

Want to See a Better Report Card?

Good nutrition can *really* help your child do better in school.

Although most experts don't know why children today do worse on tests than kids 30 or 40 years ago, there is a nearly invisible group of researchers who have found that good nutrition improves behavior, attendance, and test scores.

Here's the short version, with explanations in the following pages, of how to put their research to work for your child, what to avoid and what to seek out:

- Buy nothing containing **trans fats**
- Cut out **corn syrup** and reduce sugar of all other types
- Cut back on **corn and potatoes** - they are not "vegetables" but merely starch
- Reduce the omega-6 oils (**corn, safflower**, etc.) so that the ratio of 3s to 6s is healthier
- Avoid **cottonseed oil**, which is loaded in pesticide residues because cotton is considered a fiber crop not a food crop
- Cut out artificial **colors, flavors** and **sweeteners**
- Include sardines, rich in omega-3s (EPA and DHA), vitamin D and vitamin A
- Provide your child with supplements to compensate for the lower quality of modern food, which can be ordered online for a good price:
 - * A good chewable vitamin & mineral like NSI's *Synergy Children's Animal Chews* or Nature's Plus *Animal Parade Chewable*. At the store, good quality chewable tablets cost 27¢ a day but from VitaCost.com they are only about **14¢** a day. Flintstones chewables are cheaper but contain fewer nutrients.
 - * EPA-DHA supplement, such as Coromega's orange flavored gel in convenient packets, **23¢** a day for 230 mg of DHA and 350 mg EPA.
 - * Vitamin D, 2000 IU, which is a high enough dose to protect from flu, diabetes, and more (see below). The retail price is \$8 for a bottle of 120, or 7¢ each, which lasts 4 months, but from vitaminshoppe.com they are \$5 a bottle, or **4¢** each.)

All three supplements would cost **30¢** a day, which is cheaper than a can of soda or even an apple or banana! Read on to see how these scarce nutrients can transform your child's life.

Politicians may say that teachers don't know how to teach and parents are not helping their kids enough. But it's clear that the poor quality of modern food, compared to a few decades ago, is a better explanation for the decline in SAT scores, and the far higher rate of absences, retention, violence, and vandalism. <http://www.odemagazine.com/article.php?aID=4143>

Dr. Alexander Schauss found that whenever prisons or juvenile halls improved nutrition, there was up to 75% less violence, theft, and other antisocial behavior. <http://www.mwsc.edu/psychology/research/psy302/fall95/clark.htm>

It's time to see the obvious: when it comes to what kid eat, the old computer geek axiom applies: "garbage in, garbage out."

Pellagra

To fix school meals, we don't need to reinvent the wheel. The story of pellagra has a lot to teach us. First reported in 1902, pellagra was known for the "4 D's": dermatitis, diarrhea, dementia, and death. At least 100,000 died, and thirty times that many suffered but survived. Three decades in, one researcher showed that it was not an infectious disease but resulted from deficiencies. Another 10 years went by before the FDA required white flour to be fortified with B vitamins, which finally ended the epidemic.

pbs.org/wgbh/aso/databank/entries/dm15pa.html

The new pellegra

In the 1980's, Dr. Don Rudin called a constellation of problems "*neo*-pellagra." As a department head at a psychiatric institute, he designed a pilot study that gave 44 patients a nutritious diet plus omega-3s in the form of flax oil or fish. The subjects had a variety of physical problems like eczema and allergies, and mental problems, including schizophrenia, depression, and agoraphobia, all of which responded dramatically to the regimen.

<http://www.althealth.co.uk/services/info/supplements/Omega3.php> <http://shop.store.yahoo.com/homegym/omailpracgui.html>

While B vitamins were the missing link in the earlier pellagra, this time around it was essential fatty acids called omega-3s that were missing. What *are* omega-3s, you may wonder. They are called *essentia*/because we cannot make them from other oils and fats we consume. However, omega-3s are very hard to find in the modern diet, and trans fats are a big reason why.

Trans fats

Lately, trans fats are notorious because they are now banned in New York City, but food activists have been opposing trans fats for years. Partially hydrogenated oil *is* trans fats. But trans fat below .5 grams per "serving" can legally claim "zero trans fats."

According to the Harvard School of Public Health, the average American eats five pounds of trans fat each year! That's 6.21 grams per day, which seems low when you consider that a person eating one doughnut for breakfast (3.2 g) and a large order of french fries for lunch (6.8 g) would ingest 10 g of trans fatty acids.

