guidelines; what should be different?

- 1. Format
 - - *decision aids*
 - - *knowledge chunks*
- 2. Emphasis
 - - *prevention*
- 3. Content
 - *HFpEF?*
 - - *acute/hospitalized HF*
 - - *implementation strategies/science*
 - - *precision medicine*
- 4. Nomenclature?



We've made it easier to accomplish GDMT for heart failure:

Optimization of Heart Failure Treatment: Answers to 10 Pivotal Issues About Heart Failure with Reduced Ejection Fraction

December 2017

DOI: [10.1016/j.jacc.2017.11.025](https://doi.org/10.1016/j.jacc.2017.11.025)

5

2017 ACC Expert Consensus Decision Pathway for Optimization of Heart Failure Treatment

10 Principles for Successful Treatment of Heart Failure

2017 ACCF/AHA Heart Failure Guidelines

How to implement GDMT...

I. Initiate & Switch

Treatment algorithm for guideline-directed medical therapy including novel therapies (Figure 2 and 3)

II. Titration

Target doses of select guideline-directed heart failure therapy (Tables 1, 2, 3, 4, 5)

Considerations for monitoring

How to address challenges with...

III. Referral

Triggers for referral to HF specialist (Table 6)

IV. Care Coordination

Essential skills for a HF team (Table 7)

Infrastructure for team-based HF care (Table 8)

V. Adherence

Causes of non-adherence (Table 9)

Interventions for adherence (Table 10, 11)

VI. Specific Patient Cohorts

Evidence based recommendations and assessment of risk for special cohorts:

African Americans; older adults; frail (Table 12)

VII. Cost of Care

Strategies to reduce cost (Table 13)

Helpful information for completion of prior authorization forms (Table 14)

How to manage...

VIII. Increasing Complexity

Ten pathophysiologic targets in HFrEF and treatments (Table 15)

Ten principles and actions to guide optimal therapy

IX. Comorbidities

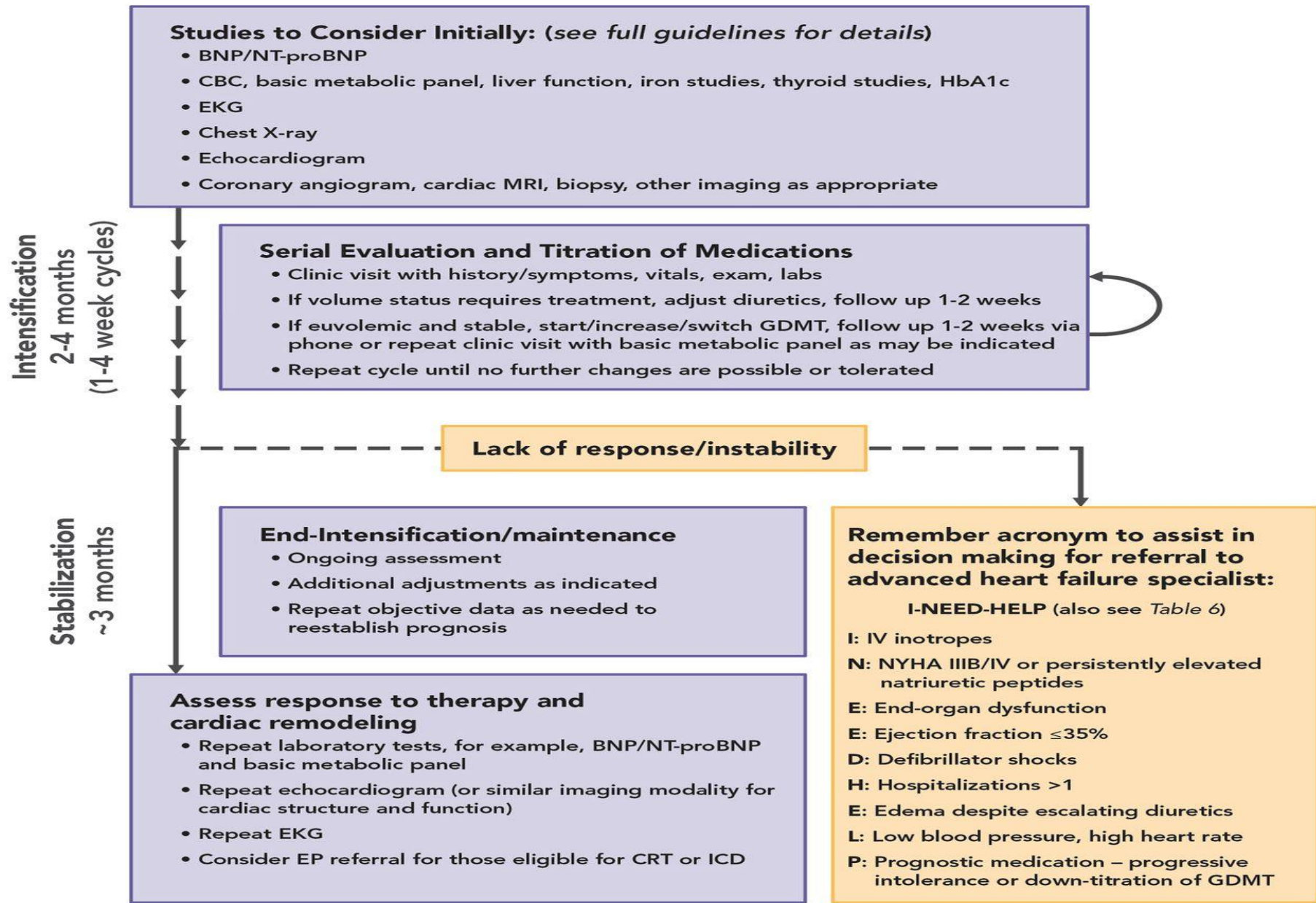
Common cardiac and non-cardiac comorbidities with suggested actions (Table 16)

X. Palliative/Hospice Care

Seven principles and actions to consider regarding palliative care

Writing Committee

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Translated Into Clinical Apps

TreatHF App



This App helps clinicians confirm which therapies are suggested for their symptomatic heart failure patients with reduced ejection fraction (HFrEF) and provides guidance on the use of each therapy.

- Enter patient indications
- Review individualized next steps for medical therapy
- Email or print a summary of the next steps
- Reference detailed information on:
 - Initiation, titration, and monitoring of each medication
 - Guidance for optimizing your overall medication strategy

Recent Innovations, Modifications, and Evolution of An Update for Our Constituencies

A Report of the American College of Cardiology/American Heart Association Clinical Practice Guidelines

Glenn N. Levine, Patrick T. O’Gara, Joshua A. Beckman, Sana M. Al-Jarrah, Las Fuentes, Anita Deswal, Lee A. Fleisher, Federico Gentile, Zachary J. Goldberger, Mariann R. Piano and Duminda N. Wijeyesundera

Author Information

1. Evidence Review Committees
2. Data Tables
3. Top ten take-home messages
4. Less text

Recommendations for Mental Health and Neurodevelopmental Issues

Referenced studies that support recommendations are summarized in Online Data Supplement 14.

COR	LOE	RECOMMENDATIONS
I	B-NR	1. Patients with ACHD should be evaluated for depression and anxiety (S3.7-1-S3.7-3).
IIa	B-NR	2. Referral for mental health evaluation and treatment is reasonable in patients with ACHD (S3.7-1-S3.7-4).
IIb	B-NR	3. Neurodevelopmental or neuropsychological testing may be considered in some patients with ACHD to guide therapies that enhance academic, behavioral, psychosocial, and adaptive functioning (S3.7-5-S3.7-9).

