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# PALM OIL NUTRITION

Consumer Perception: Where we are and where we *should* be

People are fed by the **Food Industry** which  
pays almost no attention to **health**...



...and treated by the **Health Industry**  
which pays almost no attention to **food**.

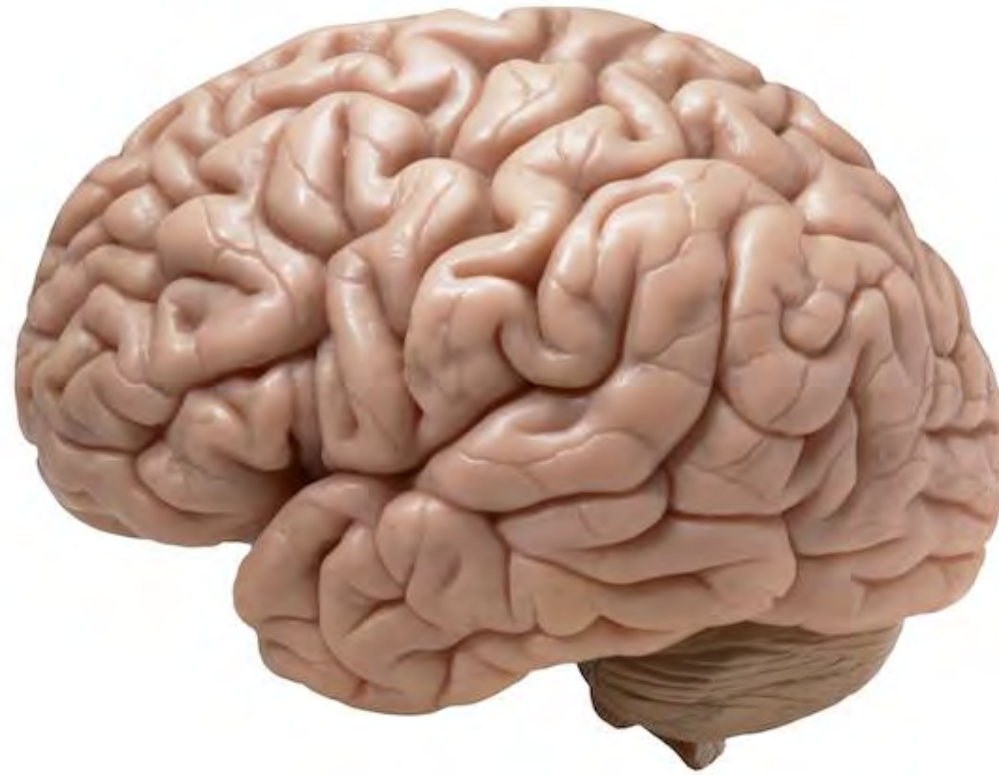
# Twinkies



# Espresso



# Brain Power



# Tetanus



# First Car





# Reality

Twinkies expire after 25 days

Standard cup of coffee > espresso

Brain neuronal activity at any given time is about 10%

Tetanus comes from *C. tetini*, not rust

First car invention: Karl Benz



# MISCONCEPTIONS

# READ ALL ABOUT IT!

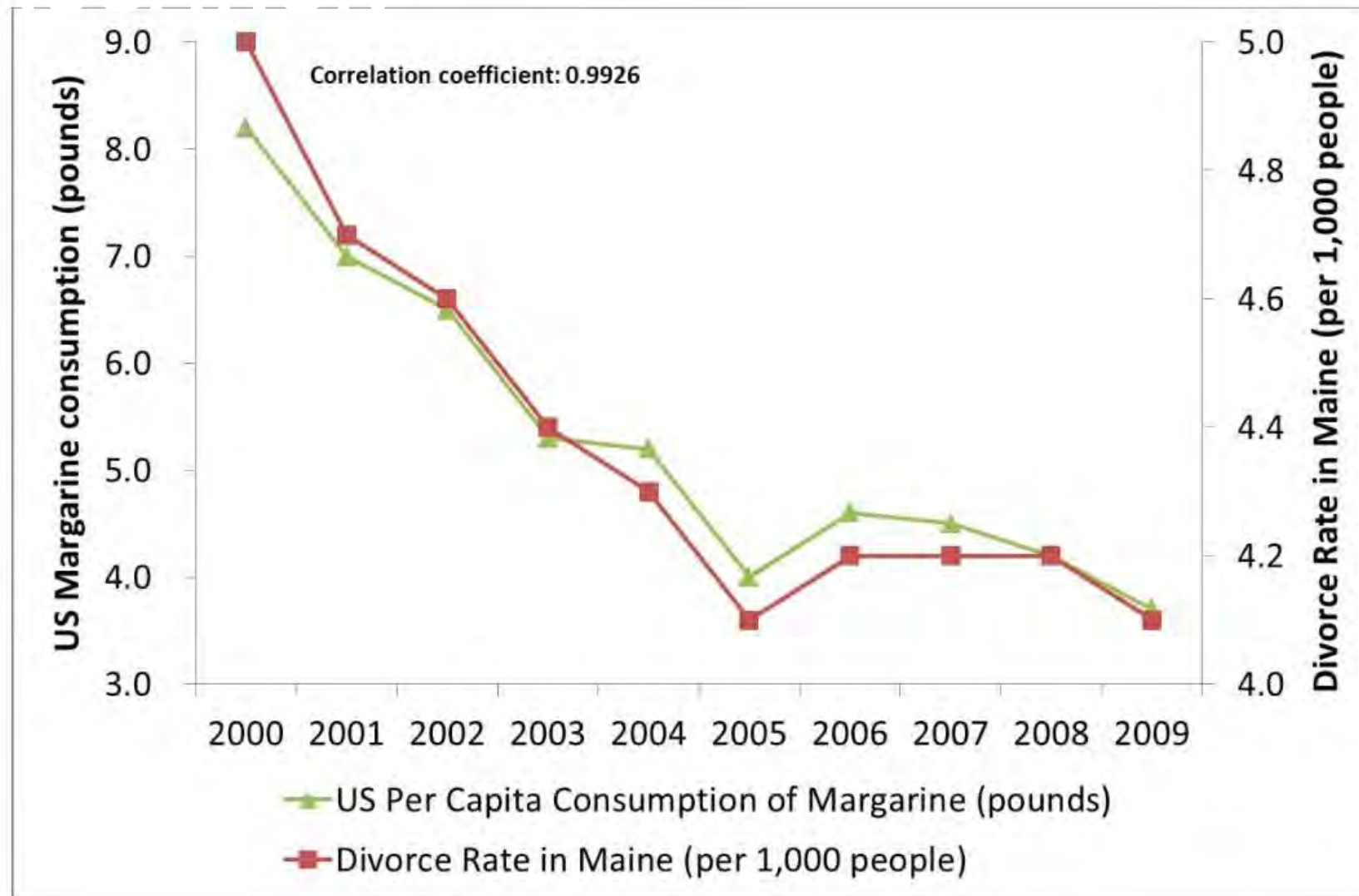


Misconceptions persist for many reasons.  
Media is one!

Sound bites are often misconstrued.

When something is NEW (vs status quo) it is  
more likely to makes NEWS

# BE CAREFUL OF CORRELATION -



# PALM OIL FRACTIONS



**Red Palm Oil**

This is available as a cooking oil, in finished products and its nutrients are also available as supplements. It does not have to undergo unhealthy hydrogenation. Red palm oil has more carotenes (pro-Vitamin A) than tomatoes or carrots, and more vitamin E tocotrienols than any other vegetable oil.



