

NAMCP
Lifestyle Medicine Institute

”*Lifestyle Medicine (LM) is the use of lifestyle interventions in the treatment and management of disease. Such interventions include diet (nutrition), exercise, stress management, smoking cessation, and a variety of other non-drug modalities.* “

American College of Lifestyle Medicine

- Addresses **causes** instead of symptoms
- Deals with prevention--primary, secondary, and tertiary (but *not* simply traditional Preventive Medicine)
- Inline with the Leading Health Indicators---Healthy People 2010:
 - Physical Activity
 - Overweight and Obesity
 - Tobacco Use
 - Substance Abuse
 - Responsible Sexual Behavior
 - Mental Health
 - Injury and Violence
 - Environmental Quality
 - Immunization
 - Access to Health Care

Large Scale Epidemiological Findings

Blue Zones

Adventist Health Study

China Study

Harvard Nurses Health Study

Blue Zones (Dan Buettner)

- Where people commonly live active lives past the age of 100 years
- Five Known Blue Zone locations:
 - Sardinia, Italy
 - Okinawa, Japan
 - Nicoya Peninsula, Costa Rica
 - Icaria, Greece
 - Loma Linda, CA

Characteristics: The people inhabiting Blue Zones share common lifestyle characteristics that contribute to their longevity. Among the lifestyle characteristics shared among the Okinawa, Sardinia, and Loma Linda Blue Zones are the following:

1. Family (family is put ahead of other concerns)
2. No Smoking
3. Plant-based diet (the majority of food consumed is derived from plants)
4. Physical activity (constant moderate)
5. Social engagement (people of all ages are socially active and integrated into their communities)
6. Legumes are commonly consumed.

Adventist Health Studies

Adventist Mortality Study

- The first major study of Adventists begun in 1960
- Consisting of 22,940 California Adventists with an intensive 5-year follow-up and a informal 25-year follow-up.
- Showed that Adventist men lived 6.2 years longer than non-Adventist men in the concurrent American Cancer Society Study and that Adventist women had a 3.7-year advantage over their counterparts [life table analyses]
- Comparing death rates of Adventist compared to other Californians:
 - Death rates from all cancers was 60% lower for Adventist men and 76% lower for Adventist women
 - Lung cancer 21% lower
 - Colorectal cancer 62% lower
 - Breast cancer 85% lower
 - Coronary heart disease 66% lower for Adventist men, 98% lower for Adventist women

Adventist Health Study 1 (AHS-1)--(1974–1988)

- Involved approximately 34,000 Californian Adventists over 25 years of age
- Purpose was to find out which components of the Adventist lifestyle give protection against disease.
- The data from the study have been studied for more than a decade and the findings are numerous – linking diet to cancer and coronary heart disease

Specific Findings:

- On average Adventist men live 7.3 years longer and Adventist women live 4.4 years longer than other Californians.
- 5 simple health behaviors (not smoking, eating a plant-based diet, eating nuts several times per week, regular exercise and maintaining normal body weight) increase life span up to 10 years.
- Increasing consumption of red and white meat was associated with an increase of colon cancer while eating legumes was protective
- Eating whole grains may reduced non-fatal heart attack risk by 45%.
- Men who had a high consumption of tomatoes reduced their risk of prostate cancer by 40%.
- Drinking soy milk more than once daily may reduce prostate cancer by 70%.

The China Project (*The China Study*)

- A culmination of a 20-year partnership of Cornell University, Oxford University, and the Chinese Academy of Preventive Medicine.
- A survey of death rates for twelve different kinds of cancer for more than 2,400 counties and 880 million Chinese
Examined the relationship between nutrition and heart disease, diabetes and cancer (western diseases)
- Correlates animal-based “western” diets with disease and death rates

Harvard: Nurses Health Study

- 84,941 female nurses (1980-1996) ; 3.4% in low-risk group
 - BMI <25
 - High cereal fiber and polyunsaturated fat
 - Low trans-fat and glycemic load
 - Moderate-to-vigorous physical activity at least 30 min per day
 - No current smoking
 - At least half a drink of alcoholic beverage per day.
- 91% of DM2 (95% CI 83-95) could be attributed to habits and behavior *not* in the low-risk pattern group



Reversing Disease through proper lifestyle

(Lifestyle as a Treatment)

Lifestyle Intervention History...

