

Healthy Food as Preventative Medicine: A clinical perspective



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Questions:

1. Why is food an essential part of healthcare?
2. What does the research tell us about Medically Supportive Foods on health outcomes and health savings?

1. Why is Food an Essential Part of Healthcare?

Upstream

Social/Structural Determinants
of Health



Downstream

Clinical interventions



Moving upstream improves healthcare effectiveness downstream

Structural Determinants
of Health

Upstream



Policies and systems: food, housing, legal, economic, political, racism, sexism, others

Social Determinants
of Health (SDOH)

Midstream



Food
insecurity



Social
Isolation



Inadequate
housing



Legal
issues



Safety
concerns



Poverty



Clinical Condition

Downstream

Diabetes



Obesity



Hypertension



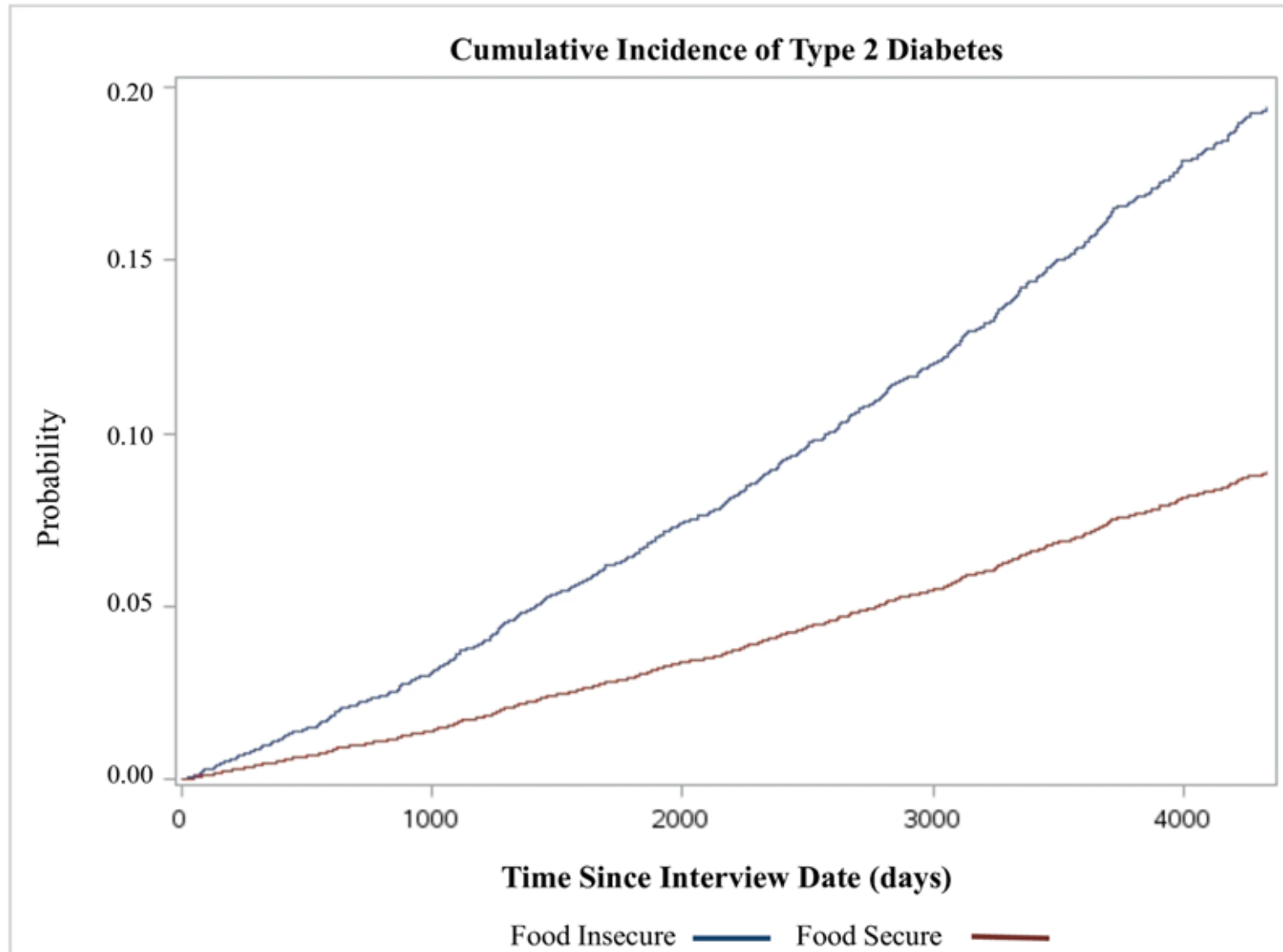
Anxiety



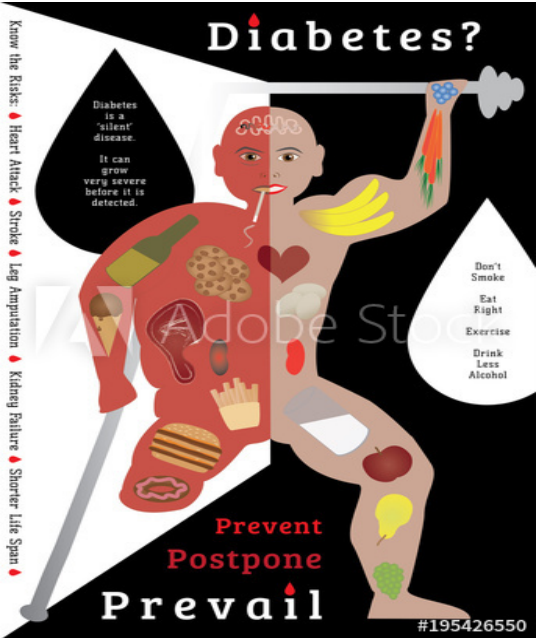
Depression



Food insecure patients have 2x risk of developing diabetes



Food can create health or disease at each stage of life



Opinion

Our Food Is Killing Too Many of Us

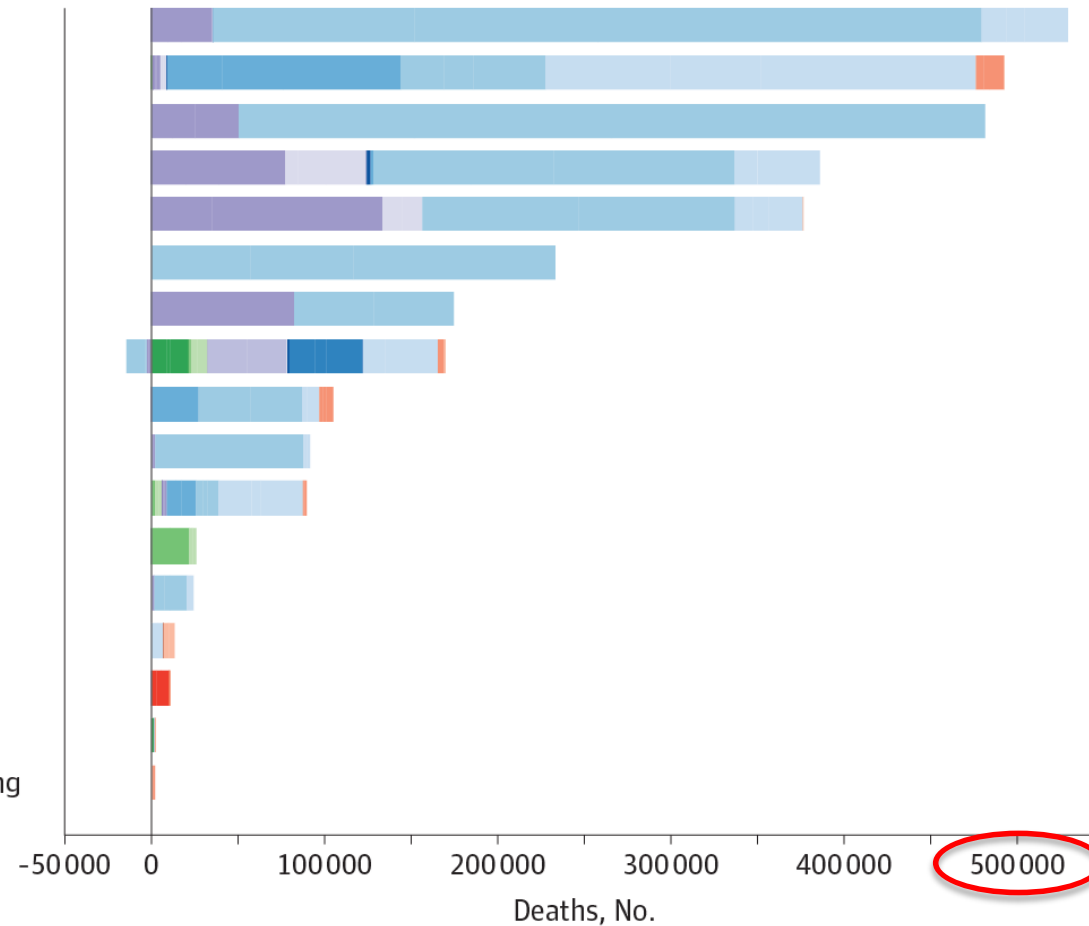
“Poor diet is the *leading cause* of mortality in the United States, causing more than half a million deaths per year.”