**Palm Oil**

Palm oil is a natural, semi-solid fruit fat used in various food formulations. It is ideal as a non-GMO replacement for trans fats. Palm oil is stable at high heat, and is prized by food processors for its great versatility. It can be fractionated into palm olein and palm stearin.



**Palm Olein**

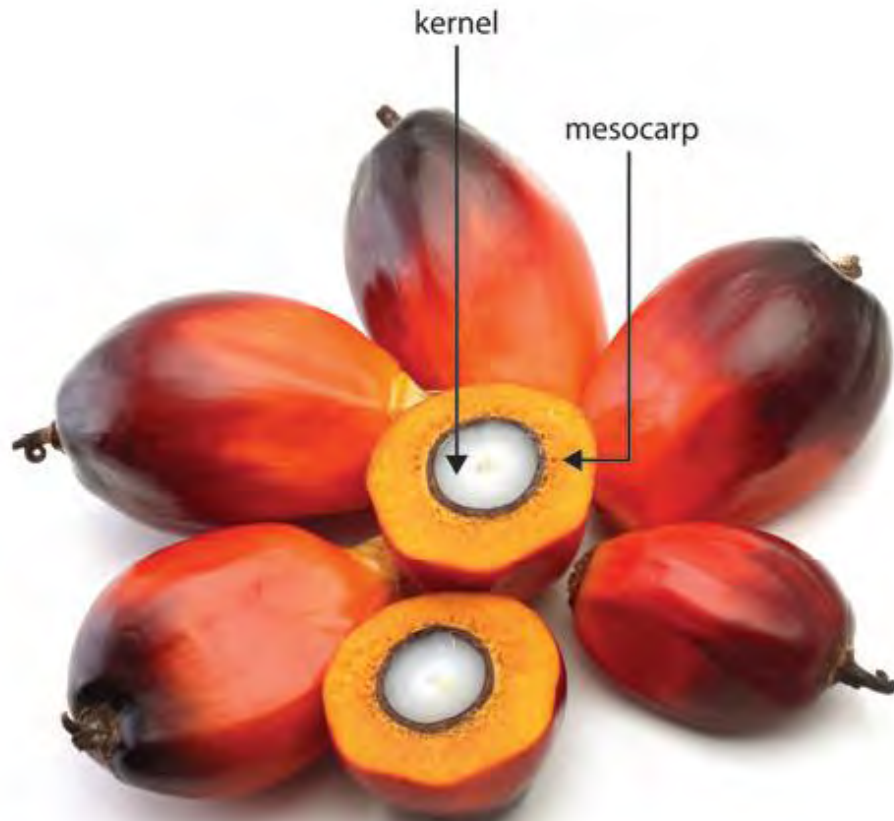
This fruit oil is the liquid fraction of palm oil. It is naturally high in monounsaturated oleic acid. Palm olein has been found to be nutritionally comparable to olive oil in several human dietary trials. It is the primary cooking oil used in tropical and sub-temperate regions of the world. It helps feed billions in these regions.



**Palm Stearin**

This is the solid fat from palm fruit oil, and is trans-free. Primarily used as an ingredient in food formulations, particularly bakery and pastry items, to bring out the best food functionality. Because it is often used in combination with other oils and fats, its saturated fat contribution to the finished products is small.

