What Is an Optimal Way of Eating?

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When assessing different diets, it’s important to examine clinical endpoints, not just biomarkers.
Optimal Lifestyle Program

- Plant-based diet
- Stress management
- Moderate exercise
- Psychosocial support
Optimal Lifestyle Program

- Eat well
- Stress less
- Move more
- Love more
Reversing Heart Disease
Lifestyle Heart Trial

% Diameter Stenosis: Quantitative Coronary Arteriography

Baseline (n.s.) 1y (P.02) 5y (P.001)

36% 38% 40% 42% 44% 46% 48% 50% 52%

Control Treatment

There was a 300% improvement in coronary blood measured by cardiac PET scans after 5 years.

Figure 2. Quantitative coronary angiograms and cardiac PET scans obtained...
99% of patients stopped or reversed their heart disease as measured by cardiac PET scans after 5 years. In contrast, 45% of controls got worse, 50% showed no change, and only 5% improved (p = 0.03).

There was a 40% reduction in LDL-cholesterol in the first year without cholesterol-lowering drugs.

Adherence and Change in Coronary Atherosclerosis after Five Years

Lifestyle Heart Trial

• There were 2.5 times as many cardiac events in the randomized control group as in the lifestyle group after five years.
Reversing Prostate Cancer
Patient Selection Criteria

- 93 men with biopsy-proven prostate cancer, PSA 4–10, Gleason <7
- All patients chose to do watchful waiting for reasons unrelated to this study
- Randomly assigned to intensive cardiac rehabilitation or usual care
Changes in PSA

Baseline

12 Months

Control (n=41)

Experimental (n=43)

Degree of Lifestyle Change and Changes in PSA

8% US

Low (<48%) Intermediate (48–88%) High (>88%)

Change in Prostate Tumor Growth (LNCaP)

Degree of Diet & Lifestyle Change and Inhibition of LNCaP Tumor Growth

1 year later
PSA—4.5 ng/ml

Baseline
PSA—6.4 ng/ml

1 year later
PSA—4.5 ng/ml
None of the experimental group patients but six control group patients had conventional treatment during the first year.

can lifestyle changes beneficially affect gene expression?
Gene expression in 501 genes was beneficially affected in only 3 months.

RAS family oncogenes (RAN, RAB14, RAB8A) that promote prostate cancer and breast cancer were downregulated.


change in genes linked with breast cancer and prostate cancer (red = turned on, green = turned off)
Reversing Aging at a Cellular Level
Telomerase increased 30% in only 3 months

![Graph showing telomerase activity (Ln) at baseline and 3 months, with a significance level of P < 0.05 (two tailed).]

Mean Changes in Telomere Length After 5 Years

Exp Group

Control Group

p<0.004

There was a significant correlation between adherence and telomere length ($p<0.007$)

Our Genes Are Not Our Fate
Inhibiting Angiogenesis
Tumor angiogenesis factor VEGF is markedly suppressed in the Intervention Group.

VEGF (Peak 23.4)

Peak intensity

Molecular weight (30-50 kD)

No intervention (Red; N=22)

Intervention Group (Blue; N=22)
Intervention group exhibits high levels of antiangiogenic Platelet Factor 4 (PF4) and heparanase, a protein that binds and inhibits many angiogenic growth factors.
What is an optimal way of eating?
Convergence of Nutrition Advice

• Consume mostly plants: fruits, vegetables, whole grains, legumes, & soy products in their natural forms

• What you *include* in your diet is as important as what you *exclude*

• Eat food as close as possible in its natural form
Convergence of Nutrition Advice

• Reduce intake of hydrogenated fats, trans fats, and most saturated fats

• Consume 4 grams/day of omega-3 fatty acids

• Organic is better (taste + health)

• Reduce intake of sugar, refined carbohydrates, & high glycemic foods
It’s not low carb vs. low fat.
It’s low in bad carbs and bad fats;
higher in good carbs and good fats.
Low in animal protein and
high in plant-based proteins.
In those age 65 or older, the risk of cognitive decline was 38% lower in those eating high vs low amounts of vegetables.

In those age 65 or older, consuming saturated fat and trans fats more than doubled the risk of developing Alzheimer’s disease.

Eat Butter.
Scientists labeled fat the enemy. Why they were wrong
BY BRYAN WALSH
myth: “Americans have been told to eat less fat, they’re consuming less fat but they’re fatter than ever, so fat is good for you.”
Reality: American Diet Since 1950

- 67% more added fats
- 39% more sweeteners
- 800 calories more per capita
- 57 pounds more meats

source: USDA Agriculture Fact Book 2001-2
Diets high in animal protein:

- 75% increase in total mortality
- 400% increase in cancer risk
- 500% increase in diabetes
- Significantly higher IGF-1 levels

The only diet proven in RCTs to reverse CHD without lipid-lowering drugs is a whole foods plant-based diet very low in fat & refined carbohydrates.

No study has ever proven that a high protein low carb diet can reverse or prevent heart disease.
High Protein, Low Carb Diets:

- Low numbers of circulating endothelial progenitor cells (EPC’s)
  - mononuclear cells that repair damaged vessels & improve endothelial function
- Double the level of non-esterified fatty acids
  - activate inflammatory pathways
  - increase atherosclerosis
After 4 weeks, flow-mediated vasodilation significantly increased on a plant-based diet compared to a HPLC diet.

Red meat and egg yolks increase TMAO levels, causing atherosclerosis.

In 37,698 men and 83,644 women, red meat consumption was associated with a significantly increased risk of all-cause, cardiovascular, and cancer mortality.

In 47,896 men, consumption of choline (red meat, eggs, & milk) was associated with a 70% increased risk of lethal prostate cancer.

A plant-based diet down regulates the mTOR gene, prolonging life.

Red meat is high in Neu5Gc, a tumor-forming sugar causing chronic inflammation.

"My only consolation is that by eating us they're killing themselves."
In a metabolic ward study, reducing fat led to a 67% greater weight loss than reducing carbohydrates.

Hall KD et al. Sept. 2015, Cell Metabolism 22, 1–10
Mediterranean Diet (PREDIMED)

- “low fat” reduced 39% to 37% fat
- increased consumption of sugar and refined carbohydrates
- no significant reduction in the rates of heart attack, death from CV causes, or death from any cause
- significant reduction only in stroke rates

Personally Sustainable = Globally Sustainable

Good for You = Good for our Planet
Our Food Choices Profoundly Affect Three Major Areas:

- Energy Crisis
- Global Warming Crisis
- Health Crisis
Energy Crisis

- 20% of the fossil fuel we burn in this country goes to produce processed foods
- It takes 10 times more energy to produce animal-based protein than plant-based protein
It takes 4,000-18,000 gallons of water for a 1/3 pound hamburger

Global Warming Crisis

- Livestock causes more global warming than all forms of transportation combined
- Responsible for 18% (and perhaps 50%) of the world’s total greenhouse gas emissions
- In contrast, the entire global transportation system accounts for only 13% of greenhouse gas emissions
Health Crisis

- 86% of the $3.0 trillion in health care costs are due to chronic diseases.
- Many of these chronic diseases can often be prevented or even reversed by lifestyle changes including a whole foods plant-based diet.
Transformation