

# PALM OIL HEALTH AWARENESS CPD LUNCH TALK

@ KPJ AMPANG PUTERI SPECIALIST HOSPITAL



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# Carotenoid-Rich Palm Oil and its Eye Health Effects



**Assoc. Prof. ChM Dr. Siau Hui Mah**

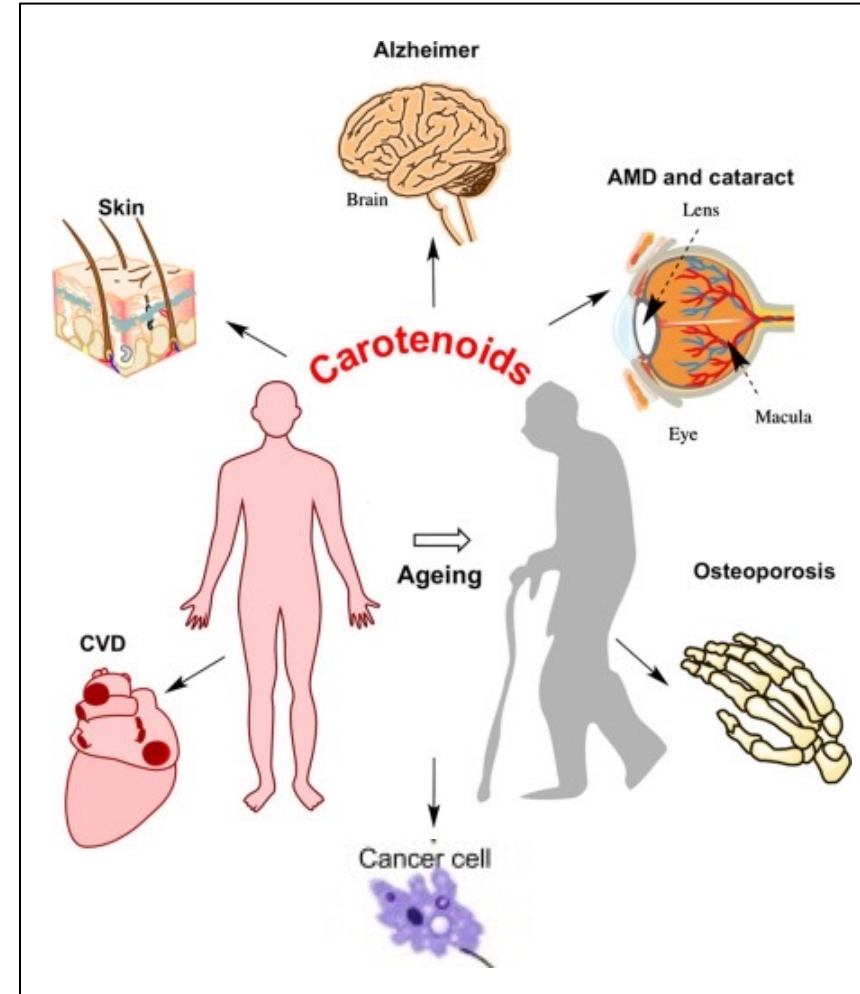
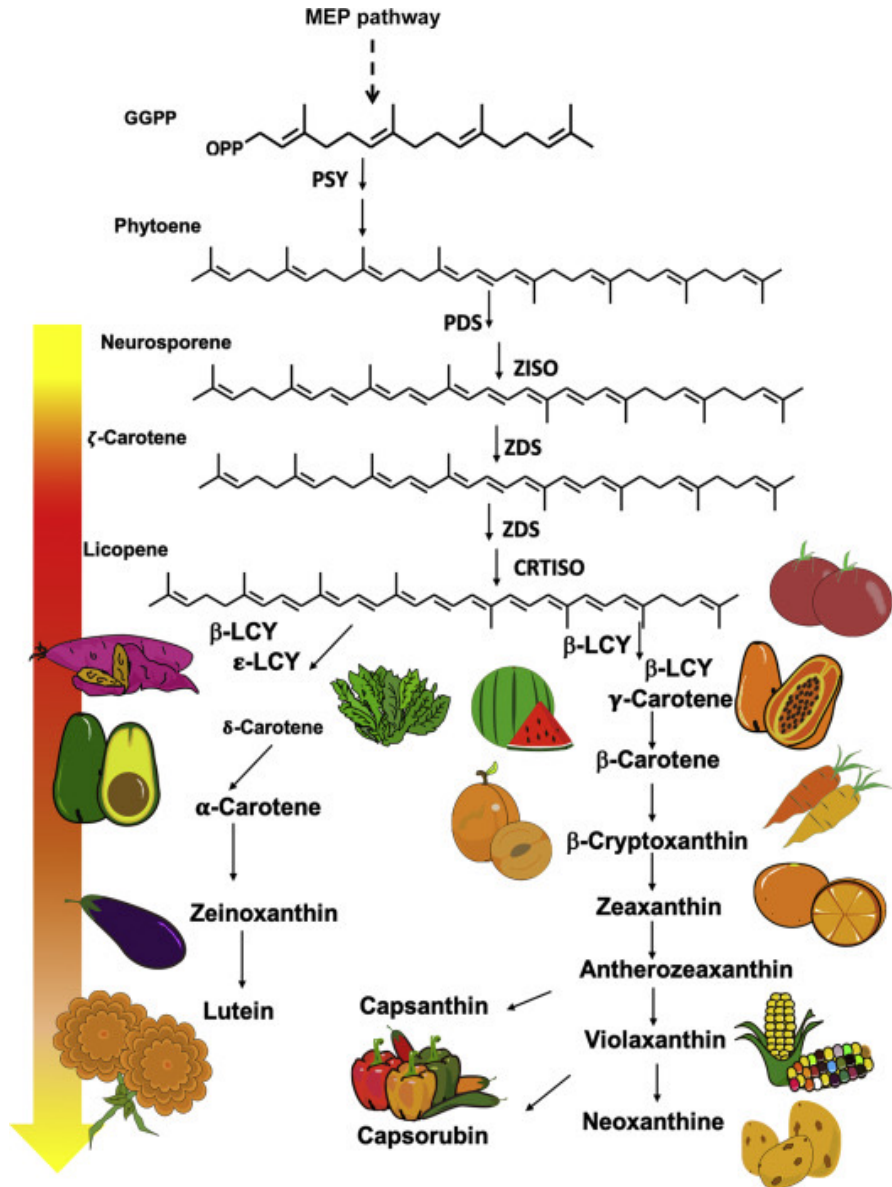
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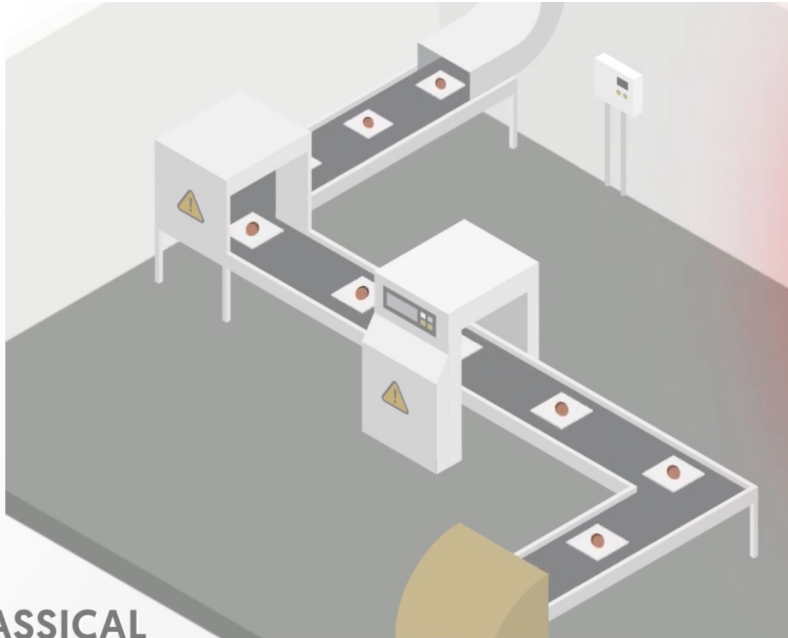
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# Carotenoids