- Dean Ornish: Lifestyle Heart Trial. (*Lancet* 1990 Jul 21;**336**:129-33)
 - As a single-blind RCT, showed that a low-fat, plant-based diet with exercise and life-stress reduction can induce regression of coronary artery stenosis

Lifestyle changes alone

- Diet: 10% cal from fat
- Moderate aerobic exercise
- Stress management
- Group support
- Smoking cessation

Ornish D. *JAMA*, 1998;280(23);

Lancet 1990; 336:(129)

Impact of Lifestyle Change

In **The Lifestyle Heart Trial**, patients were randomly assigned to an experimental group asked to make comprehensive lifestyle changes or to a usual care control group who followed more conventional recommendations.

Avg. % stenosis regressed from 40.0 to 37.8% in the exp. group yet progressed from 42.7 to 46.1% in the control group ($P = 0.001$). With lesions >50% stenosed, avg. % stenosis regressed from 61.1 to 55.8% in the exp. grp. and progressed from 61.7 to 64.4 in the control grp. ($P = 0.03$). 82% of exp. grp. had an avg. change which was in the direction of regression

Degree of overall adherence was strongly related to changes in % diameter stenosis (% D) in a '**dose-response**' relationship ($r = 62$, $P = 0.003$)

Thus, comprehensive lifestyle changes may cause significant regression of even severe coronary atherosclerosis to begin occurring after only one year, whereas more moderate changes resulted in significant progression of atherosclerosis.

Impact of Lifestyle Change

Follow on study: *JAMA*. 1998 Dec 16;280:2001-7

OBJECTIVES: To determine the feasibility of patients to sustain intensive lifestyle changes for a total of 5 years and the effects of these lifestyle changes (without lipid-lowering drugs) on coronary heart disease.

CONCLUSIONS: More regression of coronary atherosclerosis occurred after 5 years than after 1 year in the exp. grp. In contrast, in the control grp., coronary atherosclerosis continued to progress and more than twice as many cardiac events occurred.

SCRIP

Stanford Coronary Risk Intervention Project (SCRIP) found similar results

DESIGN NARRATIVE:

Randomized, fixed-sample. A total of 300 patients were randomized, 155 to usual care (UC) in the community and 145 to special intervention (SI). The SI group received intensive efforts directed at reducing or eliminating risk factors-- 274/300 (91.3%) completed follow-up arteriogram.

The MAJOR ENDPOINT:

was the rate of coronary artery disease progression as measured by angiography, at baseline and at forty-eight months. Follow-up was for four years.

SCRIP

Stanford Coronary Risk Intervention Project (SCRIP) found similar results

- Intensive risk reduction resulted in highly significant improvements in various risk factors
 - LDL-C and apolipoB -22%
 - HDL-C +12%
 - TGL -20%
 - Weight -4%
 - Exercise capacity +20%
 - Intake of dietary fat -24%
 - Intake of dietary cholesterol -40%
- Relatively small changes in the usual-care group.
- Intensive group rate of narrowing of diseased coronary artery segments *47% less than the usual-care group*
- 25 cardiac hospitalizations intensive group ; 44 in usual-care group

Other Lifestyle Interventions

- While Pritikin, NEWSTART and Ornish all advocate a very low-fat diet as *essential* to achieve regression of CAD,
- Others have found promising results with a more moderate, low-fat diet regime emphasizing alpha-linolenic fats (the so-called Mediterranean diet)

September 2009—The New York Academy of Medicine released a report featuring a range of evidence-based prevention programs that have shown results for improving health and reducing costs in communities.

“At the end of the 30-day intervention period, stratified analyses of total cholesterol, LDL, triglycerides, blood glucose, blood pressure, and weight showed highly significant reductions with the greatest improvements among those at highest risk.”



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A COMPENDIUM OF PROVEN
COMMUNITY-BASED
PREVENTION PROGRAMS

Coronary Health Improvement Project (CHIP)

- Turnkey... some tweaks
- Evidence-based...published outcomes in the peer literature
- Rated very high by the New York Academy of Medicine in their review of such programs

Live programs and video classes

36 hours instruction in lifestyle medicine with textbook, workbook, syllabus (research papers) cooking class & grocery shopping

Key Concept = “Translational Learning”

Putting research/science based evidence...into real life
Providing knowledge in a way to motivate change from an internal locus

CHIP Publications: Samples

AAHE
American Association for Health Education



American Journal of Health Education
Nov/Dec 2008 • Volume 39, No. 6
"The Coronary Health Improvement
Projects Impact on Lowering Eating,
Sleep, Stress, and Depressive
Disorders"

