



Natural Solutions to Maintain Eye Health

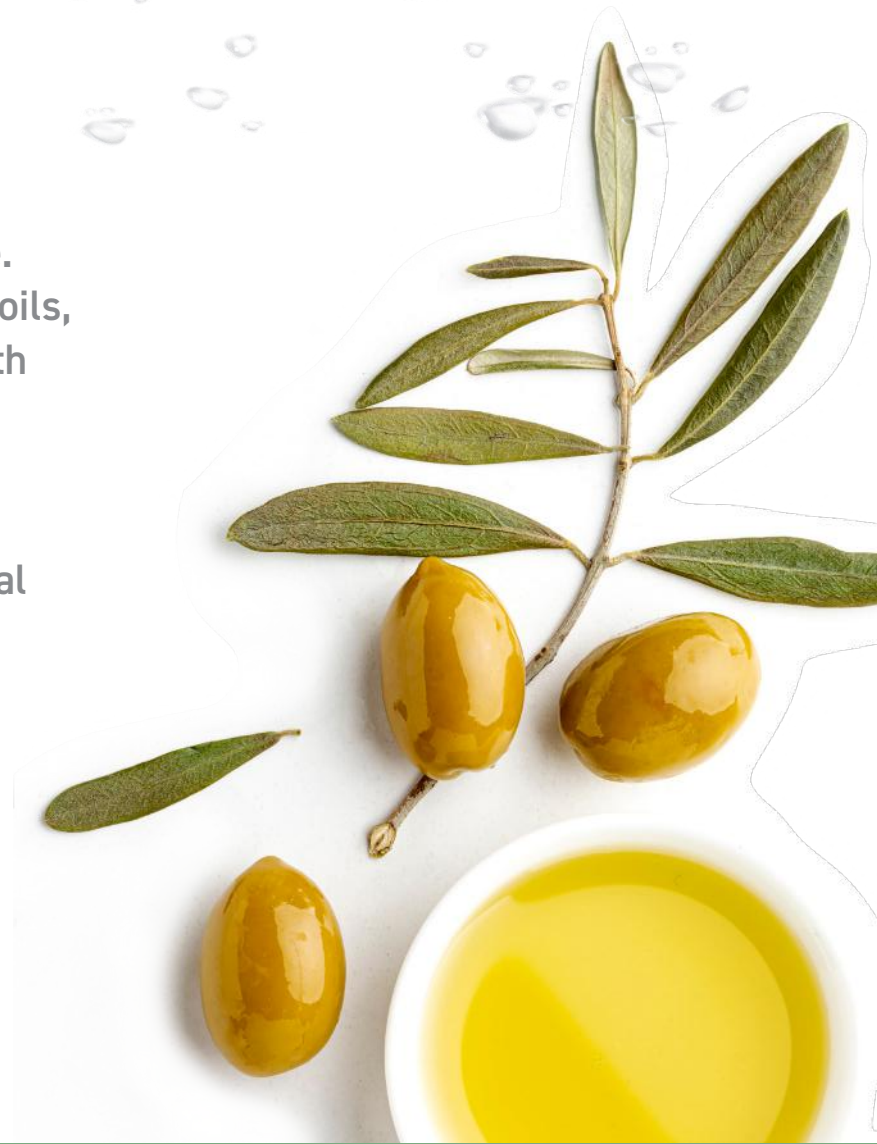


CATHEDRAL  
EYE CARE

Ingredients & Omega Quality

# Our Science

- 💧 A Natural solution to improve ocular health and combat Dry Eye. Eye Nutrients blends the perfect combination of natural Omega oils, 3 & 7 from Artic and Mediterranean diets providing high strength EPA, DHA, and DPA in a completely balanced formula.
- 💧 A revolutionary way forward in Omega purity, quality and stability Eye Nutrients has been developed using a totally natural and incredibly effective method scientifically proven to protect Omega 3 essential fatty acids against oxidation.
- 💧 Eye Nutrients only contains natural triglyceride oils as found in nature which show better bio availability and stability than concentrated supplements manufactured with ethylesters (EE).



