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. “

- 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 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 an 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

*NEJM.* 2001 Sep 13;**345**:790-7
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)
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.
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.

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.
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

Reference:
Circulation. 1994 Mar;89:975-90
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.”
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

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"

Centers for Disease Control and Prevention
January 2008 • Volume 5, No. 1
"Can Newly Acquired Healthy Behaviors Persist? An Analysis of Health Behavior Decay"

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

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"

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

The Journal of Nutrition, Health and Aging
"The Effects of an Intensive Lifestyle Modification Program on Sleep and Stress Disorders"
The CHIP Prescription For Health

CORPORATIONS
FAITH COMMUNITIES
HOSPITALS
SCHOOLS

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

THE WELLNESS COUNCILS OF AMERICA
CHIP Results:

Percent Change in Dietary Calories / Protein / Fat

Percent Change in Dietary Fiber Intake

CHIP Results:

Percent Change in Dietary Calories / Protein / Fat

Percent Change in Dietary Fiber Intake

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CHIP Results:

Percent Change in Dietary Calories / Protein / Fat

Percent Change in Dietary Fiber Intake
Mean Behavior Change (CHIP) N=211 (348) at 18 months

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