CDC Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

January 2008 • Volume 5, No.1
"Can Newly Acquired Healthy Behaviors Persist?
An Analysis of Health Behavior Decay"

**Journal of the
AMERICAN DIETETIC ASSOCIATION**

The premier source for the practice and science of food, nutrition, and dietetics

March 2005 • Volume 105 • Number 3:371-381
"Effects of an intensive diet and physical activity
modification program on the health risks of adults"

**Preventive
Medicine**
ACADEMIC PRESS

2008; 46 (4): 425-430
"C-reactive Protein Levels According to Physical Activity
and Body Weight for Participants in the Coronary Health
Improvement Project"

JOEM Journal of Occupational and
Environmental Medicine

June 2005 • Volume 47 • Number 6:558-564
"The Effects of a Worksite Chronic Disease Prevention
Program"

The
**American Journal
of
Cardiology**

1998; 82:83-7T
"Coronary Risk Reduction through Intensive Community-Based
Lifestyle Intervention: The CHIP Experience"

NCBI **PubMed**
A service of the National Library of Medicine
and the National Institutes of Health
www.pubmed.gov

Preventing Chronic Disease
January 2006 • Volume 3, No.1:A05-17
"The Behavioral and Clinical Effects of Therapeutic
Lifestyle Change on Middle-aged Adults"

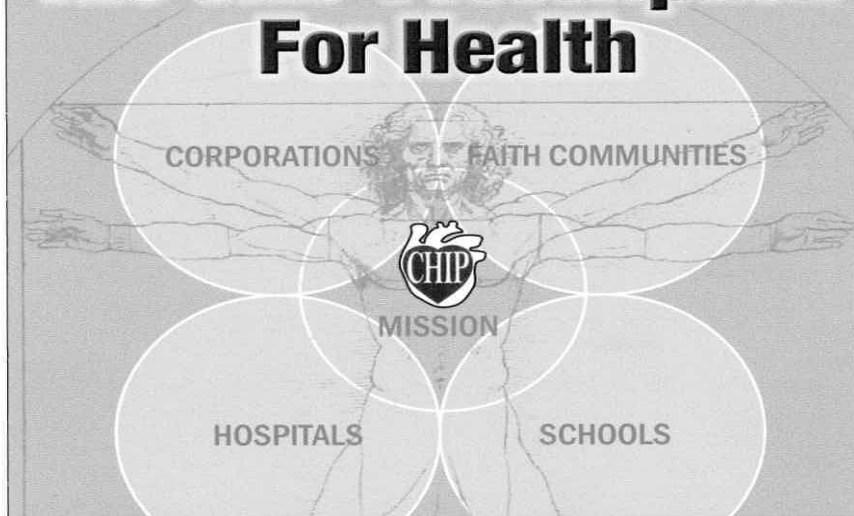
INHA
The Journal of Nutrition,
Health and Aging

Journal of Nutrition Health Aging
May 2007, 11(3):242-248
"The Effects of an Intensive Lifestyle Modification Program
on Sleep and Stress Disorders"

Absolute ADVANTAGE

THE WORKPLACE WELLNESS MAGAZINE

The CHIP Prescription For Health



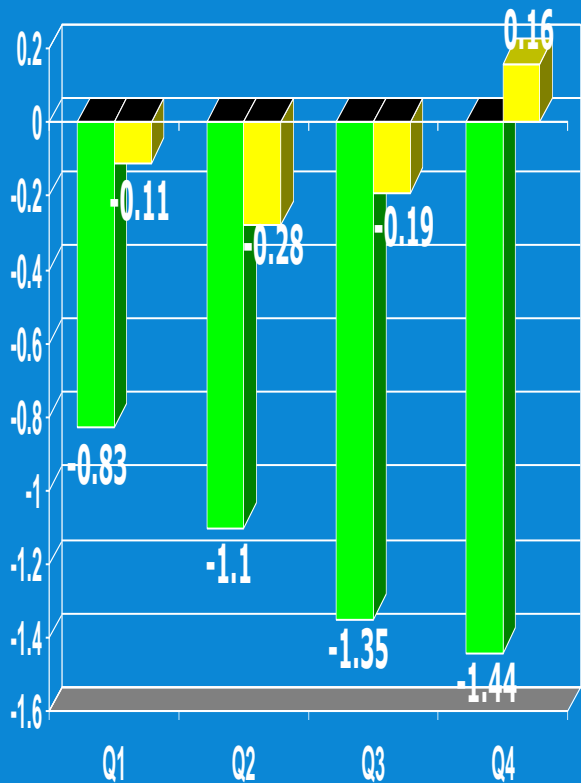
The Coronary Health Improvement Project Helps
Organizations And Individuals Implement Lifestyle Medicine



