

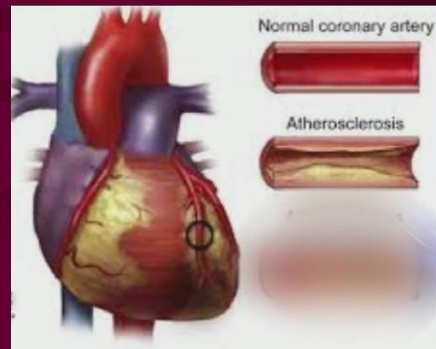
## How to Become Heart Attack Proof



**Leonard Gibbons, DrPH, MPH, HT, RD**  
Health Ministries Director, BCSD  
Lifestyle Intervention Specialist, BWOC

## What is Coronary Heart Disease (CHD)?

CHD is a disease of inflammation involving **damage to the blood vessels** that feed the heart muscle oxygen and nutrition and remove waste products produced by the heart muscle.



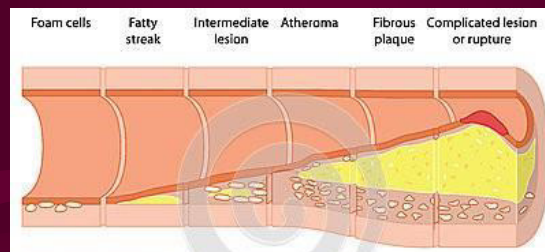
## What Plugs Up the Coronary Arteries?

CHD results from the **buildup of a waxy substance called plaque.**

Plaque is made from **calcium, fat, cholesterol, cellular waste, and fibrin**, a protein involved in **blood clotting** along with platelets.



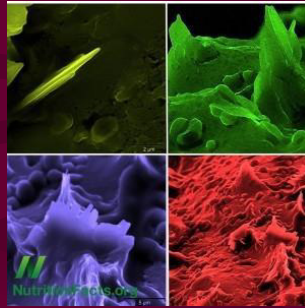
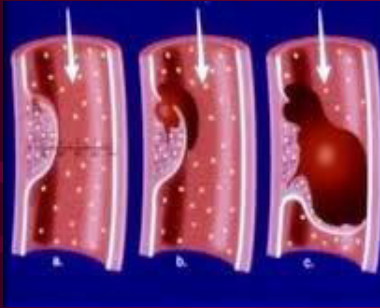
## The Genesis of Heart Disease



The buildup of plaque occurs over many years **starting in early childhood about the age of 10.**

Over time, plaques can **harden or break open** leading to a **blood clot** resulting in a **heart attack or stroke.** **CHD** is a **leading cause of death** in the **"advanced nations"** in the world.

## The Genesis of Heart Disease



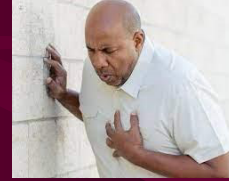
**85% of heart attacks** are caused by the **rupture of small unstable plaques**, long before the build up large stable plaques which are **often treated surgically with stents or bypass surgery**.

## Are You At Risk for CHD?



## None-Modifiable Risk Factors Linked to CHD

- **Age**
  - Men 45+, women 55+, are at increased risk
- **Gender**
  - Men are at higher risk than women for early CHD
  - CHD is still the leading cause of death for women
- **History CHD**
  - Family History before age 55 for men and 65 for women
  - Personal history



## Lifestyle Related Risk Factors linked for CHD

Modifiable CHD Risk Factors	
<input type="checkbox"/> Saturated fat including trans fats	<input type="checkbox"/> Low intake of water
<input type="checkbox"/> Cigarette smoking	<input type="checkbox"/> Insomnia
<input type="checkbox"/> Inactive	<input type="checkbox"/> Diabetes or elevated blood sugar
Feelings of stress, hostility, depression	<input type="checkbox"/> Obesity
<input type="checkbox"/> High blood pressure	<input type="checkbox"/> Dietary cholesterol
	<input type="checkbox"/> Triglycerides

## Blood Test and CHD

Risk Rating	HDL Cholesterol	LDL Cholesterol	Total Cholesterol
Very high risk	< 25	190+	220+
High risk	< 35	160+	190+
Moderate risk	< 40	130+	160+
<b>Low risk</b>	<b>45+ &lt; 130</b>	<b>&lt; 160</b>	<b>&lt; 160</b>
<b>Ideal Risk</b>	<b>60+ &lt; 100</b>	<b>&lt; 100</b>	<b>&lt; 130</b>

*NEJM, June 1, 1995*

Risks of heart attacks and strokes are **3 to 10x higher** in persons with **elevated c-reactive protein levels**.