A Risk factors and related deaths

Risk factors

Dietary risks

Tobacco use
High systolic blood pressure
High body mass index
High fasting plasma glucose
High total cholesterol
Impaired kidney function
Alcohol and drug use
Air pollution
Low physical activity
Occupational risks
Low bone mineral density
Residential radon and lead exposure
Unsafe sex
Child and maternal malnutrition
Sexual abuse and violence
Unsafe water, sanitation, and handwashing



2. Medically Supportive Foods on health outcomes and health savings

DASH Eating Pattern Reduces Blood Pressure

The New England Journal of Medicine

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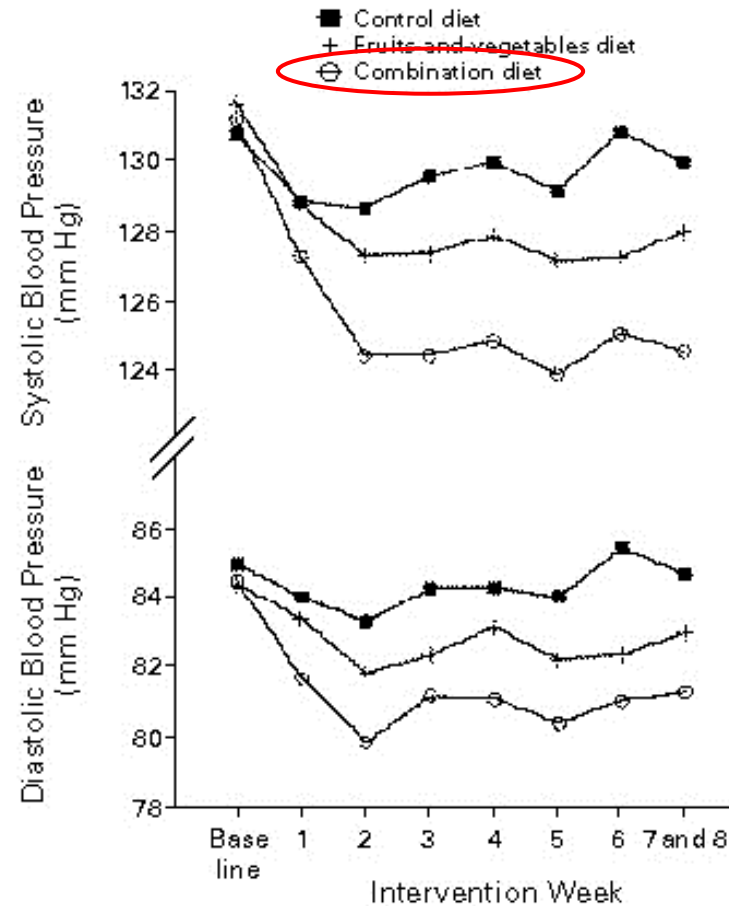
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A CLINICAL TRIAL OF THE EFFECTS OF DIETARY PATTERNS ON BLOOD PRESSURE



