

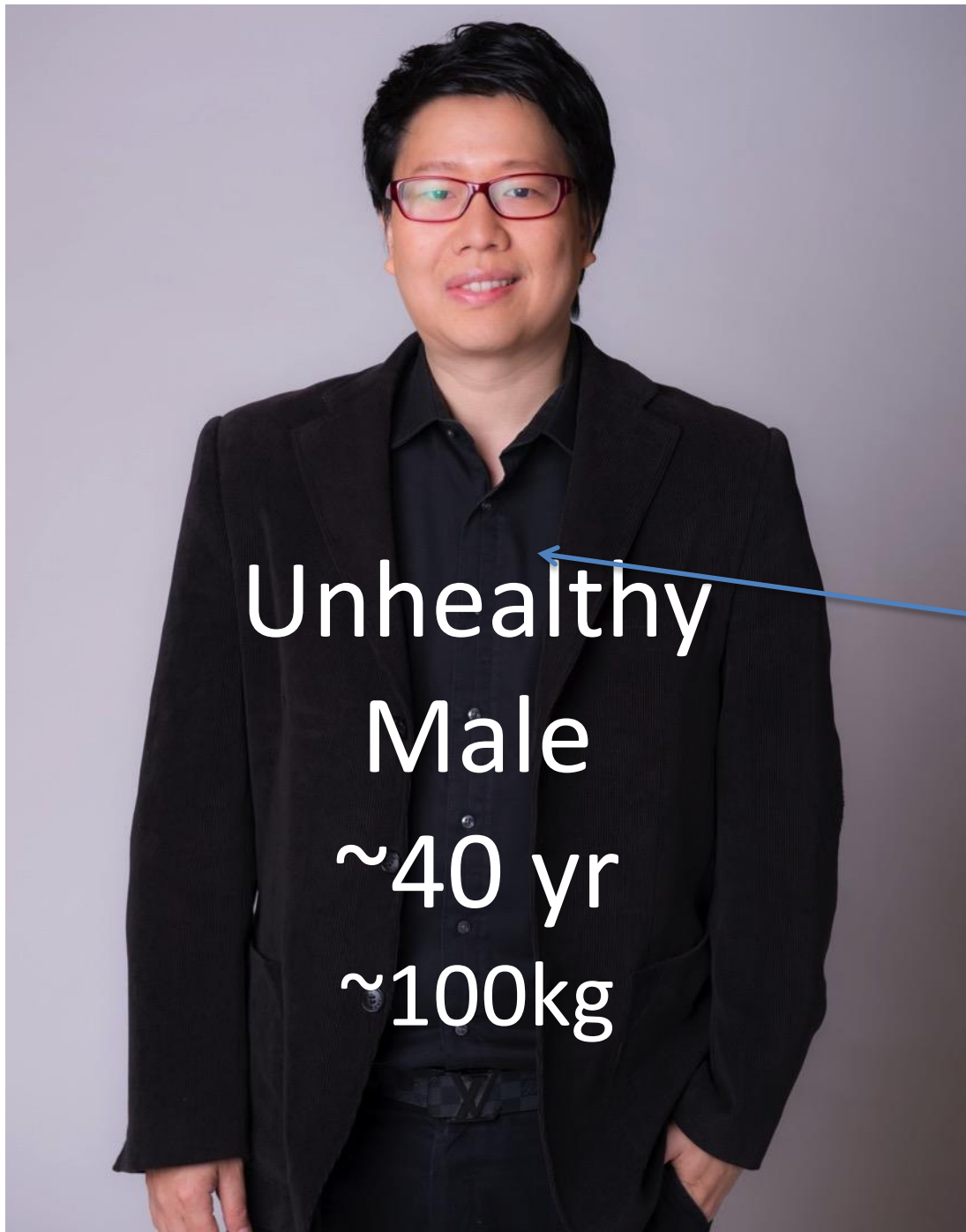
Health 4.0

Dr. Jay Jootar

19 September 2017

Our Modern Fate





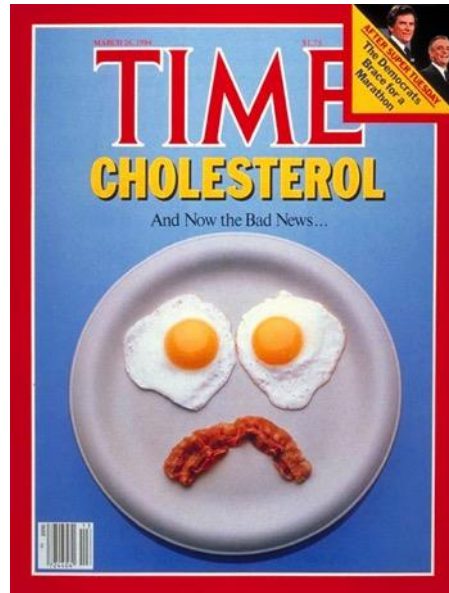
Unhealthy
Male
~40 yr
~100kg

Always wearing
black shirt to
conceal the truth

Insanely Confused



1961



1984



1999



2014

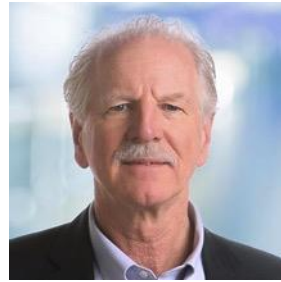
New Health Paradigm



Jeff Volek



Jason Fung



Stephen Phinney



Ken Sikaris



Andreas Eenfeldt



Robert Lustig



Jeffrey Gerber



Peter Attia



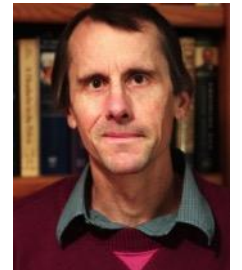
Eric Westman



Mike Eades



Sarah Hallberg



Mark Mattson



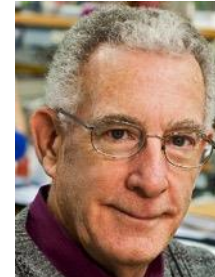
Gary Fettke



Tim Noakes



David Unwin



Thomas Seyfried



Ron Rosedale



Ivor Cummins

The Root Cause

The real culprit unveiled



"YOU CAN'T HANDLE THE TRUTH"



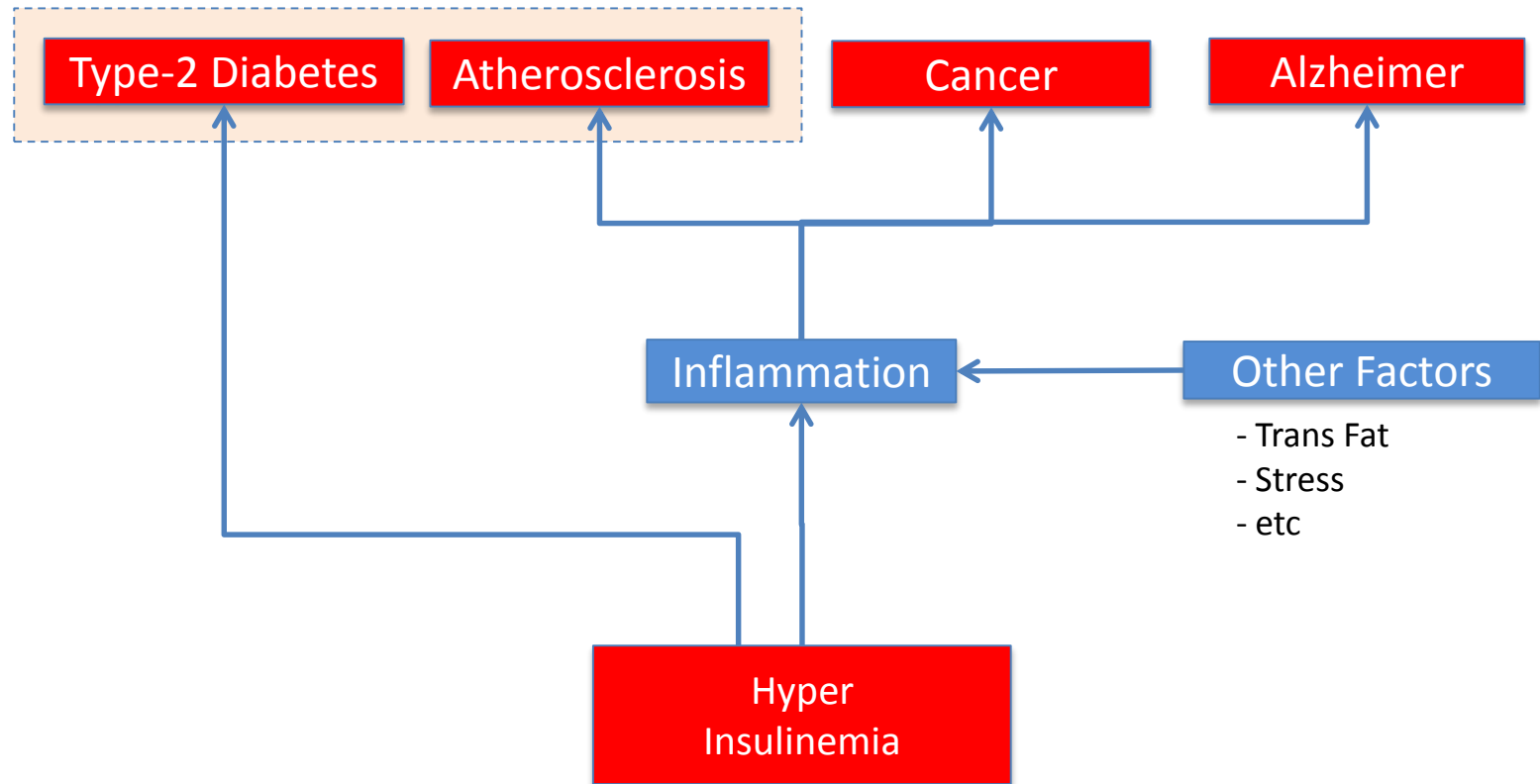
"We just followed the orders, Sir"