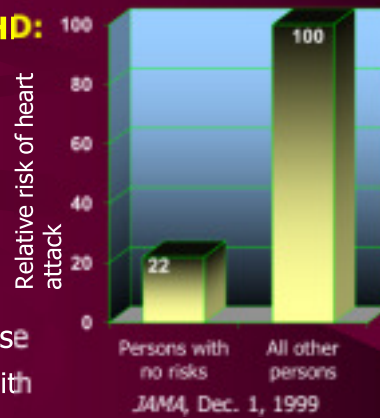
**Less than 0.5 mg/L** – ideal. **0.5 to 1.0 mg/L** – safe. **1.0 mg/L to 3.0 mg/L** – danger. **>3.0 mg/L** – Extreme danger.

## Cholesterol Levels and Risk of CHD

Cholesterol Range	Health Outcomes	Supporting Research
Total 180 - 210 mg/dl	1 in 4 persons had a heart attack	M. H. Frick, et al., New England Journal of Medicine, November 12, 1987
Total 150 – 200 mg/dl	1 in 3 persons had CHD	W. Castelli, Prevention, November 1996 Framingham Heart Study
Total < 150 mg/dl LDL ≤ 70 mg/dl Trig < 150 mg/dl Optimal level for preventing CHD	No person in 45 years died of a heart attack	W. Castelli, J. Doyle, T. Gordon, et al., Circulation, May 1977 Framingham Heart Study K. M. Dalessandri and C. H. Organ, Jr., American Journal of Surgery, April 1995

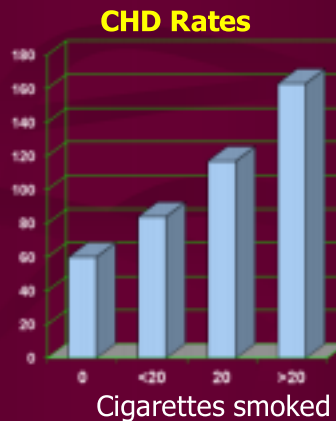
## Major Lifestyle Risk for CHD

- Over 366,000 people followed for more than 15 years with at least **3 major risks for CHD**:
  - smoking (currently)
  - cholesterol (200+)
  - blood pressure (>120/80)
- People with none of these risks:
  - were **80 to 90%** less likely to have a heart attack
  - **40-60%** less likely to die from any cause
  - **lived 6 to 10 years longer** than those with any risks



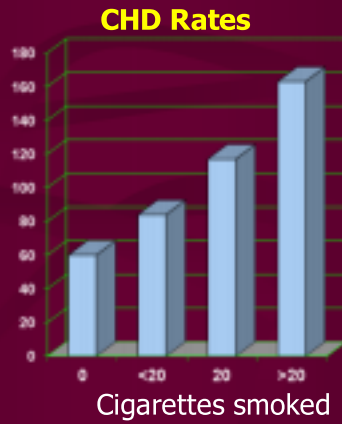
## Smoking and CHD

- **Smoking** increases the risk of heart disease by **200 to 300%**
- **Stopping smoking** reduces the risk very rapidly--nearly to the **level of the non-smoker within 5 years**



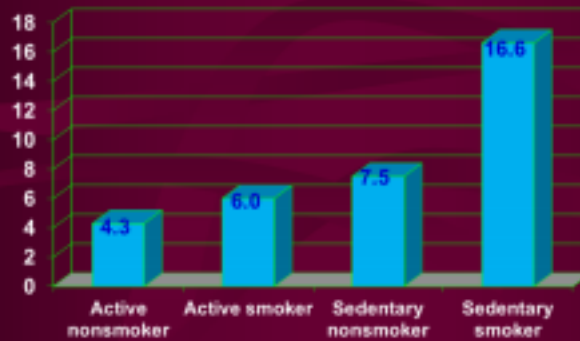
## Smoking and CHD

- **Smoking** increases the risk of heart disease by **200 to 300%**
- **Stopping smoking** reduces the risk very rapidly--nearly to the **level of the non-smoker within 5 years**



## Smoking, Exercise, and CHD

**CHD mortality rate per 1000**

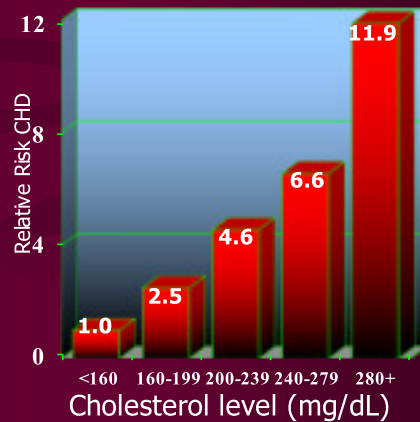


Arch Intern Med.. 1977; 157:893-899

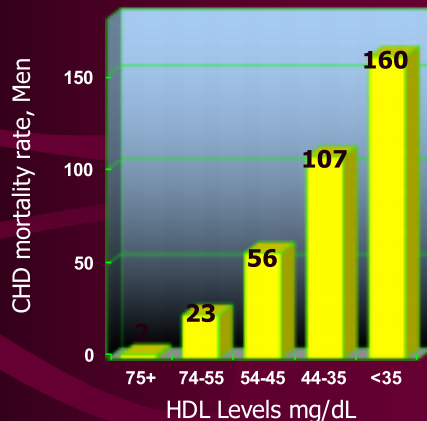
## Total Cholesterol and Heart Disease Mortality