Systolic BP
11.4 mmHg

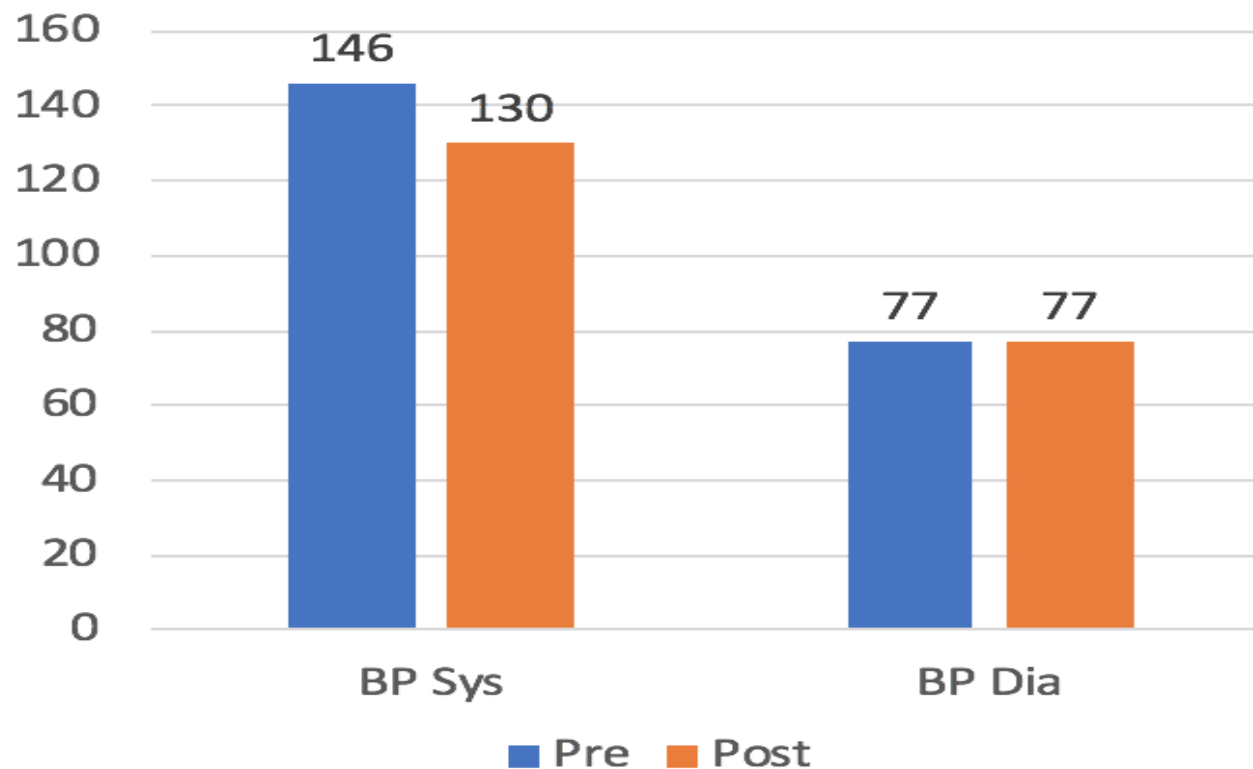


Diastolic BP
5.5 mmHg

Within 2 weeks!