INSULIN



Cholesterol

Hyperinsulinemia underlies most modern diseases



Body = Hybrid Engine



**Glycogen
(Sugar)**

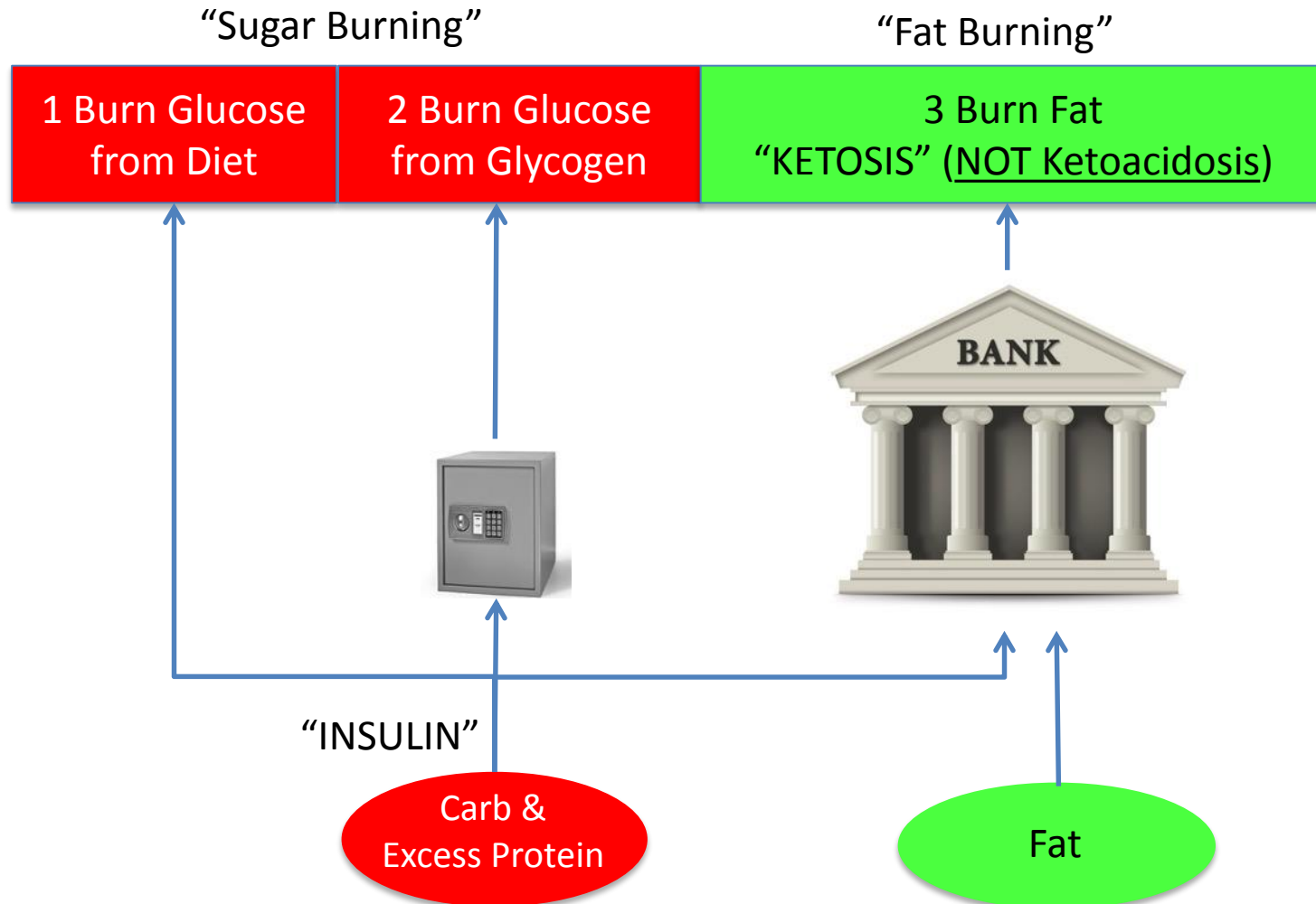
Always used First



**Triglyceride
(Fat)**

Only used if Glycogen is depleted
and insulin is not present

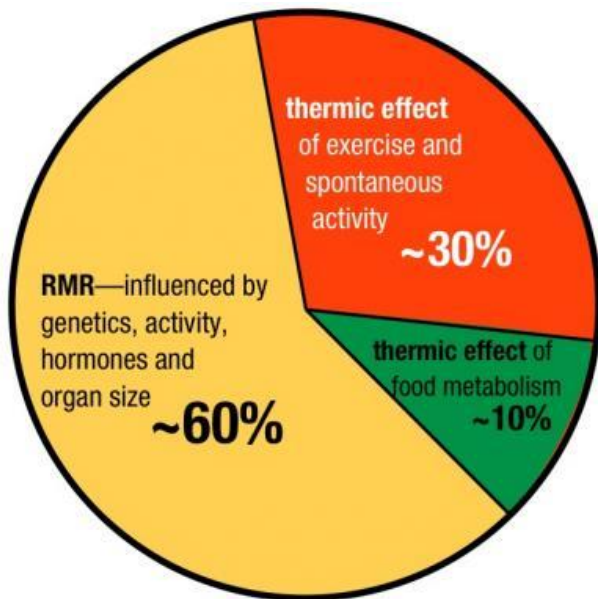
Sugar Burning vs Fat Burning



Insulin & Obesity

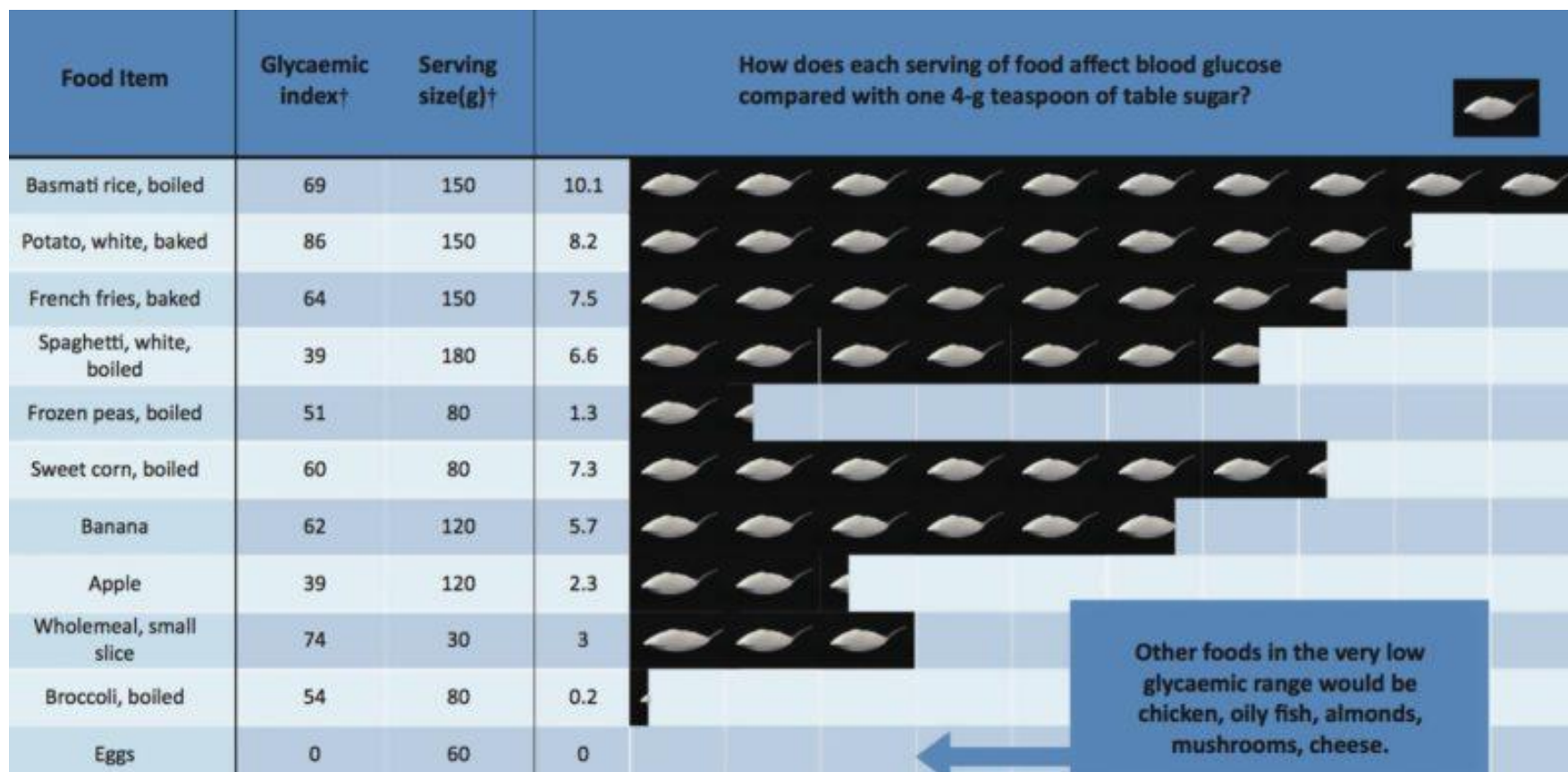
Resting Metabolic Rate
“Keeping us alive”
burns most energy

