



Omega-3  
Explained

MINAMI NUTRITION OMEGA-3 THERAPY

Cutting edge  
**OMEGA-3** advice  
and information

**Exclusive interview with  
Dr Alex Richardson**

Senior Research Fellow, Mansfield  
College and the University Lab of  
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 MINAMI NUTRITION

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# OMEGA-3 explained

## Exclusive interview with Dr Alex Richardson

*Senior Research Fellow in Physiology, University Lab of Physiology, Oxford;  
and co-director of UK charity, Food And Behaviour Research.*

Purely Yours brings you an exclusive interview with Dr Alex Richardson, one of the worlds leading experts on Omega-3 fatty acids.

Alex Richardson is internationally known for her research into the effects of food and diet on behaviour, learning and mood, and particularly for her work on omega-3 fatty acids. She has particular expertise in the field of developmental conditions such as dyslexia, dyspraxia, attention-deficit / hyperactivity disorder (ADHD) and autistic spectrum disorders, but her interests extend into mental health and the biology of individual differences. She is involved in several collaborative research programmes that include studies of genetics, brain imaging, biochemistry and nutrition as well as physiological and psychological functioning. Her current studies include controlled treatment trials of dietary supplementation in both children and adults.

Alex's work takes in clinical and educational as well as scientific research perspectives, and its main aim is to develop new, evidence-based methods for assessing and managing difficulties in behaviour, learning and mood. She works closely with education and health practitioners as well as support groups and charities, is a regular speaker at national and international research meetings and already has more than 75 research publications in peer-reviewed journals and academic books.

*School children from Kirkby Stephen Primary School with Oxford University's Dr Alex Richardson (left) and Nutritionalist Babi Chana.*

Dr Richardson originally trained as a teacher, and her excellent communication skills and clear presentation style are such that she is frequently invited to give talks to both public and professional as well as academic audiences.

### How did you become involved in research into Omega-3 fatty acids?

My early research involved studying visual and other biological (including genetic) factors in dyslexia, dyspraxia, ADHD and related conditions. I then found out that omega-3 were crucial not only for vision, but for many other aspects of brain function, because they have powerful effects on chemical and electrical signalling as well as helping to regulate the immune system, hormonal balance and blood flow.

To me, it made complete sense to find out whether supplementing the diet with omega-3 might be helpful not only for these conditions, but for behaviour, learning and mood in general – because these crucial fatty acids are unfortunately missing from many people's diets – especially if these rely on processed foods, and if they don't include much oily fish or seafood.

### What has your research shown?

So far, we've shown that omega-3 supplements (and particularly EPA) can significantly improve attention, concentration and behaviour in children with dyslexia, dyspraxia and ADHD. In the most recent 'Oxford-Durham' study, the children also showed dramatic improvements in their reading and spelling. After just three months of taking fatty acid supplements, their progress was three times the normal expected rate for reading, and it was twice the expected rate for spelling. They also showed the same improvements in behaviour, attention and concentration that we'd seen in our earlier studies – and which other researchers have also found.



## Can these supplements also help brain function in adults?

Our current studies will help to answer that question with respect to dyslexia and related conditions – but the anecdotal evidence suggest that yes, they can. In addition, there are now many studies showing benefits for mental health (especially depression and other mood-related conditions) in adults who take omega-3 supplements – but particularly EPA. And the Food Standards Agency has now commissioned a large study to find out if omega-3 can help to prevent age-related memory problems (including mild ‘cognitive decline’ as well as Alzheimer’s and other forms of dementia). The existing evidence that omega-3 can help in these areas is very promising, but the controlled trials needed to show this are still underway.

*A healthy, balanced diet is crucial, and this should ideally include a wide variety of whole, unprocessed foods, especially fruits and vegetables, nuts and seeds (especially flax seed) and if possible, a regular intake of oily fish and seafood. Dr. Richardson*

## How much has awareness of Omega-3s increased in the last 5 years?

Awareness of omega-3 fatty acids has increased, but I’d say that the level of knowledge and understanding is still very ‘patchy’. In my experience, most health professionals – let alone other professionals and members of the public – still don’t know enough about the importance of omega-3 for both mental and physical health.



