

Women & Children

What men, women and children NEED TO KNOW

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Understanding the critical value of basic essence EFAs - particularly in brain development - is important to everyone. But because of the increased nutritional requirements, pregnant and nursing mothers need to be especially aware of their importance. Likewise, do the mothers of school-age children need to know the importance of basic essence EFAs.

For the reasons discussed in the book, **Beyond The Zone** - the "Stat-Smart" chapter- I rarely place much confidence in studies. However, there are 3 exceptions:

1. A study can be conclusive in proving a "negative." If I theorize that fiber prevents colon cancer and then I give 1,000 people plenty of fiber, but they still get colon cancer in the same proportions as the general population, then clearly, the theory's premise was false. This fiber protection theory actually was disproven in 1999.
2. A study that is not funded by a pharmaceutical, food, or nutrition company will be much more credible than an industry funded study, because the researcher has less financial bias.
3. A study exploring or verifying established basic science - such as medicinal biochemistry - will be much more credible than a study designed to test a specific practical application — such as the effect that eating cereal has on the test scores of students.

Based on studies which meet these high standards, the following information reinforces the science presented in **Beyond The Zone**.

Did you know that animals consuming reduced amounts of EFAs over just 3 generations experienced an actual reduction in brain cells (smaller brains) and deficiency of omega 3 and omega 6 in the brain by the 3rd generation?¹

Life-Systems Engineering analysis: As with animals, the human brain needs certain raw material from the diet - it can't make healthy brain or nerve cells without the 2 Essential Fatty Acids (EFAs) that I refer to, together, as "basic essence." The brains of each succeeding generation of children become progressively more damaged!

Basic essence is typically removed or chemically altered by modern food processing, so we can predict that most parents and most children will be deficient in basic essence.

Did you know that brain synapses (nerve cell connections) have a higher concentration of basic essence-derived DHA (docosahexaenoic acid) than almost any other tissue in the body?² You may recall, from **Beyond The Zone**, that myelin (the insulating sheath around the nerve that speeds up the transmission) formation is critical to the development of the brain in children. Myelin production is increased with basic essence EFAs.

Scientists studied the brains of people with multiple sclerosis (MS), and compared them to the brains of healthy people. In the brains of the MS people, they found low levels of DHA, low levels of omega 3 (one of the 2 "parent" basic essence structures) in the blood, and almost no omega 3 stored in the adipose (fat) tissue.³

Multiple sclerosis is a medical condition defined by nerve destruction.

Life-Systems Engineering analysis: The structure of the brain absolutely requires the basic essence-derived DHA. The body makes all the DHA it needs when it has an adequate supply of omega 3. It is a logical conclusion that, to develop proper nerve integrity and maximum brain abilities, you need to ensure that you obtain enough "parent" omega 3.

Did you know that animals consuming inadequate basic essence couldn't learn well? Rats were subjected to a life-threatening situation and had to learn an avoidance behavior in order to survive.

With sufficient basic essence, these test animals showed a 100% success response against a life-threatening situation. Without basic essence — only 40% success — even after the 20th attempt to learn the required behavior!⁴

Life-Systems Engineering analysis:
Lower basic essence = reduced learning ability!

This is in animals. Imagine how much more important basic essence is to a human being, with a much bigger brain. Does your child have a learning-related problem? Now you have identified one of the prime suspects.

Did you know: Purdue University found that children with attention deficit and hyperactivity had lower levels of basic essence omega 3 and DHA in their blood?⁵

Is your child overly aggressive? Supplementation with DHA, a basic essence-derivative, often makes a significant improvement in students.⁶ This is yet another confirmation of the predictive value of the science of **Beyond The Zone**.

Hydrogenated (processed) cooking oils were patented in 1911. These oils contain little basic essence; the process changes the EFAs into harmful trans fats. More and more foods contain these hydrogenated oils: check the label on your margarine, cake mix, peanut butter, popcorn, cookies, and so on.

Our children are now at least the 3rd generation since 1911 (see first bullet on page 1). Could this lack of unprocessed basic essence in today's diet explain the catastrophic increases in A.D.D., A.D.H.D., other classroom-related learning disabilities, and violence and aggression in today's children?

Life-Systems Engineering analysis - Absolutely. The Purdue study is more confirmation of learning-related problems linked directly by a basic essence deficiency.