Synopsis

Mental health and neurodevelopmental issues are common in patients with ACHD and may significantly affect QoL. Neurodevelopmental abnormalities are more frequently seen in children who have complex disease, complex surgical repairs, and other characteristics (S3.7-10-S3.7-12). There is extensive literature in the pediatric population on the frequency and importance of neurodevelopmental abnormalities. However, many adults may not have been evaluated as children in accordance with current diagnostic and treatment strategies (S3.7-13, S3.7-14). Neurodevelopmental disorders, such as impairment of cognition, social skills and communication, and attention disorders, are often under-recognized even though appropriate diagnosis, treatment, and rehabilitation may be beneficial in optimizing function and QoL. An AHA scientific statement describes the common neurodevelopmental disorders affecting children with CHD and may inform neurodevelopmental issues related to adults with CHD (S3.7-13).

Recommendation-Specific Supportive Text

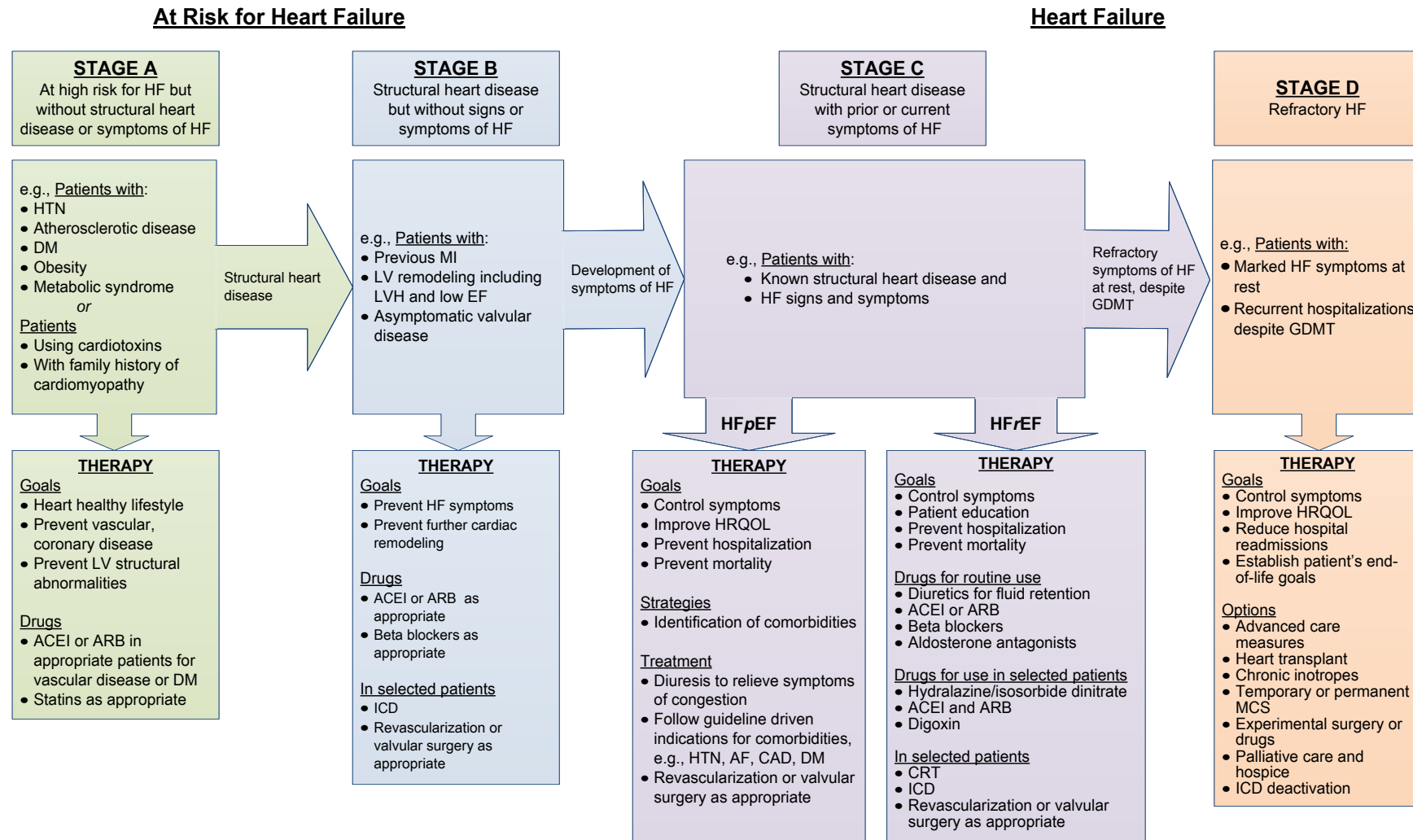
1. Anxiety and depression are underrecognized in the ACHD population. Point-of-care assessment with simple questions about anxiety and depression should be included in the symptom review.
2. Anxiety and depression are prevalent among patients with ACHD. Self-reported symptoms are incomplete to identify the existence of mood disorders. Structured professional psychological evaluation can identify up to 50% more patients with mood disorders (S3.7-1).
3. Although there is limited evidence on neurodevelopmental and neuropsychological issues in patients with ACHD, there is increasing evidence of the neurodevelopmental impact of CHD and surgery in childhood (S3.7-6, S3.7-8, S3.7-9). It is likely that this impact will persist into adulthood and may manifest in lower educational and occupational achievement. This is particularly evident in patients with genetic conditions such as 22q11 deletion and trisomy 21.