- Chicago Heart Association Study, 11,017 men, 25 years follow-up
- **Risk of death** from heart disease in young men is **3.5 times higher** if cholesterol is 240+ vs. < 200 mg/dl
- **Persons lived** up to **6 to 9 years longer** with cholesterol levels <200 v 240+ mg/dl

*JAMA* 284:311-318, July 19, 2000



## Factors That Increase HDL Cholesterol



### Factors that improve HDL

- Aerobic exercise, 12-20 miles per week
- Achieve or maintain ideal body weight (lose 10 lbs.)
- Avoid smoking
- Avoid trans fatty acids

**Note:** For every 1% you increase HDL levels, you decrease CHD by 2-3%

Source: Framingham Heart Study



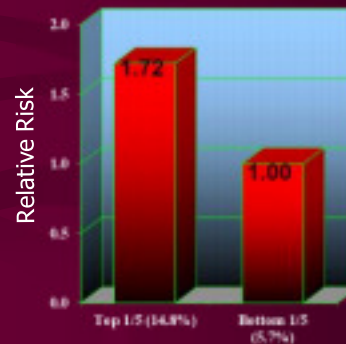
## Factors That Increase HDL Cholesterol

Kale juice (6 ounces/day)	Curcumin (500mg/day)
Brazil nuts (4/month) HDL↑15 point; LDL↓20 points	Psyllium seed husk (7 grams per day)
Garlic supplements (600mg/day)	Cranberry juice (1 cup/day)
Nuts in general about ¼ cup per day (1 oz.)	Exercise (every 20 min ↑ HDL by 3 mg/dl)

## Saturated Fat Intake and Mortality from Heart Disease

- Health Professional Study of 43,757 men, free of disease at start, and six year follow - up
- Those eating the most saturated fat had a **72% increased risk of heart disease.**

*British Med. Jour.* 1996;13:84-90



Saturated Fat Intake, Quintiles (% of calories)

## Primary Source of Saturated Fat in the Diet

- Red meat
  - Hamburgers/hot dogs
  - Cheese, cream
  - Fried chicken
  - Whole milk
  - Deep fried foods
  - Beef tacos
- Fast foods
  - Baked goods
  - Snack foods
  - Convenience foods with added fats
  - Shortening
  - Fat back, lard

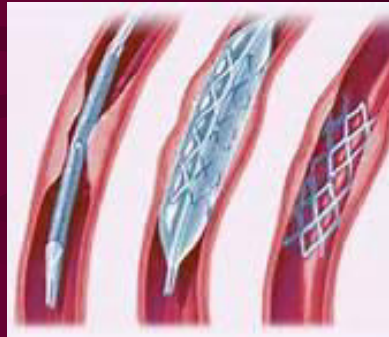


## Conventional Treatments for CHD



## High Cost, High Tech, Procedures

**1.3 million** Coronary Angioplasty procedures and **448,000** Coronary Bypass operations are performed annually in the United States of America at a cost of **more than \$100 billion**.

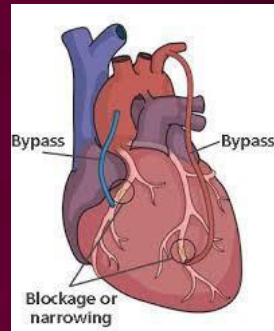


**Balloon Angioplasty with Stents**

## Little Benefit

Coronary bypass surgery **prolongs life in less than 2% to 3%** of patients who receive this procedure.

*Ornish D. Intensive lifestyle changes and health reform. Lancet Oncol. 2009; 10(7): 638 -639. Boden WE, O'Rourke RA, Teo KK, et al; COURAGE Trial Investigators. Impact of optimal medical therapy with or without percutaneous coronary intervention on long-term cardiovascular end points in patients with stable coronary artery disease (from the COURAGE Trial). Am J Cardiol.*



## Absolute Risk Reduction of Heart and Stroke Prevention Drug Strategies <5 %

Ramipril & Enalapril (ACE inhibitor) **relax blood vessels.**  
 Carvedilol (beta-blocker) **slows down the heart rate** and blood pressure.