High insulin switches to “Storage mode”,
reduces the resting metabolic rate longer
and leads to “Obesity”



Glycemic Index

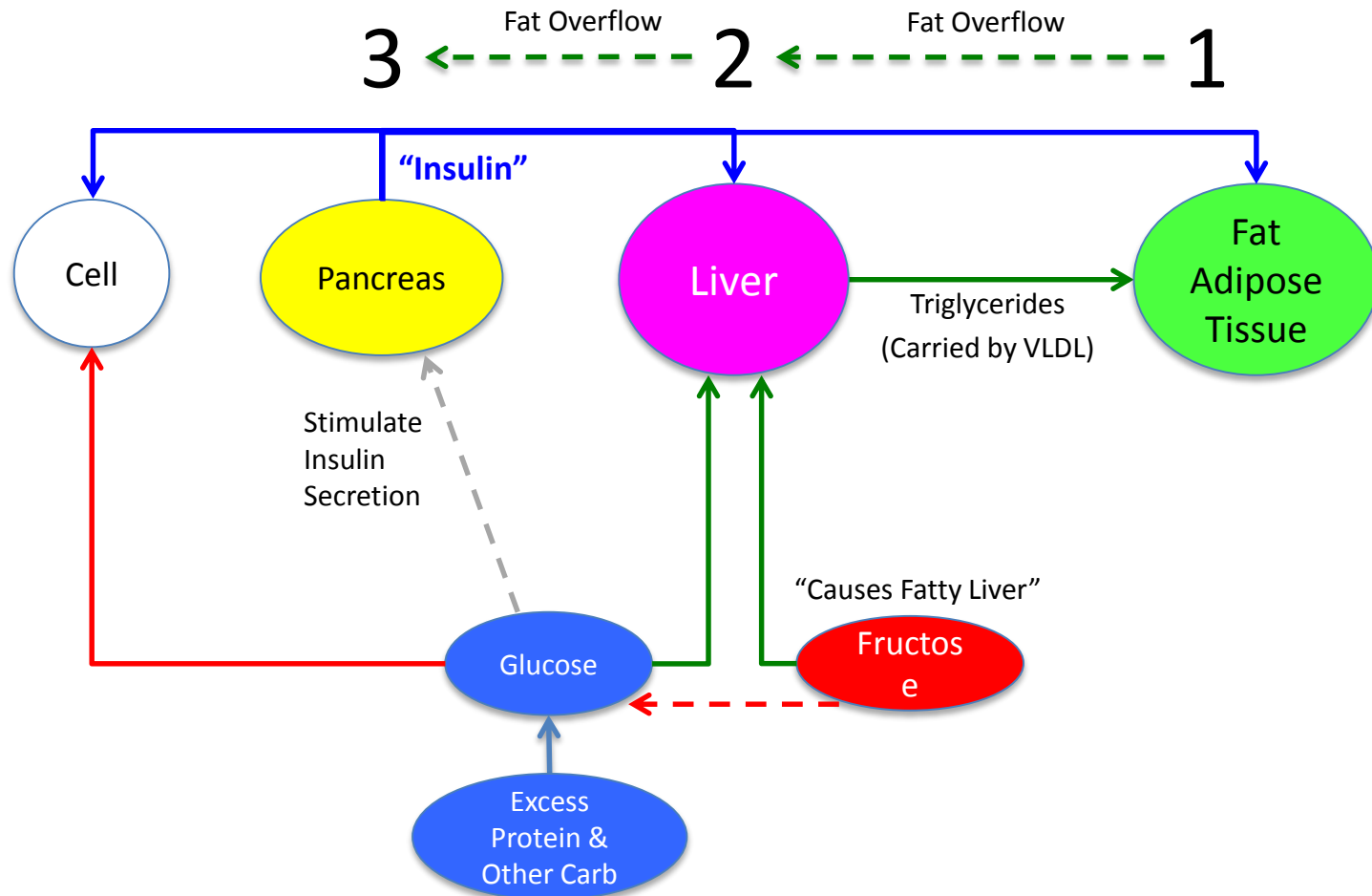
Measures how food affects blood glucose, hence blood insulin