Glenn N. Levine et al. JACC 2019;73:1990-1998

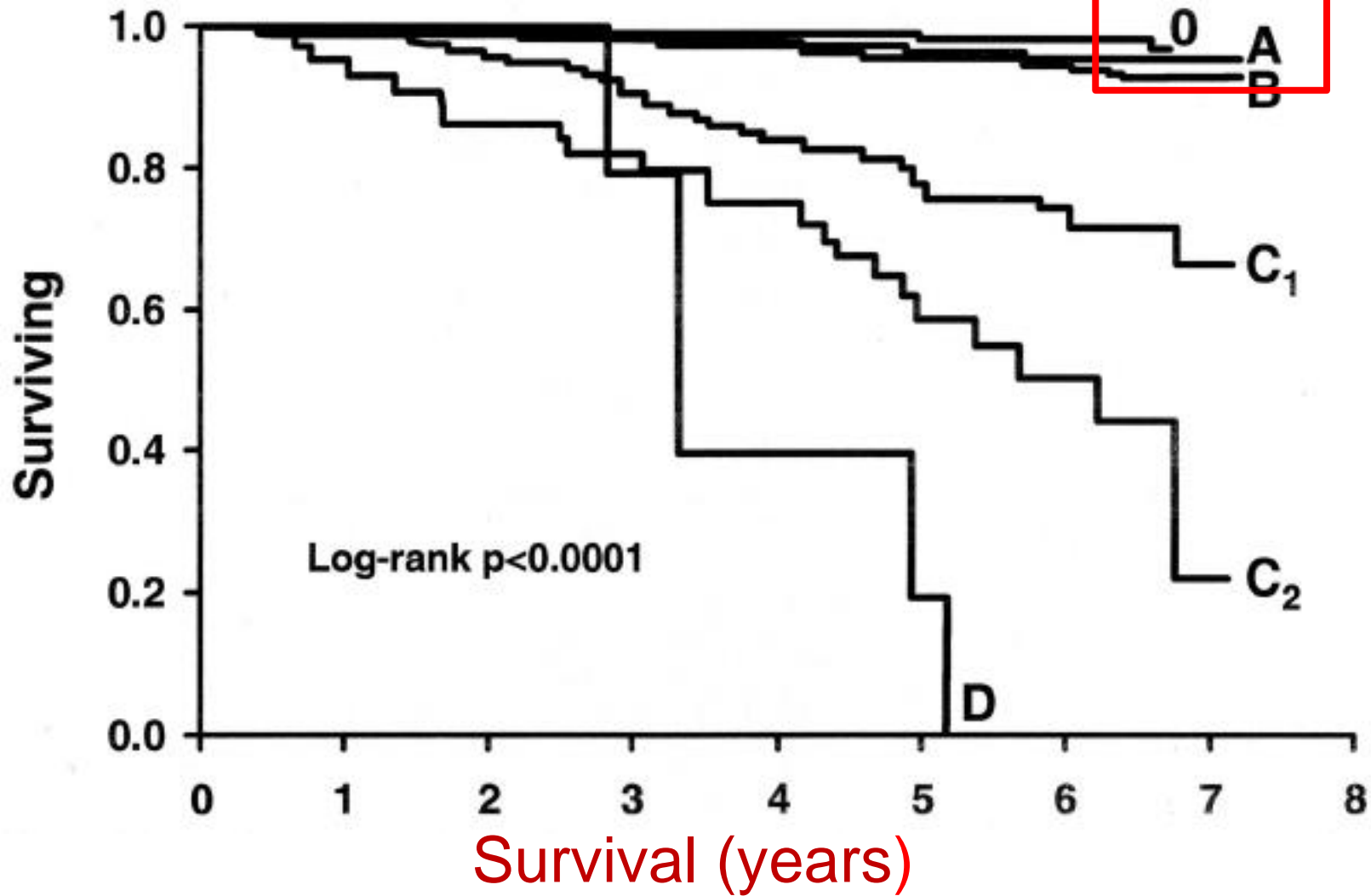
New Heart Failure Guidelines; what should be different?

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 -

Stages, Phenotypes and Treatment of HF



Prevalence and prognostic significance of HF Stages

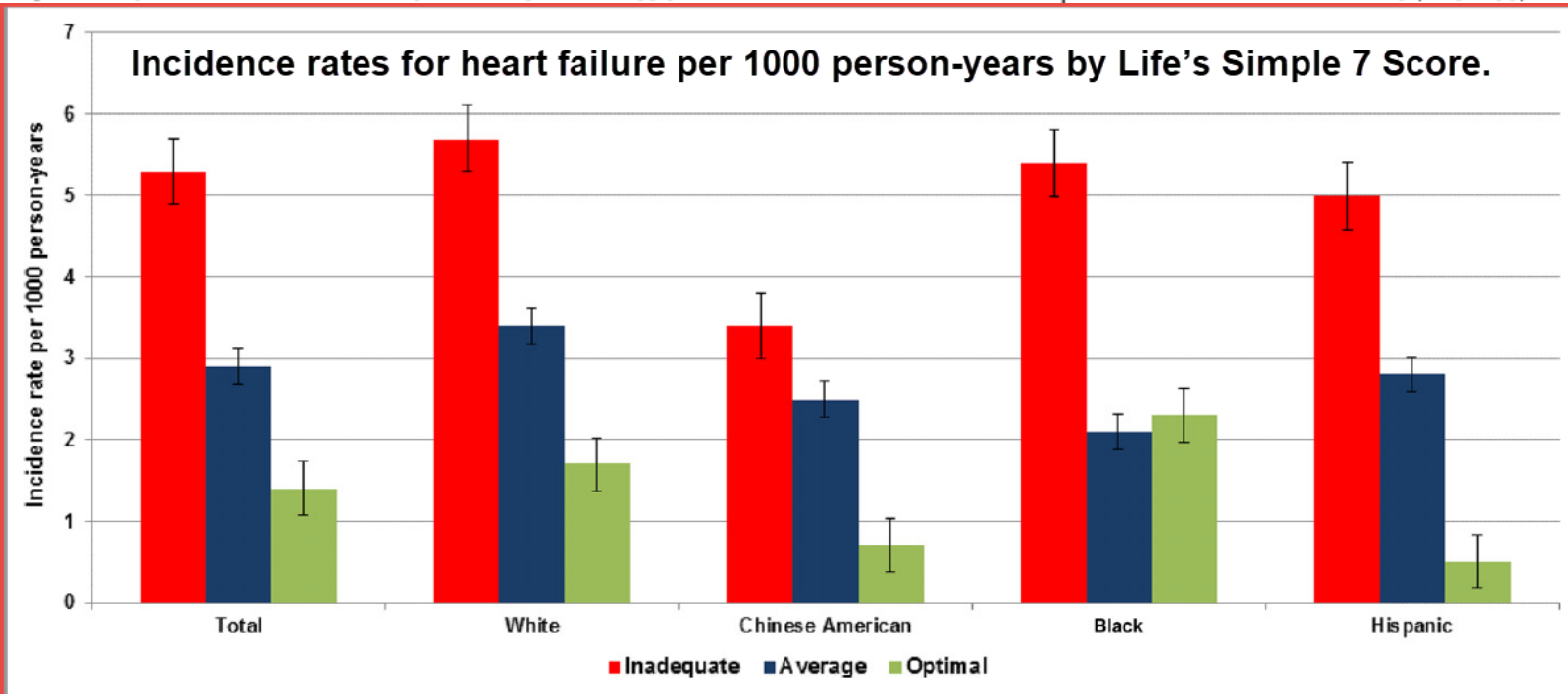


Ammar et al. *Circulation* 2007; 115:1563

Regardless of EF phenotype- HF can be **PREVENTED**

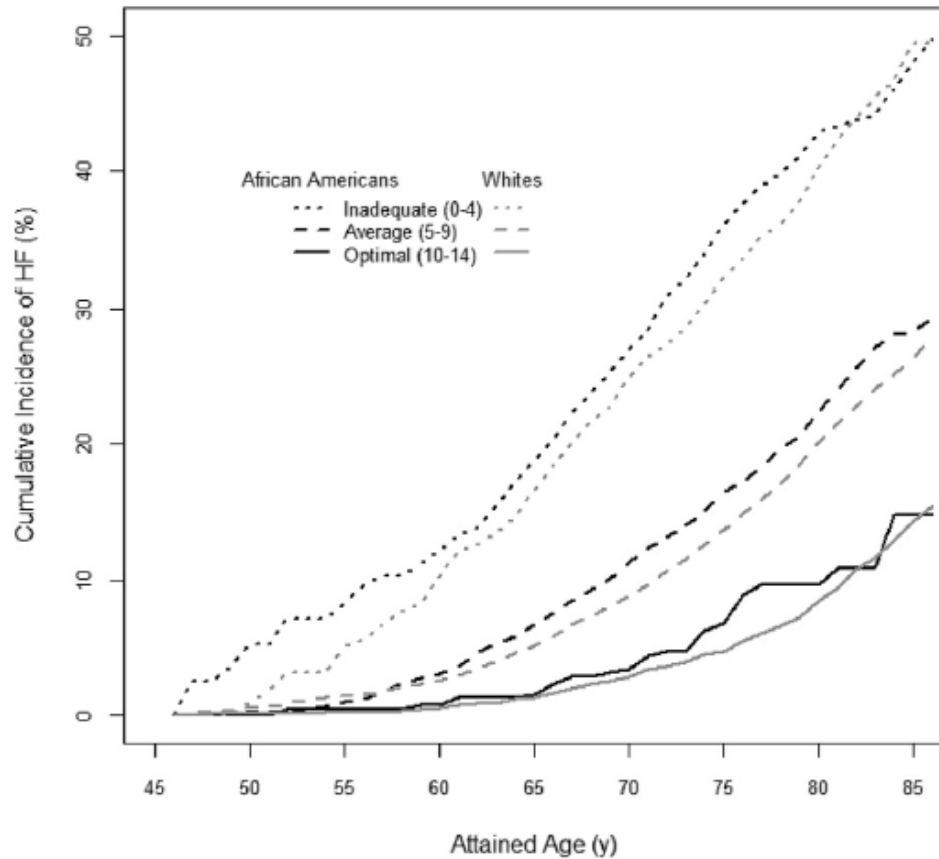
Outcome	Intensive Treatment		Standard Treatment		Hazard Ratio (95% CI)	P Value
	no. of patients (%)	% per year	no. of patients (%)	% per year		
All participants	(N= 4678)		(N= 4683)			
Primary outcome†	243 (5.2)	1.65	319 (6.8)	2.19	0.75 (0.64–0.89)	<0.001