Study	Mean treatment duration	Number of subjects	Outcome	Control untreated event rate (%)	Relative risk reduction with treatment (%)	Absolute risk reduction with treatment (%)
Pravastatin post MI or unstable angina; median cholesterol 5.6 mmol/l <sup>1</sup>	6.1 years	9014	All deaths	14.1	22	3.1
			Any MI	10.3	28	2.9
Primary prevention with pravastatin in men; mean cholesterol 7.0 mmol/l <sup>2</sup>	4.9 years	6595	All deaths	4.1	22	0.9
			Coronary events	7.9	30	2.3
Ramipril in high-risk patients (HOPE study) <sup>3</sup>	5 years	9297	All deaths	12.2	15	1.8
			Any MI	12.3	20	2.4
Enalapril post MI; EF <35% <sup>4</sup>	37 months	4228	All deaths	15.8	6	1.0

Clinical Medicine Vol 2: No. 6, November/December 2002

### Key Points

Even high risk patients have less than 5% chance of benefiting from a cardioprotective drug taken for 5 years; 95% of patients will take the drug for 5 years without benefit

These statistics are seldom shared with patients

In this study we found the median value for the lower limit of benefit below which subjects would not wish to embark on a preventive drug strategy was 20% over 5 years. This included patients just discharged from the Coronary Care Unit

The study suggests that informing patients of the percentage chance of benefit from preventive drug strategies will substantially reduce the uptake of such drugs.

## Long-Term Statin Use and Breast Cancer in Women

Cancer Epidemiol Biomarkers Prev; 22(9) September 2013

### Long-Term Statin Use and Risk of Ductal and Lobular Breast Cancer among Women 55 to 74 Years of Age

Jean A  
Peggy

Abstr

this increased risk was strongest among long-term statin users who had more than double the risk of both IDC (OR: 2.04, 95% CI: 1.17–3.57,  $P$  for trend = 0.025) and ILC (OR: 2.43, 95% CI: 1.40–4.21,  $P$  for trend = 0.006).

Seattle–Puget Sound region to investigate the relationship between long-term statin use and breast cancer risk. Nine hundred sixteen invasive ductal carcinoma (IDC) and 1,068 invasive lobular carcinoma (ILC) cases in patients 55 to 74 years of age diagnosed between 2000 and 2008 were compared with 902 control women. All participants were interviewed in-person and data on hypercholesterolemia and all episodes of lipid-lowering medication use were collected through a structured questionnaire. We assessed the relationship between statin use and IDC and ILC risk using polytomous logistic regression.

**Results:** Current users of statins for 10 years or longer had a 1.83-fold increased risk of IDC [95% confidence

## Drugs and Angina

International Journal of Cardiology 169 (2013) 262–270

### Effects of ranolazine in symptomatic patients with stable coronary artery disease. A systematic review and meta-analysis

Collectively, our meta-analysis demonstrates a significant improvement of exercise parameters in patients treated with Ranolazine compared to placebo, including significant prolongation of exercise duration by 31.9 [CI: 21.0 to 42.8] and 33.5 seconds [CI: 25.1 to 41.8] at trough and peak doses, respectively

## Angina and Vegan Diets

### Angina and vegan diet

#### 1. F.W. Male, aged 65

Hemoglobin 12.4 Gm./dL. No ECG. Cholesterol 5.7 mmol./L.

No history of coronary thrombosis, severe angina, had to stop every nine or ten paces.

1/2/64 Started vegan diet. Seen monthly.

1/7/64 Pain much improved.

2/7/64 No angina on making fairly strenuous efforts.

Aug. '64 Holiday in Lake District. Climbed mountains, no angina pain.

A diet devoid  
in the preven  
disease (IHD  
patients with  
diet. A brief

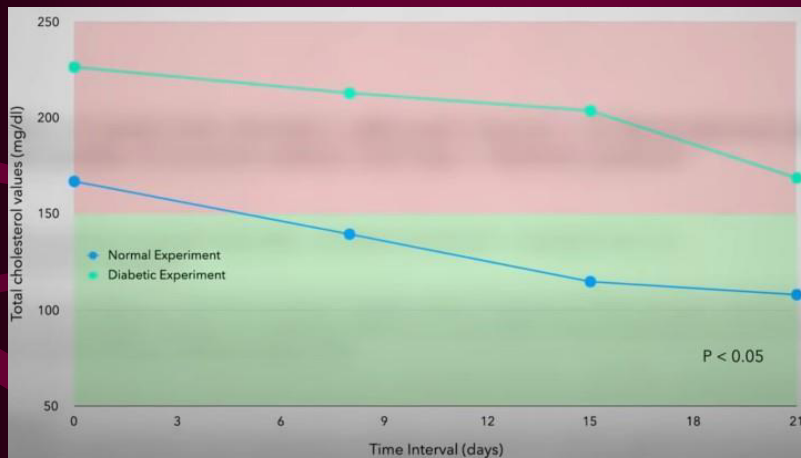
1. F.W. M  
Hemoglobin  
L.

