

The Cholesterol Conundrum

"IT IS THE INFLAMMATION STUPID"

"And do not be conformed to this world but be transformed by renewing your mind that you may prove what is good and acceptable and perfect, the will of God."

- Romans 12:2

CONUNDRUM

- a confusion or difficult problem
- a puzzle or riddle.



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Cholesterol The Building Blocks of Human Tissues

Cholesterol: What's its purpose in life? UPS!

Our bodies are made of water (70-80%). Our bodies' structure is made of proteins!

How do we transport fat in water plus regulate our cell membranes?

Our brains are mostly fat 60% or more AND HAS 25% cholesterol of body.

Brain SYNAPSES use mainly cholesterol .

YOU ARE YOUR BRAIN AND NEURONS!

History of Cholesterol

1950's - Dr Ancel Keys PAPERS

Theory - Fat and cholesterol cause heart disease, circulating LDL/ Lipids in plaques in the blood. Fatty streaks in soldiers 17 yo.

Friday Jan 14, 1977, Sen. George McGovern Senate, select committee of nutrition, and Human Needs Dietary goals for the US.

Dr Keys Lipid Theory of Low Fat/ Cholesterol

High Sugar diet and Refined carbs ↑ obesity.

"Rancid Vegetable oils" - "High Fructose Corn Syrup" of the 80s

LDL - Oxidized

"Sugar damaged protein labels"

Advanced glycation end products (AGEs) are a group of proteins and lipids that form when sugars react with other substances in a non-enzymatic process. AGEs can be harmful and are linked to a number of health issues, including: Diabetes

AGEs are common in the blood vessels of people with diabetes and contribute to the development of atherosclerosis.

body is unable to use fats/lipids with Fat-starved cells

↑obesity waistline

"Badly labeled packages cannot be delivered"

↑ LDL, ↓ HDL

Go to storage as visceral fats

Cholesterol Does Not cause heart disease!!!!

Innocent bystander only

"It is not overproduction but lack of consumption." Sugar damaged AGE

"Advanced Glycation End Products"

So oxidized and damaged LDL is all that counts for CVD/arteriosclerosis

"Sugar-damaged Proteins"

Fructose - 10 x More reactive than glucose

"↓ **Ghrelin receptors**". (Satiety Hormone) ↑ obesity

Hg A1C → damaged RBC's Hgb protein

Mevalonic Acid chain blockage with statins

↑ Na⁺ leakage; ↓ATP ↓energy

Single-cell VS Multicellular Organisms - Complex Structures

Need Bi-lipid membrane for complex organism reactions

Outer layer hydrophilic water loving; Inner large Lipid

Controls integrity of cell walls and electrolyte gradients

Cell casing → support contents

Flexible, Strong, Changing, Dynamic

Cholesterol in its Natural form is not harmful

Butter melts at room temperature

From Natural saturated fats → to sugar
carbs, vegetable oils, trans fats HFCS

20% of all mammal's cell wall is made of cholesterol.

Cholesterol needed for Sex hormones Estrogen, testosterone, progesterone, including adrenal hormones Cortisol, Aldosterone and Calcitriol/ Vit D.



Nervous System and Myelin

Insulation and protection

Synapses - cholesterol mediated

Dementia shows ↓ Cholesterol in the CSF

↓ Synaptic genesis and ↓ neurotransmitters by 10-30%

1977 Framingham Heart Study

Showed TRIG/HDL ratio

most importantly neither LDL or TC levels related to CHD

Dr Atkin's book Diet Revolution in the 1980s

New Mediterranean Diet popular today with monounsaturated fats, nuts, fruits, and veggies

2020s ADD MCT oil, Fasting, Ketosis

TRIALS

4S most famous study (TC/ LDL) had to use relative risk reduction calculation.