THE WELLNESS COUNCILS OF AMERICA

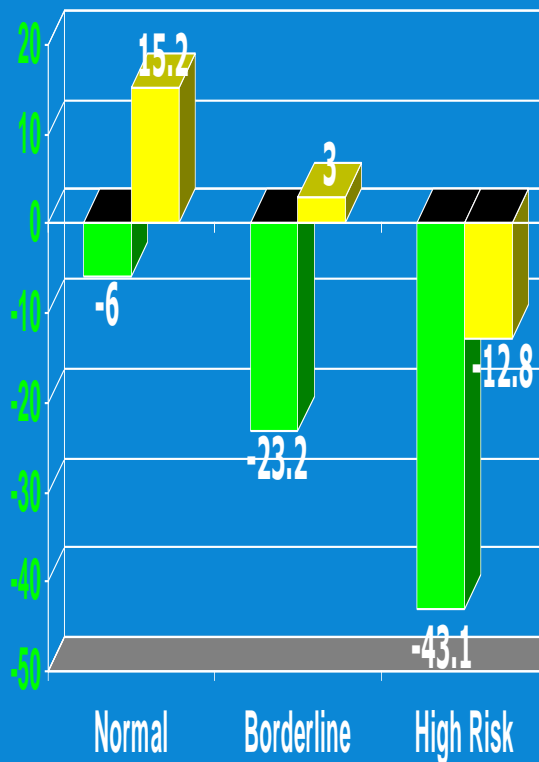
CHIP Results:

BMI Changes by Quartile



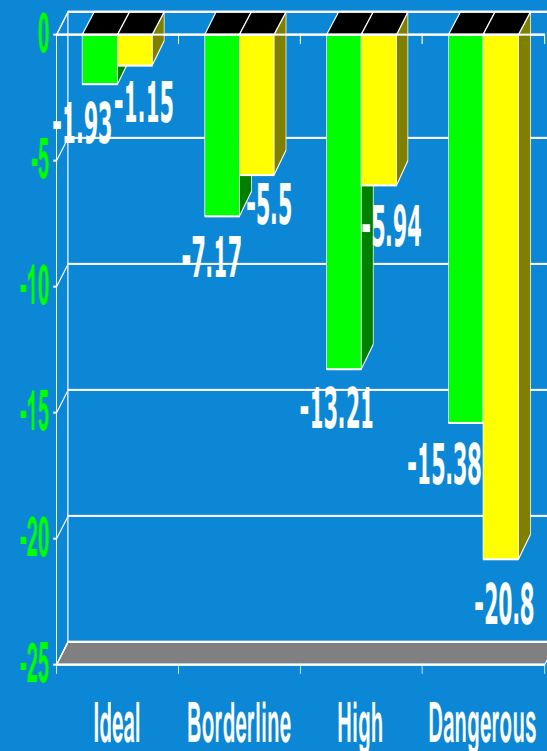
■ CHIP 6 wks ■ Control 6 wks

Cholesterol Changes mg/dl



■ CHIP 6 wks ■ Control 6 wks

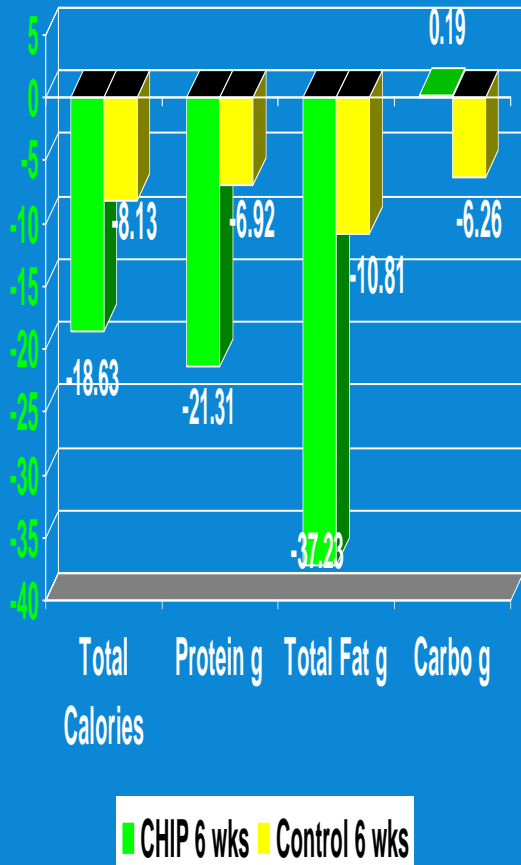
Systolic Blood Pressure Reductions mm/Hg