Inadequate basic essence = decreased learning ability!

It is now known that there are certain critical windows of development during which nerve cells and their connections **MUST** grow and become myelinated (that is, covered with myelin). These connections set the stage for potential intelligence and physical (body) control. The efficiency of brain connections may also be impaired by a deficiency of basic essence. (See discussion of multiple sclerosis.)

It is a well-known "basic" physiology fact that, if you can't see well, then you can't read well, either. It is now known that the retina (the "sensing" part of the eye) has the highest concentration of DHA (a basic essence derivative) of any tissue in the body - even higher than in brain synapses (see discussion above). Experiments show that, when basic essence is lacking in the diet, the levels of critical APTase - the chemical communicator - in the nerve endings fall by about half! After only 4 weeks of this malnutrition, dramatic changes take place in the retina. It takes as much as 10 times more light to make the eye respond!⁷

Life-Systems Engineering analysis: If you don't have enough basic essence, then expect vision-related problems, which lead to vision-related learning problems.^{8,9}

Many nutritional supplements are made available to increase blood flow to the brain, and with good reason — almost 1/5th of your heart's capacity is used to provide blood flow to the brain.

The brain receives almost 25 times more blood flow, on a pound-for-pound basis, than a muscular tissue such as an arm or a leg.¹⁰ Any restriction in blood supply weakens brain function. As you learned in **Beyond The Zone**, basic essence (especially the "parent" omega 6 component) is the body's natural nutrient to increase blood flow and, at the same time, decrease high blood pressure.

Life-Systems Engineering analysis: Is it any wonder, then, that younger and younger children are developing clogged arteries and heart disease, they are developing learning disorders in unprecedented numbers, and also can't learn — and nothing seems to help?

Parents — please make sure your children get their basic essence, so they'll be healthier!

Did you know that students performed better when their sugar intake was reduced and food additives were removed? From 1979 through 1983, one million (1,000,000) school children in 803 public schools in New York City were put on a diet free of food additives and with reduced sugar. Those schools' rankings increased to become the best ever - from 12.9% of the students performing 2 or more grades below proper level to just 4.9% performing poorly! The entire school system posted an increase of 15.7 percentage points.¹¹

Life-Systems Engineering analysis: Imagine the potential compounded results when a modest nutrition program, such as this one, is coupled with a basic essence supplementation program!

Do you think that you are “eating healthy”? Have you even adopted a vegetarian diet?

Life-Systems Engineering analysis: **Beyond The Zone** clearly explains, scientifically, why vegetarianism is inappropriate nutrition for a human being. Real-life results of physicians found that long-term vegetarians were especially low in DHA (a basic-essence derivative).

Because they didn't eat meat, vegetarians didn't obtain the DHA that meat provides. Children of vegetarians were deficient, too - but much worse -they had just a third (1/3) of the level of women who ate vegetables and meat!^{12, 13, 14}

Here's a significant question: Do all the adulterated damaged oils and fats (hydrogenated oils and transfats) from fast-food restaurants, most supermarkets, and processed foods simply increase the deficiency of basic essence or is the problem even worse? Do they actually replace good EFAs in the brain, organs, and cells — even crossing the placenta to affect the developing baby? You won't like this answer — The damaged fats and oils REPLACE the natural ones — especially in the brain!

They also find their way into the heart, liver, myelin sheath (nerves), retina (eye), sciatic nerve, and blood vessels. The greater the basic essence deficiency, the greater the damage to the body!^{15, 16, 17} If the tissue doesn't have enough of the exact required nutrient, the next “closest fitting” EFA-derivative is used instead — and it doesn't work like the required one.

A pregnant woman requires basic essence for her developing child. Pregnancy places considerable extra stress on the body, which leads to an even worse basic essence deficiency for mom. During pregnancy, her basic essence levels are reduced, as compared to non-pregnant women, and this condition persists even after her pregnancy unless the deficiency is remedied.

Life-Systems Engineering analysis: For the healthiest child, you must begin to correct the basic essence deficiency at least 6 months before conception. With basic essence deficiency, both you AND your child suffer — perhaps permanently.^{18, 19}

Pregnant women — please make sure you have sufficient basic essence, so your newborns aren't brain-deficient!

