A PILOT STUDY:-

"SUPPLEMENTATION WITH PARADOX OIL, AN OMEGA 3. 6. 9 .FATTY ACID FOOD SUPPLEMENT CONTAINING A BLEND OF FISH OIL AND EXTRA VIRGIN OLIVE OIL."

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Objective:

To evaluate whether paradox oil , a fatty acid supplement containing fish oil and extra virgin olive oil could improve clinical parameters of patients with inflammatory and degenerative joint disease.

Method:

21 patients, (13 female, 8 male) all who had previously taken "cod liver oil" or "fish oil" in liquid / capsule forms for periods of more than 3 months without any significant benefits, were asked to supplement their diets daily with one 10 ml oral dose of paradox oil. None of their prescription medication was altered and they were asked to make no significant changes in their diets.

Assessment of clinical parameters only was made at 6 weeks / 12 weeks. No lab. tests were used..

Clinical parameters:

1. Morning stiffness .
2. Reactions to light housework / gardening etc.
3. Walking distance.
4. Range of lumbar flexion /cervical rotation .
5. Subjective assessment of the patients own general wellbeing .

Results:

1 female patient failed to take the oil as she found it unpalatable .From the rest of the trial group, 13 patients showed or described moderate to significant improvements in all the above clinical parameters after 6 weeks and 16 patients showed or described enhanced improvement in all the clinical parameters after 12 weeks .10 patients remarked on improvements in general wellbeing, i.e. (less tired; better sleep patterns; skin /hair healthier; less mood swings) which were not apparent before supplementation. 3 patients who by coincidence had "blood cholesterol" checked while on the supplement had a significant mean reduction ;17% in low density lipoproteins and significant mean reduction ; 21% in triglycerides.

Discussion:

Paradox oil is a new and unique food supplement which blends together long-chain fatty acids from fish oil with those contained in extra virgin olive oil .

Fatty acids are long chain hydrocarbon molecules containing a carboxylic acid moiety at one end All fatty acids, whether saturated , monounsaturated or polyunsaturated contain a high density of carbon and hydrogen atoms. When they are consumed as food they yield a lot of food energy and this is their primary role in the diet.Unsaturated fatty acids tend to be spared this fate because the presence of one or more double bonds between the carbon atoms in the carbon -- hydrogen chain allows the human body to utilize them and do things it cant do with saturates, thus giving mono and polyunsaturated fatty acids much more important roles in maintaining health.

Three major roles of fatty acids.

1 As a source of energy .

2 As a structural component in cells and cell membranes.

The properties of the cell membrane and its internal structures depend on the make up of the fatty acids within it.A cell will only therefore respond in the optimal manner to stimuli, if the membrane surrounding it is composed of the optimal mixture of fatty acids.

3 As the raw material to make biological regulators.

Chemical messengers which control many different body processes in a number of body systems.

The two most studied fatty acids in fish oils are from the omega 3 family, (the position of the first double bond is at the third carbon atom counting from the methyl end of the chain); the 20 carbon eicosapentaenoic acid (EPA;C20;5n-3) and the 22 carbon docosahexaenoic acid (DHA;C22;6n-3).EPA has five double bonds and is capable of being elongated or metabolized into a range of biologically active substances referred to generically as eicosanoids. DHA has six double bonds in the chain and its role is more significant as a structural component of cells especially in the brain and retina of the eye.DHA plays a unique role in the building of these tissues in the foetus and its abundance in breast milk shows its importance in neonatal development.

Oleic acid, an omega 9 monounsaturated fatty acid (C18;1n-9) makes up to 85% of extra virgin olive oil. Recent research is confirming the well documented epidemiological evidence that this monounsaturated fatty acid has benefits in cardiovascular health as well as a number of other body systems.It may be a key reason why eating a Mediterranean diet reduces the risk of breast cancer as oleic acid has been shown to reduce the expression of the Her-2/neu oncogene which is associated with the aggressive form of this disease.

Linoleic acid (C18;2n-6) an omega 6 polyunsaturated fatty acid makes up to 10% of extra virgin olive oil.This fatty acid is the starting material for the omega 6 derivatives.First it is turned into gamma – linolenic acid (GLA 18;3n-6), then by processes involving enzymes and catalysts to longer chain fatty acids which have similar actions and mechanisims to the omega 3 fats.They therefore play important roles in cardiovascular health and demonstrate anti-inflammatory effects . Studies show that they can increase thermogenesis,therefore burning more fat .They also play a role in sympathetic nervous system stimulation.

High quality extra virgin olive oil (less than 0.5% “free fatty acids”) was blended with refined pure cod liver/fish oil from a known and reputable source.

