# A Healthy Heart Without Prescription Medication

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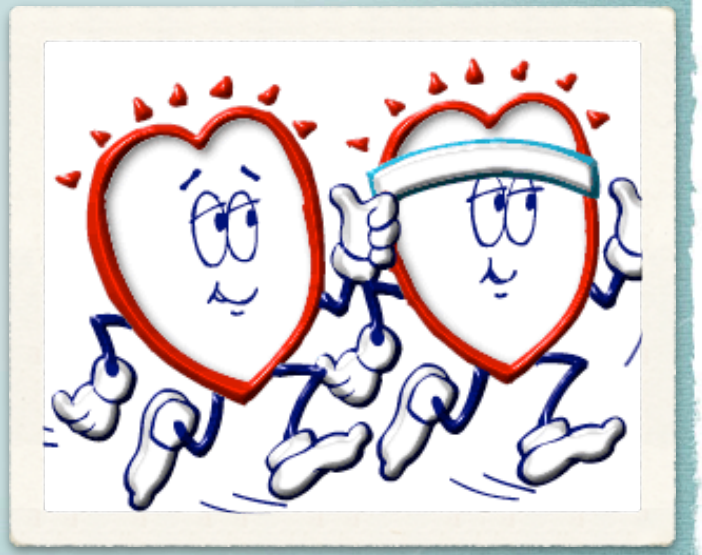


# Goals of Our 1 Hour Talk

- I hope you will gain an understanding of the following:
  - The majority of people on statin drugs do not need them.
  - High cholesterol is not a disease, nor alone a good indicator of using statins to prevent heart disease.
  - CVD and CHD are inflammatory diseases. Not caused by high cholesterol.
  - Best way to control inflammation is through diet.
  - Learn the best proven diet for prevention of inflammatory disease.
  - Some supplements may be useful to prevent and possibly treat CVD and CHD.

# Statin Drugs

- Necessary drugs but being misused and over prescribed.
- Will Lower Cholesterol. Will Not Reduce Disease in over 95% of people given them.
- Research shows they only prevent death in men between the ages of 30-50 that have a history of heart disease. No benefit in increasing lifespan in people that do not have a history of heart disease. *Kausik K. Ray et al, Statins and All-Cause Mortality in High-Risk Primary Prevention A Meta-analysis of 11 Randomized Controlled Trials Involving 65,229 Participants Arch Intern Med. 2010;170(12):1024-1031.*
- There is no benefit in women - even women who already have heart disease. Overall mortality may actually increase by 1% in both men and women. *Kendrick M. Should women be offered cholesterol lowering drugs to prevent cardiovascular disease?. BMJ. 2007 May 12;334(7601):983*

# JUPITER Study

- JUPITER - Justification for the Use of Statins in Primary Prevention - published 2008
- The study administered a statin (Crestor) to people that had normal cholesterol but elevated CRP (C-Reactive Protein a marker of inflammation).
- Headlines screamed that "Crestor cuts deaths by almost 50%!" "Statins for Everyone!"
- Study concluded that everyone should be tested for elevated CRP and if elevated they should be put on a statin.

# JUPITER - Criticism

- Funded by the drug company that makes Crestor. (Astra-Zeneca) How can it be objective?
- Lead author (a Boston Cardiologist) and other authors had a total of 131 financial ties to drug companies
- Study stopped after 1.9 years. It was supposed to be a 5 year study and critics argue that if it went on for 5 years there would be no difference in groups and increased side effects.
- Side effects - diabetes and glycosylated hemoglobin significantly increased in Crestor group

# JUPITER - Criticism

- The number of fatal heart attacks in the placebo and treatment groups were both 12.
- "The proportion of participants with hard cardiac events in JUPITER was reduced from 1.8% (157 of 8,901 subjects) in the placebo group to 0.9% (83 of 8,901 subjects) in the rosuvastatin group; thus, 120 participants were treated for 1.9 years to prevent one event…The cost for treating 120 people with Crestor is $3.45 a day or $266,616.00 for 1.9 years-an exorbitant amount of money to prevent one event." *Expanding the Orbit of Primary Prevention — Moving beyond JUPITER N Engl J Med 2008; 359:2280-2282*