Source: Dietdoctor.com

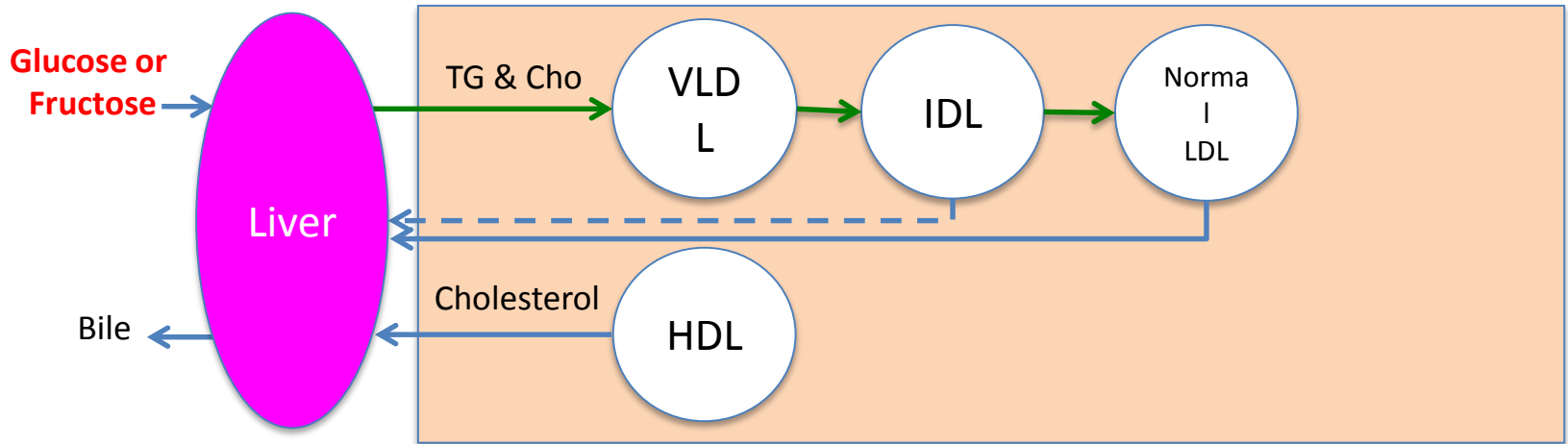
Insulin & Type-2 Diabetes

Type-2 Diabetes is the last stage of Hyperinsulinemia

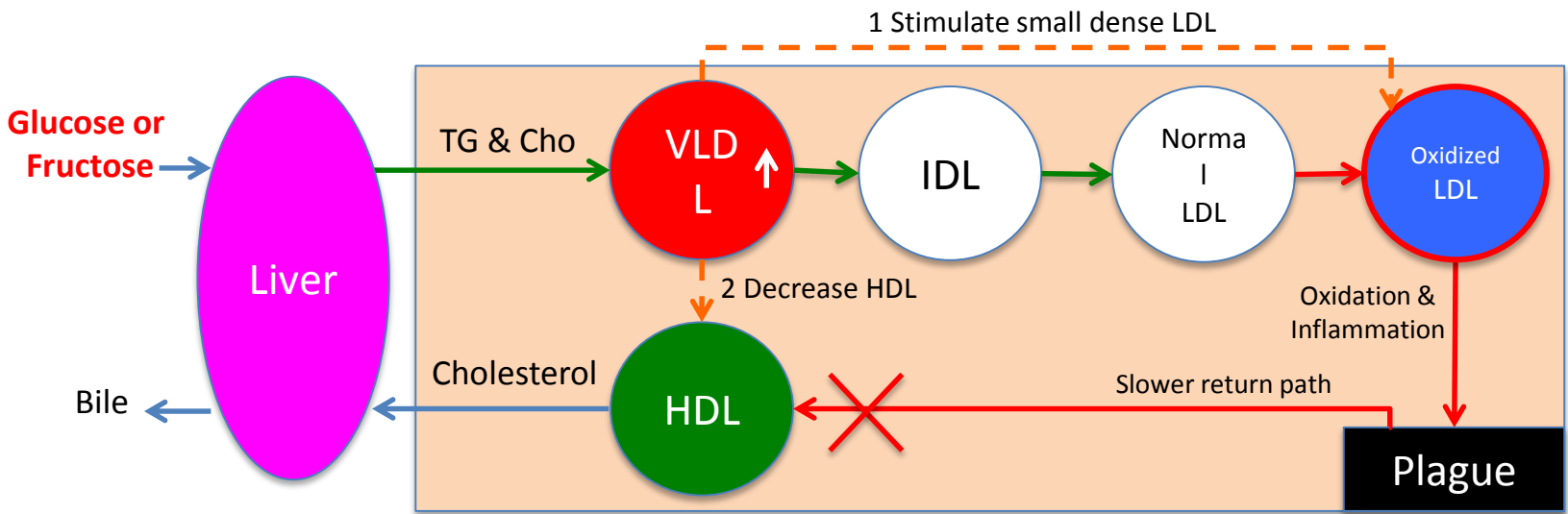


Insulin & Atherosclerosis

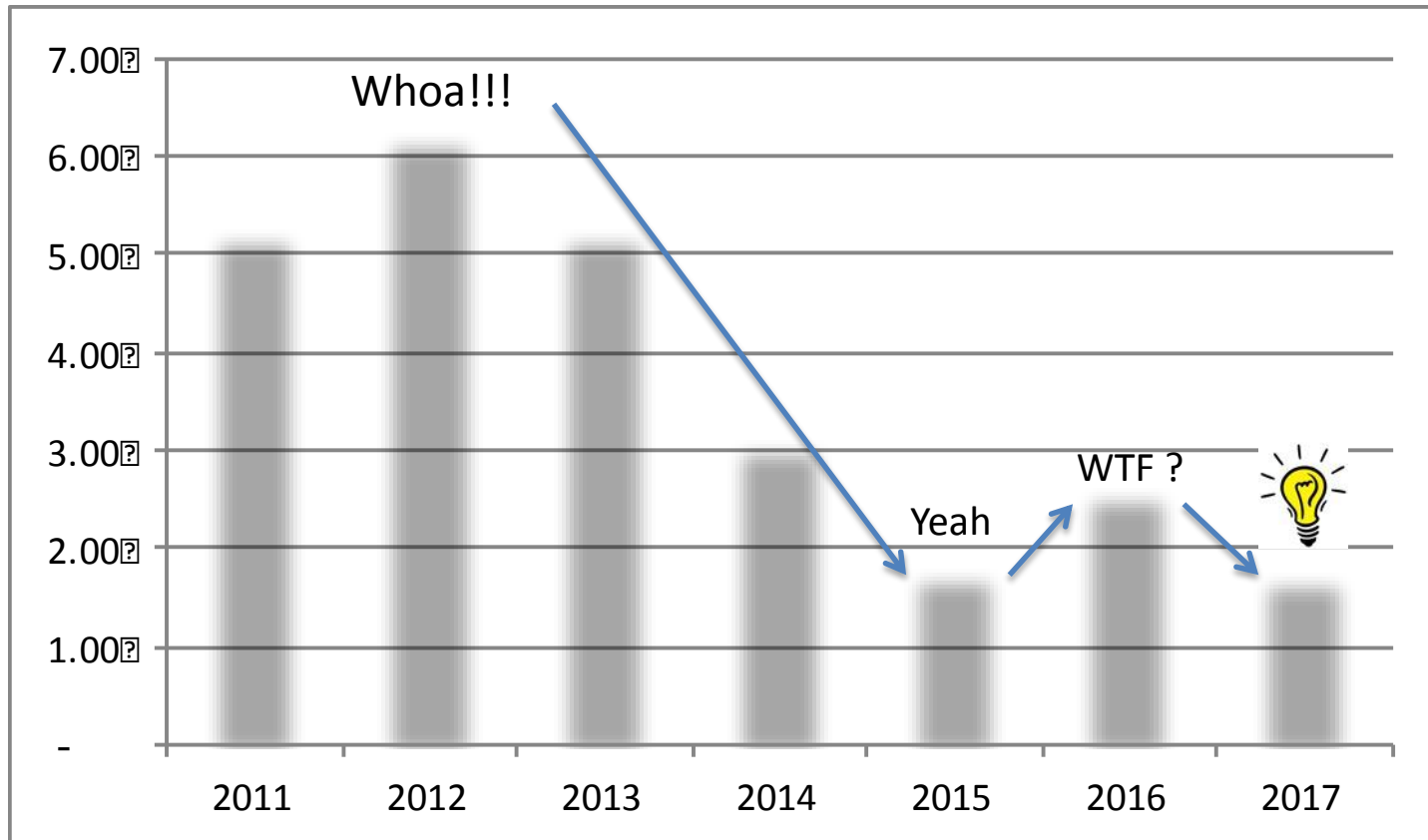
NORMAL



ATHEROSCLEROSIS

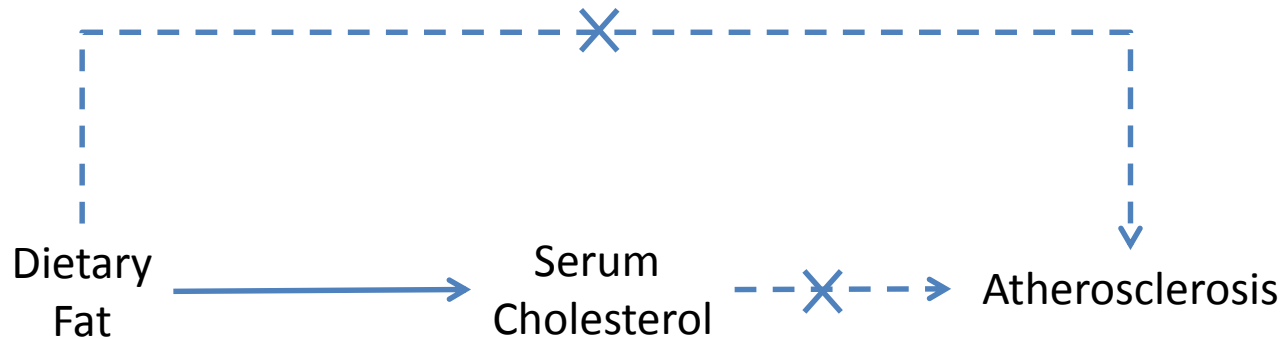


TG/HDL-C



Best Predictor of Atherosclerosis = $\frac{\text{TG}}{\text{HDL-C}}$
from Lipid profile (<2 is good)

Debunking Lipid Hypothesis



- Total Cholesterol? No
- LDL-C? No
- LDL-P? Not quite
- Oxidized LDL-C? LDL-P? Maybe...

Worst problem if you believe the hypothesis

1) False Negative (Low LDL-C leads to complacency)

2) Fear of Fat -> Switch to Carb (which is the real culprit)

Dealing with Type-2 Diabetes & Atherosclerosis

Sugar Burning

High GI Carb &
Excess Protein

->

Hyperinsulinemia

->

Inflammation

->

Atherosclerosis

Fat Burning

Burn Visceral Fat

Burn Excess Fat in
adipocyte to give room
for new fat

Cancer: Warburg Effect



Otto Heinrich Warburg (1883-1970)
Nobel Prize Winner
in Physiology or Medicine (1931)

Discover dysfunctional
mitochondria in cancer cell

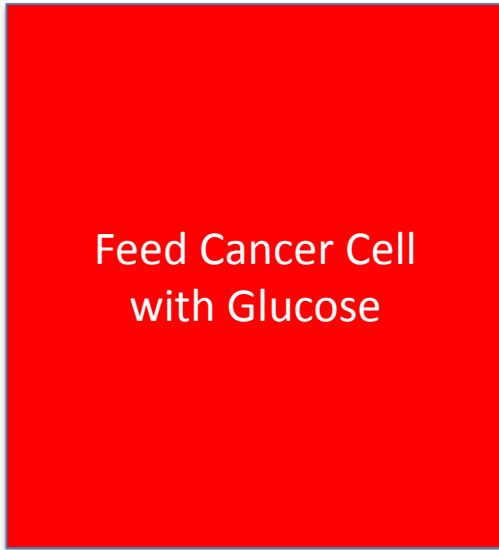
-> Cancer cells can only
metabolize glucose, not fat