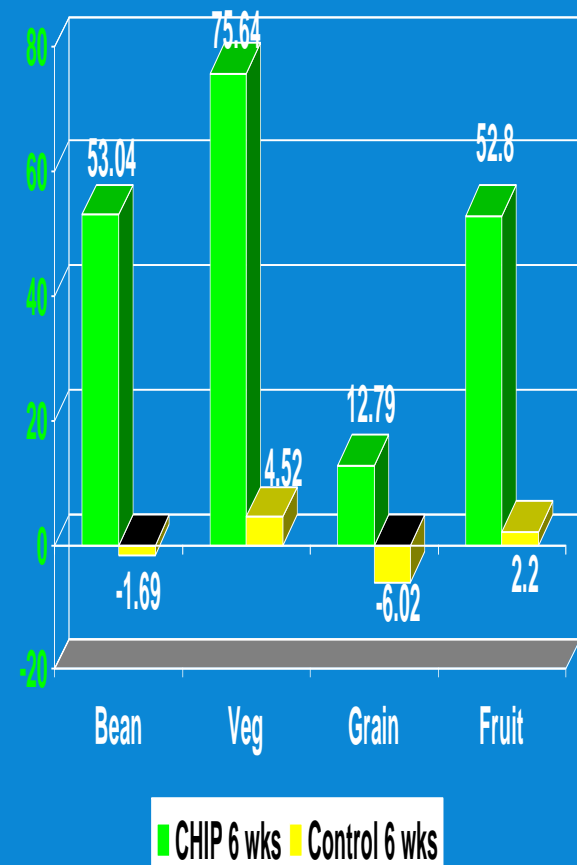
■ CHIP 6 wks ■ Control 6 wks

CHIP Results:

Percent Change in Dietary Calories / Protein / Fat

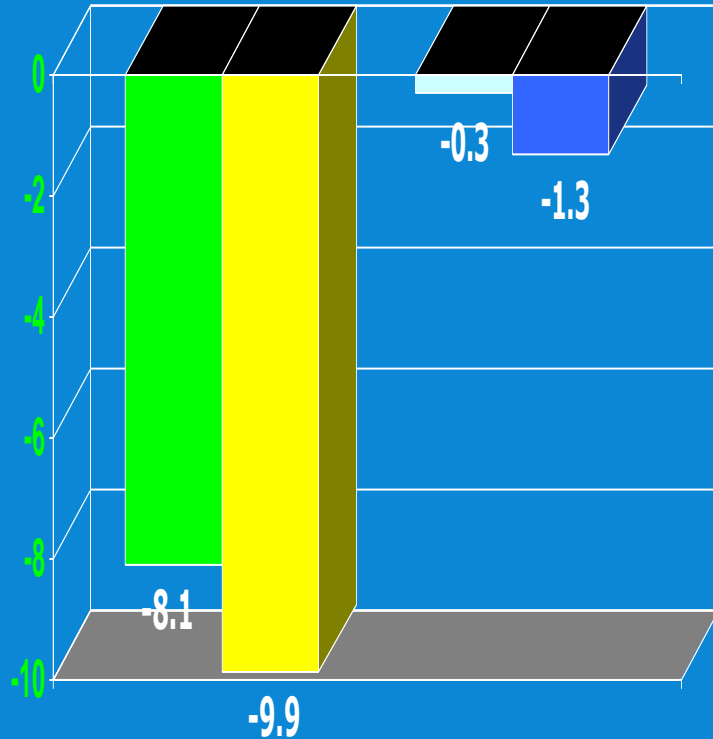


Percent Change in Dietary Fiber Intake



Change in Weight (lbs)

Mean Behavior Change (CHIP) N=211 (348) at 18 months



■ CHIP 6 wks ■ CHIP 6mos ■ Control 6 wks ■ Control 6 mos

Dietary Quantity Per Day	% of Participants Improved over 18 months
Cholesterol mg/day	84%
Saturated Fat g/day	83%
Protein g/day	75%
Fiber g/day	67%

[Merrill RM, Aldana SG, Greenlaw RL, Diehl HA, Salberg A, Englert H.](#)

Can newly acquired healthy behaviors persist? An analysis of health behavior decay.

Prev Chronic Dis. 2008 Jan;5(1):A13.