Of course, someone on a junk food diet (think: teenager) would be consuming 15 to 20 grams a day of trans fat! For total fat calories eaten per day, the average American consumes the equivalent of a whole stick of butter each day. <http://www.hsph.harvard.edu/reviews/transfats.html>

This is why it's such good news that the New York City ban on trans fats has many copy cats, including Universal Studios and Disney. Yet, oddly enough, the USDA's \$9 billion dollar school breakfast and lunch program still serves pudding and "healthy" donuts, and more, that contain trans fats, despite the fact that the National Academies of Science's Institute of Health says **there is no safe level of trans fats.** <http://www.nationalacademies.org/headlines/20061212.html>

A recent study from Holland found that trans fats actually lower IQ. They compared the intake of various fatty acids by pregnant women (determined by fatty acid content of the umbilical cord) with the neurological tests of their infants at 18 months. The infants with the highest cord levels of trans-form omega-6 fats (derived mostly from the partially hydrogenated oils in their mothers' diets) had the lowest brain scores. And the brain test scores fell in tandem with umbilical cord omega-3 levels, with fewer omega-3s linked to poorer brain performance. <http://chetday.com/omega3infant.htm>

The missing omega-3s

Omega-3s are scarce in the American diet not only because beef is no longer grass-fed, and people eat less fish and greens, but also because the trans fats in so many processed foods *cancel* omega-3s. <https://www.bcbsri.com/BCBSRIWeb/about/newsroom/mag/harvardspecialsu2003.jsp>

We've all heard about the new epidemics of obesity, asthma, allergies, ADD, and diabetes in America's school children. It began small 30 years ago but is now at emergency levels. True, many of my students function better because of Ritalin and inhalers, but they weren't *born* with a deficiency of Ritalin or epinephrine.

Could it be that these ailments are far more prevalent now because our food has changed? As a matter of fact, according to Dr. Artemis Simopoulos, M.D., who headed the NIH Nutrition Committee for nine years, 90% of Americans are omega-3-deficient. cgnh@bellatlantic.net Kids with asthma and allergies typically have lower plasma levels of omega-3s, as do many kids with ADD. Since all those problems are greatly helped by omega-3s, shouldn't we increase omega-3 foods in the schools? A panel of NIH (National Institute of Health) experts (ISSFAL - International Society for the Study of Fatty Acids and Lipids) recommends that a 9-year-old get **450 mg of DHA/EPA**. http://diabetic-diet-secrets.com/members/index2.php?option=com_content&do_pdf=1&id=140 That is **about one sardine a day**. DHA and EPA are the particular type of omega-3s especially important to the brain and hormones. Unfortunately the USDA school meal program contains practically *no* omega-3s.

To add to the complexity of the problem, it turns out that the *ratio* between omega-3s, (important for IQ, vision, and immunity) and omega-6s is another factor we must consider. We evolved on a natural diet that ranged from 1:1 on up to 1:4 in the ratio between omega-3s (found in grass-fed beef and fish) and omega-6s (found in corn, safflower, sunflower, and cottonseed oil). Now the American diet has a ratio more like 1:15 or even 1:20. The opportunity cost of using corn oil is that any tiny amount of omega-3s that Americans might consume will be overwhelmed by the 6s. That's why olive oil, low in both 3s and 6s, has been helpful, since it keeps the ratio closer to the ideal. The World Health Organization recommends a ratio of 3s to 6s of no more than 1:10. Sweden recommends a ratio of 1:5, and Japan recently lowered its recommendation from 1:4 to 1:2.

ScientificAmerican.org reports that the more omega-6 fatty acids people had in their blood compared with omega-3 fatty acid levels, the more likely they were to suffer from symptoms of depression. <http://www.sciam.com/article.cfm?alias=fatty-acid-tied-to-depres&chanId=sa003&modsrc=reuters> Educators should take note because depression affects more and more young people.

Where is the FDA?