# JUPITER - Criticism

- "We believe that the treatment benefits achieved in the JUPITER trial are not large enough to advocate an expansion in the clinical indications for statins." *JUPITER: A Few Words of Caution, Circ Cardiovasc Qual Outcomes 2009;2;286-288,*

# Statin Drugs - Side Effects

- Will increase muscle pain (myopathies)
- One study found muscle damage in 70% of statin users even if they didn't have complaints. *Draeger A, et a Statin therapy induces ultrastructural damage in skeletal muscle in patients without myalgia. J Pathol. 2006 Sep;210(1):94-102.*
- Increases Risk of Diabetes *Statins and risk of incident diabetes The Lancet, Volume 375, Issue 9732, Pages 2140 - 2141,*
- Memory issues *Statin-associated memory loss: analysis of 60 case reports and review of the literature Pharmacotherapy. 2003 Jul;23(7):871-80*
  *Diane Graveline MD Lipitor: Thief of Memory, Statin Drugs and the Misguided War on Cholesterol 2004, Infinity Publishing ISBN:0741418819*
- Sleep Issues *Edwin K. Kwon, B.A.; Michael H. Criqui, M.D., M.P.H.; and Joel E. Dimsdale, M.D. The National Heart, Lung, and Blood Institute of the National Institutes of Health 2007*

# Appropriate Use of Statins

- If there is a history of heart disease or genetic issues then it can prevent heart disease. Reduces risk by about .2% per year. *Douglas Bremner MD, Before You Take that Pill: Why the Drug Industry May Be Bad for Your Health 2008, Avery Trade, ISBN: 158333295*

- If it was less widely used we would see more benefit in the population. Statins should be used as a last resort for people with multiple risk factors - high inflammation (measured by CRP), diabetes,obesity, smoking, elevated blood pressure, elevated cholesterol and/or previous history.

- If you take statins best statins are water soluble ones such as Prevastatin. Avoid fat soluble such as lovastatin, simvastatin, fluvastatin, and atorvastatin.*Ichihara K,et al. Disparity between angiographic regression and clinical event rates with hydrophobic statins. Lancet. 2002 Jun 22;359(9324):2195-8.*

# “Silent” Inflammation

- CRP is a measure of inflammation in the body.
- CRP - C Reactive Protein is a better risk marker for a cardiovascular disease than cholesterol.
- Unhealthy diets (rich in pro-inflammatory foods such as trans-fats, refined grains, sugars) lead to an increase in metabolic and cardiovascular disease. *Diet and inflammation: a link to metabolic and cardiovascular diseases* *Eur Heart J.* *2006 Jan;27(1):15-20.*

# Statins are Anti-Inflammatory

- Statin drugs are anti inflammatory with potential serious side effects.
- A plethora of evidence shows that it is the anti-inflammatory action - not the reduction in cholesterol that can prevent heart disease


- *Statins as Potent Antiinflammatory Drugs Circulation. 2002;106:2041-2042*
- *Statins as anti-inflammatory agents Trends in Pharmacological Sciences Volume 23, Issue 10, 1 October 2002, Pages 482-487*
- *Anti-Inflammatory Effects of Statins: Clinical Evidence and Basic Mechanisms Nature Reviews Drug Discovery 4, 977-987 (December 2005)*
- *Neuroprotective effects of statins may not be related to total and low-density lipoprotein cholesterol lowering American Journal of Cardiology December 2002 (Vol. 90, Issue 11, Pages 1237-1239)*

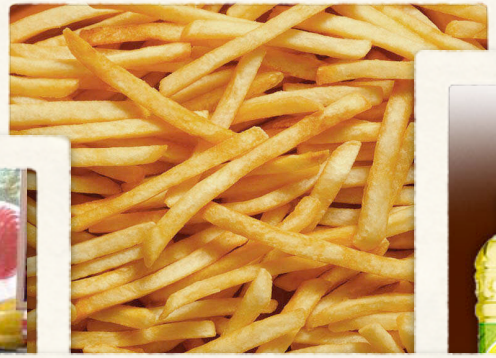
# Recap

- Statins are unnecessary for the majority of people taking them. No evidence of efficacy in preventing disease or deaths.
- High cholesterol is not a disease, it is a marker. High cholesterol alone absolutely should not warrant statins.
- High inflammation (CRP) is currently a better indicator for disease than cholesterol.
- We need to reduce inflammation in order to prevent disease.
- The best and most economical way to control inflammation is through diet....So onto diet we go.....