0.8% Absolute vs 13 % Relative risk

Anti-inflammatory effect

ENHANCE trial (2008)

Zocor 80 mg vs Vytorin (+Zetia)

IMPROVE-IT (2015) ezetimide After MI

↓ LDL but no clinical Difference or Reduction in mortality

Cholesterol is an innocent bystander drawn into Plaque

Inflammation is the cause! Like blaming the first responder for the fire/accident

Jupiter 2003

Justification for the use of statins in primary Prevention/ Intervention

Rosuvastatin (CRESTOR) studied very strong STATIN

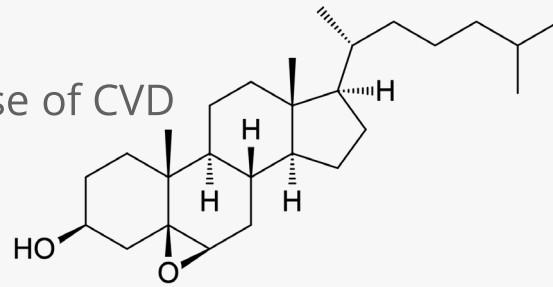
Patients had ↑ HS-CRP with NO history of CHD (INFLAMMATION)

How statins actually work!

History and TRIALS

Dr Kilmer McCully 1960's

Homocysteine found in 40% cause of CVD



Oxycholesterol or 5,6-epoxycholesterol is a form of oxidized cholesterol implicated in atherosclerosis. It is commonly formed from the reaction of fats and oxygen during high temperature cooking such as frying.

Smoking

Most heart attacks had normal cholesterol 140-180

Dr Atkins Diet Revolution 1972

Dr Dean Ornish 1980's reversing heart disease with fruits and vegetables

Dr Paul Dudley White

1950s Cardiologist to President Eisenhower 1955

Started Cardio 1921 - 1928 First Heart attack

Margarine/Corn oils to blame

Changed Omega 3/6 Ratio from 1:1 to 10-20 - 30: 1

1:2 acceptable > 1:6 Pathology

Penned animals cornfed ↓ omega 3 with ^ omega 6

↑ cancer risk

Arrhythmias

Behavior/emotional problems

Cholesterol Panels Phenotype

Pattern A

LDL- statins work here only

Triglyceride buoyant /fluffy

TRIG/HDL ratio 2:1

↓ VLDL

↓ HS-CRP

HGBAIC < 6.0

(-) Lpa

(-) Homocysteine

(-) APO – B

Pattern B

LDL- statins not effective on oxidized LDL

Small dense, oxidized (damage)

↑ CVD TRIG/HDL > 4:1

↑VLDL

(+) ↑HS-CRP

(+) APO-B

(+) Lpa (genetic)

↑Homocysteine

(Vitamin Deficiency)

↑ HGB AIC >6

Cholesterol Panels Phenotype

Treatment plan for Pattern B

- 1- weight loss: ↑ activity level/lose weight
- 2- ↓Sugars/Bad Fats ↓ Carbs
- 3- DMI II control ↑ fiber/omega 3

Types of Cholesterol

Total Cholesterol

LDL Low density lipids

HDL High density lipids

lipoproteins lipids + proteins

VLDL Very Low-density lipids /Triglycerides

Non-HDL

Independent Risk factors (CVD)

Other Risk Factors

1- APO - B100 (<100)

Genetic factor Apolipoprotein

(Covering of cholesterol molecule)

(key to recognizing molecule in cell membranes)

Tx: improve Omega 3 Ratio, Increase Fiber

Mono unsaturated Fats

lower sugar/trans fats

2- Homocysteine Genetic/Acquired

low Vit B6, B12, Folate (B9) levels > 15 ml

most inflammatory molecule > 40% responsible

CVD/atherosclerosis essential amino acid

Homocysteine → cysteine /methionine other causes

EtOH abuse, PPI's, Hypothyroid, MTHFR mutation

3- Lp(a) (LDL like substance) > 30

90% genetic mutation oxidizes intima of artery causes

accelerated CVD causes thrombus atherogenesis

- Treatment Niacin ↓ 25% and COQ 10 ↓ 40%

- Statins ↑ Levels

STATINS HMG COA Reductase Inhibitor

1- Decrease TC + LDL Variable about 40%

(type + dose-related) ↑ receptor liver cell (LDL) increases reuptake lowers healthy LDL only

2- Anti-inflammatory inhibits NF-KB (Nuclear Factor Kappa B) ↓ Immune System function anti-inflammatory

