

The Oil Drum: Campfire

Discussions about Energy and Our Future

Omega 3, Brain Health, and Society

Posted by [Nate Hagens](#) on September 9, 2009 - 4:40pm in [The Oil Drum: Campfire](#)

Topic: [Demand/Consumption](#)

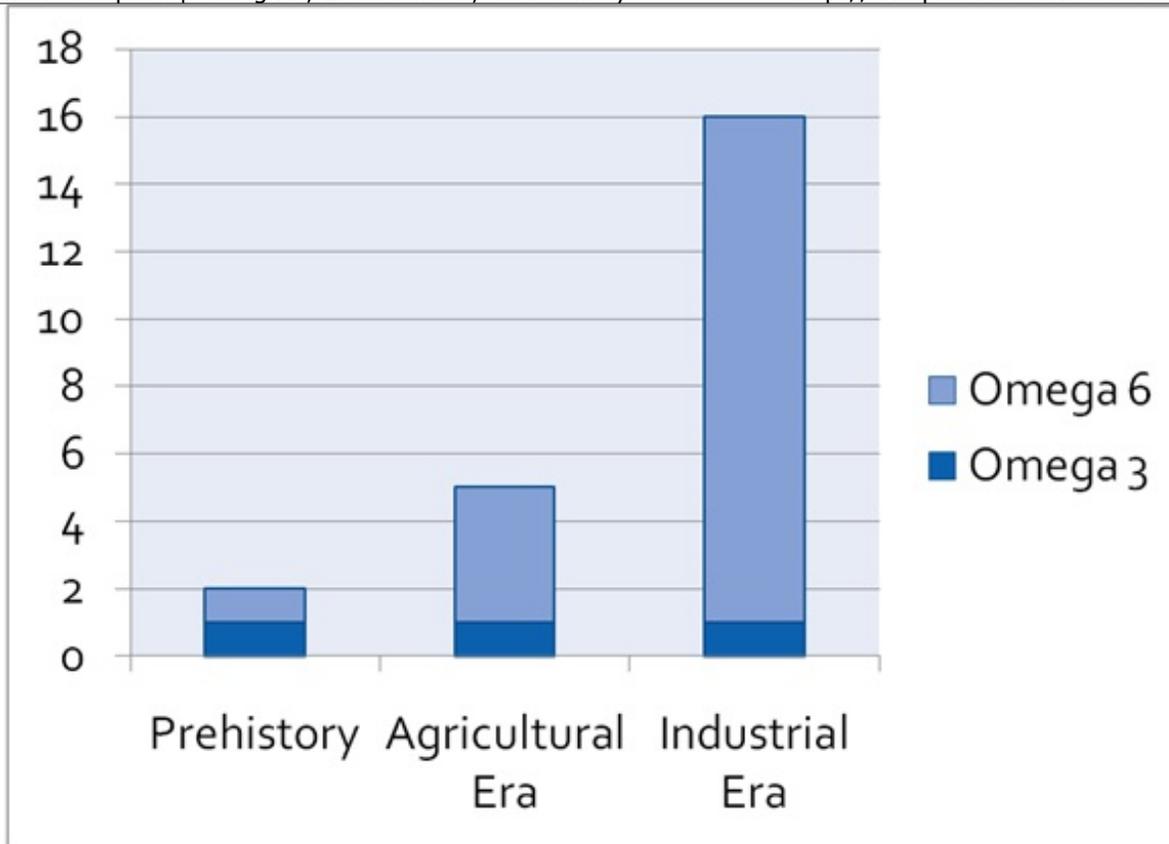
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Below is a guest post on the importance of Omega 3/6 for brain function in a post peak world from Michel Petit, MD, ([awashinoil](#) on TheOilDrum). Dr. Petit is a General Physician, has been Peak Oil aware since 1996 (Scientific American Campbell and Laherrere), with special interests in environmental medicine, human evolution, nutrition, brain health, and the biology of aging. Like myself, Michel believes that our environment and our nutrition are very important if we want a healthy population.