# Inflammation!!










# Reduce Sugars & Processed 'food'

- Sugars and Simple Carbohydrates - leads to increased inflammation and reduced HDL
  - *"Effects of High Dietary Sugar" Br Med J 1980;281:1396*
  - *Intake of carbohydrates compared with intake of saturated fatty acids and risk of myocardial infarction: importance of the glycemic index Am J Clin Nutr 91: 1764-1768, 2010*

# Reduce Sugars & Processed 'food'

- Older Australian women who eat a high glycemic index (high sugar content per serving) foods have almost 3x the chance of dying from an inflammatory disease. (i.e. heart disease) *Carbohydrate nutrition and inflammatory disease mortality in older adults Am J Clin Nutr 92: 634-643, 2010*

- High glycemic foods in Italian women increased overall risk of coronary heart disease *Dietary Glycemic Load and Index and Risk of Coronary Heart Disease in a Large Italian Cohort Arch Intern Med. 2010;170(7):640-647*

# Use Whole Grains

- Increased consumption of high-density and low-quality foods, such as those rich in refined grains and poor in natural antioxidants and fiber, may cause an activation of the innate immune system, most likely by excessive production of proinflammatory cytokines associated with a reduced production of anti-inflammatory cytokines. *Whole-grain intake cools down inflammation Am J Clin Nutr. 2006 Jan;83(1):124-31*

- Significant reduction in C-Reactive protein (CRP) in a high fiber diet (whole grains) or a fiber supplement. *Effect of a High-Fiber Diet vs a Fiber-Supplemented Diet on C-Reactive Protein Level Arch Intern Med. 2007;167(5):502-506*

# Reduce Sugars & Processed 'food'

- "... replacement with a higher carbohydrate intake, particularly refined carbohydrate, can exacerbate the atherogenic dyslipidemia associated with insulin resistance and obesity that includes increased triglycerides, small LDL particles, and reduced HDL cholesterol. ... there are few epidemiologic or clinical trial data to support a benefit of replacing saturated fat with carbohydrate. CVD risk [reduction]...should primarily emphasize the limitation of refined carbohydrate intakes and a reduction in excess adiposity. " *Saturated fat, carbohydrate, and cardiovascular disease* *Am J Clin Nutr* *91: 502-509, 2010*

# Saturated Fat Controversy

- "...An independent association of saturated fat intake with CVD risk has not been consistently shown in prospective epidemiologic studies....Replacement of saturated fat by polyunsaturated or monounsaturated fat lowers both LDL and HDL cholesterol..." *Saturated fat, carbohydrate, and cardiovascular disease* *Am J Clin Nutr* *91: 502-509, 2010*

# Saturated Fats Controversy

- A meta-analysis of prospective epidemiologic studies showed that there is no significant evidence that dietary saturated fat is associated with an increased risk of CHD or CVD. *Meta-analysis of prospective cohort studies evaluating the association of saturated fat with cardiovascular disease* *Am J Clin Nutr* *91: 535-546, 2010*

- "Intensive dietary counseling to promote a low-total-fat diet did not reduce cardiovascular events in healthy adults." *Low-Fat Dietary Pattern and Risk of Cardiovascular Disease* *JAMA*. *2006;295:655-666*

- Study shows no correlation between coronary events (heart attack, vascular disease etc) and saturated fat intake. However it does show that an increase in saturated fat increases cholesterol.. *Dietary fat and risk of coronary heart disease in men: cohort follow up study in the United States* *BMJ* *1996; 313 : 84*