# MISCONCEPTIONS OF PALM OIL



**Saturated** fat is bad

**New** oil

**Not widely** used

**Difficult** to incorporate into diet

No major **nutrient** advantage

# REALITY OF PALM OIL



Saturated fats in the diet are **CVD-neutral**

**5,000 yrs** of use

**Most produced** edible oil globally

Very high **smoke point (caveat)**

15x more provitamin-A carotenes than **carrots** and  
30x more than **tomatoes**

PLUS one huge advantage: **Tocotrienols**

# COMPARISON OF COMMON OILS

Oil	Tocopherols (mg/100 g product)				Tocotrienols (mg/100 g product)			
	alpha	beta	gamma	delta	alpha	beta	gamma	delta
Canola	21.0	0.1	4.2	0.04	0.04	-	-	-
Castor	2.8	2.9	11.1	31.0	-	-	-	-
Coconut	0.5	-	-	0.6	0.5	0.1	1.9	-
Corn	11.2	5.0	60.2	1.8	-	-	-	-
Cottonseed	38.9	-	38.7	-	-	-	-	-
Olive	11.9	-	0.7	-	-	-	-	-
Palm	25.6	-	31.6	7.0	14.6	3.2	28.6	6.9
Palm kernel	6.2	-	-	-	-	-	-	-
Peanut	13.0	-	21.4	2.1	-	-	-	-
Rice bran	32.4	1.8	5.3	-	23.6	-	34.9	-
Safflower	34.2	-	7.1	-	-	-	-	-
Sesame	13.6	-	29.0	-	-	-	-	-
Soybean	7.5	1.5	79.7	26.6	0.2	0.1	-	0.03
Sunflower	48.7	-	5.1	0.8	-	-	-	-
Walnut	56.3	-	59.5	45.0	-	-	-	-
Wheat germ	133.0	71.0	26.0	27.1	2.6	18.1	-	-



# MISCONCEPTION OF VITAMIN E

**Vitamin E** has been lumped together as a group of compounds

Most studies using **alpha-tocopherol** – has resulted in the unfair assumption that the other members of the vitamin E family would result in the same outcomes



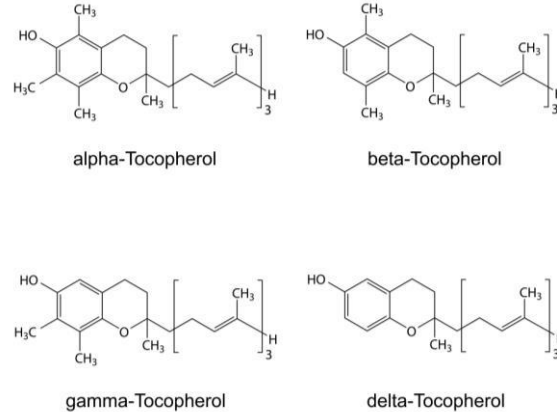
# REALITY OF VITAMIN E

1



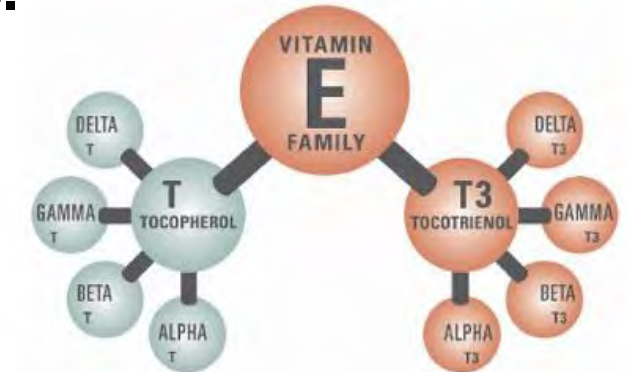
Vitamin E

2.



Tocopherols

3.



Tocotrienols

**Tocotrienols** are a natural form of vitamin E. It is found in our regular diet. While tocopherols are generally present in common vegetable oils (i.e. soy, canola), tocotrienols are concentrated in cereal grains (ie. oat, barley, and rye, rice bran), with the **highest level found in crude palm oil**.

The image is a collage with a white background. In the top right, there is a glass of bright orange juice. On the left and bottom, there are several pieces of fruit. Some are whole, dark reddish-brown fruits, possibly pomegranates or a similar variety. In the bottom foreground, two slices of a fruit are shown, revealing a white, crystalline or waxy substance in the center of each slice. A dark grey horizontal bar is positioned across the middle of the image, containing the word "Sustainability" in white, bold, sans-serif font.

**Sustainability**

# ENVIRONMENTAL MISCONCEPTIONS



Poor **yield**

**Unsustainable**

Major cause of **deforestation**

Tremendous biomass **waste**

Negative **impact on wildlife**

Malaysia has the same practices as **Indonesia and Africa**

# ENVIRONMENTAL REALITY



**Highest yielding** edible oil bearing crop per hectare in the world

World's first **certified sustainable** vegetable oil: RSPO

**Minimal deforestation**

MPO strives toward **zero waste** by using biomass as renewable energy

**Wildlife Conservation Fund** ensures industry support and commitment for animals

In Malaysia, oil palm plantations are **net carbon sink** with over 700M oil palms planted



# Tocotrienols in Clinical Practice

# Heart Health



- Cholesterol reduction
- Reversal of arterial blockage (in Carotid Stenosis patients)
- Elasticity of large arteries (arterial compliance)
- Potent antioxidant (40 - 60 times more potent than alpha tocopherol)







♀ Age:60

Right

Plaque Scan

IMT

Left

Plaque Scan

IMT

Quick Set

Custom

Pulse Rate

49 bpm

IMT

Max  
0,770 mm

Mean  
0,687 mm

Min  
0,577 mm

Tx Level 100  
Gain 79  
Depth 3  
D.Range 65

Auto ROI

Auto Freeze

Tx Level

- Framingham Risk
- ApoA1 and Lp(a)
- **ApoE4 Genomic Variant**
- Blood Pressure
- Pulse Wave

