



MANAGEMENT FILE

by DR CHARLES SHEPHERD, our medical adviser

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the ME association



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ESSENTIAL FATTY ACIDS – including EPA, Fish Oil and Evening Primrose Oil supplements

INTRODUCTION

Supplements containing essential fatty acids (EFAs), in particular fish oil supplements with EPA (eicosapentaenoic acid), have become an extremely popular form of treatment for ME/CFS. But what do they do? Is there any evidence that they work in ME/CFS? And are they safe?

WHAT ARE ESSENTIAL FATTY ACIDS (EFAs)?

Essential fatty acids are known as essential because the 'parent' acids cannot be manufactured by the body – they have to come via food sources in your diet.

EFAs are sub-divided into two main 'families' known as the omega-3 and omega-6 series.

Alpha-linolenic acid (ALA) is the parent acid for the omega-3 series. This is then converted by enzymes in the body into what are called long chain polyunsaturated fatty acids such as docosahexanoic acid (DHA) and eicosapentaenoic acid (EPA).

The best dietary source for omega-3 fatty acids, in particular EPA, is oily fish. EPA is also being added to some types of milk following claims that supplementation may help to improve mental activity in children. Some of the omega-3 fatty acids are found in vegetable oils such as linseed, walnut and rapeseed – but these are not the same as those found in fish.

Linoleic acid (LA) is the parent acid



for the omega-6 series. This is then converted into gamma-linolenic acid (GLA). Good sources of omega-6 series fatty acids include vegetable oils such as corn oil, sunflower oil, palm oil, rapeseed oil and soya oil. Evening primrose oil is a good source of GLA.

WHAT DO ESSENTIAL FATTY ACIDS DO IN THE BODY?

EFAs play a vital role in keeping cells healthy. In particular, they help to maintain the structure and function of the cell membrane – the outer protective wall. They also help to transport fats around the body and are used to manufacture important chemicals called prostaglandins that are involved in inflammation.

EFA deficiency has been linked to a considerable number of medical disorders, including learning problems,

developmental delay, hormonal imbalance, skin problems, and inflammatory diseases. It is also thought that EFAs work together with vitamin E to protect the heart – which is one of the reasons why this vitamin is sometimes present in commercial supplements.

Deficiency of EFAs can be the result of either dietary deficiency of the parent acid or a problem with the conversion of the parent acids into products such as GLA and EPA. It is worth noting that strict vegetarian diets provide little or no DHA, EPA or AA.

WHY MIGHT ESSENTIAL FATTY ACIDS BE BENEFICIAL IN ME/CFS?

Several research groups have suggested that EFAs, including EPA, may be involved in ME/CFS. Research findings supporting this view include the fact

that EFAs have antiviral activity and that viral infections can inhibit the conversion of EFAs. Stress can also inhibit the conversion process.

There is also some evidence from brain imaging studies – which have demonstrated increased levels of a chemical called choline – to support the view that EPA supplementation might be helpful in ME/CFS (reference: Puri BK et al. (2002) Relative increase in choline in the occipital cortex in chronic fatigue syndrome. *Acta Psychiatr Scand*, 106, 224 - 226).

IS THERE ANY RESEARCH EVIDENCE TO SUPPORT THE USE OF ESSENTIAL FATTY ACIDS IN ME/CFS?

Back in 1990 Professor Peter Behan and colleagues at the University of Glasgow carried out a placebo-controlled trial involving 63 patients with postviral fatigue syndrome.

They used *Efamol Marine* - an EFA supplement containing 36mg of GLA; 255 mg of linoleic acid; 10 IU of vitamin E; but only a small quantity (17mg) of EPA. There were quite significant benefits in those taking the supplement (reference: Behan PO et al. (1990) Effect of high doses of essential fatty acids on the postviral fatigue syndrome. *Acta Neurol Scand*, 82, 209 - 216.

However, a second placebo-controlled trial carried out at the University of Sheffield, which used the same active treatment but a different placebo, found no significant differences between the two groups (reference: Warren G et al. (1999) The role of essential fatty acids in chronic fatigue

syndrome: a case-controlled study of red cell membrane essential fatty acids and a placebo-controlled treatment study with high dose EFA. *Acta Neurol Scand*, 99, 112 - 116.

As far as EPA alone is concerned, results from a small trial carried out by Professor Basant Puri and colleagues at the Hammersmith Hospital in London suggest that a high dose EPA supplement could be of value in ME/CFS (reference: Puri BK. (2004) The use of eicosapentaenoic acid in the treatment of chronic fatigue syndrome. *Prostaglandins, Leukotrienes and Essential Fatty Acids*, 70, 399 - 401).

Four patients, aged between 20 to 56, were given an EPA supplement known as *eye q* (manufactured by Equazen Ltd). The total dose taken was generally 12 capsules daily with a range of 10-18 capsules daily. Two capsules of *eye q* contain 186 mg of EPA; 58 mg of DHA; 20 mg GLA; and 3.2 mg of vitamin E.