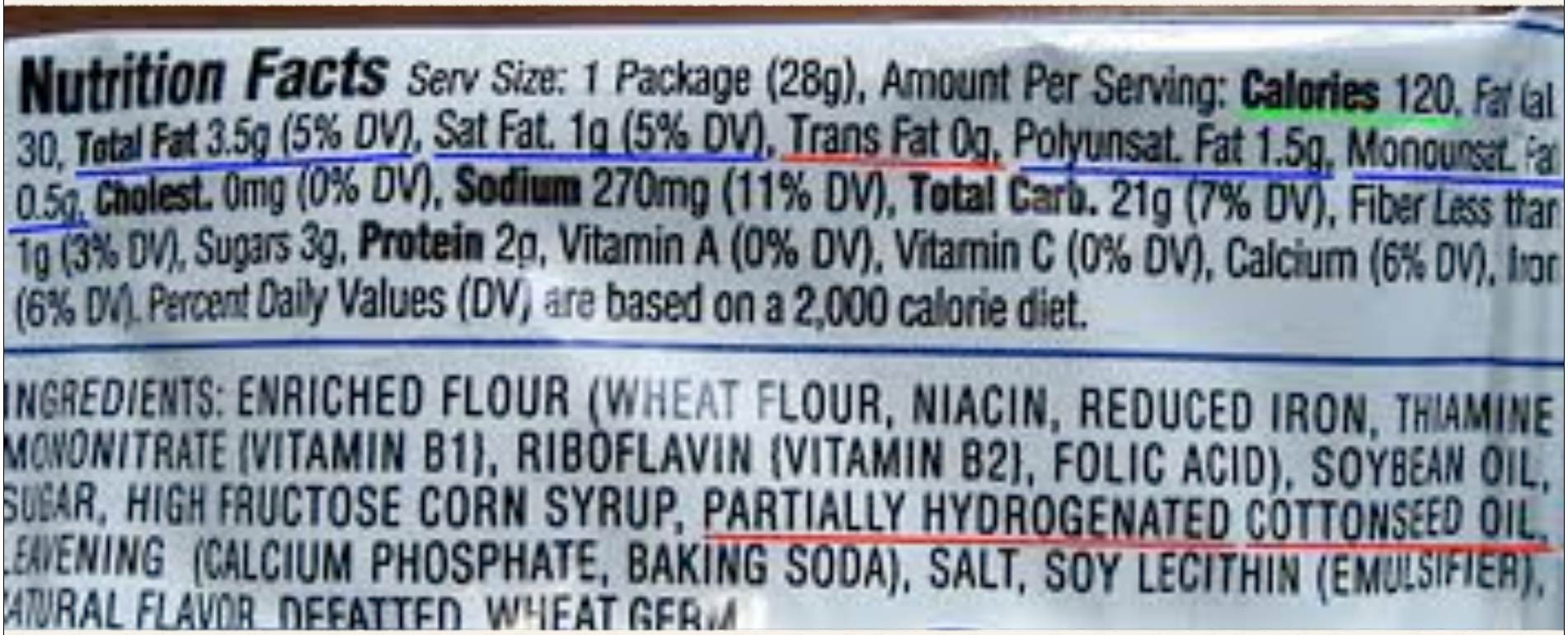
# Reduce Unhealthy Unsaturated Fats

- Often saturated fats are replaced with oils high in inflammatory Omega-6 fatty acids or worse with trans fatty acids.
- Vegetable Oils in Processed Foods: Sunflower, Corn, Soy - Directly cause inflammation and injure tissue
  - High in Omega-6.
  - SAD is about 30:1 (Omega-6:Omega-3). Ideal is anywhere from 4:1 to 2:1


- *Optimal Diets for Prevention of Coronary Heart Disease JAMA. 2002;288:2569-2578*
- *Diet and Cardiovascular Disease Prevention , J Am Coll Cardiol, 2007*