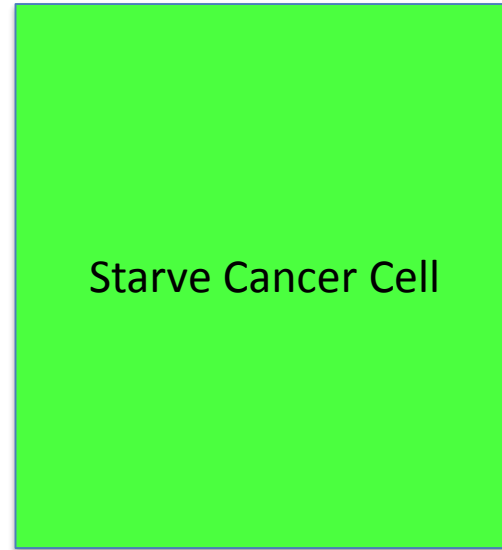
Cancer Cell

Weakening & Killing Cancer

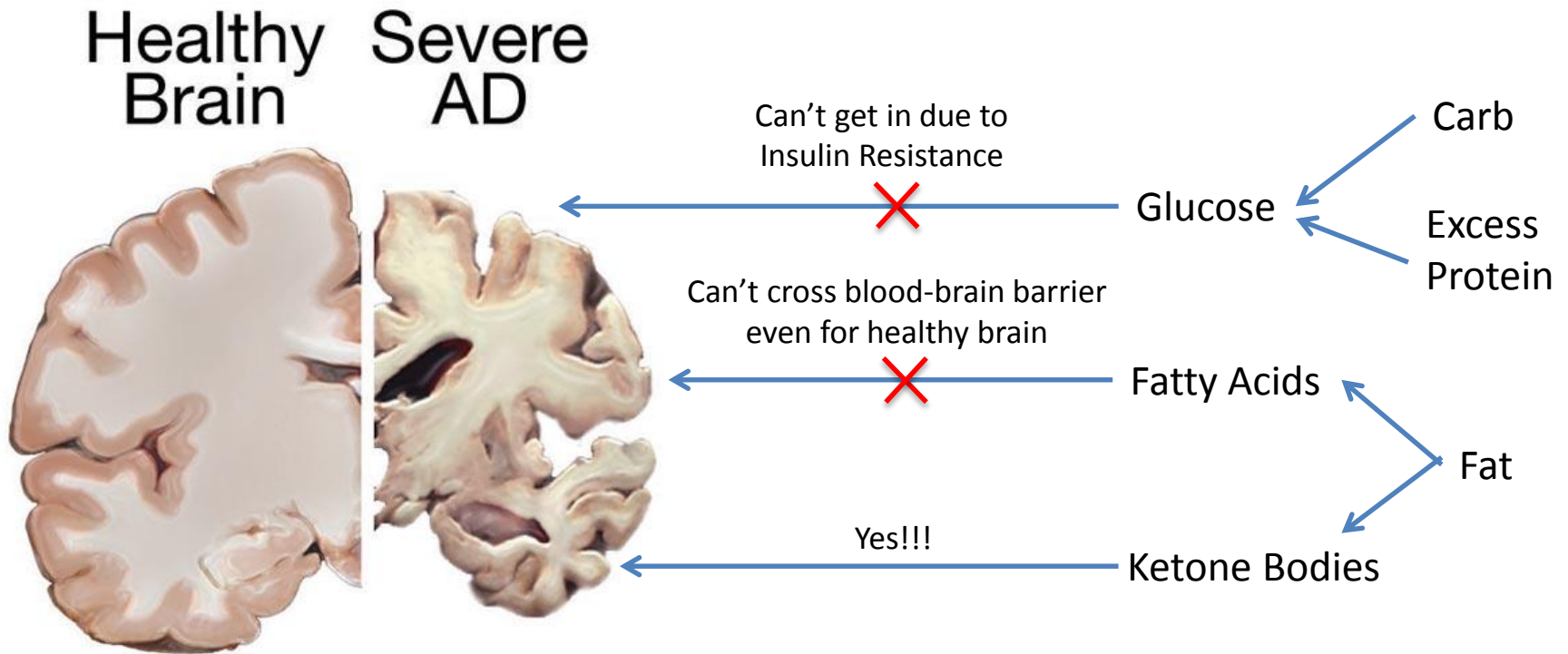
Sugar Burning



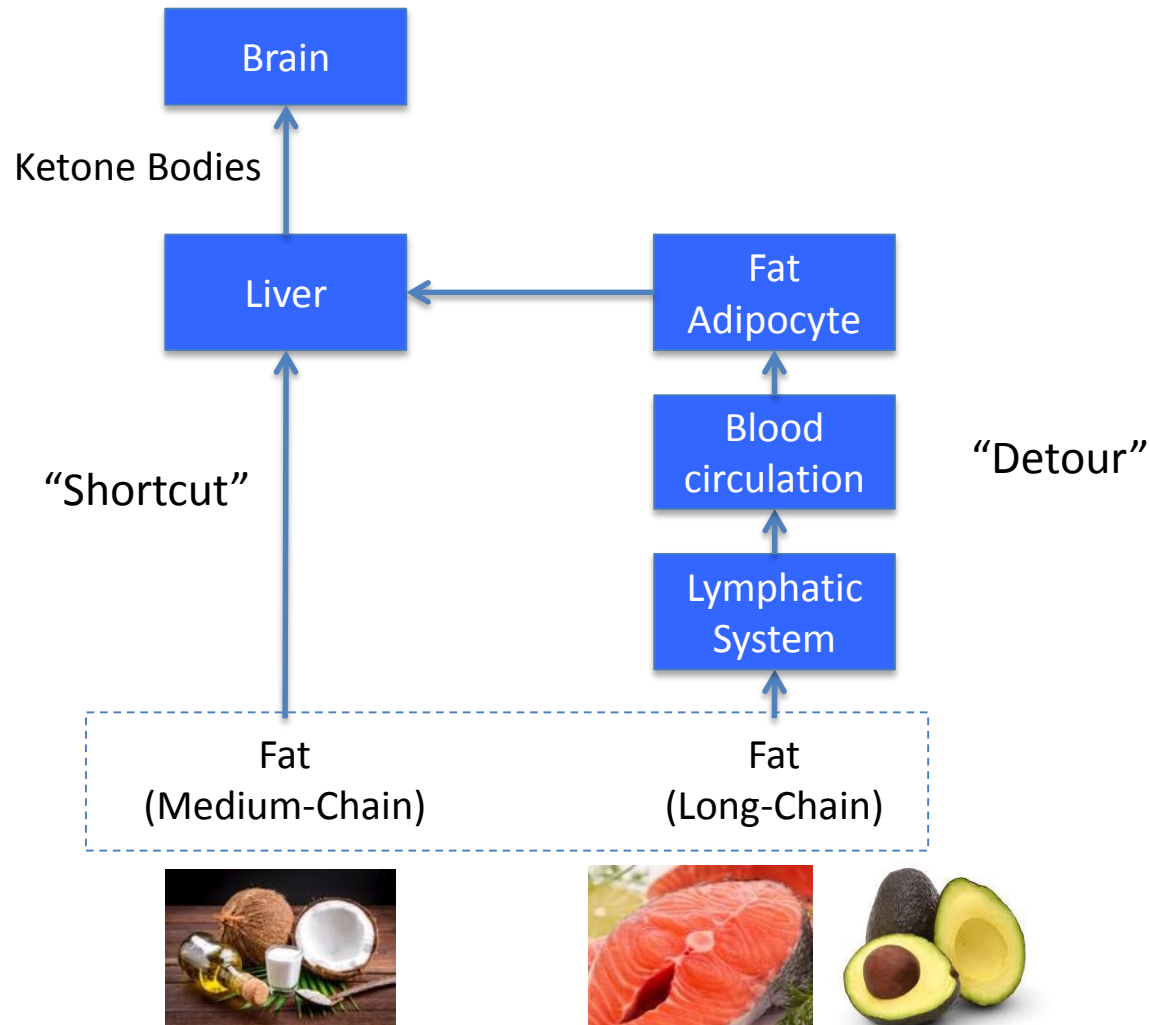
Fat Burning



Alzheimer = Brain Insulin Resistance



Medium-Chain Fat & Ketone bodies



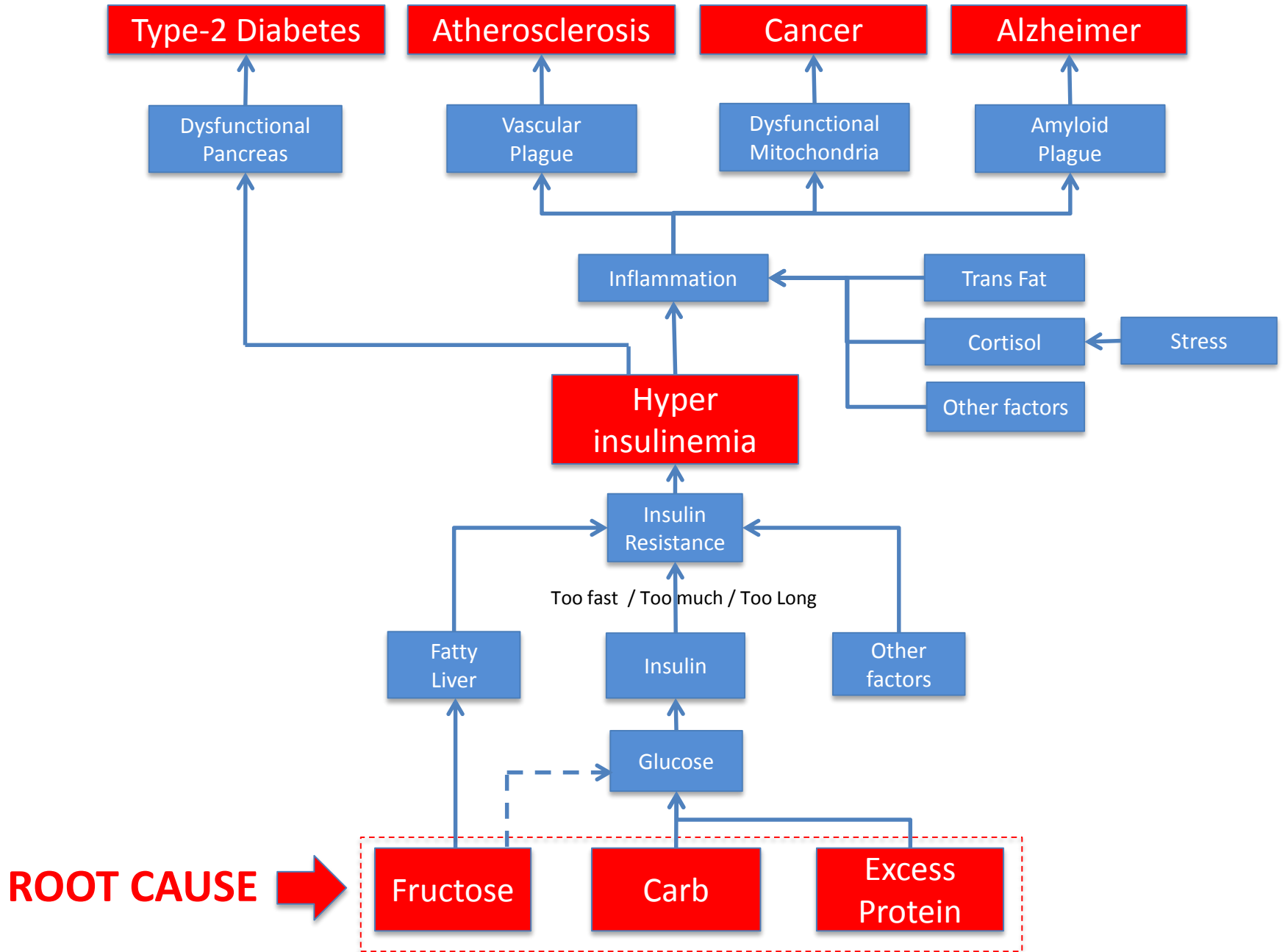
Feeding the Alzheimer Brain

Sugar Burning

Starve
Alzheimer Brain

Fat Burning

Feed Alzheimer Brain
with Ketone bodies



Solution

Evolution?