Secondary outcomes	Patients		Events	Events per 1000 patient-years		Weight (%)	HR	HR (95% CI)
	Treatment (n)	Placebo (n)		Treatment	Placebo			
Myoc:								
Acute								
Stroke								
Heart	Patients with history of heart failure							
	EMPA-REG OUTCOME	462	244	124	63.6	85.5	23.6	0.72 (0.50–1.04)
	CANVAS Program	803	658	203	35.4	56.8	34.1	0.61 (0.46–0.80)
Death	DECLARE-TIMI 58	852	872	314	45.1	55.5	42.4	0.79 (0.63–0.99)



American Heart Association's Life's Simple 7: Avoiding Heart Failure and Preserving Cardiac Structure and Function

Aaron R. Folsom, MD,^a Amil M. Shah, MD,^b Pamela L. Lutsey, PhD,^a Nicholas S. Roetker, MPH,^a Alvaro Alonso, MD, PhD,^a Christy L. Avery, PhD,^c Michael D. Miedema, MD,^d Suma Konety, MD,^e Patricia P. Chang, MD,^f Scott D. Solomon, MD^b



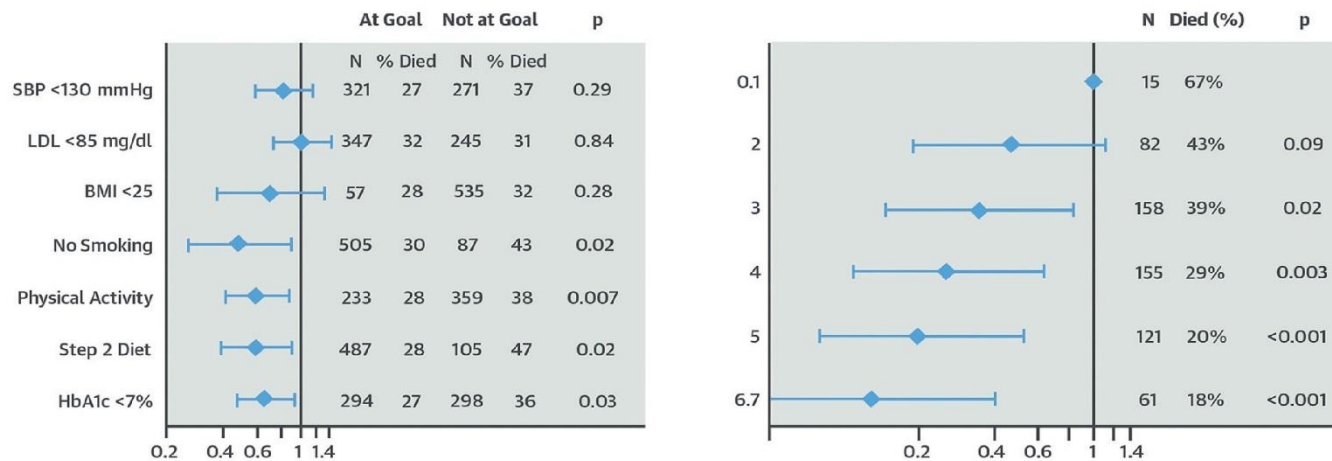
Race-specific lifetime risk of heart failure (HF) in relation to 3 categories of an AHA Life's Simple 7 score, ARIC, 1987-2011.

Greater achievement of American Heart Association's Life's Simple 7 in middle age is associated with a lower lifetime occurrence of heart failure and greater preservation of cardiac structure and function.

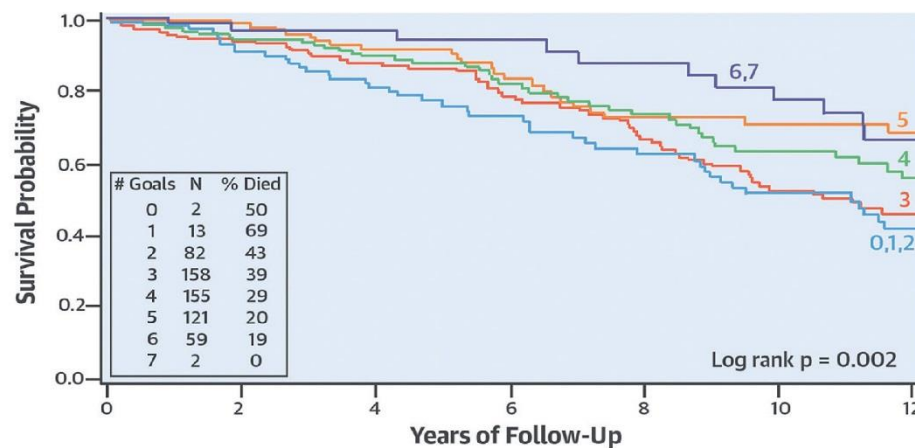
American Journal of Medicine
(2015) 128, 970-976

CENTRAL ILLUSTRATION: Association of Survival With Individual and Number of Goals Achieved

Death Rate Associated With Achieving Individual and Number of Goals



Time to Death by Count of Goals Achieved



Does a DASH diet (for HTN) also protect for HF?