Improvement in Blood Pressure

16 point ↓
in Systolic Blood Pressure



$d = -1.04, p < 0.01, n = 24$

Coronary Artery Disease

Lyon Diet Heart Study - Randomized Clinical Trial

- What: **Mediterranean diet** vs “Western” diet
- Who: Patients **after first heart attack**

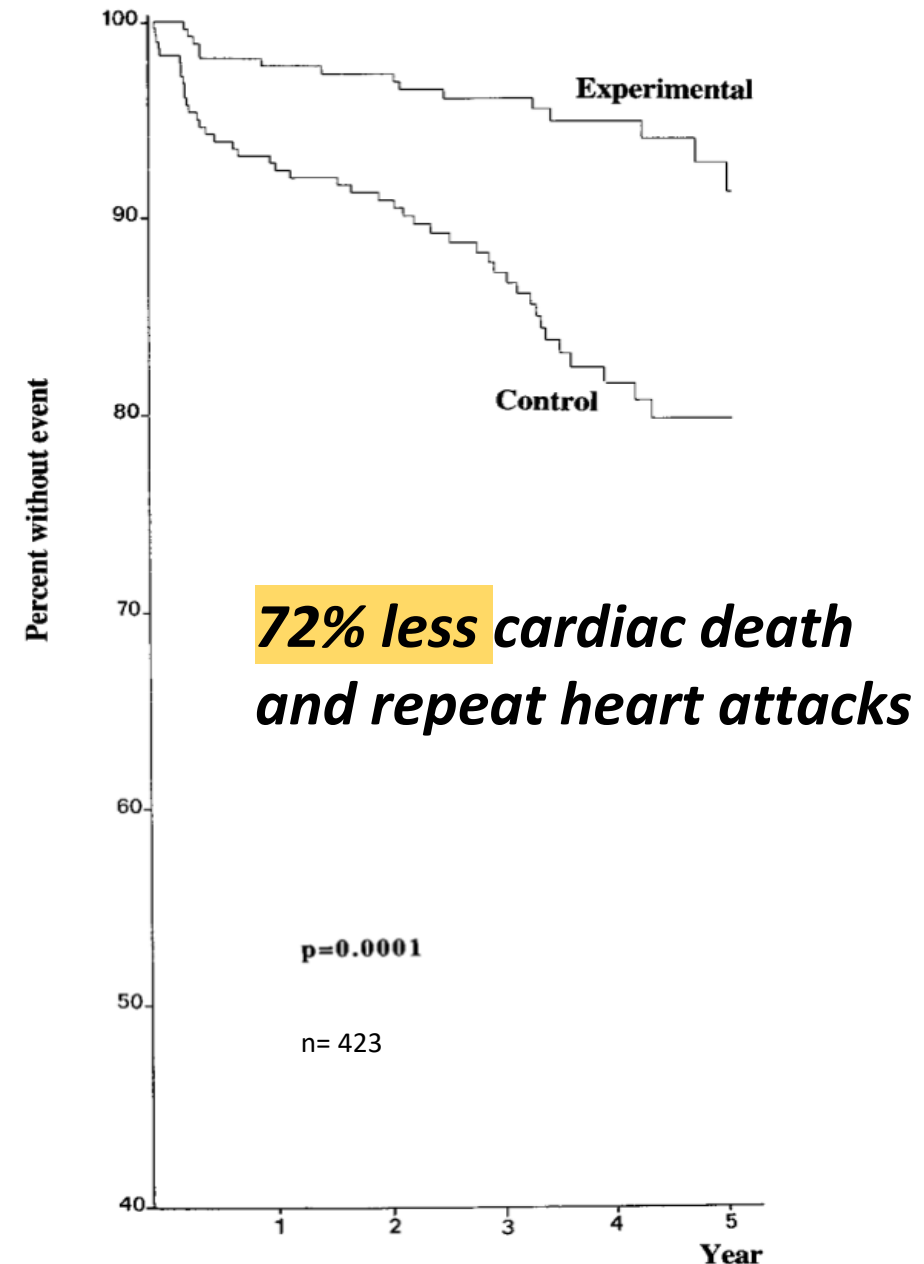
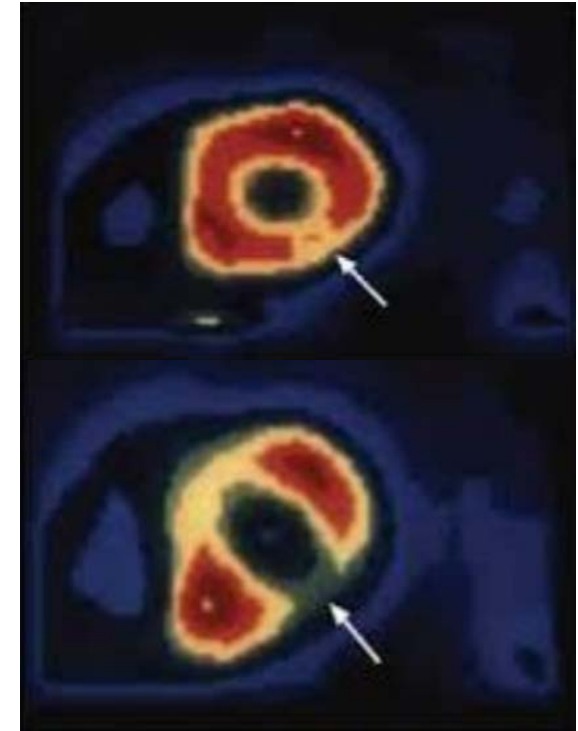