*Kids love a fruit smoothy, and it’s a great way of hiding omega-3 fish oil if your child dislikes swallowing the capsules.*

## Do you think Omega-3s tend to be pigeon-holed as being “for the heart”?

Yes – insofar as health professionals or the public are aware of omega-3, it usually tends to be in relation to the long-established importance of these fatty acids for cardiovascular health – i.e. prevention of heart attack and stroke. Other physical health benefits of omega-3 that are fairly well known include their anti-inflammatory actions. Many people use fish oils to maintain supple joints and/or to combat arthritis, for example.

Fewer people seem to know that in addition to their proven benefits for the heart and circulation and the immune system, the same omega-3 (EPA and DHA) are actually critical for the development and functioning of the brain, and for learning ability. Controlled trials in this area are not yet as numerous as those for heart disease or immune disorders, but as I’ve already mentioned, research is already showing that supplementation with omega-3 can have benefits for many aspects of behaviour, learning and mood. In children, the improvements include better attention and concentration, faster reading and spelling progress, and less disruptive behaviour. In adults, reductions in depressive symptoms and stress-aggression have been found to follow from dietary supplementation with EPA in particular.

## What dosage would you recommend for people wanting to improve brain function?

The amount or ‘dosage’ of the right oils doesn’t actually have to be very high in order to get any benefits. The real problem is that most adults and children in the UK usually consume far less EPA and DHA than the experts recommend for physical health, let alone optimal brain function. This is especially true if their diets contain mainly highly-processed ‘junk foods’, and if they don’t eat oily fish or seafood regularly.

To make this clear: the scientific experts recommend a daily intake of 500mg of EPA + DHA for all healthy adults just to prevent heart disease. By comparison, around 700mg per day of these fatty acids has been used in our studies with dyslexic, dyspraxic or ADHD children, which isn’t very much higher than this basic level. In my opinion, based on the evidence we have, an appropriate ‘target dose’ for most children (or adults) wanting to achieve optimal mental performance is probably around 500mg EPA per day. It is this particular omega-3 fatty acid that is most strongly linked with improvements in behaviour, learning and mood in the →



research studies to date. However, more research is still needed before we can be confident of the best combinations and doses – and requirements can differ not only between individuals, but also in the same person over time, especially if there is a significant change in their diet, lifestyle or circumstances.

One important point we already know is that some people may need a higher dose of around 1g / day EPA in order to gain noticeable benefits from omega-3 supplementation. This particularly seems to apply where dramatic mood swings or temper tantrums are part of the picture – as they often are in children with ADHD-type behavioural and learning difficulties.

*Because of its potency, one capsule of MorEPA can provide your daily requirement of Omega-3.*

But so far, properly controlled trials using different doses have only been carried out in adults. For example, 1g / day of EPA was better at reducing symptoms of depression in adults than either placebo or higher doses of EPA.



## Should we look beyond the price of an Omega-3 product and what should we look for on the label?

The actual contents of any supplement are what really matters, and EPA and DHA are the omega-3 fatty acids that are most important to the brain, heart and immune system. When checking product labels, consumers should look carefully at exactly how much EPA and DHA each capsule provides. Some ordinary fish oils (and cod liver oil in particular) do not deliver very much EPA or DHA per capsule. Other, specialist supplements are highly concentrated, so the same quantities of the important omega-3 can be delivered in far fewer capsules.

## It seems that EPA may be more important than DHA when it comes to attention, concentration and learning ability. Would you agree?

Yes. Although more studies are needed to confirm this, the evidence points to EPA rather than DHA as the omega-3 fatty acid most important in regulating behaviour, learning and mood. This is why we have chosen high-EPA supplements for our latest research studies in this area. Our 'target dose' of 500mg/day EPA can be provided using just one large capsule (or two small capsules) per day of a concentrated supplement such as MorEPA. By comparison, supplements used in previous studies required 6 or more capsules per day to achieve the same dose.

## Does purity of the product matter?

There are two issues here – firstly, purity in terms of freedom from potential contaminants; and secondly, purity in terms of concentration or potency.