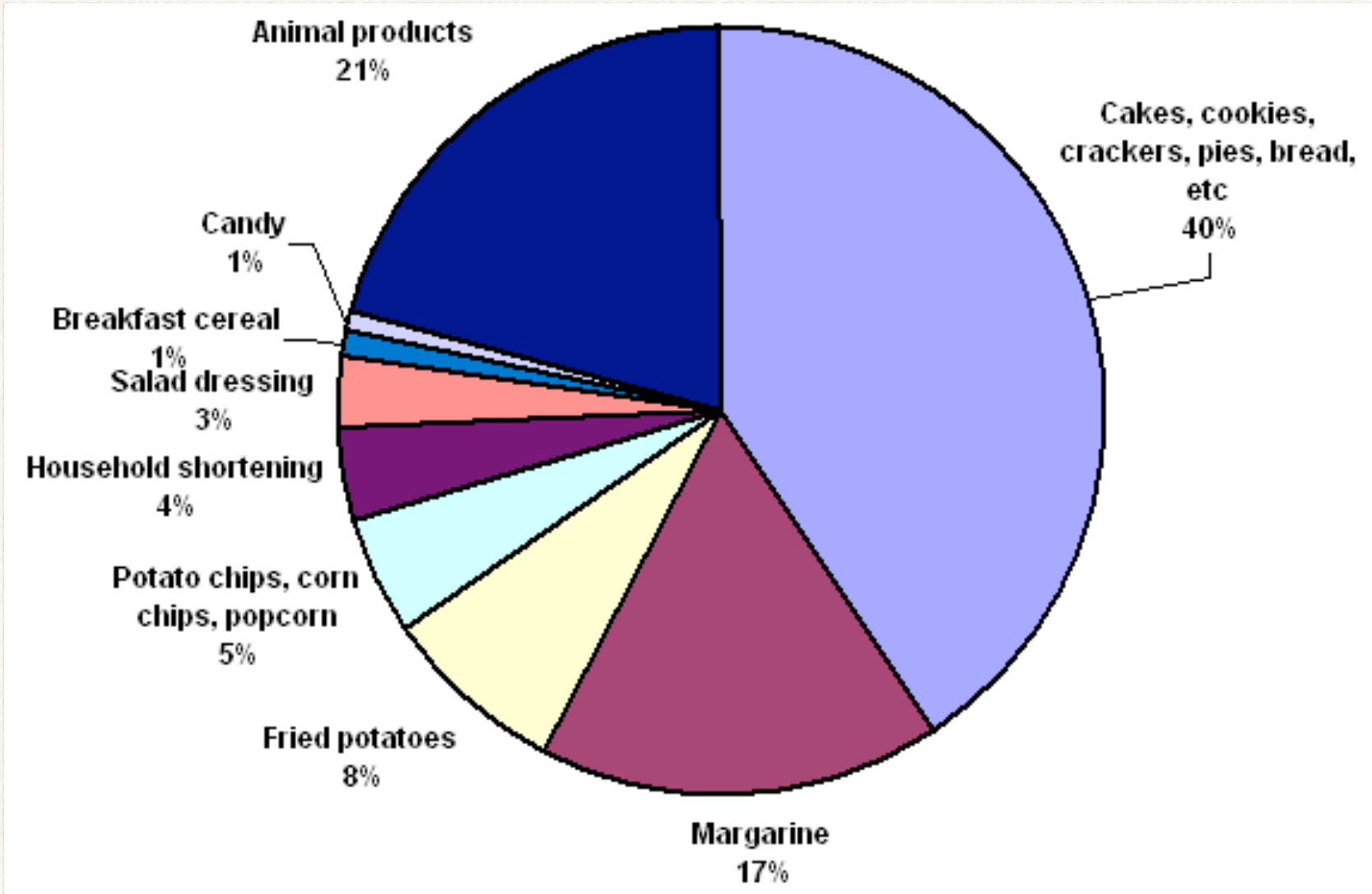
- Or Worse the Saturated Fats were replaced with Trans-Fats……

# Eliminate Processed Foods




Remove any pantry items with the word ‘ hydrogenated’