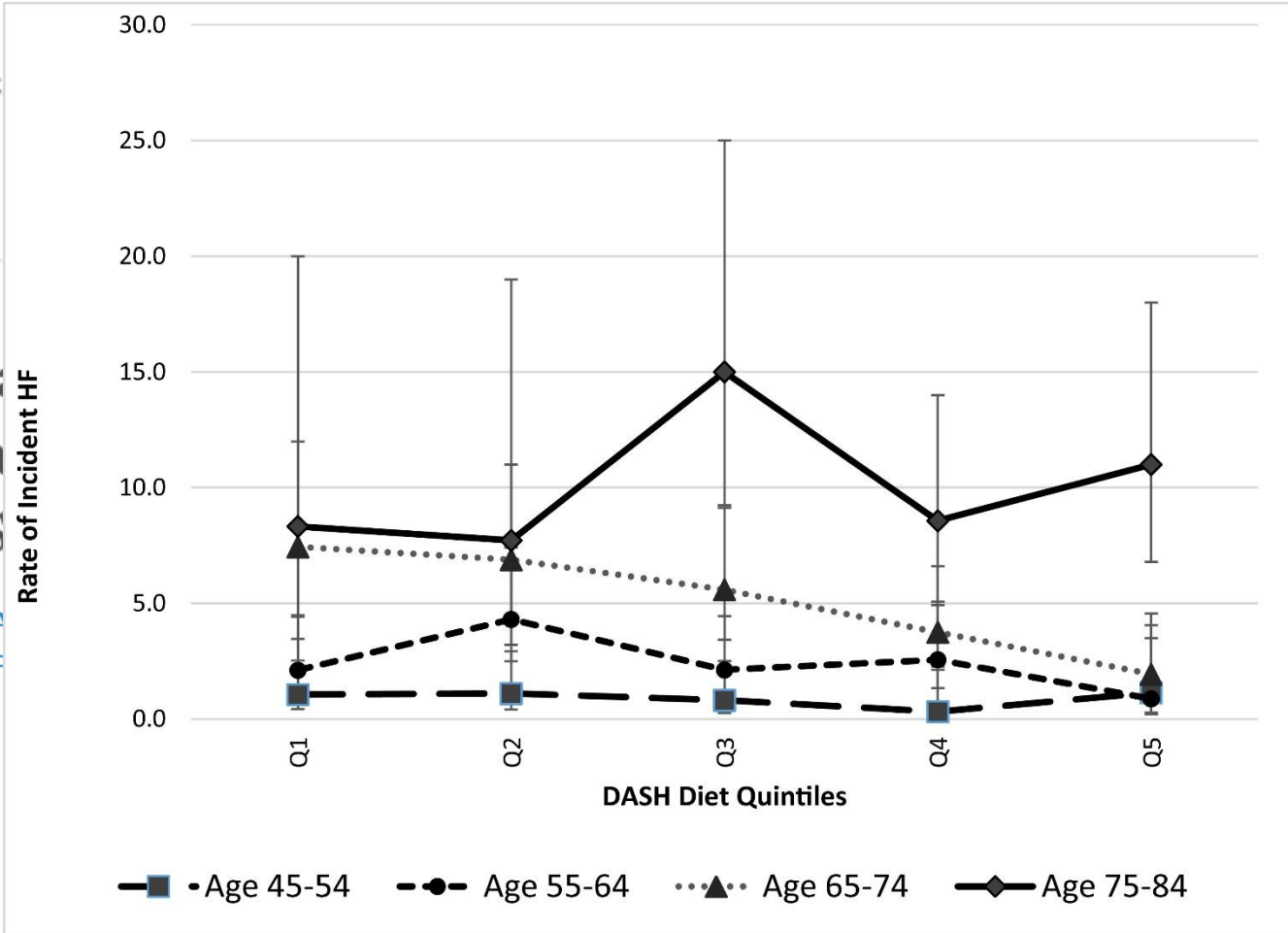


American Heart Association

Research Article

Dietary Approaches to Concordance and Multi-Ethnic Study

Claudia L. Campos MD¹, Alain G. Bertoni MD, MPH⁴

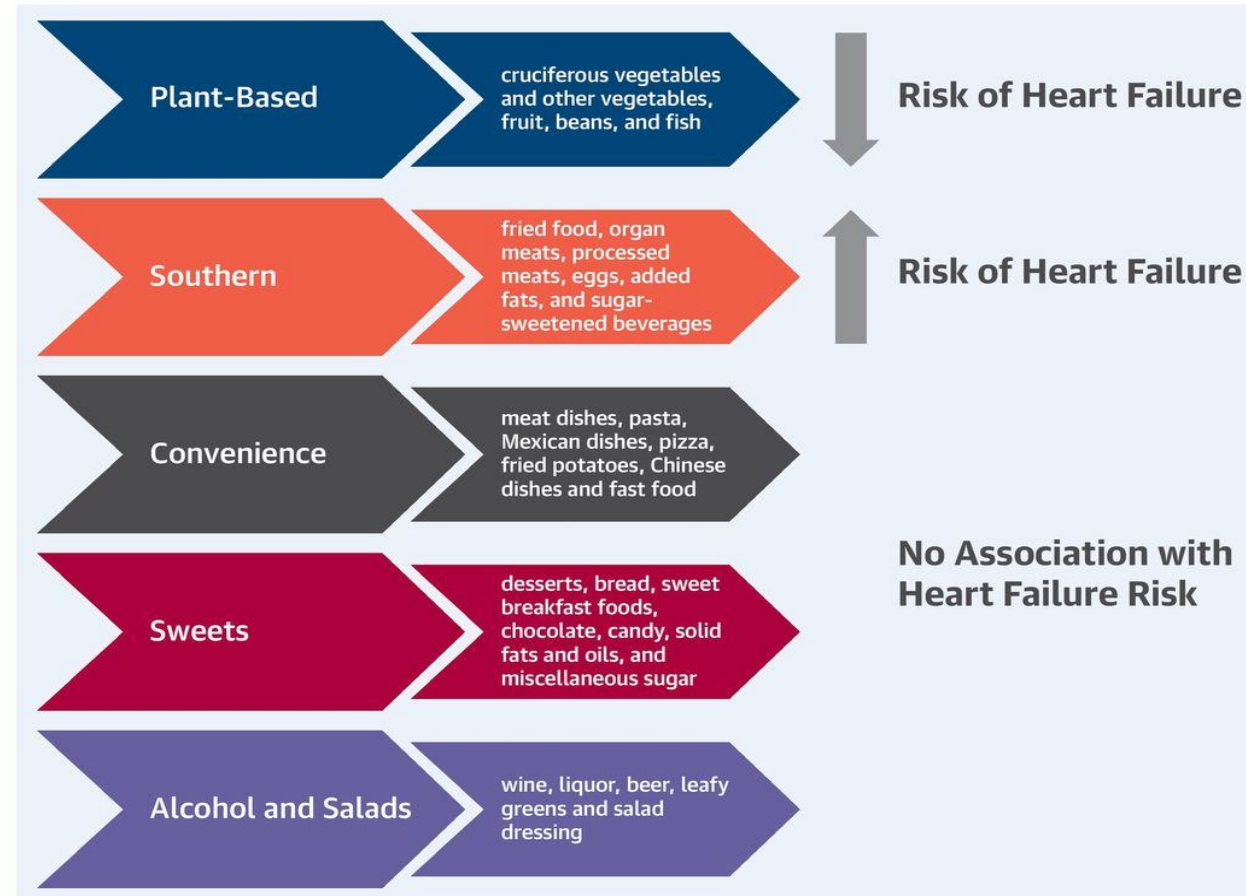


Dietary Patterns and Incident Heart Failure in U.S. Adults Without Known Coronary Disease

Kyla M. Lara, Emily B. Levitan, Orlando M. Gutierrez, James M. Shikany, Monika M. Safford, Suzanne E. Judd and Robert S. Rosenson

Author Information

CENTRAL ILLUSTRATION: Dietary Patterns Among American Adults and Risk for Heart Failure



Kyla M. L



From: The Metabolodiuretic Promise of Sodium-Dependent Glucose Cotransporter 2 Inhibition The Search for the Sweet Spot in Heart Failure