# Our Research

- There is a current on going Ethics approved study taking place in Cathedral Eye Clinic. Studying the effectiveness of Eye Nutrients Dry Omega in improving Ocular health in patients undergoing intraocular lensbasedsurgery or laser refr.active surgery.
- Eye Nutrients was formulated after extensive laboratory testing and extensive reviews of the literature which included large scale epidemiological studies within the Artic and Mediterranean populations and clinical researchtrials.
- Through a joint project conducted in the topmost department of Biomedical Science in the UK at the University of Ulster, led by Dr Richard Owusu-Apenten PhD





# Dietary Recommendations

Eye Nutrients is designed to improve Ocular health, but its benefits help the whole of the body.  
Overview of dietary recommendations regarding fish or marine n-3 fatty acids.

Authority/Organisation	Country Region	Year	Recommendation
The American Heart Association	USA	2015	A variety of (preferably fatty) fish at least twice a week
The Norwegian Directorate of Health/VKM	USA	2014	Fish as dinner at least 2-3 times per week
Food and Agricultural Organisation of the United Nations (FAO)/(WHO)	USA	2011	At least 1-2 100g servings of fatty fish per week
European Food Safety Association (EFSA)	USA	2010	250mg EPA + DHA daily
Scientific Advisory Committee for Nutrition (SACN)	USA	2004	450mg EPA + DHA daily
International Society for the Study of Fatty Acids and Lipids (ISSFAL)	USA	2004	500mg EPA + DHA daily

# The Omega with a Difference

Omega 3 from fish oil is made up of eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA) and docosapentaenoic acid (DPA) is available to consumers either as triglycerides or ethyl ester.

One of the most frequently debated quality issues surrounding fish oil is which form is best triglyceride (TG) or ethyl ester (EE)? What form are the long-chain Omega 3 fatty acids (EPA and DHA,DPA) in when we absorb them from eating fish?

The answer is the triglyceride form, in fact over **98%** of all fats ingested from foods are in triglyceride form.

# Omega 3 in Ethyl Ester form (EE)

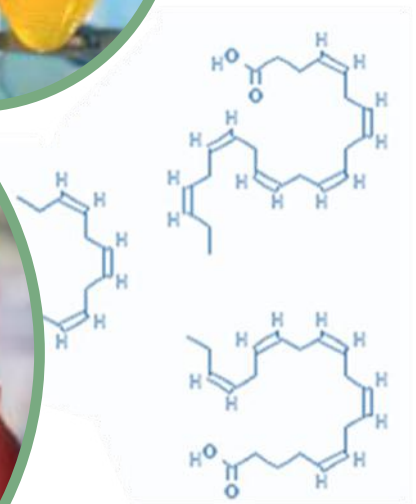
- ✗ Ethyl ester (EE) forms of Omega 3 fatty acids supplements are the more prevalent form on today's market because they are cheaper to produce than their triglyceride (TG) counterparts.
- ✗ The EE form has a much higher boiling point and is easier to work with when processing.
- ✗ Once purification is complete through the distillation process manufacturers leave fish oil in EE form to concentrate EPA, DHA, & DPA molecules.



# Ethyl Esters & Esterification

- ✗ Esterification is the unnatural 'equilibrium reaction' between acids and alcohols to form esters.
- ✗ During this process called ethylation, the glycerol backbone of triglycerides is removed from EPA and DHA and some of the shorter chain fatty acids are also taken out.

The DHA and EPA free fatty acids are then esterified to form ethyl esters!