F.R.C.Path.  
ton Hospital  
, Esq., B.Sc.  
ch Assistant  
of Pathology  
ton Hospital

to return of

he died of  
of angina

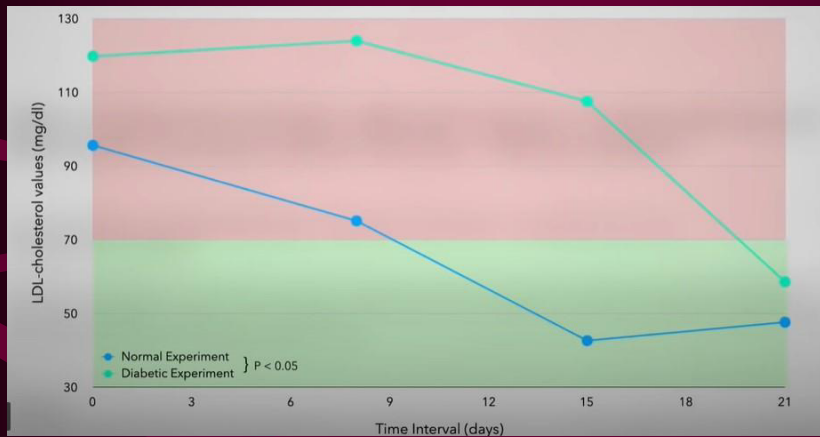
## Amla Power and Total Cholesterol



1/2  
teaspoon  
a day

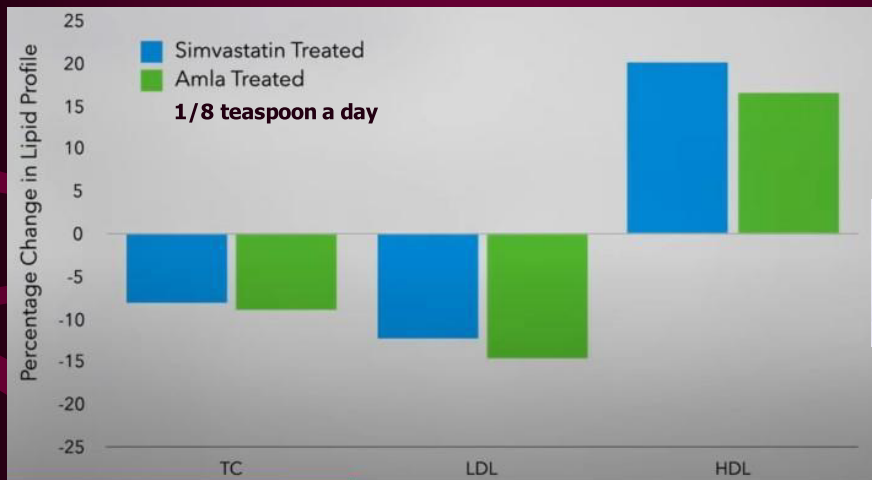
Int J Food Sci Nutr. 62(6): 609-16

## Amla Power and LDL Cholesterol



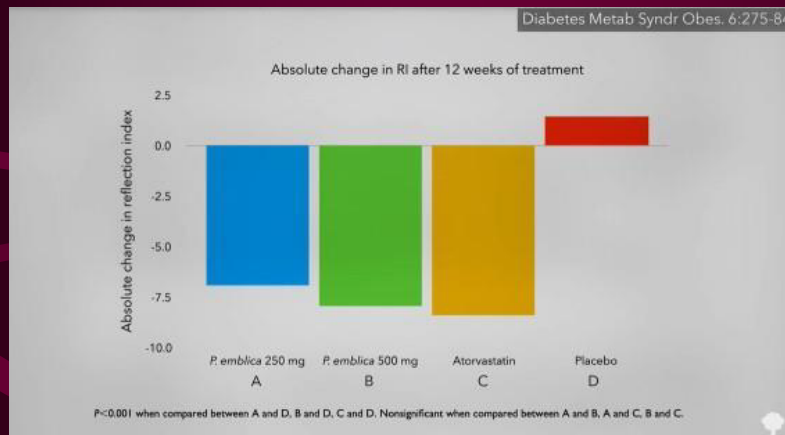
Int J Food Sci Nutr. 62(6): 609-16

## Amla vs Simvastatin and Lipid Profiles

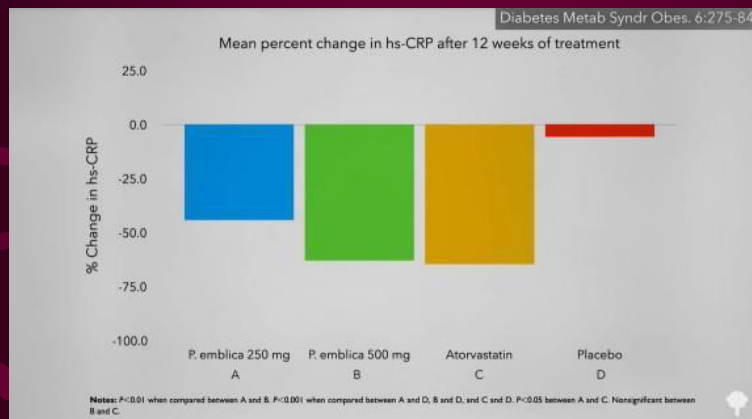


Indian J Pharmacol. 44(3): 238-42

## Amla Extract vs. Drugs for Reducing Artery Stiffness

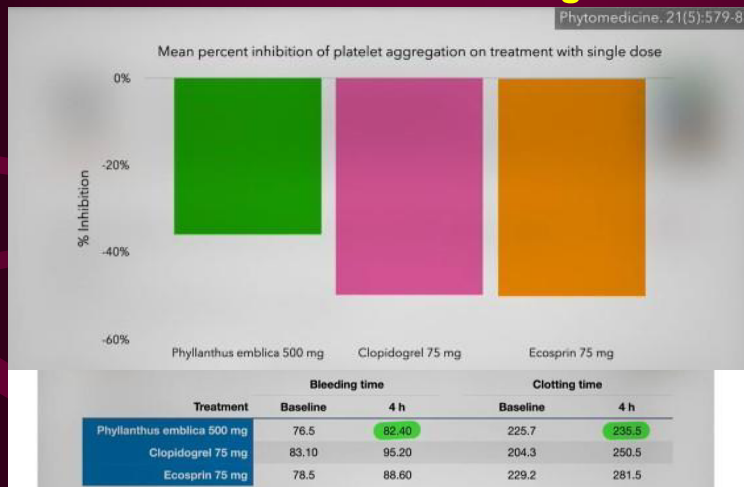


## Amla Extract vs. Atorvastatin and Hs-CRP





## Amla Extract vs. Aspirin and Plavix for Inhibiting Blood Clotting Time



## The NEWSTART Solution for CHD



## Low Cost, Low Tech, Major Benefits

The **INTERHEART** study followed **30,000** people and found that **changing lifestyle could prevent at least 90% of all heart disease.**

**Factors included:** smoking, a history of hypertension or diabetes, waist/hip ratio, dietary patterns, physical activity, consumption of alcohol, blood apolipoproteins (Apo), and psychosocial factors.

[https://www.thelancet.com/journals/lancet/article/PIIS01406736\(04\)17018-9/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS01406736(04)17018-9/fulltext)



## Lifestyle and Disease Prevention

The **"EPIC"** study of **23,000** participants measured **four simple behaviors:**

- Not smoking
- Exercising 3.5 hours a week
- Eating a healthy diet (fruits, vegetables, beans, whole grains, nuts, seeds, and limited amounts of meat)
- Maintaining a healthy weight (BMI <30)



## Lifestyle and Disease Prevention

In those that adhered:

- **93% of diabetes**
- **81% of heart attacks**
- **50% of strokes**
- **36% of all cancers** were prevented



## Ugandan Africans and Coronary Heart Disease

In the 1950's a landmark study revealed that **CHD**, the number one cause of death in Bermuda today (41% of all deaths) was **almost non-existent in the African population of Uganda**.



the only infarct found in Uganda among 1,427 patients over forty years of age was a small healed one.

*The American Journal of Cardiology. January 1960*

## Ugandan Africans

The **staple foods** in Uganda include **green plantain, sweet potatoes cassava, yams, corn, millet, pumpkins, tomatoes and green leafy vegetables.** Protein intake comes almost entirely from **beans along with nuts.**



## Ugandan Africans

There **daily fat intake** was **16–20 g = 2 Tbs. peanut butter (5 tsp. oil)** per individual with **10 to 15% of total calories coming from fat.**



## Asian Population in Uganda

They had a **death rates from CHD at 43%** for men over 30 years of age.

**Staple foods** - polished rice, "dhal" (lentils), **wheat flour for making chapattis and pooris an unleavened bread, fried in oil.** **Green vegetables and herbs, and other vegetables and fruits.**



*The International Journal of Epidemiology 2012; 41: 1221-1225*

## Asian Population in Uganda

**Fats (butter, milk) and oils** (cottonseed) are **always used** in the preparation of foods

The **daily fat intake 137-159 g = 1/2 to 3/4 cup of fat** per individual with **30 to 45%** of **calorie** intake coming **from fat.**



## Asians Vs Ugandan Cholesterol Level

Cholesterol Levels (mg/100ml)		
Age	African	Asian
12	166	206
20	164	218
40	145	248