# Trans Fat Content



# This is not exactly heart healthy. (But yes better than Fruit Loops!)

# Pause…..Recap

- Simple sugars are one of the most common ways to increase inflammation in the body.
- It is important to eat whole grains. Cook your own whole grains is best.
- Many of the processed foods (even though they are 'whole' grains) have lost their nutritional value because of processing. Loss of important phytonutrients and antioxidants.
- For most people some saturated fat is healthy (butter, coconut oil, grass fed meats or wild game)
- Avoid any 'food' that has the word 'hydrogenated' on the label

# Optimal Diets

- "We observed no association between dietary protein and risk of total IHD in this group of men aged 40–75y [at 18 years of follow-up]." *Dietary protein and risk of ischemic heart disease in middle-aged men Am J Clin Nutr 92: 1265-1272, 2010*

- Consumption of fruits and vegetables, particularly green leafy vegetables and vitamin C–rich fruits and vegetables, appears to have a protective effect against coronary heart disease. Each 1-serving/d increase in intake of fruits or vegetables was associated with a 4% lower risk for coronary heart disease. *The effect of fruit and vegetable intake on risk for coronary heart disease. Ann Intern Med. 2001 Jun 19;134(12):1106-14.*

# Mediterranean Diet

- Mediterranean diet reduces inflammation *Mediterranean-style dietary pattern, reduced risk of metabolic syndrome traits, and incidence in the Framingham Offspring Cohort Am J Clin Nutr 90: 1608-1614, 2009*

- "...the Mediterranean diet has been demonstrated to reduce markers of inflammation and to improve endothelial function...Numerous studies have been conducted to help provide dietary recommendations for optimal cardiovascular health. The most compelling data appear to come from trials that tested diets rich in fruits, vegetables, MUFAs, and PUFAs, particularly the n-3 PUFAs". *Impact of Dietary Patterns and Interventions on Cardiovascular Health Circulation. 2006;114:961-973*

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# Mediterranean Diet

- Strong evidence supports valid associations of protective factors, including intake of vegetables, nuts, and "Mediterranean" and high-quality dietary patterns with CHD, and associations of harmful factors, including intake of trans–fatty acids and foods with a high glycemic index or load. *Systematic Review of the Evidence Supporting a Causal Link Between Dietary Factors and Coronary Heart Disease Arch Intern Med. 2009;169(7):659-669.*

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# Mediterranean Diet

- Mediterranean diet is associated with improved heart rate variability comparing twins *Mediterranean dietary pattern is associated with improved cardiac autonomic function among middle-aged men: a twin study* Circ Cardiovasc Qual Outcomes. *2010 Jul;3(4):366-73.*

- Greater adherence to a Mediterranean diet is associated with a significant improvement in health status, as seen by a significant reduction in overall mortality (9%), mortality from cardiovascular diseases (9%), incidence of or mortality from cancer (6%), and incidence of Parkinson's disease and Alzheimer's disease (13%) *Mediterranean Dietary Pattern and Prediction of All-Cause Mortality in a US Population* Arch Intern Med. *2007;167(22):2461-2468.*

# Mediterranean Diet

- "Our data support the hypothesis that a Mediterranean diet (that emphasizes olive oil, fiber, fruits, vegetables, fish and alcohol and small amounts meat/meat products) can be an effective measure for reducing the risk of myocardial infarction. Our results support the exclusion of refined cereals with a high glycemic load as healthy elements of this pattern." *Mediterranean diet and reduction in the risk of a first acute myocardial infarction: an operational healthy dietary score European Journal of Nutrition Volume 41, Number 4, 153-160*

- Mediterranean diet adherence was associated with a significantly reduced CHD risk in [Spain], supporting its role in primary prevention of CHD in healthy populations.
*Adherence to the Mediterranean diet and risk of coronary heart disease in the Spanish EPIC Cohort Study. Am J Epidemiol. 2009 Dec 15;170(12):1518-29.*

# Mediterranean Diet

- Results showed up to 20% less chance of dying from cardiovascular disease or cancer by following a Mediterranean diet. In 70-90 year olds there was 50% less chance of dying if following a Mediterranean diet.