All four patients showed improvement in their symptoms, particularly 'brain fog', which started within 12 weeks of starting the treatment. These results do, however, need to be treated with caution in view of the very small number of patients taking part and the lack of a control group taking a placebo.

Otherwise, the evidence for benefits for EFAs in ME/CFS is anecdotal with feedback suggesting that while some people gain benefit, others do not.

WHAT OTHER MEDICAL CONDITIONS ARE EFAS BEING USED IN?

EPA, along with other omega 3-fatty acids, is now being assessed in a number of other medical conditions.

Results so far suggest that these fatty acids can provide a significant degree of protection against coronary heart disease and may help in reducing blood pressure.

Other possible uses include reducing joint inflammation in some types of arthritis, and in psychiatric illnesses such as depression and schizophrenia.

There is evidence that Evening Primrose Oil can be useful in the management of arthritis, eczema, pre-menstrual syndrome and other female hormonal problems.

ARE THERE ANY CONTRA-INDICATIONS?

Anyone with a blood disorder, or who is taking anticoagulant medication (to thin the blood) should check with their doctor or pharmacist before using an EPA supplement because omega-3 supplements can interfere with blood clotting mechanisms. Omega-3 supplements also need to be used with caution, or not at all, by people with liver disease, asthmatics who are sensitive to aspirin, and women who are pregnant or breast feeding.

There are reports that evening primrose oil can lower the seizure threshold in epilepsy, especially temporal lobe epilepsy. So anyone with epilepsy, or a past history of epilepsy, should consult their doctor before using this supplement.

SIDE-EFFECTS

Omega-3 supplements, even at higher doses, seem to be generally well tolerated by people with ME/CFS – the only minor problem being a slight fishy taste in the mouth after taking some types of capsule.

The side-effects that have been reported in the medical literature include gastrointestinal disturbances such as nausea and loose motions. Less common ones include dizziness and taste disturbances. Rare side-effects include headaches, problems with blood sugar control, acne, liver disorders and skin rashes.

Very rare side-effects include hypotension (low blood pressure), nasal dryness, urticaria (a blotchy red rash), and an increased white blood cell count.

Minor side-effects are sometimes reported with evening primrose oil supplements. These can include headaches, nausea, gastric upsets, and loose stools.



COMMERCIAL SUPPLEMENTS

A large number of commercial omega-3 and omega-6 supplements are available from pharmacies, health food shops, and over the internet. Our ME Essential magazine carries adverts for some of these preparations. Before purchasing a supplement always check on the dose of the various EFAs that it contains, along with the other ingredients. A product called VegEPA contains both a high dose of EPA and some GLA. EFA supplements are quite expensive to buy and are not available on an NHS prescription for the treatment of ME/CFS.

EFA SUPPLEMENTS FROM THE ME ASSOCIATION

The ME Association has always taken a very cautious view on the use minerals, supplements and vitamins in treatment of ME/CFS. In view of the fact that there is some published evidence to support the use of EFAs, as well as a considerable amount of feedback from members who feel they are of benefit, we have been selling fish oil supplements for a number of years.

The product the MEA used to stock was Efamarine (500mg) capsules which contain GLA (34 mg); EPA (17mg), DHA (11mg) and vitamin E (10mg). But we had to discontinue this some years ago when fresh supplies became impossible to obtain. We believe there were importation problems.

WHAT ABOUT EATING LOTS OF OILY FISH INSTEAD?

Although health experts all agree that a regular weekly intake of oily fish (eg her- ring, mackerel, salmon, sardines, trout, fresh but not tinned tuna) is a good idea, this will not provide the levels of EPA found in commercial supplements. And eating very large amounts of oily

fish may not be a good idea because of concerns about the intake of mercury and other toxins that are now being found in some types of fish. Pregnant women should also limit their intake of oily fish for this reason.

CONCLUSION

More research needs to be carried out before EFA supplements, especially those containing EPA, can be regarded as an effective form of treatment for ME/CFS. They do however appear to be safe and generally well tolerated – so are worth considering if you can afford the expense of a three-month course.

Medical information contained in this leaflet is not intended to be a substitute for medical advice or treatment from your doctor. The ME Association recommends that you always consult your doctor or healthcare professional about any specific problem. We also recommend that any medical information provided by The MEA is, where appropriate, shown to and discussed with your doctor.

ME CONNECT

We're here to help

Do you need to talk?

 ME Connect is the telephone helpline service of the ME Association. It provides information and support for people with ME and those who live with or care for them. ME Connect provides a safe and understanding environment for people with ME so that they know they are being heard and understood.

ME Connect is a member of the Helplines Partnership which promotes high standards.

CALL 0344 576 5326

10am-12noon
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