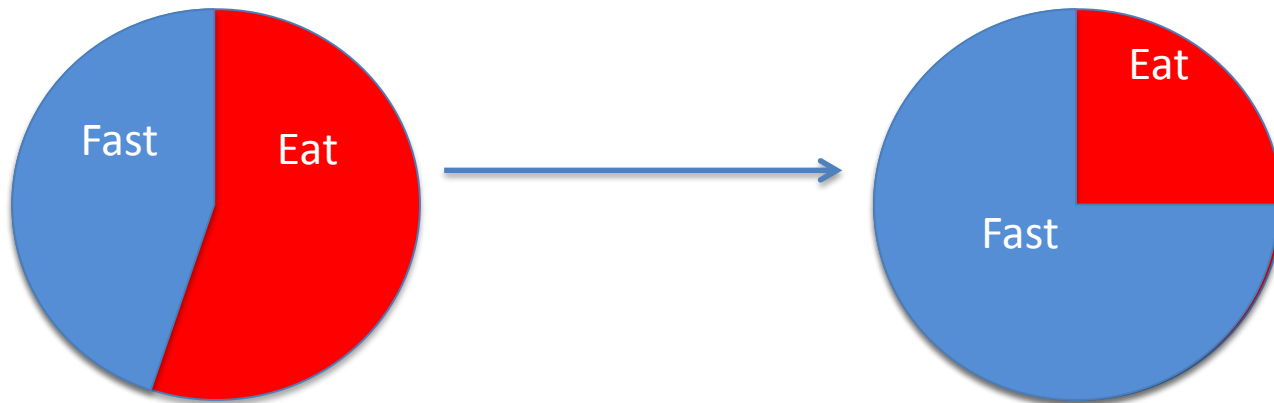
Homo Carbohydrate
circa 42,000 C.E.

Looks exactly like
"Jabba the Hutt"

#1 Stretch the Fasting Time

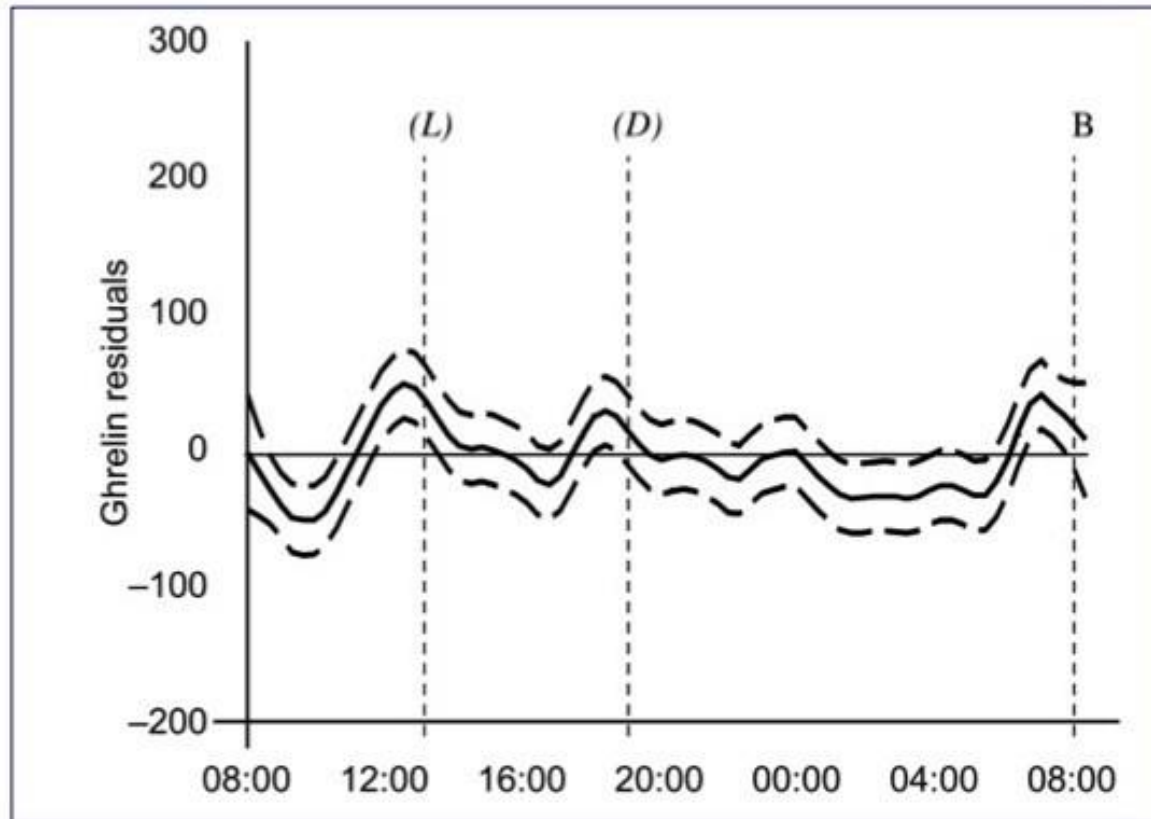
Intermittent Fasting

“Give more time to deplete Glycogen then start burning stored Fat”



Fasting Become Easier Over Time

Ghrelin = Hunger Hormone

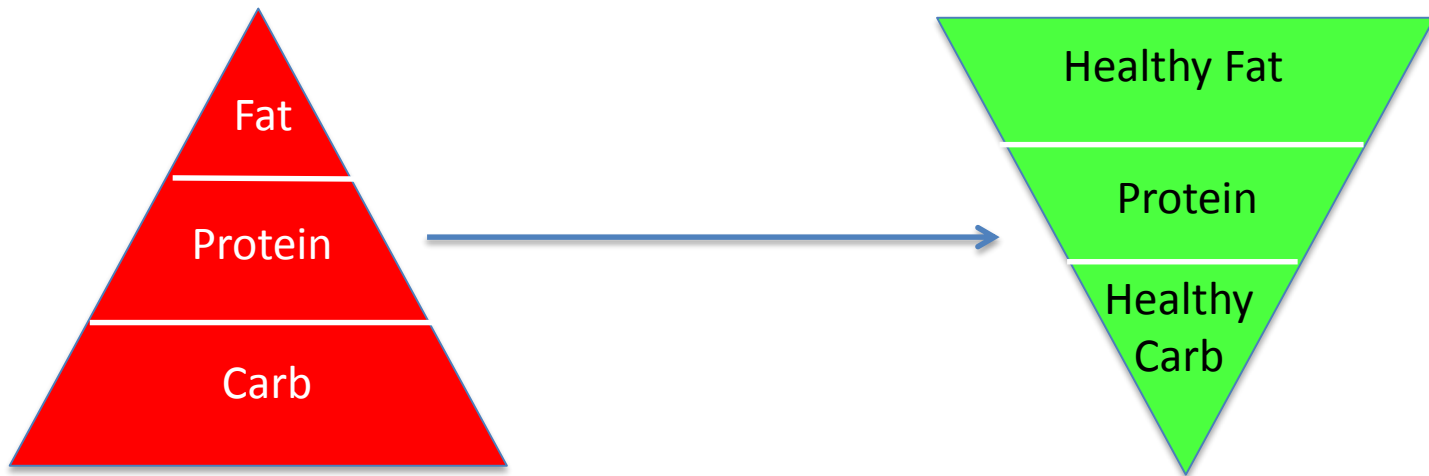


Natalucci G et al. European J Endo 152; 845-850

#2 Reverse Food Pyramid

Low-Carb High-Fat Diet (LCHF)