Figure 1. Cumulative survival without nonfatal myocardial infarction (CO 1) among experimental (Mediterranean group) patients and control subjects.

Medically Supportive Foods + Group → *Heart Disease Reversal*

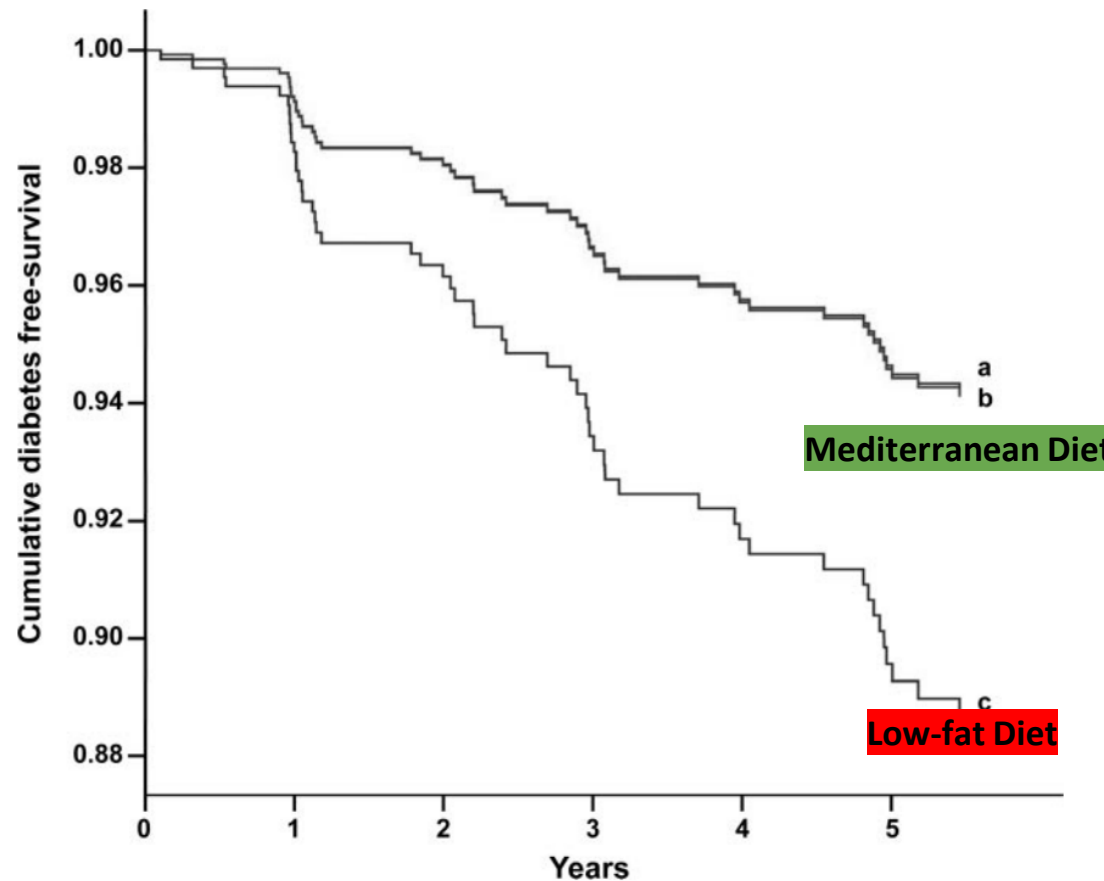
Year 1:

- Reperfusion within 3 weeks
- **82%** of patients had blockage reversal
- **91% less frequent** chest pain



Year 5: Consistent improvement

Reduction in the Incidence of Type 2 Diabetes With the Mediterranean Diet



- Higher diabetes-free 5-year survival
- **52% ↓** in diabetes incidence rate

Summary of Medically Supportive Foods on Health Impact

Health Impact

of non-MTM food interventions

↓ HbA1c
avg blood sugar



0.5-2.1% pts^{1,2,3,4}

↓ Blood Pressure



-16 mmHg⁶

↓ BMI



-0.4-0.7 kg/m²^{5,6}

↓ Preterm Birth



37% reduction⁷

↓ Depression
clinical depression score (PHQ9)



up to 47% reduction^{5,6}

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4. Tester, J et al. Food as medicine 2017 pilot executive summary of impact on dietary intake and cardiometabolic health. Publication pending.
5. Cavanagh M, Jurkowski J, Bozlak C, Hastings J, Klein A. Veggie Rx: an outcome evaluation of a healthy food incentive programme. *Public Health Nutrition*. 2016; 20(14), 2636–2641.
6. Emmert-Aronson, B et al. "Group Medical Visits 2.0: The Open Source Wellness Behavioral Pharmacy Model." *Journal of alternative and complementary medicine*. 2019;25(10):1026-34.
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Medically Tailored Meals

Massachusetts study showed **decreased ED visits*, admissions***
(p<0.05)

	Avg monthly healthcare costs of those who received MTM	Matched control	Difference
MANNA study	\$28,268/month	\$40,960/month	\$12,692/month*
Massachusetts study	\$843/month	\$1,413/month	\$570/month*

	Post-MANNA (12 mos)	Matched control	Difference
Avg monthly INPATIENT costs	\$132,441/month	\$219,639/month	\$87,198/month*
Length of stay	10.7 days	17.1 days	37% decrease LOS*
Discharge to home	93%	72%	Home d/c 23% more likely*

*p<0.05

Curvey et al, *J Prim Care Comm Health*, 2013
Berkowitz et al, *Health Affairs*, 2018

How much can Medically Supportive Foods Improve Health Savings?