  *Mediterranean Dietary Pattern and Prediction of All-Cause Mortality in a US Population* *Arch Intern Med. 2007;167(22):2461-2468.*

- Imagine if there was a drug that could reduce death rates by 50%!

# What is Mediterranean Diet?


- high consumption of fruits and vegetables
- high consumption of unrefined grains and other cereals, beans, nuts and seeds
- olive oil is staple oil, butter and lard used in small amount
- low to moderate consumption of dairy products, moderate of fish and poultry
- low consumption of red meat
- eggs are consumed up to to four times a week
- low to moderate wine consumption (red is best)

# What is Mediterranean Diet?

- Total fat is 30-40% of total calories. 8% of calories are from saturated fats (olive oil, butter, lard, nuts, seeds, cheese, yogurt, fish, poultry, meat, eggs)
- Carbohydrates make up about 40% (whole grains, beans, nuts, seeds, wine)
- About 20% of diet is protein (fish, cheese, nuts, poultry, meat, eggs)
- *Mediterranean diet pyramid: a cultural model for healthy eating American Journal of Clinical Nutrition, Vol 61, 1402S-1406S*

- OK I hope you get the point that diet has a big influence on heart disease and people do not have statin deficiencies……..

- …but one other thing that is common in populations with low rates of heart disease is that they are active…..

# Exercise!!

- Very clear unequivocal benefits in prevention of cardiovascular disease.
- Hundreds of times more potent than a drug.



- *Role and benefits of exercise in the management of patients with heart failure. Heart Fail Rev. 2010 Nov;15(6):523-30.*
- *Benefits of exercise training in chronic heart failure.Arch Cardiovasc Dis. 2009 Oct;102(10):721-30*

# Foods For Prevention

- Anti-inflammatory foods - vegetables especially brassica family (broccoli, cauliflower, kale, brussel sprouts, collards, turnips)
- Rainbow of vegetables - organic red, yellow peppers, winter squash, sweet potato, beets
- Garlic & Onions
- Fatty Fish, Walnuts, Pumpkin seeds, and Flax Seeds - good sources of Omega-3

# Foods For Prevention

- Cut down or eliminate oils high in Omega-6 such as Corn and Soy (Usually found in processed foods). Use olive oil, small amounts of butter from grass fed cows, unrefined coconut oil.
- Eat lean meats and poultry. Organic meats are preferred if grass-fed not available.
- Nuts - almonds, walnuts, brazil nuts, macadamia nuts, pecans, cashews
- Fruits - blueberries, local fruits in season. Avocados are a great source of fat. Use fruits as dessert.

- OK enough about diet....what about supplements..???

# Supplements- Fish Oils

- Many studies show it helps increase LDL & HDL cholesterol and lower triglycerides.
- Some studies show it prevents heart disease, some are inconclusive. But more benefit than statin drugs alone.


- *Effect of different antilipidemic agents and diets on mortality. Archives of Internal Medicine, Vol. 165, April 2005, pp. 725-30*
- *Docosahexaenoic acid restores endothelial function in children with hyperlipemia. International Journal of Clinical Pharmacology and Therapeutics, Vol. 42, No. 12, 2004, pp. 672-79*


- 1-2 grams per day
- High doses of fish oil (more than 5 grams/day) can actually increase chances of having an 'event'.


- *Fish consumption, fish oil, omega-3 fatty acids, and cardiovascular disease. Circulation, Vol. 106, November 19, 2002, pp. 2747-57*
- *Effect of supplementation with fish oil-derived n-3 fatty acids and gamma-linolenic acid on circulating plasma lipids and fatty acid profiles in women. American Journal of Clinical Nutrition, Vol. 77, January 2003, pp. 37-42*

# Supplements- CoQ10

- CoQ10 is a powerful antioxidant and free radical scavenger.
- Research shows it beneficial in heart disease, heart failure, high blood pressure, and a host of other inflammatory diseases.
- Found in oily fish such as salmon, organ meats (liver) and whole grains.
- Expensive as supplement ($$$) - 200mg/day.
- A must for anyone on statins