Beyond that, you may ask, why hasn't the FDA set a Recommended Daily Allowance for omega-3s? Maybe because if they did then the USDA school meal program would have to insure that kids *got* them. Two years ago, the Office of Management and Budget urged the Department of Health and Human Services and Agriculture to revise the nation's dietary guidelines to say that omega-3 fatty acids can reduce the risk of coronary heart disease, while trans fatty acids may *increase* the risk. So far, no change.

http://www.udoerasmus.com/articles/misc/n3_transfats_usgovt.htm

Recently, consumers have forced food manufacturers to give up trans fat even though it has a fantastic shelf life. But food processors will fight fiercely to keep omega-3s *off* the list of essential nutrients because foods made with them have a very *short* shelf life.

Some school districts ahead of the curve

There has been some progress: Years before New York City banned those trans fats, North Carolina took them out of school meals. [Nutrition in School Food Program Section 7.29.\(a\) G.S. 115C-264](#) Meanwhile, in Texas twenty-eight school districts now serve enchiladas and nachos enriched with the "good guy" omega-3s extracted from sardines. http://biz.yahoo.com/prnews/040120/datu028_1.html

Will kids eat healthy food? The last three years I taught in Sacramento I had a little experiment in my classroom. I showed my second graders that I could eat omega-3-rich sardines -- scales, guts, bones and all! Half of them begged for a taste. With their parents' permission, they could have sardines every day for snack and often asked for seconds and

thirds! (Humans have eaten sardines for millennia; sardines are better than tuna because they are lower on the food chain and have hardly any mercury or dioxin residues.) The sardine eaters improved academically faster than the others.

<http://www.sacbee.com/content/news/education/story/12735250p-13587059c.html>

Antonia Demas has been bringing wholesome, delicious food to children for years with her "Food Is Elementary" curriculum. To see how she gets a child to write, "I have changed my favorite food from candy to broccoli," visit: <http://www.foodstudies.org/Curriculum/LessonSummaries.htm>

Sodas

The average teen drinks at least two 12-ounce sodas a day, that's 300 calories!

http://www.mercola.com/2005/jun/14/calories_america.htm Tufts University researchers found that the average American consumes 120 pounds of sugar a year, which is 600 calories a day from sugar. <http://www.spineuniverse.com/displayarticle.php/article1149.htm> Yup, that means the average kid gets half their empty calories from sodas! It's good that schools are finally banning soda machines.

Sugars

Besides the lack of omega-3s and excess trans fat, food in schools is plagued by high amounts of corn syrup and other sugars. Food containing this high fructose corn sweetener can legally be called "all natural." While raisins are *really* natural, mixing a cheap sweetener with white flour and hydrogenated fat makes a nonfood that can be *advertised* as "all natural." You know corn syrup is cheap but did you know that it stimulates the brain's opiate receptors? That's why food processors like to put it in as many foods as possible.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=15962882&dopt=Citation

It's not just in sodas

But corn syrup is not only in sodas. Our consumption of corn syrup has risen 250% in the past 15 years because it's in just about anything that is sweetened. A new study links the sharp rise of diabetes to the growing consumption of refined carbohydrates.

<http://forum.lowcarber.org/showthread.php?t=180216> Another study links trans fats to diabetes.

<http://www.mendosa.com/transfat.htm> So our kids are getting a double whammy, namely, corn syrup *and* hydrogenated oils. No wonder diabetes in children has tripled in ten years.

<https://www.healthforums.com/library/1,1277,article~10245,00.html>

Kellogg's Apple Jacks cereal, served for breakfast in Vallejo schools (with milk the only protein - despite milk protein and milk sugar being allergens for most children of color), contain *both* corn syrup and partially hydrogenated oil. The national school lunch program was created to prevent the high level of poor health found in military draftees for WWII, but now it is part of the problem, helping to cause the poor health that we all pay for in the higher cost of education and health care, and lower productivity, not to mention the cost of crime and addiction.

John Hoebel, a psychologist at Princeton University, is researching whether it is possible to become dependent on the natural opioids released from eating a large amount of sugar. Along with a team of physiologists from the University of the Andes in Venezuela, Hoebel recently showed that rats fed a diet containing 25 per cent sugar are thrown into a state of anxiety when the sugar is removed. Their symptoms include chattering teeth and the shakes—similar, he says, to those seen in people withdrawing from nicotine or morphine.

<http://banzhaf.net/docs/newsci.htm> Is it realistic to think that a few "five a day" posters on the cafeteria walls will convince kids to choose veggies over the sugary options? Why not simply require that all calories on school campuses be *healthy* calories?