Are you angry that results such as these, conclusively showing the real-life results of basic essence deficiency, aren't publicized to the general public? You have every right to be outraged! The majority of these studies were published — mainly in limited-circulation professional journals — in the early 1990s. Popular health and nutrition magazines keep touting: take lots of vitamins and calcium, don't eat fat, eat lots of carbohydrates, and exercise extensively. Could it be that everyone is repeating the wrong advice?

Yes, they are, and now **Beyond The Zone** gives you the established medical science that predicts the real-life results of these and other studies. Isn't it time that you put the power of science to work for you instead of trusting popular opinion?

¹Sinclair, A.J., Crawford, M.A., "The effect of a low fat maternal diet on neonatal rats," Br J Nutr, 1973, 29:127-137.

²Bazan, N.G. "Supply of n-3 polyunsaturated fatty acids and their significance in the central nervous system," Ref.: Wurtman, Nutrition and the Brain, Vol. 8, New York: Raven Press, Ltd., 1990:2.

³Nightingale, S, et al. "Red blood cell and adipose tissue fatty acids in active and inactive multiple sclerosis," Acta Neurol Scand, 1990, 82:43-50.

⁴Yokota, A. "Relationship of polyunsaturated fatty acid composition and learning ability in the rat," Nippon Saniujinka Clakkadji (in Japanese), 1993, 45:15-22.

⁵Stevens, L.J., Burgess, J. "Omega 3 fatty acids in boys with behavior, learning, and health problems," Physiology Behavior, 1996, 59(4-5):915-920.

⁶Hamazaki, T., et al., "The effects of docosahexaenoic acid on aggression in young adults," J Clin Invest, 1996, 97:1129-1134.

⁷Bourre', J.M., Brainfood, Little Brown, and Company, 1993, pages 56, 208-209.

⁸Bazan, N.G., Gordon, W.C., Rodriguez de Turco, E.B., "The uptake, metabolism, and conservation of docosahexaenoic acid (22:6n-3) in brain and retina alterations in liver and retinal 22:6 metabolism during inherited progressive retinal degeneration" ¼ Sinclair, A., Gibson, R., eds., Essential Fatty Acids and Eicosanoids, Champaign, Ill: American Oil Chemists' Society, 1992, pages 107-115.

⁹Birch, E.E., Birch, D.G., Hoffman, D.R., Uauy, R., "Dietary essential fatty acid supply and visual acuity development," Invest Ophthalmol Vis Sci 1992, 33(11):3242-53.

¹⁰Bourre', J.M., Brainfood, 208-209. (Based on work of neuroscientist Nicholas Bazan.)

¹¹Schoenthaler, Stephen, et al., "The Impact of a Low Food Additive and Sucrose Diet on Academic Performance in 803 New York City Public Schools," Intl J of Biosocial Res, 8(2), 1986, pages 185-195.

¹²Argen, et al., "Essential fatty acid composition of erythrocyte, platelet, and serum lipids in strict vegetarians," Lipids 1995, 30(4):365-69.

¹³Reddy, S., Sanders, T.A.B., Obeid, O., "The influence of maternal vegetarian diet on essential fatty acid status of the newborn," Eur J Clin Nutr, 1994, 48:358-68.

¹⁴Reddy, S., Sanders, T.A.B., "The influence of a vegetarian diet on the fatty acid composition of milk and the essential fatty acid status of the infant." J Pediatr 1992, 120:S71-77.

¹⁵Dopeshwarkar, G.A. Nutrition and Brain Development, Plenum Press, 1981, pages 70-73.

¹⁶Grandgirard, A., Bourre', J.M., Julliard, F., et al., "Incorporation of trans long-chain n-3 polyunsaturated fatty acids in rat brain structure and retina," Lipids, 1994, 29(4):251-258.

¹⁷Peterson, J., Opstvedt, J., "Trans fatty acids: Fatty acid composition of lipids of the brain and other organs in suckling piglets," Lipids, 1992, 27(10):761-69.

¹⁸Van Jaarsveld, P.J., et al., "The essential fatty acid status of women from a community with low socioeconomic status," Med Sci Res, 1994, 22:719-21.

¹⁹Holman, R.T., Johnson, S.B., Ogburn, P.L., "Deficiency of essential fatty acids and membrane fluidity during pregnancy and lactation," Proc Nat Acad Sci, 1991, 88:4835-4839.