OMEGA 3, BRAIN HEALTH, AND SOCIETY

Our distant paleolithic ancestors ate an omnivorous diet composed of wild plants, animal meat and fishes. About 10,000 years ago, domesticated animal meat, milk, eggs and cereals grains were gradually introduced in the human diet. During the 19th century, refined sugars, refined grains and hydrogenated vegetable fats became part of the human diet. Vegetable oils, high-fructose corn syrup and processed food became very popular in the 20th century. All these recent changes have altered our genetically determined biology. To function optimally, our body and especially our brain need to respect our evolutionary dietary history.

The fatty acids composition of modern diet plays an important role in brain function, and thus behavior. Modern diets have created a great imbalance between two important fatty acids nutrients. Omega 3 and omega 6 fatty acids are essential nutrients to human health and cannot be manufactured by the body itself. We must get them from food, the best source of omega 3 being fish while the main source of omega 6 being vegetable oils. Our distant ancestors ate a diet with a balanced ratio of omega 6 /omega 3 fatty acids of 1:1. The human brain evolved for hundreds of thousands of years fed with balanced portions of game meat, fish, fruits, vegetables and roots.

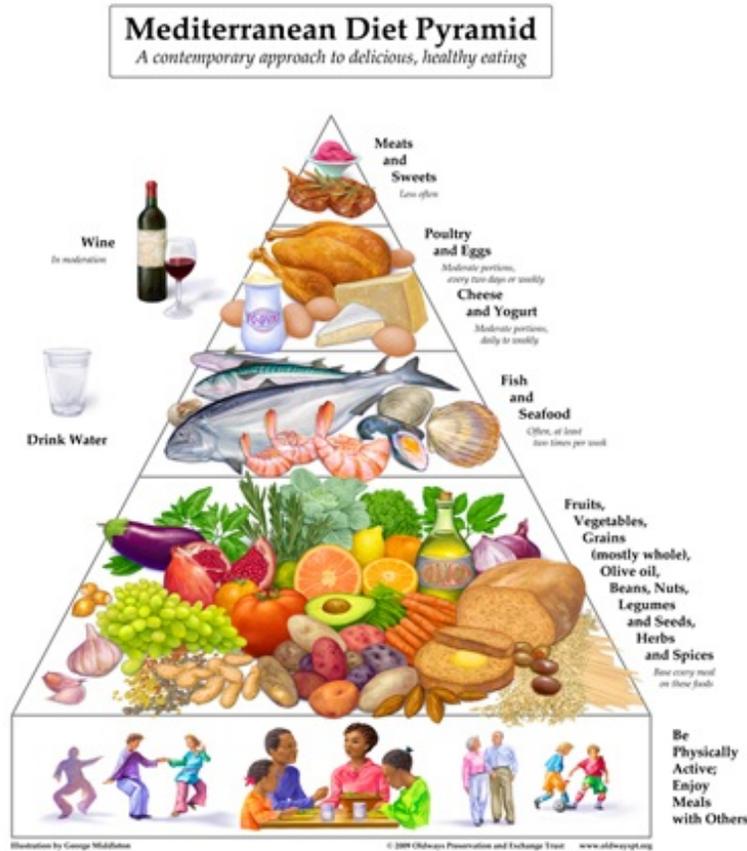


The sharp rise in processed food made from vegetable oils has increased the omega 6/omega 3 ratio to at least 15 in modern society. We know this ratio is far too high for optimal brain functioning.

There is no consensus about the ideal omega6/omega 3 ratio but most experts agree it must be below 4:1. Today's discussion is limited to the impacts of essential fatty acids on brain and behavior. If you want to learn more about these essential nutrients, their biological activities and their other effects on health, go to [this link](#). If you don't have enough time to read that text, watch two short videos entitled: *Introduction* and *Brain and Eye* on [this web site](#).