Omnivore Diet	Dairy and Eggs	Dairy Products	All Plant Foods
208 mg/dl	175 mg/dl	165 mg/dl	141 mg/dl

## U.S. Vs Ugandan Autopsies Studies

**632 Ugandan men** were matched with **632 men from St. Luis USA** to determine death rates due to CHD.

**1 individual** (0.2%) in the 632 autopsies conducted on **Ugandan men** was found to have **had heart issue not related to their death.**

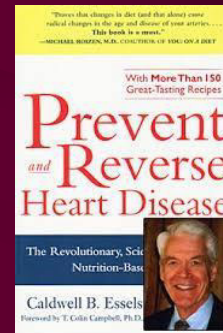
**136 heart attacks deaths** (22%) occurred in **U.S. individuals** or **100 times** the rate of CHD seen in the African men.

*The American Journal of Cardiology. January 1960*

## Reversing Artery Disease

Dr. Cadwell Esselstyn's **12 year long whole plant food study** included 24 patients who had failed their 1<sup>st</sup> or 2<sup>nd</sup> angioplasty and bypass graph or refused treatment.

**Five patients were told** by their cardiologist that they would **not last for 1 year**.



## Reversing Artery Disease

The whole food plant based diet consisted of:

- All plant foods except oil, nuts, avocado pear and seeds
- No animal products
- Exercise was allowed but not required
- **All five patients who were told they would die with in a year were alive 20 years later!**



## Reversing Artery Disease

### On the whole plant food diet after 12 years (n=17):

- No coronary event in 17 compliant patients
- 4 of 12 patients experienced angiographically confirmed disease reversal
- One patient (#18) went off the diet briefly and experienced a coronary event



## Pant Based Diets Reverse CHD

Blood Lipids	5 Years	12 Years
Total Cholesterol	137 mg/dl	145 mg/dl
HDL	37 mg/dl	38 mg/dl
LDL	76 mg/dl	82 mg/dl
Triglycerides	143 mg/dl	143 mg/dl

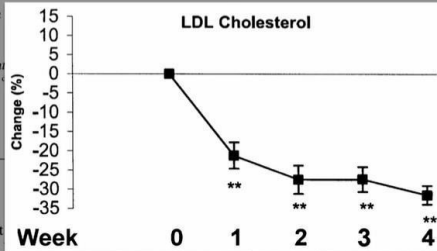


## Plant Based Diet and LDL Cholesterol

*Comparative Biochemistry and Physiology Part A 136 (2003) 141–151*

The Garden of Eden—plant based diets, the genetic drive to conserve cholesterol and its implications for heart disease in the 21st century

lowered serum LDL-cholesterol in healthy volunteers by over 30%, equivalent to first generation statins, the standard cholesterol-lowering medications.

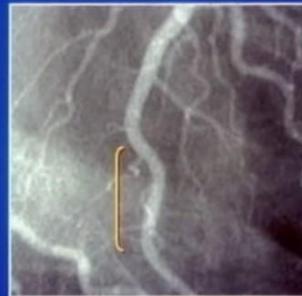


## Plant Based Diets Reverse CHD

### Reversal of Coronary Disease

November 27, 1996

July 22, 1999



## The Standard Cardiac Approach

**6 of 24 patients** went back to their cardiologist after 6 months on the diet and **reverted to the standard diet** for coronary heart disease.

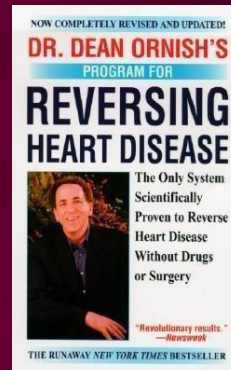


**On the standard cardiac care the 6 patients experienced:**

- 13 cardiac events
- 4 received additional bypass operations
- **2 of them died (1/3)**

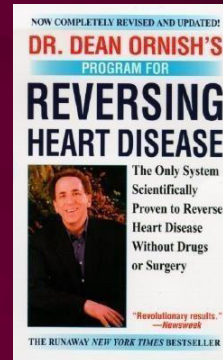
## The Multicenter Lifestyle Demonstration Project

- Low fat, whole -plant food diet with no free oils or fat
- Exercise 3 hours per week minimum
- Group support meetings
- Stress management program



## The Multicenter Lifestyle Demonstration Project

The experimental group (194) when compared to the control group (137), avoided revascularization for at least 3 years by making comprehensive lifestyle changes at a **savings of \$30,000/per individual** or \$5,820,000 in the first year.