Probe Angle

Guide

No Image

Angle 120

111 Deg.

FREEZE

Study Menu

Parameter Settings

Modify Trace

Image Save

# Neuro Health





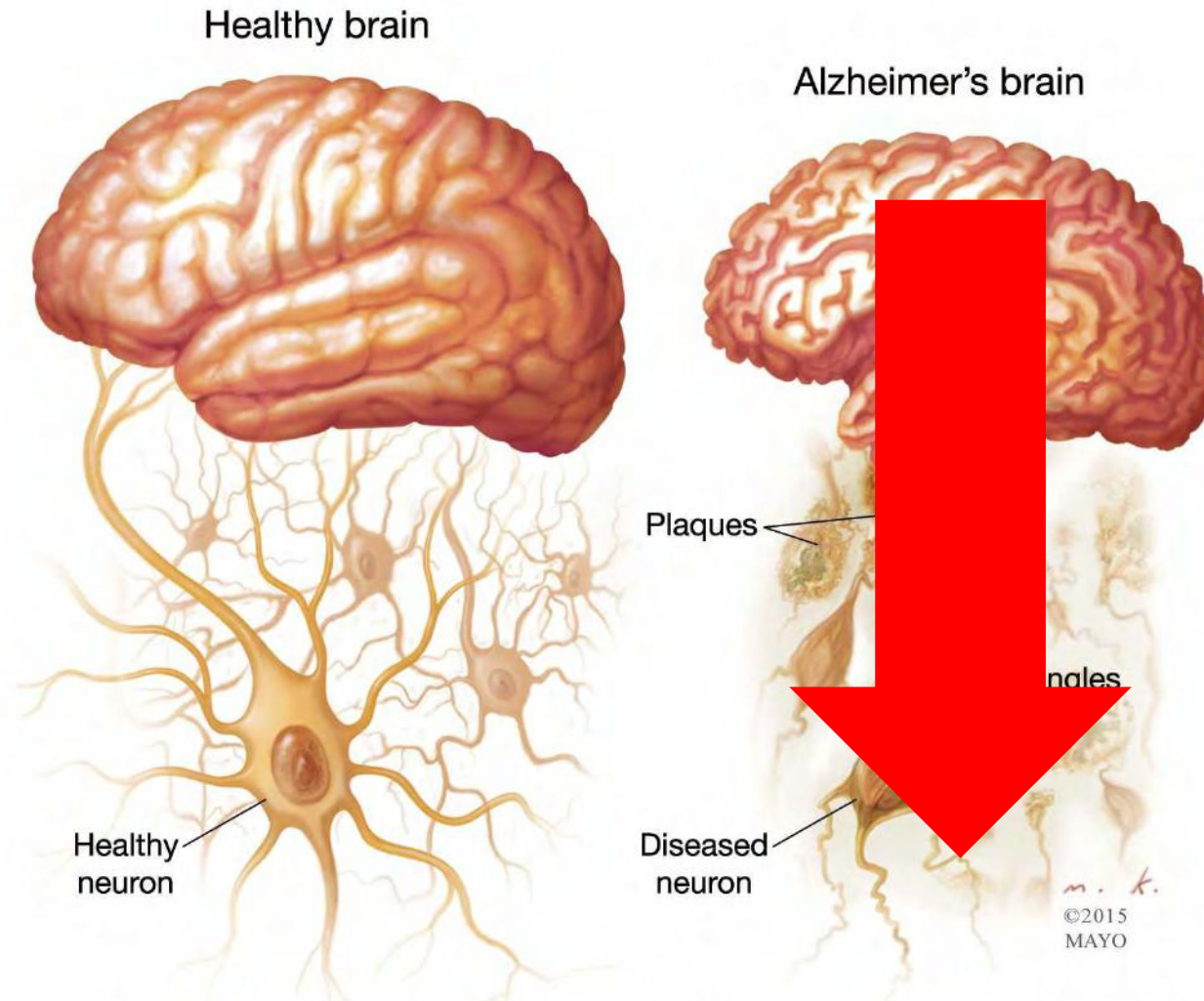
**NIH funded** studies in collaboration with Ohio State University Medical Center.

Mixed tocotrienols were found to **attenuate the progression of white matter lesions** (linked to neurodegenerative diseases and to an increased risk of stroke)

Recently the **largest ever clinical trial on tocotrienol with 240 subjects** (using EVNol SupraBio).

