

THE BIG FAT DEBATE

“ESSENTIAL FATS”



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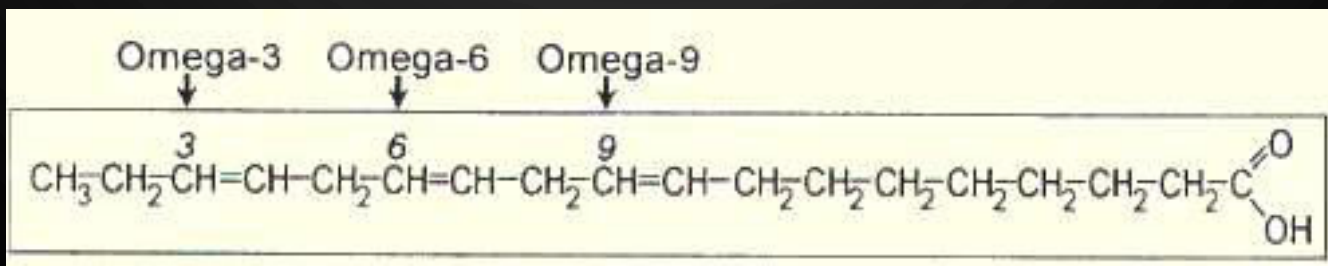
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FAT IS ESSENTIAL FOR LIFE

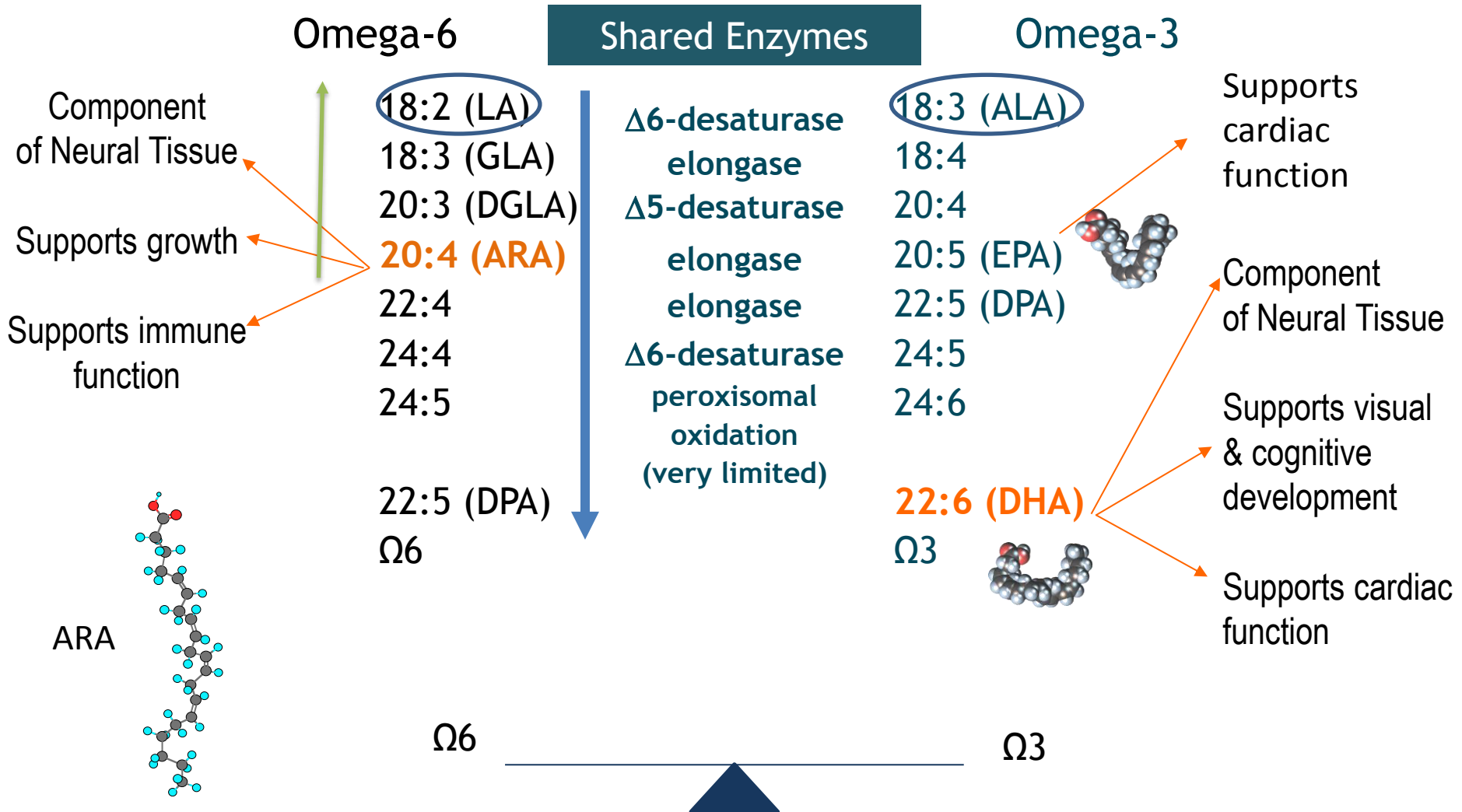
- FAT IS AN ESSENTIAL MACRONUTRIENT AND A RESERVOIR OF ENERGY
- 12-14% OF A HEALTHY NEW BORN BABY'S BIRTHWEIGHT IS FAT
- THE FATS WE CONSUME ARE PREDOMINANTLY IN THE FORM OF TRIGLYCERIDES: 3 FATTY ACIDS ESTERIFIED ONTO GLYCEROL. THE TYPES OF FATTY ACID AND WHERE THEY ARE POSITIONED ARE IMPORTANT
- FAT IS A SOURCE OF MANY THOUSANDS OF METABOLITES ESSENTIAL FOR THE SMOOTH RUNNING OF OUR BODIES
- FAT PROVIDES STRUCTURAL CUSHIONING FOR ALL OUR ESSENTIAL ORGANS
- OUR BRAINS ARE CA. 60% FAT (ON A DRY WEIGHT BASIS)
- ADHERANCE TO NO FAT AND VERY LOW FAT DIETS SOON LEADS TO ADVERSE HEALTH CONSEQUENCES
- MODERATE CONSUMPTION OF NATURALLY DERIVED FATS IS GOOD FOR YOUR HEALTH AND WILL NOT INCREASE YOUR RISK OF CARDIOVASCULAR DISEASE OR CANCER
- A RECENT META-ANALYSIS HAS SHOWN THE STUDIES AVAILABLE AT THE TIME OF THE INTRODUCTION OF THE US 1977 & 1983 DIETARY FAT GUIDELINES DID NOT JUSTIFY THEIR CONTENTS (HARCOMBE Z ET AL., OPEN HEART 2015).