Regarding contaminants: a huge number of omega-3 supplements are available.

Unfortunately, not all of these are of good quality, and in some cases, they may not only be ineffective, but could contain harmful residues, either from environmental pollution or from the methods of extraction and processing used.

*Not only children, but also adults benefit from Omega-3 supplements, EPA especially.*



Unprocessed fish oils can sometimes contain residues of heavy metals such as mercury, or other fat-soluble contaminants such as PCBs and dioxins. There are official regulations on the maximum permitted levels of these substances, and in quality supplements, these undesirable ingredients should be below permitted (if not the minimum detectable) levels.

Any reputable supplier should be able to provide information on both the source of their oils and their







manufacturing methods, but at the very least, it should not be assumed that 'cheap' supplements give the best value. Vitamin E is usually included in quality supplements as an antioxidant to protect these fatty acids from breakdown. If not, additional Vitamin E supplementation (and other antioxidants like vitamin C) may be required.

With regard to potency – supplements vary greatly in their concentration, so the really important issue here is how much EPA and DHA each capsule actually contains. With ordinary fish oils, 6 or more capsules per day (and sometimes more than 20!) may be needed to obtain the 500mg that experts recommend. By contrast, some specialist supplements can provide this dose in only one or two capsules of highly concentrated and purified fish oils.

### For some, capsules can be difficult to swallow. Would you use liquid fish oil?

In a word – no. The problem with liquid fish oils is that EPA and DHA are highly perishable – in particular, they are destroyed by light, heat and air. (This is a major reason why omega-3s have almost disappeared from the food supply in many modern, developed countries). As soon as liquid fish oils are exposed to air - which happens the moment the bottle is opened - these precious fatty acids start to suffer oxidative damage. Even if you follow the instructions to the letter (to keep the liquid refrigerated and away from light at all times, and to consume within a limited timeframe) you can't prevent this kind of rancidity from developing unless the supplement is provided in daily doses that are individually sealed. For this reason, I would always recommend EPA and DHA supplements in the form of capsules rather than liquids. These can be broken open if necessary, and the contents added to any suitable food or drink (fruit smoothies are a great way to disguise these oils if needs be!).

### Do you take omega-3 supplements?

Yes – and so do most of the other researchers in this field, oddly enough! That's not to say that I recommend supplements instead of a good diet – because I don't. A healthy, balanced diet is crucial, and this should ideally include a wide variety of whole, unprocessed



foods, especially fruits and vegetables, nuts and seeds (especially flax seed) and if possible, a regular intake of oily fish and seafood.

Cutting down on refined sugar, saturated and hydrogenated fats is also advisable for almost anyone. I now consume far more omega-3 than I used to do from food. But given how important these fatty acids are for almost every aspect of physical as well as mental health and performance, I'm taking no chances! Many years ago, I had such a bad case of 'repetitive strain injuries' that I was told by a medical expert that I had to accept I would never be able to use either of my hands ever again. The best they could offer was non-steroidal anti-inflammatory drugs, and braces to stop me from bending my wrists. By chance my research led me to omega-3 fatty acids – and once I started taking those, after two years of misery I was able to throw the drugs and the wrist supports away. I have had full use of both of my hands since then, but I still take 1 gram a day of EPA for its anti-inflammatory benefits – and I'd like to think that it's doing something positive for my brain as well!

Although more studies are needed to confirm this, the evidence points to EPA rather than DHA as the omega-3 fatty acid most important in regulating behaviour, learning and mood. This is why we have chosen a **very pure high-EPA supplement** as MorEPA for our latest research studies in this area. Our 'target dose' of 500mg/day EPA can be provided using just one large capsule (or two small MINI capsules) per day of a concentrated supplement such as **MorEPA and PlusEPA**. By comparison, supplements used in previous studies required 6 or more capsules per day to achieve the same dose.



For further information on the benefits of Omega-3 fatty acids visit Dr Richardson's charity web site at [www.fabresearch.org](http://www.fabresearch.org)

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Minami Nutrition's obsession with the most stringent purity levels and environment friendly manufacturing is why countries from Scandinavia to New Zealand have discovered the best quality omega-3 fatty acid range in the world.

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