JAMA Cardiol. 2017;2(9):939-940. doi:10.1001/jamacardio.2017.1891

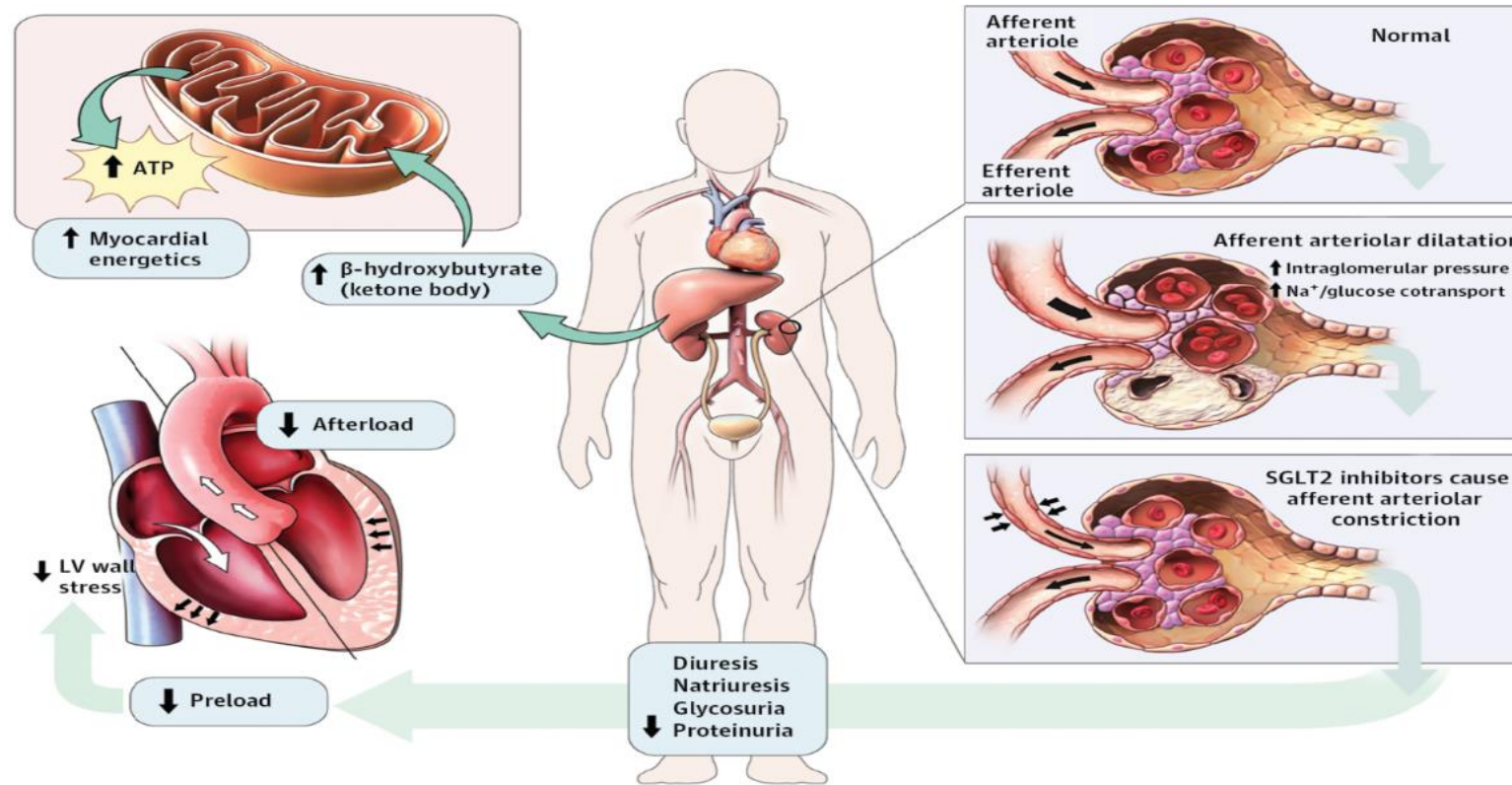


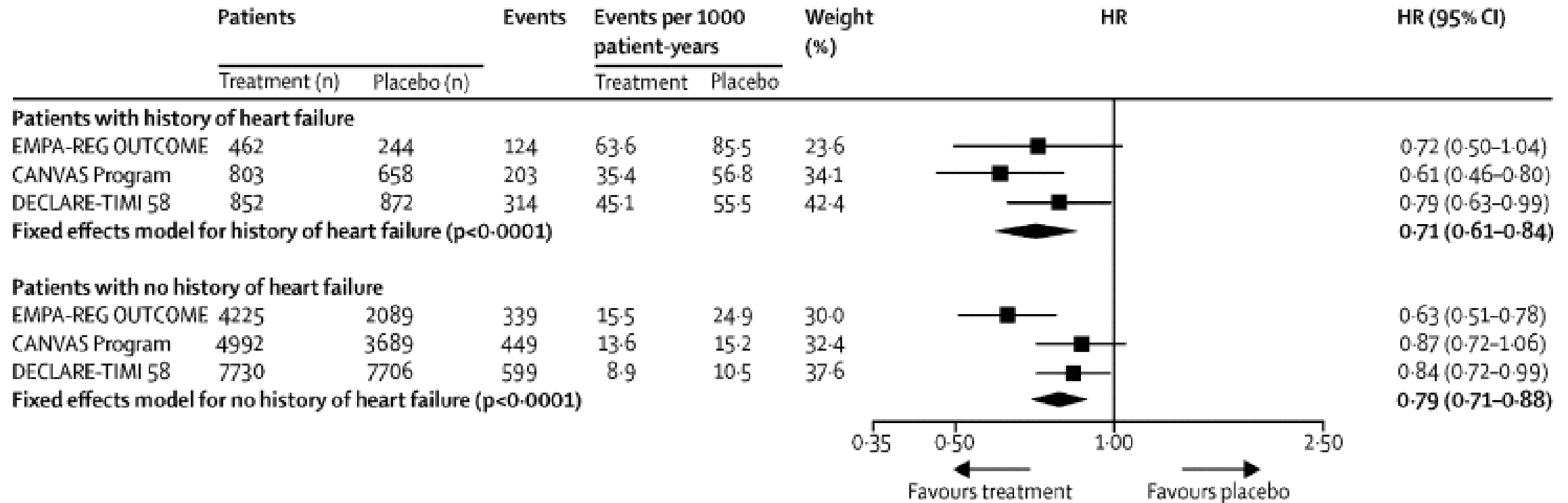
Figure Legend:

Proposed Mechanism of Cardiorenal Protection With Sodium-Dependent Glucose Cotransporter 2 (SGLT2) Inhibitors At the level of the kidney, SGLT2 inhibition promotes glycosuria and natriuresis. It also promotes afferent arteriolar constriction resulting in a decrease in intraglomerular pressure. A reduction in preload and resultant left ventricular (LV) wall stress improves overall LV filling conditions. Additionally, metabolic effects of SGLT2 inhibition to improve myocardial energetics and reduce afterload have also been proposed as cardioprotective mechanisms. ATP indicates adenosine triphosphate.

This figure was specifically commissioned for this article and has not been reproduced in any form in any media format. Figure created by M. Gail Rudakevich, BSc, MScBMC.