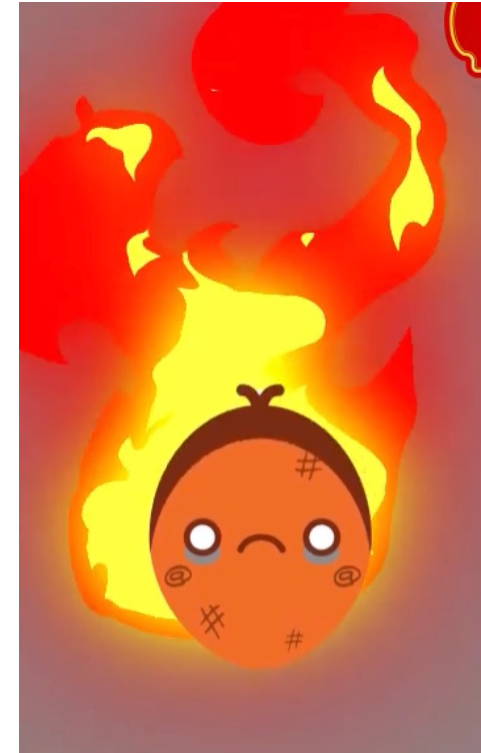
# Carotenoid-Rich Palm Oils

## Palm Oil Refining Process



CLASSICAL  
**HIGH** TEMPERATURE  
PROCESS PLANT

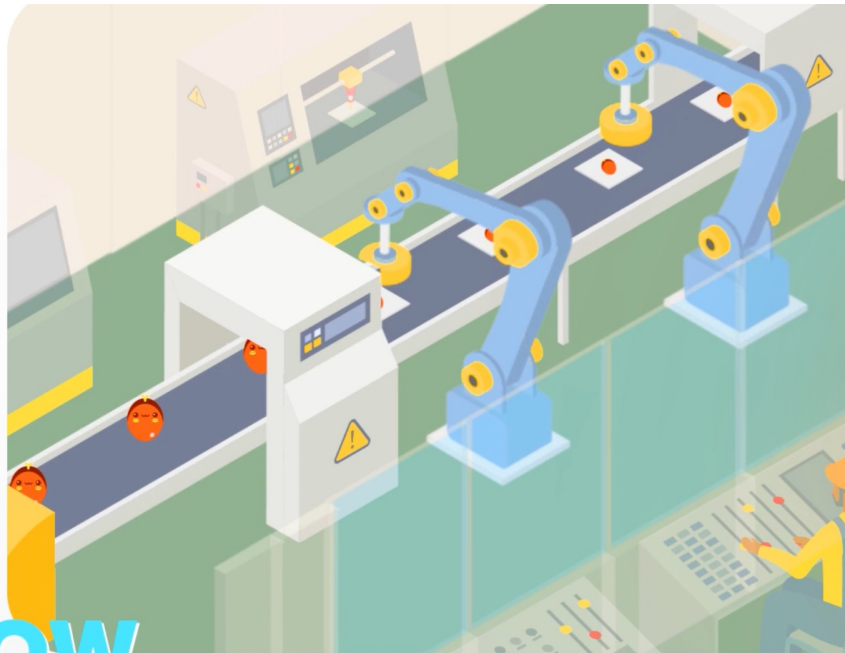
Subjected **265 degC**  
to Remove odour



This step thermally  
degrades all nutrient

# Carotenoid-Rich Palm Oils

## Palm Oil Refining Process



**LOW**  
TEMPERATURE  
PROCESS PLANT

## RED PALM OIL (RPO)



Retain the nutrient  
**ProVit A and Vit E**

# Carotenoid-Rich Palm Oil



Google search engine: Shopping

VS



## RED PALM OIL (RPO)

- Colour?
- Phytonutrients?
- Carotenoid Contents?
- Price: RPO vs supplement?

Sample	Carotenes (ppm)	Vitamin E (ppm)
Crude palm oil <sup>a</sup>	643	869
Pretreated palm olein <sup>a</sup>	514	864
Red palm olein <sup>b</sup>	513	707
RBD palm olein <sup>a</sup>	Nil	561

Nagendran et al. 2000

## The Benefits of Red Palm Oil

**1**

### **PACKED WITH PHYTONUTRIENTS**

Rich in Vitamin A and E, phytosterols, squalene and coenzyme Q10

**2**

### **RICH IN VITAMIN A**

Prevents Vitamin A deficiency and associated skin and eye diseases

**3**

### **HIGH LEVEL OF TOCOTRIENOLS**

Tocotrienols are powerful antioxidants with beneficial health properties

Phytonutrient	Composition (ppm)
Carotenoids	600-750
Vitamin E	717-863
Phytosterols	235-365
Squalene	14-15
Ubiquinone	18-25



# Carotenoids Contents

- **Red Palm Oil, retains 80% of carotenoids present in CPO**



- **Main components are:**  
Beta carotenes - 56%  
and Alpha Carotenes - 35%

- **Contains 15 and 50 times more carotenes than carrots and tomatoes respectively**