# Natural TG vs EE

- ✓ Eye Nutrients Dry Omega is better being naturally stable.
- ✓ Supplied as Omega 3 in its natural triglyceride form through our unique formula of natural omega oils.
- ✗ Most Omega 3 products are supplied in the unnatural ethyl ester form (processed)
- ✗ Some contain Omega-3s in the rTG or re-esterified Triglyceride form (very processed)





# Ethyl Ester Side effects

Ethanol in the EE form must be filtered through the liver where ethanol is drawn off, the body must then rebuild the resulting free fatty acid back into triglyceride, free ethanol filtering through the liver runs the risk of creating side effects.

- Side effects may include:
- Flu-like symptoms
- Upset stomach
- Alteration in sense of taste
- Skin rash



The impact of ethanol released from ethyl ester forms of fish oil is documented under the adverse events section in the prescribing information for Lovaza.

# Ethyl Esters & Esterification

## Layman's Terms

✗ EE Omegas are made using unnatural chemicals!

✗ Alcohol is used to strip the extra natural nutrients!

✗ The remaining EPA & DHA is preserved and concentrated.

✓ In Conclusion  
Natural Ingredients and Processes are best.



# Omega 3 in Triglyceride form

- Triglyceride oils are the molecular form found naturally in fish and plant oils.
- Fats are sorted and transported in the body in triglyceride form.
- A triglyceride fish oil is metabolised and absorbed more efficiently than oil in the ethyl ester form.



# Triglyceride No Side effects

- 💧 Virtually no negative side effects resulting from the triglyceride (TG) form of fish oils once TG's are further stabilised as in Eye Nutrients formulations
- 💧 To receive maximum benefit from the crucial Omega 3 fats humans should consume fish oils, as close to their naturally occurring state as possible
- 💧 Almost all clinical evidence showing Omega 3 benefits relates to whole food fish consumption with fats occurring naturally in the TG form.
- 💧 Research shows that the TG form is more readily digested and assimilated than the ethyl esters which are a very recent addition to the food supply.





# Digestion of Omega 3

- ✓ After ingestion of an Omega 3 fatty acid molecule in triglyceride TG form the fatty acids are cut from glycerol backbone then the backbone and fatty acids are absorbed via the gut epithelial cells and immediately reattached to form the natural triglyceride.
- ✗ EEs that are digested produce free fatty acids plus ethanol this is a less efficient absorption process compared with direct intake of a natural form triglyceride because the EE form must be reconverted back to a TG form in the body.

The delay of TG re-synthesis in EE fish oils causes a release of ethanol's and may subsequently produce oxidative stresses with free radicals.



# Absorption

- ✓ The bioavailability of different Omega 3 formulations have been reported by Dyerberg and others in studies where healthy subjects were given a TG fish oil, EE fish oil or cod liver oil, results consistently showed the concentration of EPA and DHA highest in the TG group.
- ✗ In one study 20% of the Omega 3 in the standard ethyl ester forms was absorbed unless taken with a high-fat meal which raised the absorption level. In contrast the absorption of EPA and DHA in their natural triglyceride form was substantially greater in either context (high fat or low fat).



# Eye Nutrients Stability-

## Summary, why is it so important?

- ✓ Eye Nutrients uses a unique process, blending quality natural sourced Omega 3 oils with natural anti oxidants found in specific Olive Oils, thus bringing together the health benefits of the Artic and Mediterranean diets.
- ✓ The blend of natural oils used by Eye Nutrients have significantly greater effect on maintaining the stability of the Omega 3 Molecules and also impart additional benefits to health.
- ✓ Eye Nutrients leads the field in therapeutic levels of Omega 3 with much higher stability, proven to be 155% more stable than ordinary Omega 3 products.



# Eye Nutrients Stability-

## Summary, why is it so important?

- ✗ Omega 3 is chemically unstable and oxidizes rapidly to a complex chemical soup of lipid peroxides + secondary oxidation products
- ✗ Oxidative degradation is undesirable and leads to loss of shelf-life, functionality and nutritional value as well as lower consumer acceptability (fishy smell and after taste)
- ✗ Oxidised oils may have altered biological activity making them ineffective or even harmful