Meta-analysis; SGLT2 inhibitors and heart failure hospitalizations

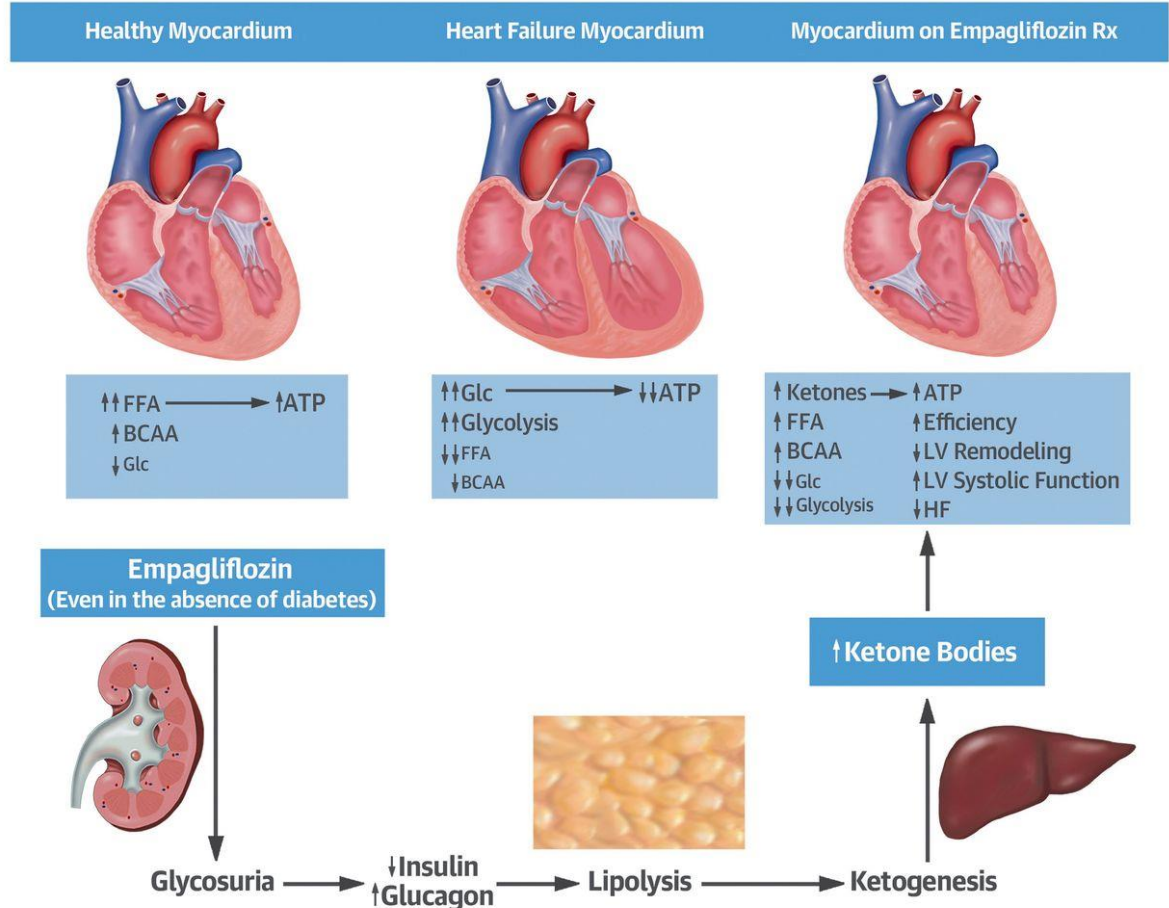
Lancet. 2019 Jan 5;393(10166):31-39.



Empagliflozin Ameliorates Adverse Left Ventricular Remodeling in Nondiabetic Heart Failure by Enhancing Myocardial Energetics

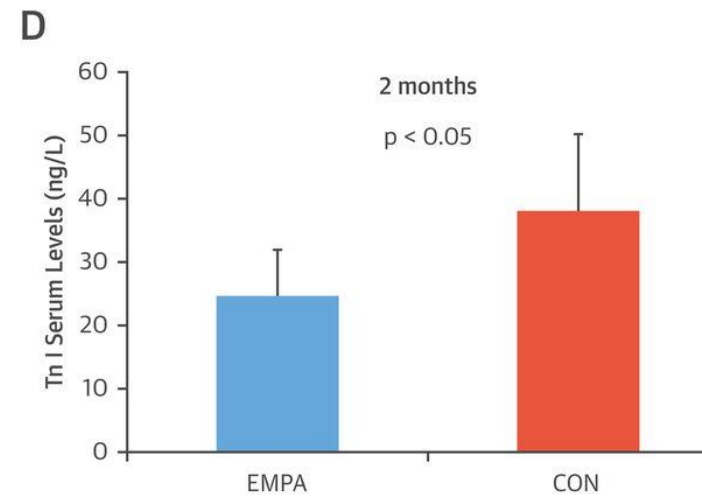
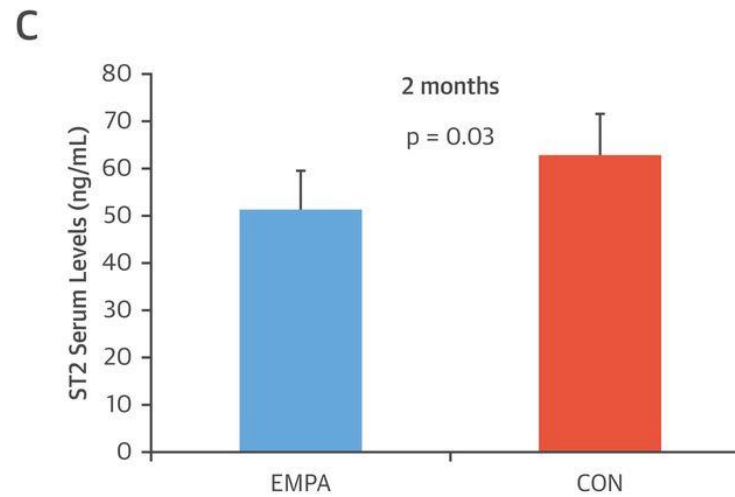
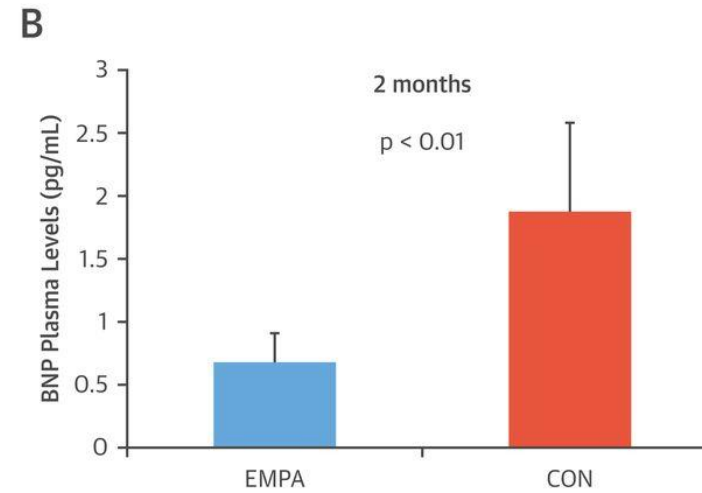
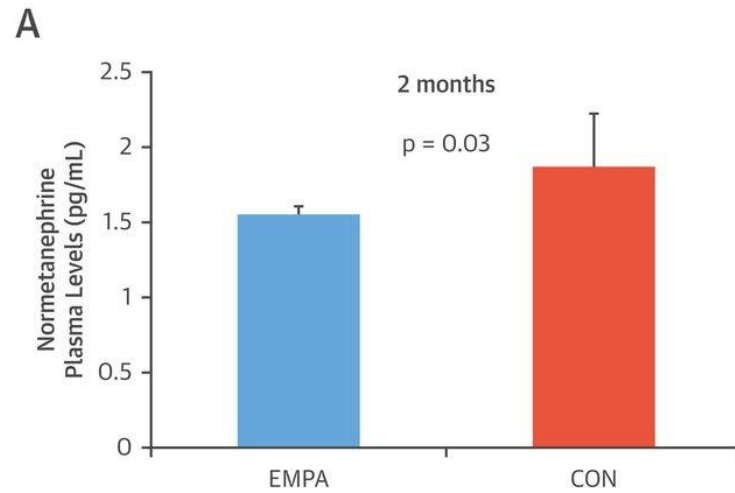
Carlos G. Santos-Gallego, Juan Antonio Requena-Ibanez, Rodolfo Sarrazin, Belen Picatoste, Eduardo Flores, Alvaro Garcia-Ropero, Javier Sanz, Raul Badimon