Omega 3 fatty acids are very important for normal brain function and psychological health. Dietary deficiency of omega 3 fatty acids is very common and has been associated with increased risk of attention-deficit disorder, dyslexia, dementia, depression, behavioral problems, impaired learning, impulsive and aggressive behavior. A diet too rich in omega 6 fatty acids is almost always associated with similar problems. The higher your omega6/omega 3 ratio, the more likely your brain will not function at its full potential. Correcting and optimizing intakes of omega 3 and omega 6 fatty acids are potential opportunities to prevent, correct or lessen the severity of these problems. Optimizing omega 3/omega 6 fatty acids ratio could contribute to these desirable objectives. This means eating enough [omega 3 fatty acids](#) while limiting the intake of [omega 6 fatty acids](#).

One good way to optimize this ratio is to follow the Mediterranean Diet - I like [this Food Pyramid](#) because it provides a good omega6/3 ratio.



[Mediterranean Pyramid](#)

The Mediterranean Diet provides all the vitamins, minerals and phytochemicals your body needs. Only Vitamin D supplementation is sometimes required depending of the color of your skin (darker skinned people need more Vitamin D) or your sun exposure (you may need Vitamin D if you never go outside, live in northern climates, or are addicted to TheOilDrum). Your physician will tell you how much Vitamin D you may need. (Living in Canada and working inside a building, I take 1000 I.U of Vitamin D on a daily basis). You should also know that fish is an excellent dietary source of Vitamin D.

Now that we know that omega 3 fatty acids are essential for optimal brain function, it is time to ask the following ecological/resource question:

Are there enough fish in the sea to provide every human brain living on this planet with adequate Omega 3?

[Deep sea fishing has peaked](#) during the last 10 years, while population has not. Overfishing is well explained by [Dr Daniel Pauly in this video link](#). Growing acidity of oceans is also killing corals and planktons which is gradually destroying the marine habitat. To learn more about ocean acidification, take the time to [watch this 56 minute video](#).

Oceans, rivers and lakes are also becoming more polluted with fertilizers, chemical pollutants and

plastics. As an expected consequence:

- *The list of endangered fish species is growing.
- *Dead zones in oceans are growing.
- *Fish are smaller.
- *Smaller fish produce fewer eggs.
- *[Jellyfish are taking over.](#)
- *Freshwater fish are generally too polluted for human consumption.
- *Aquaculture is growing fast but the quality of these fish varies widely.
- *Farm-fishes are sometimes located in polluted coastal waters.
- *Antibiotics, pesticides and fungicides are widely used in fish farming.
- *Farmed fish contains less omega 3 than wild fish.
- *Transgenic fish can have a higher tolerance to toxins and accumulate more toxins that ultimately end up in consumers.

[Source](#)

The logical next question is:

How can we secure the future supply of omega 3 for a growing human population approaching 7 billion?

We do know that marine ecosystems may recover under [appropriate management](#). The list of Omega 3 fortified-food is growing. Could [aquaponics](#) become the equivalent of home fish-farming? Algae based DHA is expensive but also could be a reliable replacement. [Jellyfish on the menu](#) ?

CONCLUSIONS

We simply have no choice. Marine habitats should be preserved because once they are destroyed, they take a long time to recover or may never recover. Wild fish remains the best source of omega 3 fatty acids. (and, it is much tastier than jellyfish). We should do everything to preserve fish in our oceans, our lakes and our rivers. If for no other reason than we need healthy ocean fisheries to properly feed more than 6 billion human brains. There is no reason to let a nutritional deficiency ruin the life and potential of the masses. A world with enough fish for everyone could become a much better place. Imagine what could be the positive impacts if everybody had a better attention span, an improved mood and decreased [impulsivity](#). Perhaps the world would be better prepared to find long term solutions to today's and tomorrow's economic and environmental problems. Collective discount rates would certainly improve for the best.

For a better world,

Michel Petit, MD



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