Lessons from anti-tobacco campaign

We can learn a lot from the anti-tobacco movement. After our nation hit the tipping point, not only were existing laws that prevented minors from buying cigarettes more effectively enforced, but *new* laws were passed to ban smoking from public places. New curricula with the anti-tobacco message were added. Beyond that, state governments sued Big Tobacco when the health fallout of cigarettes overwhelmed the medical system and tax dollars were footing a large part of the bill.

Similarly, now that some states and school districts are improving nutrition beyond the USDA standards, government lawyers will consider suing Big Junk Food.

What's served at schools

The Mental Health Foundation says scientific studies have clearly linked attention deficit disorder, depression, Alzheimer's disease and schizophrenia to junk food and the absence of essential fats, vitamins and minerals in industrialized diets. <http://www.guardian.co.uk/food/Story/0,,1687319,00.html>

A few dieticians are real advocates for children's nutrition stick out in the crowd, people like Enid Hohn in Vista. <http://www.signonsandiego.com/news/education/20050914-9999-7m14fitness.html> Vista Unified replaced chips, candy, chocolate milk, and sodas with granola bars, dried fruit, beef jerky, nuts, cut-up fruit, shaker salads, vegetables with ranch dressing, tuna packs with crackers, water bottles, milk and fruit juice. Hohn says, "Kids will eat healthier items and you can still make money, and a pox on anybody who says kids are only going to drink soda and eat Flaming Hot Cheetos. In 10 years I believe we will look back and say, 'Can you believe we used to sell that junk to our students?' " http://www.usatoday.com/news/health/2005-08-21-junk-food-cover_x.htm Santa Rosa Unified banned chocolate milk from their cafeterias because it is loaded with corn syrup; too much sweetness interferes with absorbing the calcium!

IQ

Poor nutrition is a major cause of low IQ and aggression, big problems for educators that no amount of new curricula and increased teacher training will fix. One study of 1000 children found that the malnourished group had a 41% increase in aggression by age 8 and a reduction in IQ. Between 9 and 16% of American adolescents are iron deficient, and for black and Mexican American girls it ranges between 19 and 22%. <http://www.usc.edu/usnews/stories/10773.html>

Adolescents who suffered severe iron deficiency as infants tested lower than average on visual-motor integration, quantitative or numerical concepts, visual matching, and performance IQ, even though their current iron and growth status is excellent, according to a University of Michigan study. They scored about 7 points lower on standardized achievement tests [100 point scales] for reading, writing and arithmetic, with particularly marked differences in written expression. They had also acquired less general knowledge of the world, were less able to do abstract reasoning, and their motor scores were also lower. <http://www.sciencedaily.com/releases/1997/06/970606121500.htm>

Researchers studied 245 children in a Phoenix elementary school, giving half a vitamin-mineral supplement and the other half placebos. The children on supplements had an average gain in nonverbal IQ points over those taking placebos. Significantly, the overall gain was due almost entirely to 24 children who exhibited an average 16-point higher net gain in IQ scores over placebo controls.

"In order to place this magnitude in social perspective," the researchers note, "a typical high school graduate who enters a vocational trade school has an average IQ of 100 while the typical college graduate who is successful in graduate school has an IQ of 115."

<http://www.crimetimes.org/OOb/w00bp3.htm>

Vitamin D Finally Famous

Look what this new media darling does for us:

Forbes reports it helps fight **tuberculosis**. <http://www.forbes.com/lifestyle/health/feeds/hscout/2006/02/23/hscout531184.html>

Harvard found it prevents **cancer**. <http://www.nutraingredients.com/news/ng.asp?n=72442-vitamin-d-cancer-rda>

The New York Times, **fewer falls** http://www.projo.com/lifebeat/content/lb_Brody_Vitamin_02-24-08_6B9262U_v11.1925fe0.html

Prevents **asthma**, the chief cause of school absence. <http://www.sciencenews.org/articles/20070512/food.asp>

Researchers find that D prevents **diabetes**. http://digg.com/health/The_vitamin_D_miracle_Is_it_for_real

D prevents or reverses **coronary disease**. http://en.wikipedia.org/wiki/Vitamin_D

Pregnant women need D to prevent **preeclampsia** <http://www.newstarget.com/022493.html>

And it prevents **schizophrenia**. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=14984883&dopt=Abstract

Vitamin D Could Close the Achievement Gap

State Superintendent of Schools Jack O'Connell convened a large conference last year to deal with the Achievement Gap http://en.wikipedia.org/wiki/Achievement_gap. Why are Asian and white kids, *on average*, up to four years ahead of black and Hispanic kids? He believes that the problem is due to teachers' cultural ignorance or racism.