“Reduce glycogen store to burn fat”



Eat More



Fat
(Medium
Chain)



Fat
(Long
Chain)



Carb
& Excess
Protein



Eat Less

Fructose



Sweden Story



Dr Annika Dahlqvist



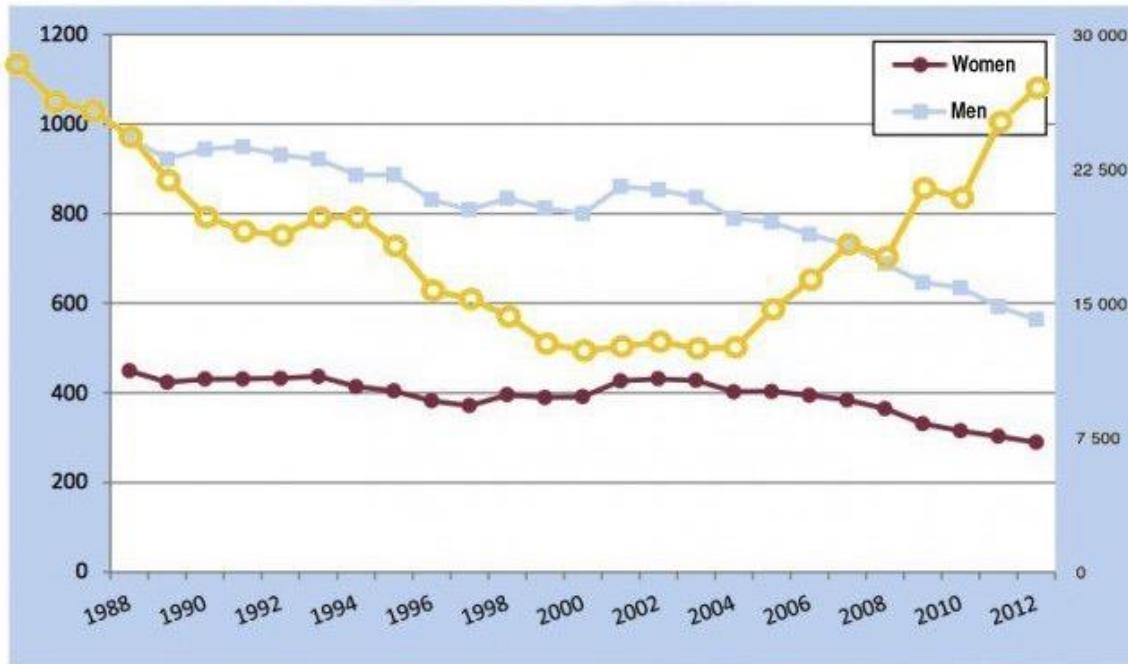
Sweden Becomes
First Western
Nation to Reject
Low-fat Diet
Dogma in Favor of
Low-carb High-fat...

2008 "Tipping Point"



Sweden Butter Crisis

Chart 5. Age-standardized incidence rates of acute myocardial infarction, per 100,000 population, 20 years old and older, gender and age, 1988-2012.



Dietdoctor.com

○ Butter consumption in Sweden, metric tons

When did we start eating Carb?

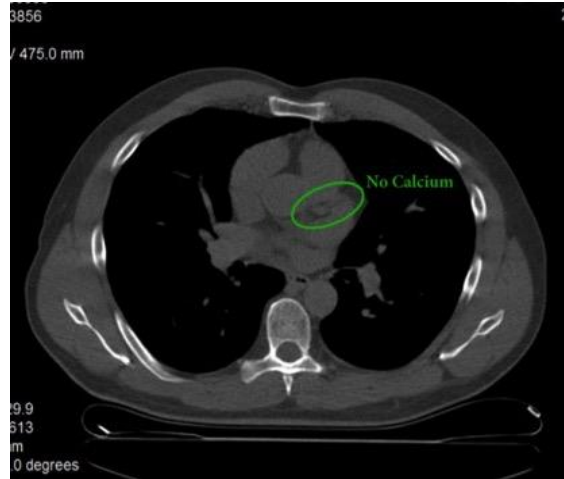


Healthcare Opportunities

Medical Testing



Glucose/Insulin
Tolerance Test



Calcium Score



Always-on Blood Test?

Primary Care



Primary Care



Telemedicine

Medical Research



Prohibitive Cost for
Typical Medical Research

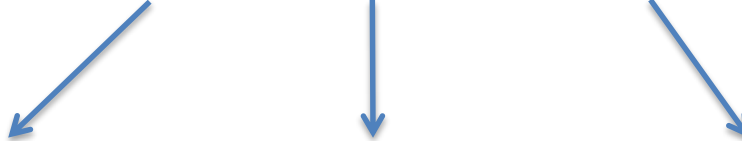


300k intermittent-fasting
monks in Thailand

Agriculture

Opportunities

Shift of Species



Coconut and Palm



Avocado



Fatty Nuts
(Almonds, Macadamia, etc)