CENTRAL ILLUSTRATION: Postulated Effect of Empagliflozin on Heart Failure

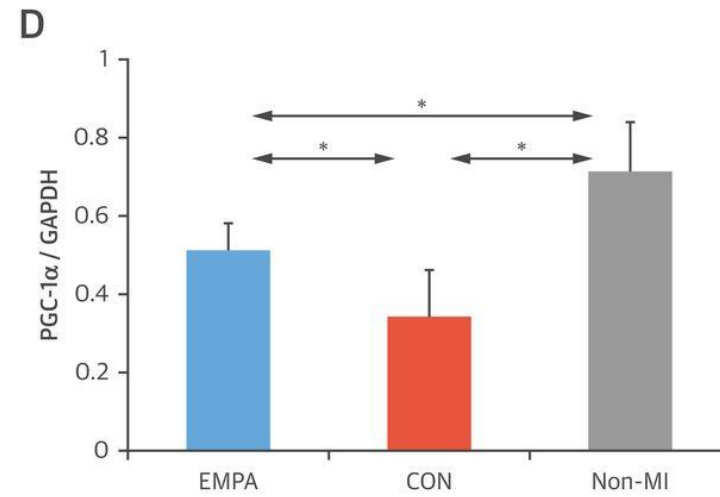
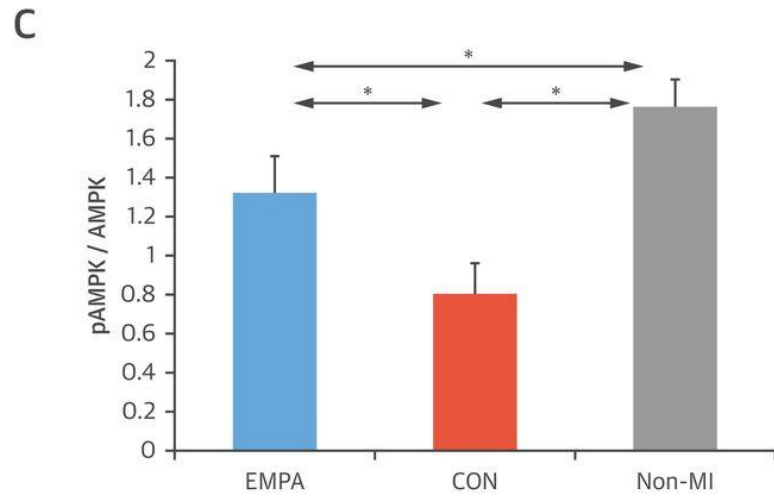
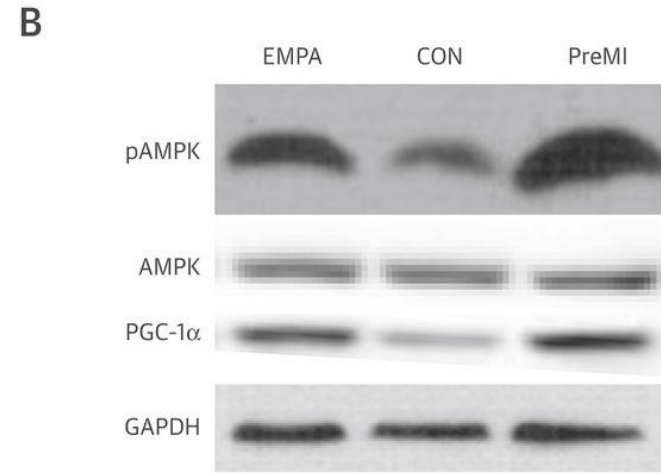
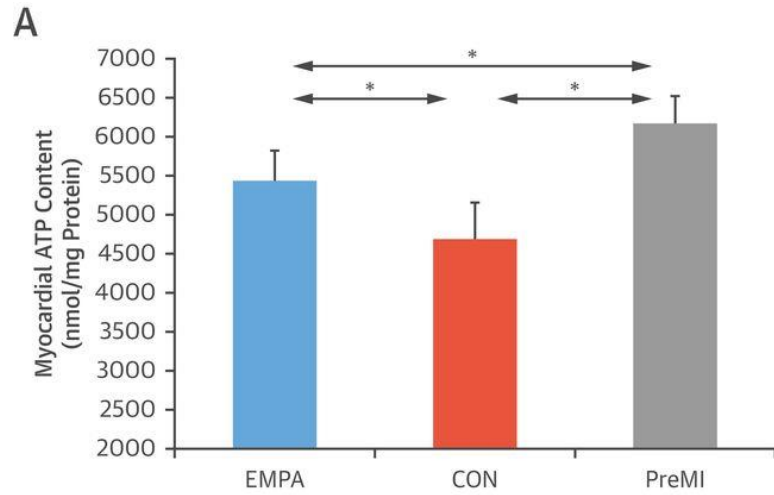


Carlos

Santos-Gallego, C.G. et al. J Am Coll Cardiol. 2019;73(15):1931-44.



Carlos G. Santos-Gallego et al. JACC 2019;73:1931-1944

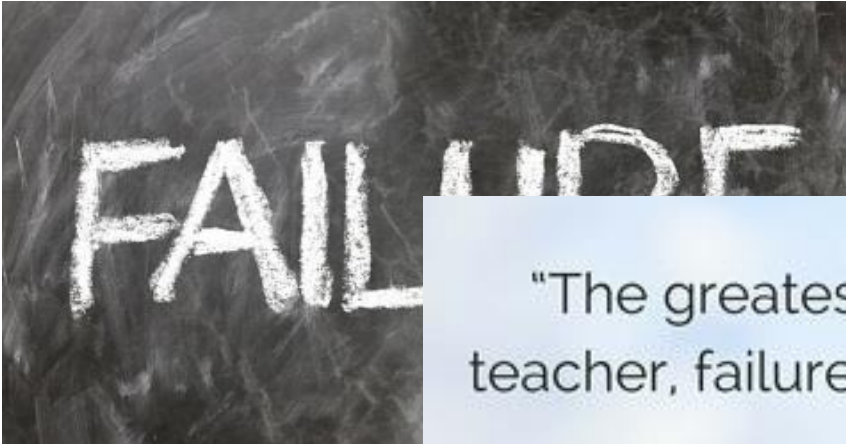


Carlos G. Santos-Gallego et al. JACC 2019;73:1931-1944

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 - *precision medicine/epigenetics/SDOH*
- 4. Nomenclature?
 -

Is it time for a culture change?





**The next heart failure
guidelines; first order of
business--**

**CHANGE THE NAME-
Take the “failure” out
of heart failure**

Mic-drop