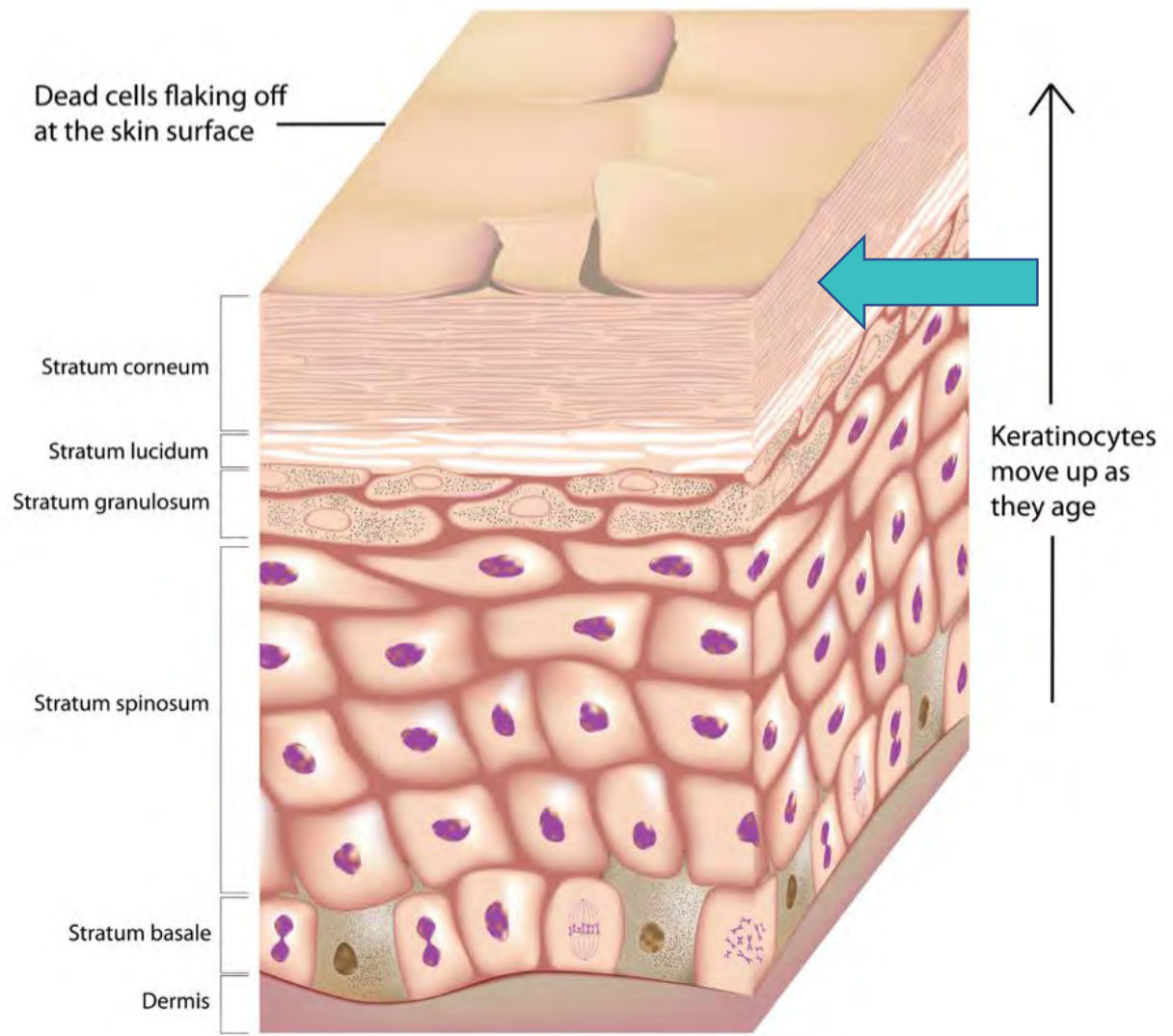
Outcome: **neuroprotection in reducing white matter lesions / TIA.**