Monocyte adhesion

Macrophage recruitment

Smooth muscle migration

Platelet aggregation

↓Thrombin formation

CVD risk reduction all across the board

used in organ transplant for immune suppression

3- Decrease COq10/Inhibition

3. Mevalonic Acid blockade

↑Nat gradient leakage and ↓ATP + Energy

By age 40 you need CoQ10 supplementation

Most common food source heart muscle meat like chicken hearts

Myalgias weakness and CHF heart Problems

Mitochondrial damage

4- Dolichol inhibition

endoplasm reticulum

DNA repair/rapid aging

Psychological side effects Aggression, Addiction, Hostility

5- Decrease Glial cell cholesterol production

dementia, Amnesia (Total Global Amnesia)

Short term memory problems

ALS type symptoms

6- Decrease myelin production/protection

↓ Synapse/Neuro transmitter function

40% cholesterol in Myelin

MS risk ↑ MRSA infection skin barrier breakdown

7- increase ↑ 10-25% DMII after Tx

8- ↑ Cancer Risk (NF-kB)

Lung, Colorectal ,ovarian cancer

Proper +Japan studies increase cancer outweighed statin benefit

STATINS TREATMENT RISK Reduction

Relative Risk

One group compared to another

30% ↓ Heart attack

14% ↓ Stroke

Absolute Risk 0.8% -1.3%

(Overall Death, MI, STROKE)

ALTERNATIVES TO STATINS

1- VITGAMIN E STATIN LIKE EFFECT: lowers LDL

2- Alpha Lipoic Acid ALA anti-inflammatory

3- Magnesium, Vit D3/ K2 ↓ cytokines as in COVID19 also

4- Red Yeast extract natural (Mevacor) can still cause mild myalgias at high doses (↓ CoQ10) and Fatigue

5- Coq10 antioxidant in mitochondria

6- Vit C antioxidant on free radicals lowers HGA1C levels naturally

Formulations for Reducing Oxidized LDL Triglycerides Increasing HDL

Red yeast, Chromium TRAACS,
MicroActive CoQ10, Gugu lipids, Niacin B3.

ALA, Cinnamon, Chromium,
Vanadium, B3, B6, B12



**Circulation Assist , Nitric oxide
Booster , (only gas nutrient)
Sexual health / ED**



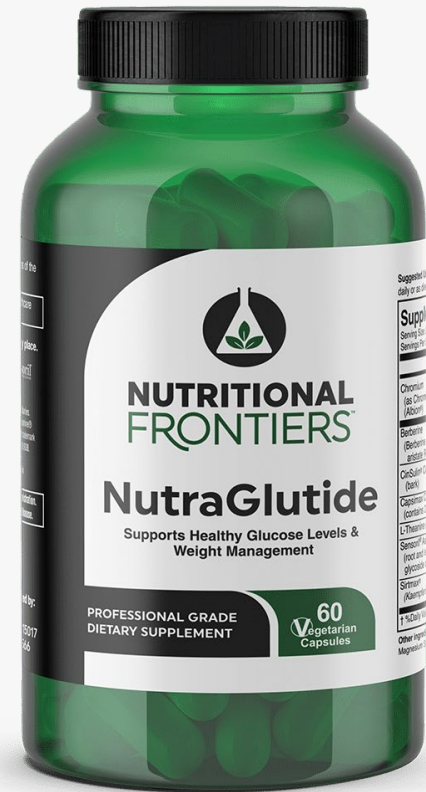
**Protein shake 20gm/scoop
Vegan Protein, Fibersol-2, MCT oil**