Paradox oil contains the following therapeutic and essential long chain monounsaturated and polyunsaturated fatty acids.
Per 10 ml dose:

1. E.P.A. (ecoisapentaenoic acid) omega 3 = 700mg
2. D.H.A (docosahexaenoic acid) omega 3 = 700mg
3. Linoleic acid omega 6 = 300mg
4. Oleic acid omega 9 = 4000mg

A mass of epidemiological and specific research papers have demonstrated the wide ranging health benefits of the above“good fats.”Could there be enhanced or synergistic benefits by blending the good fats contained in fish oil and olive oil along with their natural vitamins, phytochemicals and antioxidant stabilizers.?

EPA ,DHA and oleic acid have been shown to have several actions in a number of body systems. In the cardiovascular system EPA ,DHA and oleic acid lower elevated triglycerides and low density lipoproteins(by inhibition of lipogenesis and stimulation of fatty acid oxidation in the liver). They have also demonstrated anti-arrythmic properties, the exact mechanism for this is unclear but it seems likely that it is due to the increased presence of these fatty acids in the cell membranes of the heart giving them greater permeability.

EPA ,DHA and Oleic acid have been demonstrated to have anti-inflammatory and immune modulating properties giving obvious benefits in prolonging bone and joint health as well as in other diseases involving inflammatory and immune responses.Several mechanisms are thought to account for these phenomena.These fatty acids inhibit the conversion of aracidonic acid to the pro-inflammatory eicosanoids (E2 prostaglandins) and leukotrienes . Inhibition of inflammatory cytokines, TNF –alpha and IL 1-beta, seems to be another mechanism in suppressing the inflammatory pathways.

A diet rich in these fatty acids has been shown to increase insulin sensitivity thus improving blood sugar control and promoting the consequential anabolic effects ,with increased liposis and less tendancy to become diabetic.

DHA is vital for normal brain development in the foetus and for maintainence of normal brain function throughout life, being a major determinant of membrane fluidity in brain cells.Along with EPA this seems to play a major role in normal cognitive function and mood. Diets rich in oleic acid have also demonstrated increased cognitive function in the elderly.

More recently these fatty acids have been involved in studies to determine their ability to suppress cancer cells. In vitro and animal studies have shown EPA, DHA and oleic acid to suppress neoplastic transformation, inhibit cancer growth, enhance apoptosis and to have anti angiogenic activity.A common mechanism underlying the anti-cancer effects of the above fatty acids could be their role in modulating eicosanoid production and activity.

Optmum health of course relies on the correct balance of fatty acids.Unfortunatley recent evidence implies that modern western diets provide at least 10 times more omega 6 fatty acids than omega 3 thus competing for enzymes involved in their metabolic interconversion. This problem is further compounded by the hydrogenation of these polyunsaturated fatty acids(mainly from mass produced seed oils such as rape and sunflower) to form” useable” trans fats which are abundant in fast and convenience foods. There is little doubt that this imbalance is directly responsible for the development of chronic long term diseases which ravage western society.

Along with the fatty acids paradox oil contains the fat soluble vitamins;

1.vitamin A	500 µg
2.vitamin D	4 µg
3.vitamin E	10 mg

These vitamins occur naturally in fish oil and olive oil and their roles in maintaining health are well documented.

However, also contained in paradox oil are a family of compounds known as polyphenols (only found in abundance in extra virgin olive oil). New research is proving their unique and powerful antioxidant activity against oxygen derived free radicals in pathological processes. Hydroxytyrosol (one of olive oils polyphenols) has the highest level of free radical protection activity ever reported for any natural antioxidant compound measured on the ORAC scale (oxygen radical absorbance capacity)

Hydroxytyrosol	(olive oil)	27000
Oleuropein	(olive oil)	12000
Epicatechin	(green tea)	8100
Ascorbic acid	(vitamin C)	2100

The therapeutic value of the phenol compounds contained in extra virgin olive oil (as many as 5mg of antioxidant polyphenols in every 10 grams of olive oil) may be the key to the seemingly synergistic combination of these fatty acids. As they are fat soluble they can remain stored in the body ready for use, unlike the water soluble antioxidant flavenoids which are washed out of the body systems. Along with the fatty acids the fat soluble polyphenols have been shown to have a wide range of beneficial effects in pathological processes where oxidative stresses are paramount. Many other nut and seed oils contain few if any polyphenols and thus may not show the same therapeutic range as the blend of oils in Paradox

Conclusion:

With regard to the musculoskeletal system there was a significant improvement in all of the clinical parameters in a majority of the patients. A number of patients on this small pilot study also reported and were seen to have beneficial effects in other body systems. Results of this preliminary study suggest that a blend of fish oil with extra virgin olive oil can be beneficial to patients with inflammatory and degenerative joint disease and may have positive effects on other body systems.

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