But the evidence says the real problem is the difference in peoples' ability to absorb the sun's ultraviolet rays, which are blocked by melanin in the skin, so the darker a person's skin tone, the less vitamin D they can make. A University of Pittsburgh study found that over 80% of black women (compared to 50% of white women) are D deficient during pregnancy. Their infants had even higher levels of deficiency, 92.4% and 66.1% respectively. Asians also have skin pigment, but many Asian diets include D-rich fish. <http://www.newstarget.com/022039.html>

Nearly every cell in the body has vitamin D receptors, including the brain. That means that D is crucial for thinking. Dr. Michael Holick, one of the best-known vitamin D experts and author of *The UV Advantage*, explains that blacks make five to 10 times *less* vitamin D in their skin per minute of sun exposure than whites, due to higher pigmentation. The CDC found that 10 times more blacks than whites were D deficient. [Vitamin D Council, 11-3-03, www.cholecalciferol-council.com] Hispanics are also lower than average in D. <http://www.futurepundit.com/archives/003178.html> By the way, in winter *nobody* living north of San Francisco, regardless of skin color, can make *any* vitamin D because the tilt of the earth means the UVB rays travel at a slant through the atmosphere, and are absorbed before reaching us.

Why is the problem greater now? More Hispanics now avoid traditional refried beans that contain lard (pork fat). For African Americans, Soul Food (not the modern degraded version heavy on white flour, sugar and hydrogenated fats, but the traditional kind) used lard and bacon drippings. Both cuisines supported health for hundreds of years. Going back to the days of slavery, "massah" only provided the cheapest calories, but slaves added wild game and fish, cast-off organ meats, wild greens or home-grown produce, and -- yes! -- pork fat.

The richest land source of D is pork fat, at 2,800 IU per 3.5 ounces, about two times what is found in 3.5 ounces of herring! A lactating sow needs 3,600 IU a day, and, since sick sows are expensive, they get it, hence pork fat is nutritious. We can only wonder why the FDA isn't concerned about the social costs of sick human mothers and babies when it sets an RDA for nursing mothers at a mere 400-600 IU, while in Canada the RDA is 2000 IU.

Many families are amused by stories of their grandmother or great grandmother forcing the children to take a spoonful of cod liver oil every morning. A friend tells me her mother tried to make it more palatable by following up with a slice of orange. I point out that her fine brain (and master's degree) and lovely teeth probably owe a lot to her mother's insistence on that daily lovin' spoonful.

The dreadful taste was due to poor storage methods which allowed oxidation; oil that is properly stored isn't too "fishy." Cod liver oil contains omega-3s and vitamin A along with the vitamin D, so it was quite an elixir for health that has no modern counterpart. Alas, informed consumers who go out of their way to consume omega-3 supplements aren't getting any D because it is removed in the distillation. The research is there, what's lacking is a distribution system. An alert supplement company could market a tasty cod liver oil concentrate, particularly aimed at communities of color, and someday we'd all look back and see what a difference it made. Is official lack of action simply another form of racism?

Hardly any food contains vitamin D. Until schools start issuing vitamin supplement pills, about the only way to get it is from food that contains fish livers, i.e. sardines (which are more sustainable than fish at the top of the food chain, although we must work to protect them too.) It's true that milk is fortified with D. But did you know that 70% of black kids and 90% of Asian kids are allergic to milk? <http://www.alternet.org/story/13557/> Also, the D2 (ergosterol) is about a tenth the biological efficiency of D3 (cholecalciferol) from fish oil.

Tired? Try vitamin D

Clara Felix explains why, and what to do about it in the following four paragraphs:

To produce the ATP "energy currency" molecules that fuel all cellular activities, the cell's "energy factories" (the mighty mitochondria) must use *ionized* calcium.

No Calcium ions = no cell energy!

Carl Reich MD of Calgary premised over 30 years of clinical practice on this unique function of vitamin D. Without enough ionized [electrically charged] calcium, he said, "cell energy starvation" takes place. To combat this the body acidifies its cellular fluids, in a desperate effort to ionize whatever calcium it can.