# T3 CONCENTRATIONS IN BRAIN

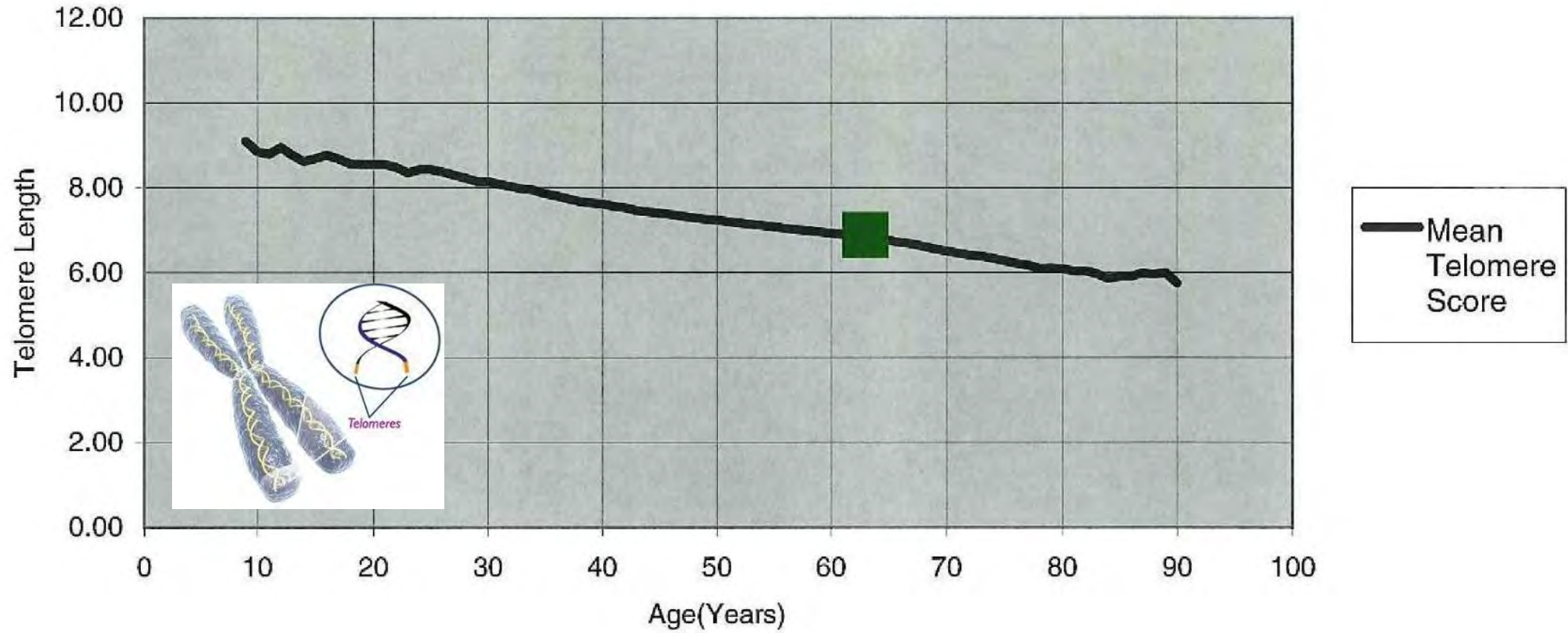


# Skin Health





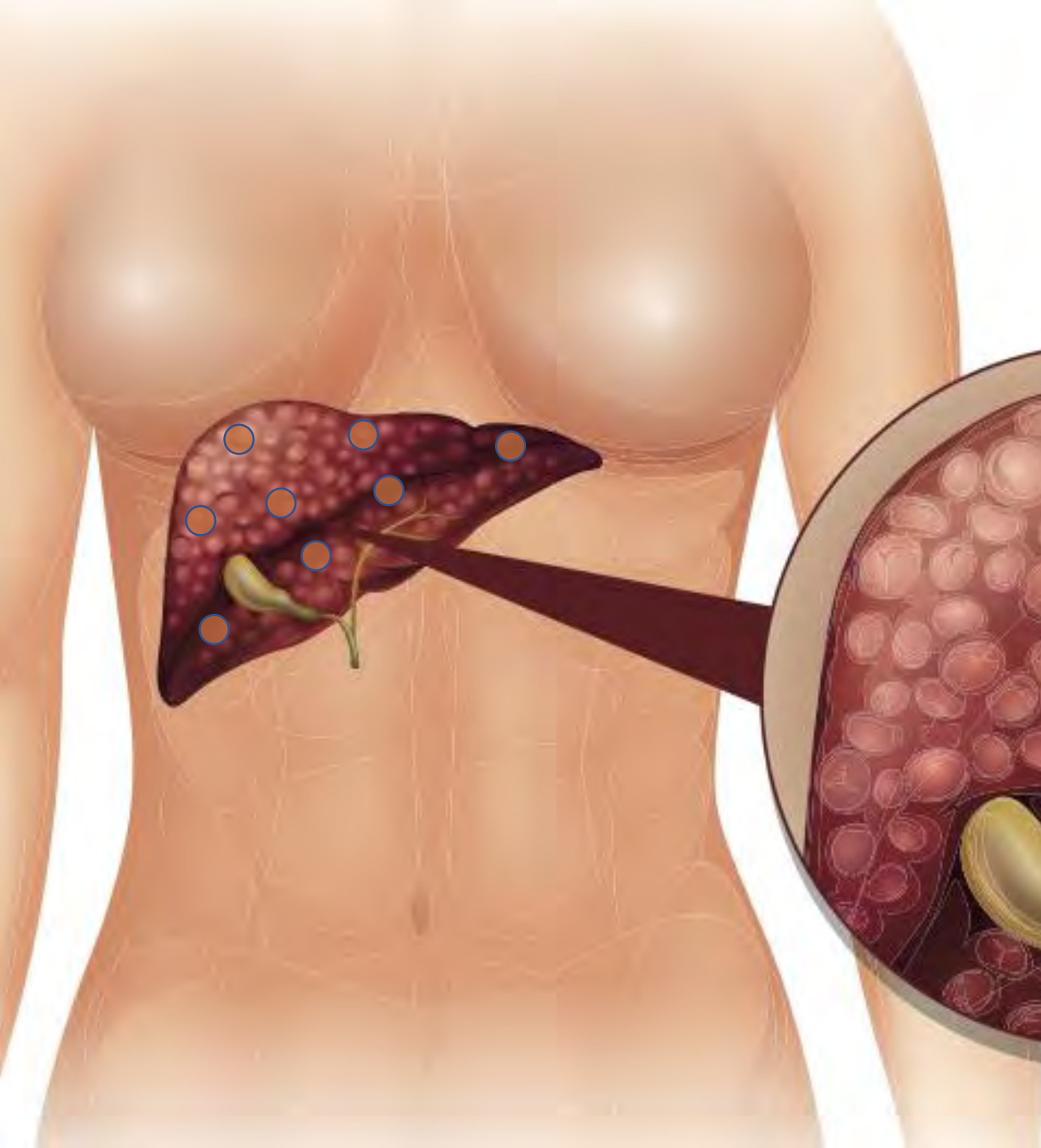
## Telomere Test Results





# Liver Health

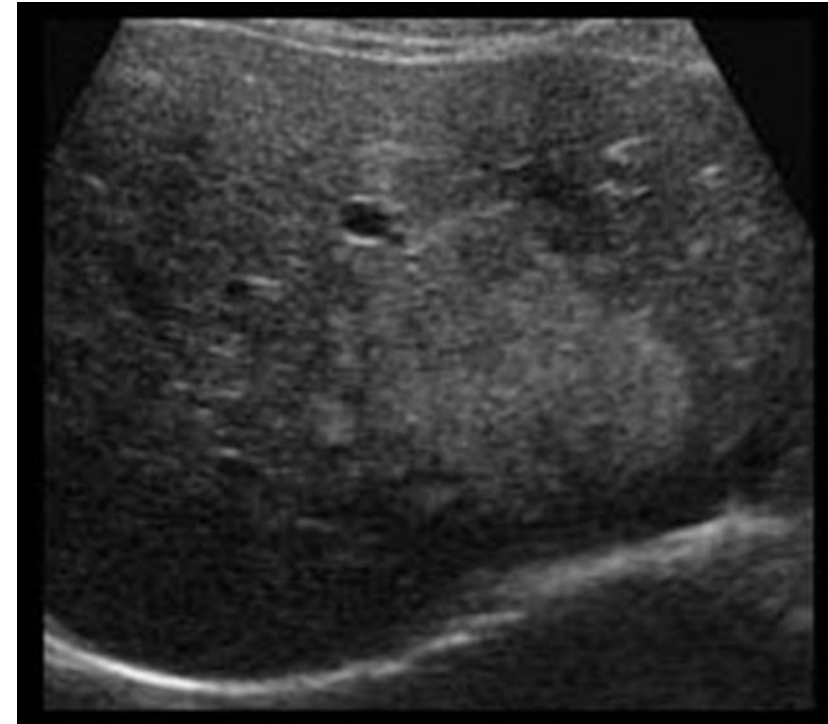




- NAFLD increasing in Asian countries (25% in NA) due to rise in Metabolic Syndrome