- *The emerging role of coenzyme Q-10 in aging, neurodegeneration, cardiovascular disease, cancer and diabetes mellitus. Curr Neurovasc Res. 2005;2(5):447-59.*
- *The effect of conenzyme Q10 in patients with congestive heart failure. Ann Int Med. 2000;132(8):636-640.*
- *Chronic heart failure and micronutrients. J Am Coll Cardiol. 2001;37(7):1765-1774.*

# Supplement -Lipoic Acid

- alpha-Lipoic Acid is a powerful antioxidant that has been shown to help with cardiovascular disease.
- *Wollin S et al, a-Lipoic Acid and Cardiovascular Disease, J. Nutr. 133:3327-3330, November 2003*
- *Smith et al, Lipoic Acid as a Potential Therapy for Chronic Diseases Associated with Oxidative Stress Current Medicinal Chemistry, Volume 11, Number 9, May 2004 , pp. 1135-1146(12)*
- I usually give about 500mg/day, but it is expensive. (not as expensive as CoQ10)

# Supplements - L-Carnitine

- Can sometimes be needed w/CoQ10.
- Helps bring fatty acids into mitochondria of cells.
- Some people may benefit, some may not


- *Kobayashi et al. L-carnitine treatment for congestive heart failure--experimental and clinical study. Jpn Circ J. 1992 Jan;56(1):86-94.*
- *Ferrari R et al, Therapeutic effects of L-carnitine and propionyl-L-carnitine on cardiovascular diseases: a review. Ann N Y Acad Sci. 2004 Nov;1033:79-91.*

# Supplements - Niacin

- Can be effective at raising HDL and lowering LDL.
- Studies have shown effectiveness in heart attack events and risk factors.


- *Canner PL, Berge KG, Wenger NK, et al. Fifteen year mortality in Coronary Drug Project patients: long-term benefit with niacin. J Am Coll Cardiol. 1986 Dec; 8(6):1245-55.*
- *McKenney J. New perspectives on the use of niacin in the treatment of lipid disorders. Arch Intern Med. 2004 Apr 12;164(7):697–705.*


- Can get flushing, but there are ways to prevent it.
- However certain populations should not use (hx of liver disease, gout, ulcers)
- Best under the guidance of a healthcare provider. Niaspan is the prescription.

# Vitamin D

- Get your vitamin D levels checked. 25(OH)D. Current recommendation is minimum between 40-60 ng/ml.
- Supplement appropriately, divided doses through day is best. Can be from 400-5000IU/day depending on levels
- Thousands upon thousands of studies that show inflammatory diseases have a strong correlation with low vitamin D levels.

# Magnesium

- Magnesium may be of benefit to some. Recommended is ~ 500mg/day
- Best forms are Magnesium citrate or a chelated form.
- *Peacock et al, Serum magnesium and risk of sudden cardiac death in the Atherosclerosis Risk in Communities (ARIC) Study. Am Heart J. 2010 Sep;160(3):464-70.*

# A Good Multi Vit/Mineral

- In general a good multi vitamin/mineral is advisable.
  - *Dietary Intake and Coronary Heart Disease: A Variety of Nutrients and Phytochemicals Are Important. Tucker KL.. Curr Treat Options Cardiovasc Med. 2004 Aug;6(4):291-302.*
- Look for one with 'mixed-tocopherols' for Vitamin E
- Natural Folate is important. (rather than just folic acid)
- Chelated minerals
- B12 best source is methylcobalamin

# A Good Multi Vit/Mineral

- If your vitamin use any of the following it is inferior:
  - any artificial ingredients such as food coloring (FD&C) then you can bet it is inferior.
  - Calcium Carbonate
  - dl-alpha tocopherol

# I Hope I explained ...

- The majority of people on statin drugs do not need them.
- High cholesterol is not a disease, nor a good indicator of using statins to prevent heart disease.
- CVD and CHD are inflammatory diseases. Not caused by high cholesterol.
- Best way to control inflammation is through diet.
- Best proven diet for prevention of inflammatory disease is the Mediterranean diet.
- There are supplements that may be useful to prevent and possibly treat different forms of vascular and heart disease.

# THANK YOU!!!