## It Only Takes 1 Meal!

After a meal of animal products people suffer **endotoxemia**

The blood stream becomes awash with **dead meat toxins** that **trigger inflammation & stiffening of blood vessel**-dead or alive  
These dead meat toxins **aren't destroyed by stomach acid, pancreatic enzymes or cooking for several hours**  
**100,000,000 bacteria** are in **1/4 pound** of fresh **hamburger meat!**



Physicians Committee For Responsible Medicine. J Am Coll Cardiol. 2006 Aug 15;48(4):770-5. Atheroscler Thromb Vasc Biol. 1997;7:2904-2909. Am J Cardiol. 1997;79:3503-54. Ann Internal Med. 2002; 136:525-28  
Husain Ghannam et al. Increase in Plasma Endotoxin Concentration and the Expression of Toll Receptor and Suppressor of Cytokine Signaling in Mononuclear Cells After a High-Fat, High-Carbohydrate Meal. Diabetes Care. 2002; 25:2287

## It Only Takes 1 Meal!

**After 2 hours** blood flow ↓ **50%** and blood fat ↑ **60%**

**3 hours later** blood vessels become **abnormal and stiffer**

**4 hours later** the blood gets thicker **than it was 2 hours ago**

**5 hours later** the blood fats are ↑ **150%**

**6 hours later** the good cholesterol HDL **was not able to protect blood vessels** from damages that lead to coronary artery disease



## The Daniel Diet - 11 Days

**500 individuals** eating, fish, dairy, meat, poultry and plants foods were put on a **whole plant food diet for 12 days** – The same diet as Dr. Cadwell Esselstyn



**After 11 days:** Average Blood Pressure (BP) dropped – 9/4 mmHg

Rapid Reduction of Serum Cholesterol and Blood Pressure by a Twelve-Day Very Low Fat, Strictly Vegetarian Diet. John McDougal et. al. JACN, Vol. 14, No. 5, 491-496.



## The Daniel Diet - 11 Days

Average BP in **hypertensive** participants dropped by **17/13 mmHg**, an achievement that surpasses the average BP lowering effect of blood pressure medications.



**Cholesterol** levels dropped **11%**.  
Average **weight loss** was **5 ½ lbs.**



•Rapid Reduction of Serum Cholesterol and Blood Pressure by a Twelve-Day Very Low Fat, Strictly Vegetarian Diet. John McDougal et. al. JACN, Vol. 14, No. 5, 491-496.

### Questions for How to Become Heart Attack Proof

1. The buildup of plaque starts in early childhood about the age of 10. T F
2. In the Framingham Heart Study, no person in 45 years died of a heart attack who had a total cholesterol level < 150 mg/dl. T F
3. Feelings of stress, hostility, depression, hypertension, diabetes, saturated fat, smoking and inactivity are all risk factors linked to CHD. T F
4. For every 20 minutes of exercise, you ↑ HDL levels by 4 mg/dl. T F
5. Red meat, hamburgers, hot dogs, cheese, cream, fried chicken, deep-fried foods and fast foods are some of the primary food sources of saturated fat. T F
6. The conventional treatment of CHD through surgery and cholesterol lowering drugs represent the most effective tools for treating this health condition. T F
7. Even high-risk patients have less than a 5% chance of benefiting from heart protective drugs (cardioprotective drugs) taken for 5 years. T F
8. Drugs to treat angina (severe chest pains due to a poor blood supply to the heart) work better than a vegan diet for treating angina. T F
9. Amla (Indian Goose Berries) was shown to be as effective as the medications that were designed to lowering cholesterol levels, inhibit blood clots and reduce stiff arteries. T F
10. In one very large study, not smoking, exercising for 3.5 hours a week, eating a healthy diet (fruits, vegetables, beans, whole grains, nuts, seeds, and limited amounts of meat) and maintaining a healthy weight (BMI <30) was effective in significantly lowering the risk of diabetes, heart attacks, strokes and all cancers. T F
11. In the 1950's in Uganda, a study revealed no African in this country died from CHD. If fact, in 632 autopsies no one died from CHD. T F

12. While the cholesterol levels in the Africans in Uganda increases with age, the cholesterol levels of Asians living in Uganda decrease as they get older. T F
13. Doctor Cadwell Esselstyn 12-year study, demonstrated that a whole food plant-based diet could reverse CHD; the build-up of plaque in the arteries. T F
14. Dead meat toxins trigger inflammation and stiffening of blood vessels dead or alive. T F
15. In one study, two hours after a meal that included sausages and other breakfast items, blood flow ↓50% and blood fat ↑60%. T F
16. Eleven days on a vegan diet is not long enough time to see big improvements in factors such as body weight blood cholesterol levels and blood pressure readings. T F
17. Kale juice, garlic, curcumin, nuts and exercise can all increase HDL cholesterol levels. T F
18. A current smoker who also does not exercise (sedentary) is at a very high risk for CHD when compared to an active none smoker. T F
19. Ideal risk levels for cholesterol numbers are as follows: HDL 60+, LDL < 100, Total cholesterol < 130. T F
20. 85% of heart attacks are caused by the rupture of large stable plaques. T F