- 66.7% significant improvement in one trial
- 50% cured after one year in another trial
- Palm tocotrienol complex (EVNol® SupraBio™) is effective in treating NAFLD and there is no other drug treatment available

# LIVER ENZYMES & ABDOMINAL U/S

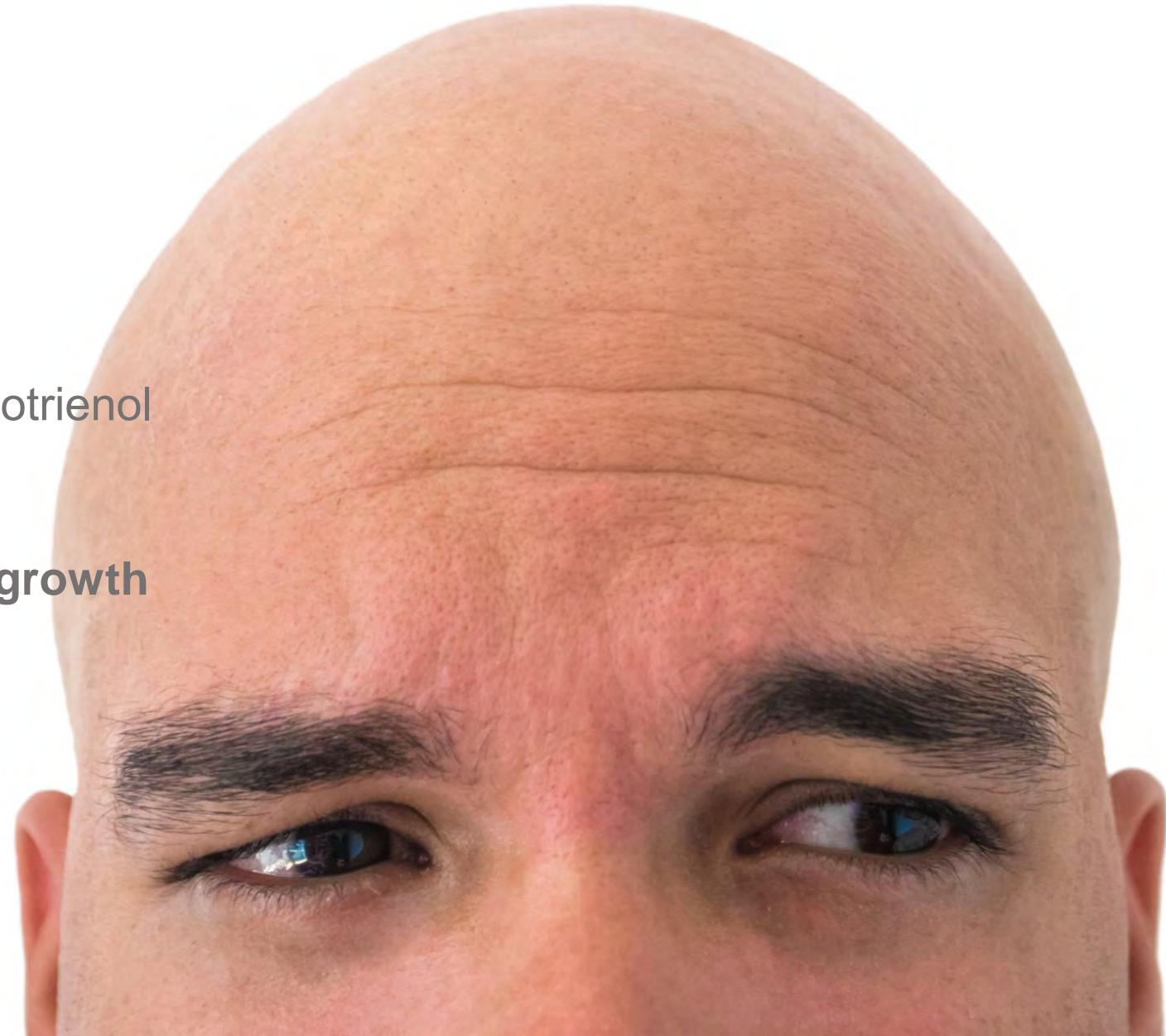
ALT	78	(15-55)
AST	277	(15-45)
GGT	959	(<50)
ALK	264	(30-105)