- 30% subsidy on fruits and vegetables



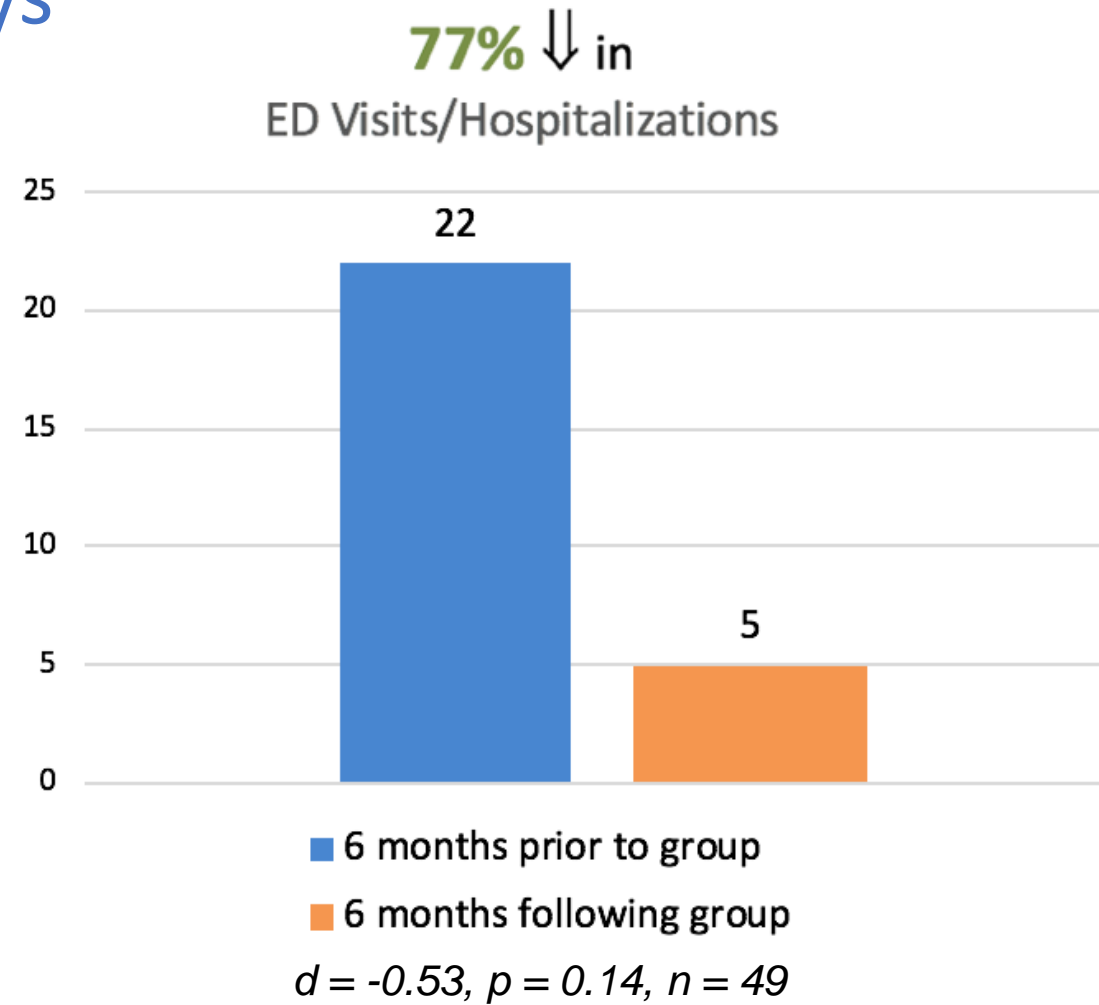
- prevents **1.93 million** cardiovascular (CV) events
- saves **\$40 billion** in healthcare costs

- 30% subsidy on healthy foods



- prevents **3.28 million** CV events
- prevents **120,000** diabetes cases
- saves **\$100 billion** in healthcare costs

Medically Supportive Foods + Group: Decreased Emergency Room & Hospitalization Days



Cost
Avoidance =
\$ 52,479