Reich used saliva pH tests to confirm widespread chronic systemic acidity in his patients, including children. He insisted that this and low cell energy are prime instigators of all kinds of health nuisances: fatigue, headaches, muscle cramps, allergies, gut problems, etc. If vitamin D deficiency persists and the body's adaptive processes become exhausted, he said the small complaints evolve into serious ones: asthma, hypertension, osteoporosis, arthritis, etc., depending on which organ or system is most vulnerable.

Reich proved his theory by treating patients with calcium, magnesium and zinc; vitamin A, and vitamin D (4800 - 8800 IU daily for adults; 2400 - 5200 IU daily for adolescents; 1,400 IU for children). He also recommended an alkaline-producing diet high in vegetables and fruit. . . and he saw very consistent improvements and recoveries in his patients!

<http://www.smartlifeforum.org/felixletter/issue118.htm>

Flu Season is Vitamin D Deficiency Season

"Imagine being able to block the spread of epidemic flu with appropriate doses of this vitamin," says immunologist Richard L. Gallo of the University of California, San Diego, a coauthor of many Vitamin D studies. Flu hits in the winter, when people's sun-induced levels of D are lowest. Gallo explains that cathelicidin, an antimicrobial peptide, kills invaders by punching holes in the external membrane of a microbe, so that the insides leak out. Cathelicidin production is greatly increased by vitamin D. <http://www.sciencenews.org/articles/20061111/bob9.asp>

John J. Cannell, MD, writes, "You can test the theory [that D fights infection]. Simply obtain a bottle of 50,000 IU capsules of vitamin D3. Wait until you are sure you are getting a cold or the flu. Then take 1,000 IU of vitamin D per pound of body weight every day for three days. For a 150 pound adult, that would be 150,000 IU (three capsules) a day for three days. This is called "stoss" therapy in Europe and is safe to do, unless you have a high blood calcium for any reason. Remember, bottles of 50,000 IU vitamin D are a medicine, not

a supplement, and you will make yourself vitamin D toxic, and you may even die, if you take a 50,000 IU capsule every day for months or years. <http://www.vitamincouncil.com/newsletter/2006-nov.shtml>

You can buy 50,000 IU capsules from Bio-Tech-Pharm. <http://www.bio-tech-pharm.com/products/d35.html>

According to a new study in the Journal of the American Heart Association, only 10 percent of Americans currently have optimal blood levels of vitamin D. <http://www.charlotte.com/441/story/509776.html>

Special Ed

Special Ed requires a lower teacher-student ratio. In New Jersey, where special ed students comprise just over a 20th of the students, a fifth of the budget is needed for their education <http://www.philly.com/mlt/inquirer/news/editorial/14297170.htm>. In Washington D.C., the special ed budget sucks up almost a third of the entire school budget, to support the tenth of the District's students who are in special ed. "Learning disabilities, or LDs, account for over 51 percent of all children in special ed. . . . More than 80 percent of all school children in the United States could qualify as learning-disabled under one definition or another." <http://www.washingtonmonthly.com/features/1999/9906.worth.scandal.html>

Learning disabilities like dyslexia, ADD, and more, respond well to nutrition <http://www.guardian.co.uk/food/Story/0,,1687319,00.html>, so wouldn't it be wonderful if the school breakfast and school lunch program solved a lot of these problems!

Preventing more Columbine's

Dr. Joseph Hibbeln at the U.S. National Institutes of Health (NIH), found that depressive and aggressive feelings diminished by about 50 percent after taking fish-oil capsules for two to four weeks. He reports that the brain tissue of Americans is far lower in omega-3s than that of the fish-loving Japanese, and, inversely, our rate of violent crime is much higher than theirs. Oxford University psychologist Alex Richardson recommends 500 mg a day of omega-3s (that's about one sardine [Brunswick can](#)). Hence, if we boosted omega-3 consumption, violence would go down in the US. http://www.odemagazine.com/doc/46/feed_your_brain

Food Additives Cause ADD

In a review of two dozen scientific studies, the nonprofit Center for Science in the Public Interest (CSPI) contends that food dyes and certain foods can adversely affect children's behavior. The 32-page report titled "Diet, ADHD, and Behavior" charges that federal agencies, professional organizations, and the food industry are ignoring evidence that diet affects behavior. <http://www.rachel.org/bulletin/index.cfm?St=3>