Software Paradigm for Agriculture



iPhone



Android



Thailand

Soil as "OS"
for Agriculture

Key Steps

Library

Instruction

Execution

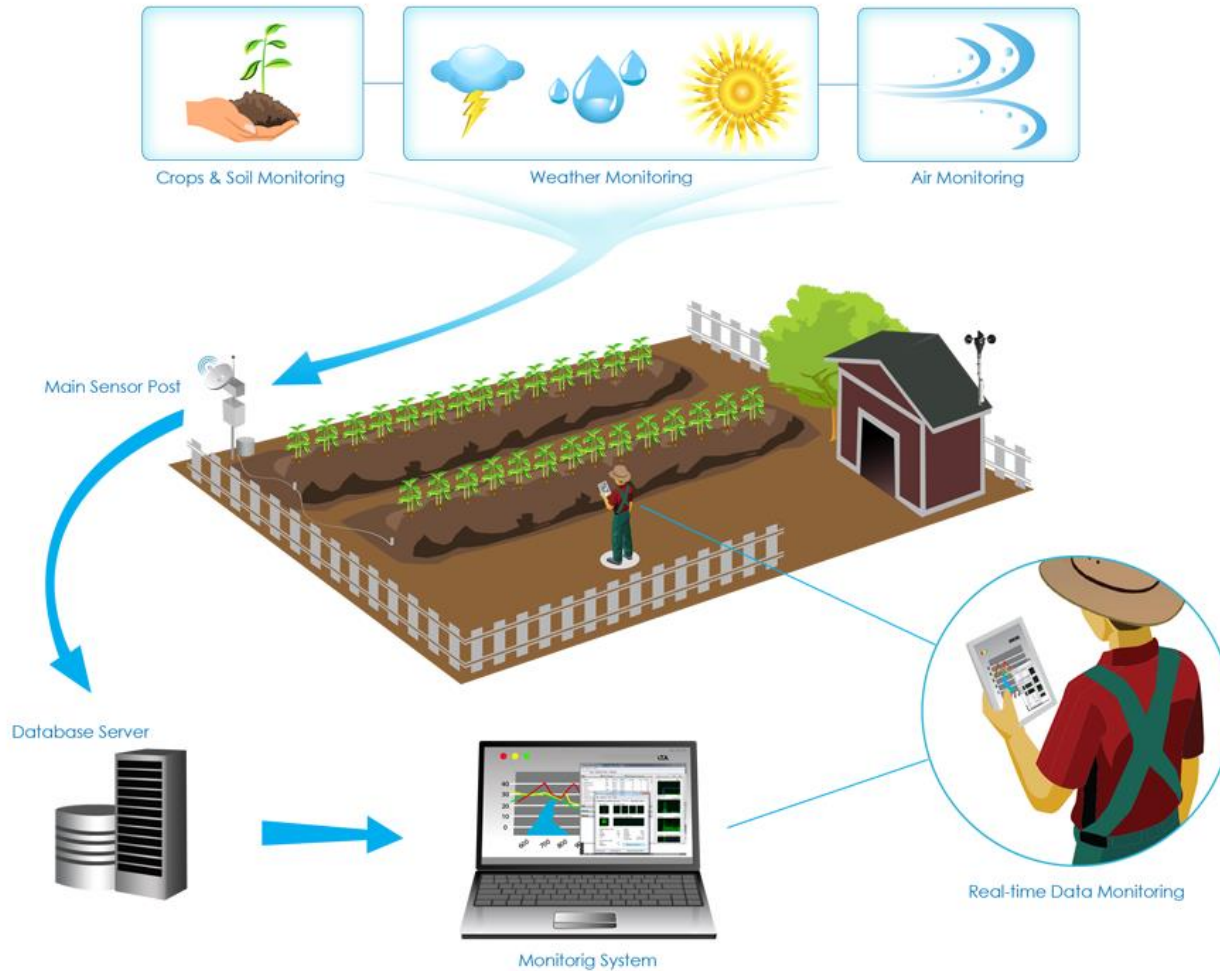
Software



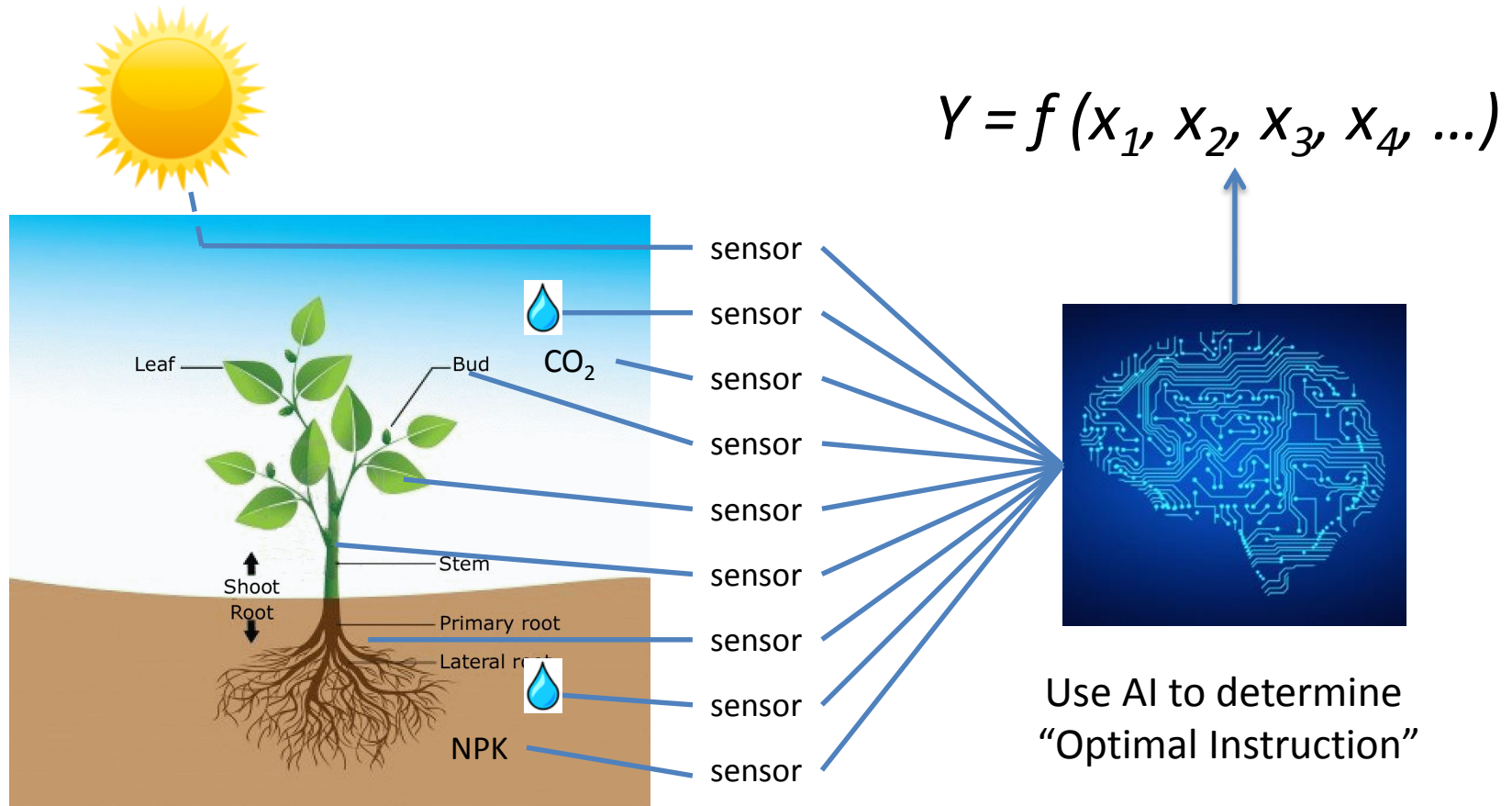
Agriculture



Smart Farming: Execution



Machine Learning: Instruction





Food Opportunities

Cooking & Smart Kitchen



Cooking creates human race



Cooking will save human race

Food processing

How to replicate “Sexiness” of Grain-based Food?



Crispness



Elasticity

Healthy National Cuisine



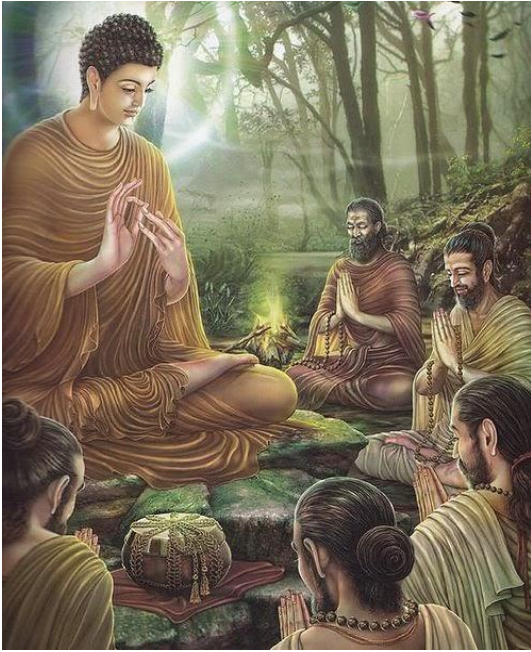
Mediterranean Cuisine



LCHF Thai Cuisine ?

Closing Thoughts

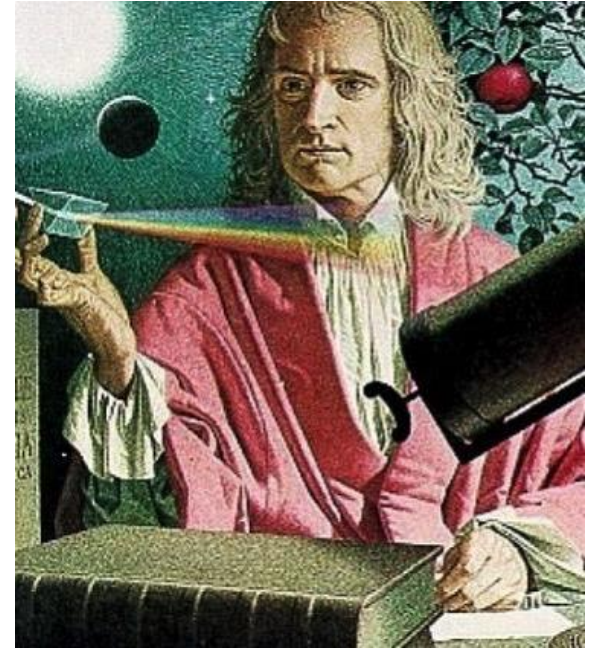
Critical Thinking



Kalama Sutra



Flat World Paradigm

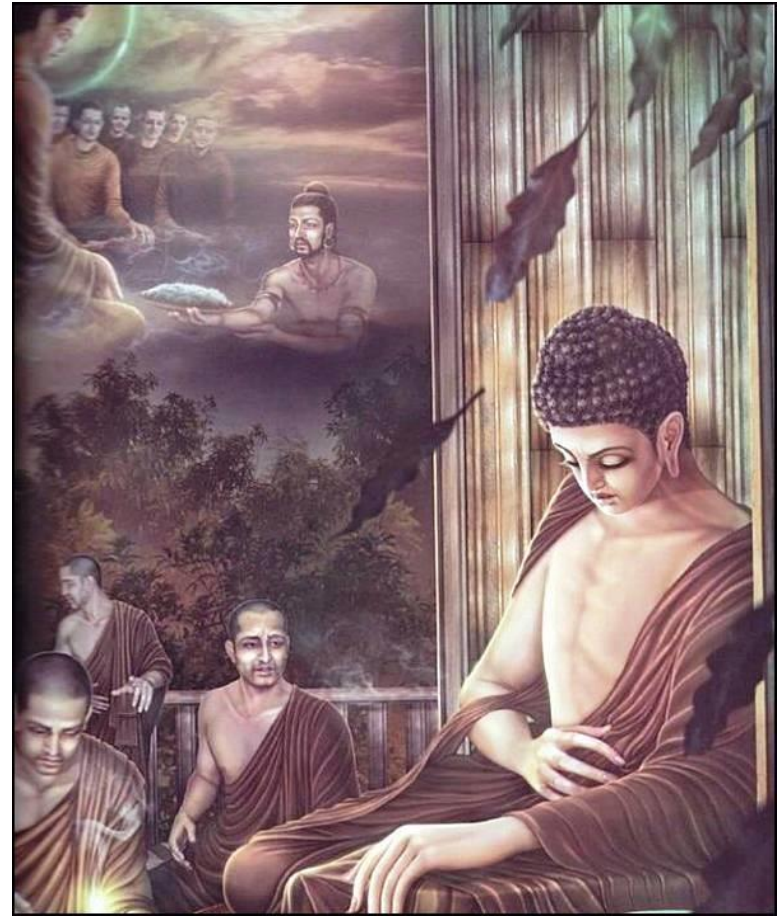


Scientific Revolution

Meaning of Life



Qin Shi Huang Di
& Search for Eternity



Buddha's Last Meal