THE NUTRITION TEXT BOOKS TELL YOU LINOLEIC ACID (LA) AND ALPHA LINOLENIC ACID (ALA) ARE ESSENTIAL, BUT:-

- THE “ESSENTIALITY” OF ANY FATTY ACID IS DETERMINED BY ITS EFFECT ON A LINOLEATE STARVED MOUSE. MOST OF THIS WORK WAS CONDUCTED IN THE 1950’S.
- DEFICIENCY SYMPTOMS OF LA AND ALA HAVE ONLY BEEN SEEN IN A HANDFUL OF TUBE FED (PARENTERAL) SEVERELY ILL PATIENTS.
- DEFICIENCY IS AVOIDED WHEN THE DIET CONTAINS MORE THAN 0.5% LA (AS TOTAL ENERGY), MOST WESTERN DIETS CONTAIN 5 -10%
- THE TEXTBOOKS SAY LA AND ALA CANNOT BE SYNTHESIZED BY THE HUMAN BODY, BUT RECENT WORK WITH RADIOACTIVE TRACERS SHOWS THAT SUFFICIENT LA CAN BE MADE FROM ARA AND SUFFICIENT ALA FROM EPA AND DHA BY RETRO-CONVERSION.
- LINOLEIC ACID INTAKE IS PROMOTED AS HEART HEALTHY, BUT MODERN REWORKING OF ORIGINAL FEEDING TRIALS (SYDNEY DIEY HEALTH STUDY AND MINNESOTA CORONARY EXPERIMENT RAMSEY CE ET AL, 2014 & 2016 BMJ) APPEAR TO SUGGEST AN INCREASED RISK OF CVD , PARTICULARLY IN OLDER WOMEN.
- ALPHA LINOLENIC ACID IS A DERIVED FROM VEGETABLE OILS AND IS AN OMEGA 3 FATTY ACIDS, AND CAN BE LABELLED ON FOODS IN THE UK ASD SUCH, BUT UNLIKE ITS MARINE COUSINS EPA AND DHA IT DOES NOT HAVE EFSA APPROVED HEALTH CLAIMS.



METABOLIC PATHWAY FOR FORMATION OF ARA, EPA AND DHA



SOME SAT FATS AND TRANS FATS ARE BENEFICIAL

- THE HUMAN BRAIN UTILISES 20% OF OUR ENERGY INTAKE. GLUCOSE IS THE MAIN SOURCE BUT EXCESS LEADS TO OBESITY. KETOGENESIS OF MEDIUM CHAIN FATTY ACIDS IS THE DEFAULT ENERGY SOURCE (C8:0, C10:0, C12:0)
- MYRISTIC ACID (C14:0) IS ESSENTIAL FOR MYELINATION OF NERVE FIBRES
- VACCENIC ACID (C18:1 TRANS-11) IS A TRANS FAT NATURALLY FOUND IN DAIRY FOODS AND HUMAN BREAST MILK.

SOME CANDIDATES FOR TRULY ESSENTIAL FATTY ACIDS

- THE BUILDING BLOCKS OF THE BRAIN: ADRENIC ACID C22:4 (ADA), DHA AND ARA . THESE HAVE ENABLED THE EVOLUTION OF HOMO SAPIENS
- THE MARINE OMEGA 3 FATTY ACIDS: EPA, DHA AND DPA (N-3).

THESE FATTY ACIDS HAVE A LONG LIST OF EFSA APPROVED HEALTH CLAIMS AND ONLY ORIGINATE FROM THE MARINE ENVIRONMENT