Pesticides Cause ADD

Did you know that only a third of the cotton boll is fiber, while the rest of each cotton boll is mostly oil and ends up in salad dressing and chips, or as cattle food? Environmental contaminants are found in disproportionate numbers of people in the juvenile and criminal justice system. http://www.panna.org/resources/gpc/gpc_200308.13.2.09.dv.html. Research has implicated pesticides and exposure to low levels of industrial chemicals that may interfere with hormones, especially thyroid. [Pages 53, 59 at http://www.rachel.org/bulletin/index.cfm?St=2](http://www.rachel.org/bulletin/index.cfm?St=2)

Furthermore, while 90% of U.S. children have detectable residues of at least one organo-phosphate pesticide in their bodies, little is known about their effects on the developing brain. In the laboratory, a single low-level exposure to an organophosphate pesticide or a pyrethroid at day 10 of life causes permanent changes in the brain and hyperactivity of rodents. http://www.panna.org/resources/gpc/gpc_200308.13.2.09.dv.html The milk from cows that eat the 3 million tons of cottonseed hulls is not tested for pesticide residues, which makes it easy to say 'no traces have been found.' http://www.findarticles.com/p/articles/mi_m1525/is_3_84/ai_54492553 However, the

Centers for Disease Control recently looked for and found 116 pesticides and other chemicals in human blood and urine, an industrial chemical "body burden" that is passed on to our children through breast milk and prenatal exposure. www.panna.org/resources/gpc/gpc_200308.13.2.pdf
For some perspective, nearly a quarter of all pesticides used in the US are applied to cotton. http://www.findarticles.com/p/articles/mi_m1525/is_3_84/ai_54492553

Follow the Leader

Beyond cutting out the junk and increasing veggies and fruits, our kids also deserve to get the omega-3s that Americans once ate on a routine basis. Consider what's really possible. Seven years ago, in Appleton, Wisconsin, the alternative high school, serving a hundred "at risk" youth, was transformed overnight. Out went the soda machines, salty fried snacks, and cookies. Bottled water became the main beverage. Salads, whole grain bread with added flax meal, casseroles and soups, and smoothies were the new fare.

For the last seven years, there have been no guns or drugs on campus and no dropouts or expulsions! [Super Size Me](http://www.super-size-me.com) Three years ago, the entire district -- 15,000 kids in 24 schools -- adopted the healthier meal plan. In the first two years the Appleton district came out ahead \$5 million due to less vandalism and graffiti, and getting more money from the state due to better attendance (less illness also pays off in fewer retentions).

<http://www.odemagazine.com/article.php?aID=4143>, Greg Bretthauer at bretthauergreg@aasd.k12.wi.us

That's 24 schools. How about over 800 schools? From 1979 through 1982, Dr. Stephen Schoenthaler supervised meal changes New York City schools and in that four year period the number of students passing final exams went from 11 percent below the national average to five percent above. Schoenthaler also improved nutrition in youth detention centers. One of his studies showed that the number of violations of house rules fell by 37 percent when vending machines were removed and canned food in the cafeteria was replaced by fresh alternatives. He summarizes his research, "Having a bad diet right now is a better predictor of future violence than past violent behavior." <http://www.odemagazine.com/article.php?aID=4143>,

<http://www.nutrition4health.org/nohanews/NNW88NewYorkKidsImprove.htm>

It's no surprise that the SF Bay Area is a hotbed of school food reform. In Berkeley, Chef Ann Cooper has the same tiny budget every other district suffers, yet manages to replace nearly all the processed foods with nutritious alternatives, including a lot of organic and local produce. Kids like the changes, which increases participation. The New Yorker recently covered her frustrations and success <http://www.chefann.com/blog/?p=397> and her new book, *Lunch Lessons—Changing the Way We Feed Our Children*, tells how she does it.