# Hair Health



- University of Science Malaysia conducted a RDBPCT n=36
- 50mg of tocotrienol complex (EVNol SupraBio) or placebo
- 95% of the volunteers in the tocotrienol group had hair growth
- **40% had more than 50% hair growth**



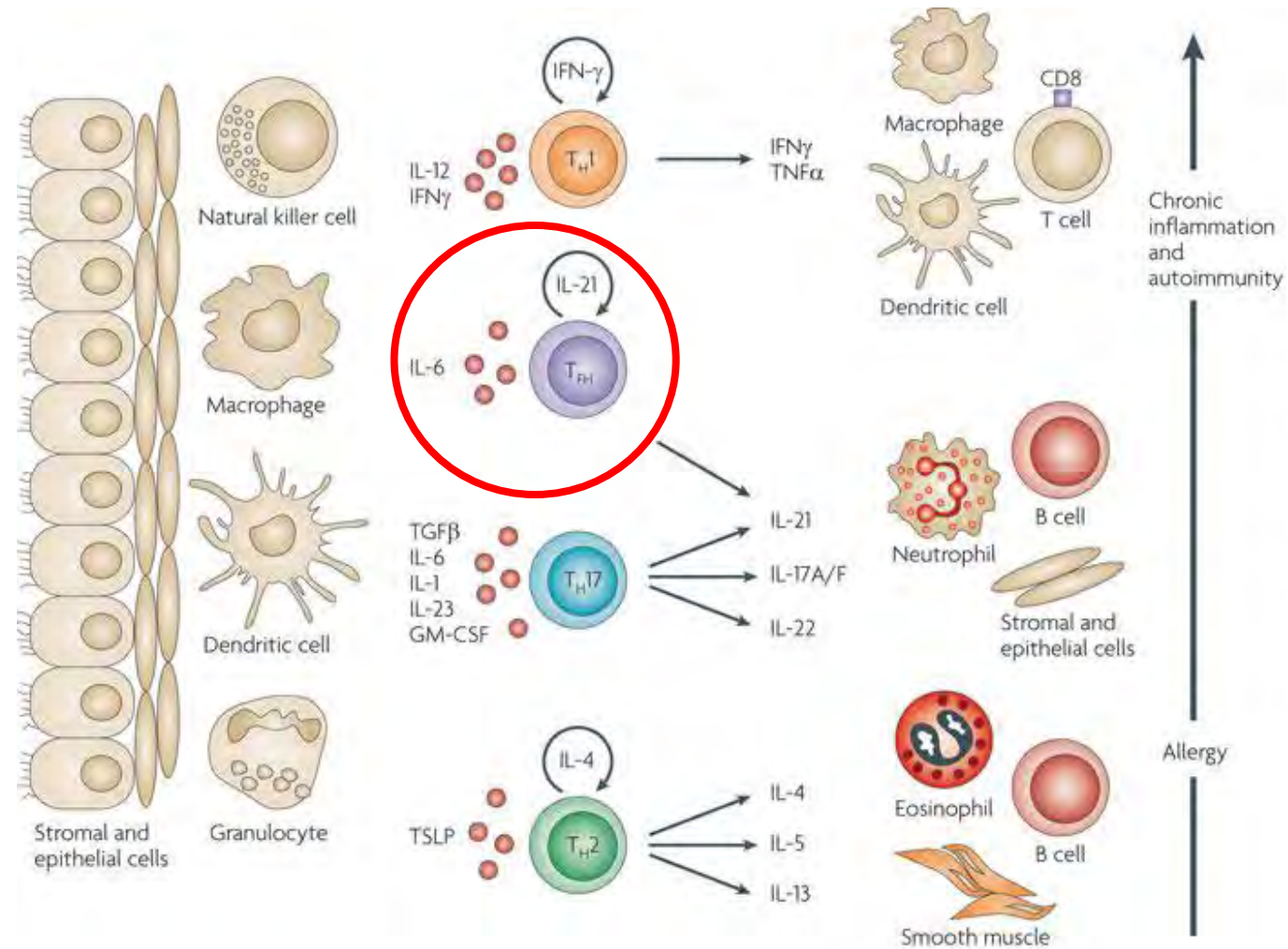
# Immune Health



- Researchers at MPOB, International Medical University and University Putra Malaysia conducted RDBPCT
- n=108 (18-25); Palm tocotrienol complex during TT immunization
- Higher concentration of anti-TT IgG Antibody in tocotrienol group
- Inflammation in tocotrienol group (IL-6 production) significantly lower



# COMPREHENSIVE STIMULATED







**In The Media**

# CONSUMER FEEDBACK



Over 75 M impressions



# WHERE WE ARE / NEED TO BE

- Saturated fats are bad, all the same, olive oil is the only healthy oil
- Vitamin E supplementation may not be healthy
- Palm oil causes cancer
- Not many solutions for slowing down aging or hair regrowth
- Major environmental impact
- Saturated fats are CVD-neutral, some are better than others, RPO is healthier than Olive oil
- Vitamin E in the form of tocotrienols can prevent /intervene on many health issues
- Zero evidence that Palm Oil causes Cancer
- Tocotrienols showing promise for both
- Minimal environmental footprint

# ONGOING HUMAN CLINICAL TRIALS



**Ohio State University**

Liver / Skin Health



**University Science  
Malaysia**

Stroke / Neuroprotection



**University Science  
Malaysia**

Prediabetes



More: [www.tocotrienol.org](http://www.tocotrienol.org)



Terima Kasih  
Thank You

## References

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