**15 X >**



**50 X >**

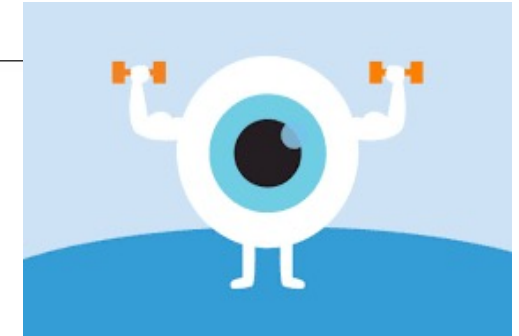


## Carotenoids in Red Palm oil

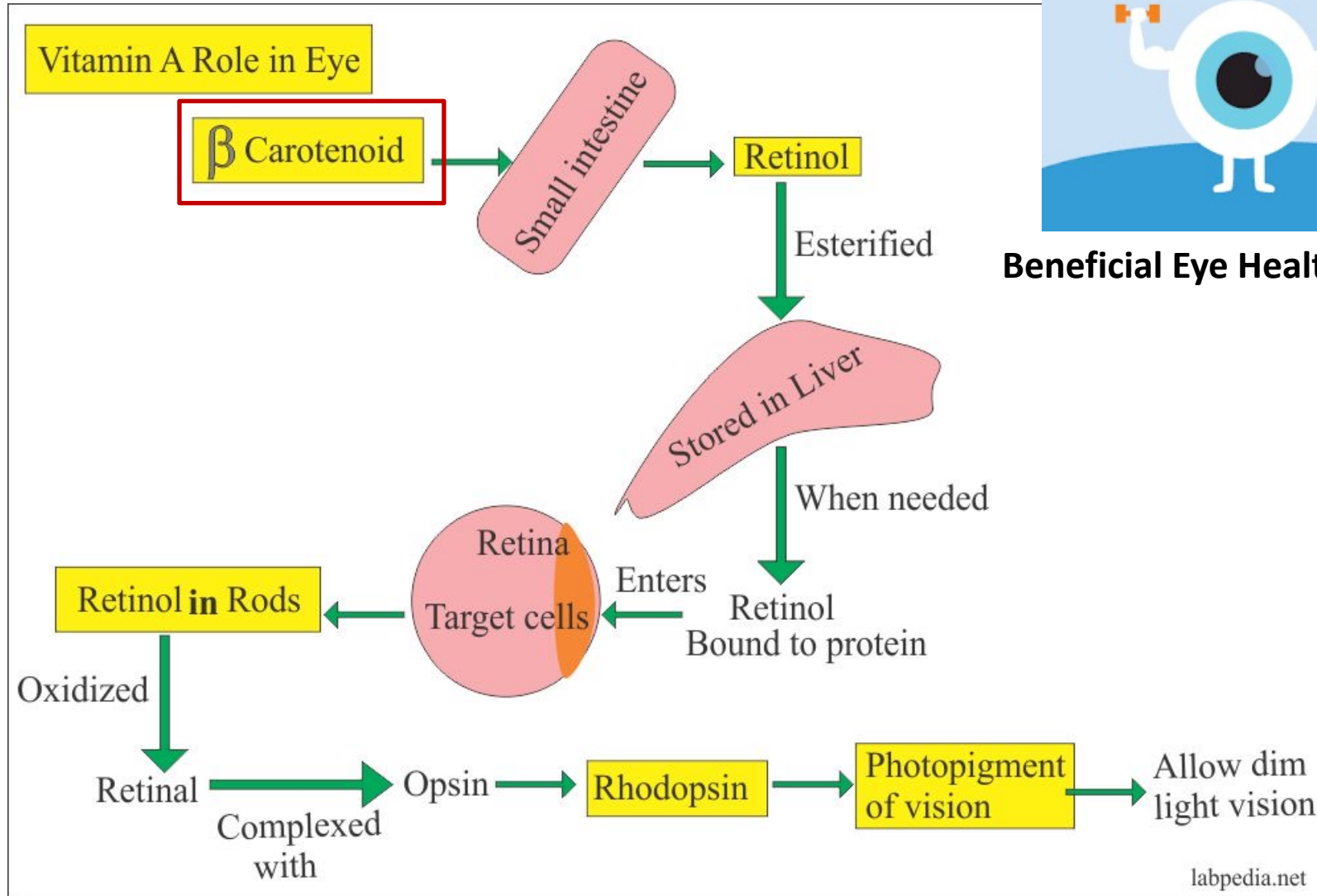
Carotene	Composition (%)
$\beta$ -carotene	56.0
$\alpha$ -carotene	35.2
Cis- $\alpha$ -carotene	2.49
Lycopene	1.30
Phytoene	1.27
$\delta$ -carotene	0.83
$\beta$ -Zeaxanthin	0.74
$\zeta$ -carotene	0.69
Phytofluene	0.68
Cis- $\beta$ -carotene	0.68
$\gamma$ -carotene	0.33
Neurosporene	0.29
$\alpha$ -Zeaxanthin	0.23
<b>Total (ppm)</b>	<b>500-700</b>



# Red Palm Oil



**Beneficial Eye Health Effects**





**THANK YOU**