**Relieves inflammation
(Omega 3 based)
Pathogenesis of many diseases**



**Reduces inflammation and glucose
levels: berberine, Cinnamon,
Chromium, Cinsulin, Ashwagonda,**



**Anti inflammatory hormone D3
with K2 and Magnesium
vascular repair and damage control**

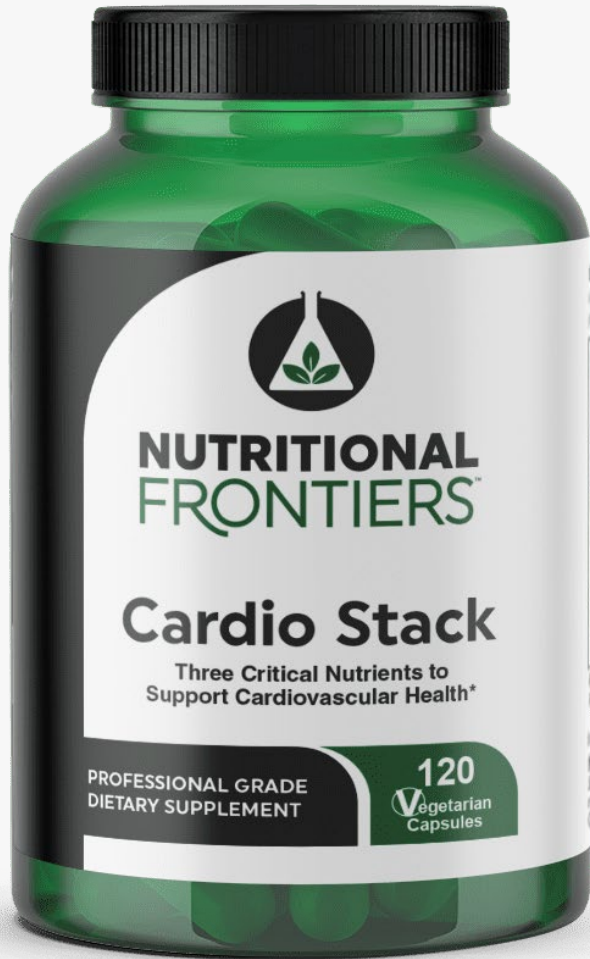


**B3 and B5 lowers Triglycerides
and LDL Inflammation also B12**



Cardio support

CoQ10, L carnithine, DMG Adaptogen



DMG and CoQ10 Anti inflammation

Vit E ; helps Gum Disease, and Oxygen utilization



CASE STUDY #1

TC 240 Afebrile

LDL 159 BP 130/84 P 72

HDL 61

HGBAIC 5.5 ≈ Glu 108

Lpa < 30N Homocysteine < 15 N

APOB100. 80 N

55 yo HM nonsmoker, active, social ETOH

No Fam Hx CAD, DMII, or stroke

CASE STUDY #2

TC 202 Afebrile

LDL 130 BP 140/105

HDL 34 P 88

TRIG 320 HGAIC 6.5 ≈ 130 glu

Lpa 50 H Homocysteine 19.2 H

APOB100 132 H

42 yo WM smoker, No ETOH + coffee/caffeine
and soda

likes sweets/carbs; low exercise

avoids meat, butter, milk



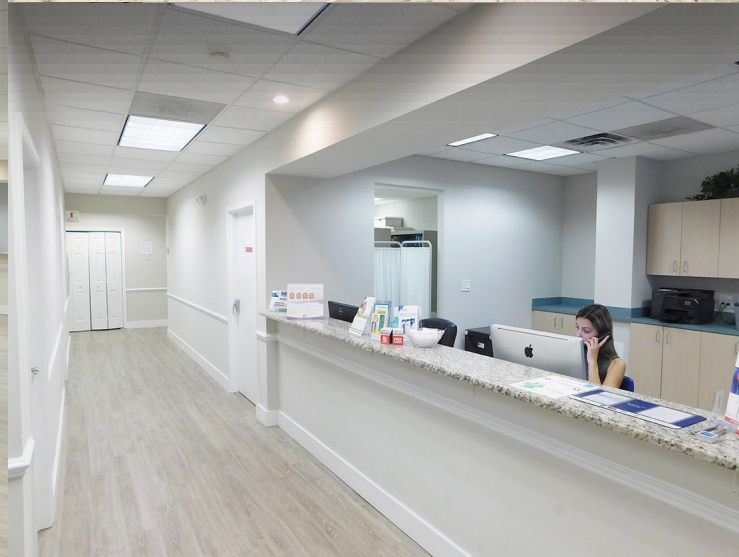
QUESTIONS?

Case Studies



Dr. Silva's Ultra Wellness

For more information: 954 943 9670



THE END

Thank You