Then there is Miguel Villarreal in Marin County. His parents were farm workers and as a teenager after a day in the fields even "the tips of my hair were sore." Now he brings organic salads and wholesome pizza to school kids in Marin. The high school kids, who supposedly won't give up their salty, sugary junk food, love his wraps.

http://www.marini.com/marin/ci_4288598

The most recent arrival is Revolution Foods, founded by two women with brand new MBAs who are showing what is possible at charter schools, which otherwise can't offer school meals or end up relying on fast food outlets to provide questionable meals. Partnering with Whole Foods, they set an example for all schools. [revfoods.com](http://www.revfoods.com)

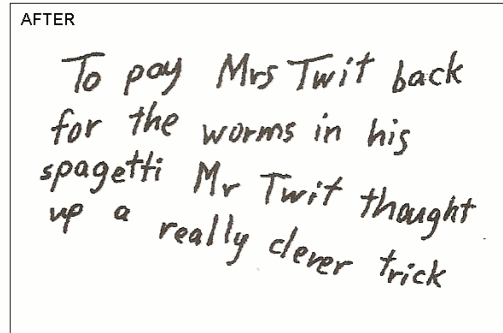
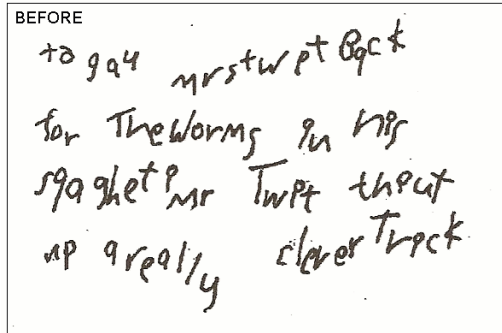
Omega-3s Improve Handwriting

The human brain is primarily composed of fat, 60% by dry weight. Researchers theorize that fat must therefore be critical to the development of a healthy brain. They were particularly interested in the importance of **DHA** (docosahexaenoic acid), an omega-3 long chain fatty acid.

DHA comprises 25 to 35% of the brain's fatty material and 50 to 60% of the fatty material in the retina of the eye where it is needed for visual acuity. EPA, the other essential omega-3, is needed to transmit messages along nerves and for the laying down of memory. <http://www.naturalnews.com/022709.html>

A trial funded by Durham County Council, Australia, in conjunction with Oxford University, found that 40% of 117 children with learning and behavioral conditions who took an omega-3 supplement (eye-q) improved their reading and spelling. The supplements help a part of the brain known as the cortex function more efficiently, and calm down a part of the brain known as the limbic system, which is associated with restlessness and lack of concentration. (Abstract of the study is found online at <http://www.ncbi.nlm.nih.gov/pubmed/15867048>.) For example, this boy's writing was transformed from an illegible scrawl into a relatively neat, legible script.

8 year old Joe's handwriting before, and after, just 1 month of Omega 3 - Dr Alex Richardson Durham Study (credit: http://www.sparkybrand.com/why_omega3.shtml)



60-Year Decline in Impulse Control

In 2001 a self-regulation study first done in the late 1940s was repeated. Researchers asked kids ages 3, 5 and 7 to stand perfectly still. Back in the 1940s, the 3-year-olds couldn't stand still at all, the 5-year-olds could do it for about three minutes, and the 7-year-olds could stand pretty much as long as the researchers asked. In 2001 the 5-year-olds behaved at the level of 3-year-olds 60 years ago, and 7-year-olds were barely approaching the level of a 5-year-old 60 years ago.

Self-regulation is incredibly important for success in life. High dropout rates, drug use and crime are associated with poor executive function, which is a better predictor of success in school than a child's IQ. Children who are able to manage their feelings and pay attention are better able to learn.

<http://www.npr.org/templates/story/story.php?storyId=19212514> Could it be that the changes in our food supply are a greater factor in the academic and behavior decline of our children than the "usual suspects" of bad parenting and poor teaching?

Recipe for Student Health and Success

Can we afford to ignore this information another day? We educate children to look both ways crossing the street, to wear seatbelts, to be cautious around strangers, but we allow TV advertisements to teach them about food—which has a far greater impact on their lives—and then claim we are powerless to counteract those hours of indoctrination. Research shows that kids need nutrition education in the classroom before they can appreciate new foods that happen to be healthy such as, say, tabouli, hummus, sprouted grain bread, sprouts, and so on.

<http://www.bookmaster.com/marktplc/10033.htm>

Americans have been dumbed down by junk food like trans fat and corn syrup. We certainly have been sicked down by our diet, hence the huge cost of health care, now a sixth of our GDP (\$7,110 per capita), and in ten years it will be a fifth of GDP (\$12,320 per capita). That money could go towards reducing global warming or early childhood education! We know chronic illness takes the lion's share of our medical care dollars, and we know that at least half of illness relates to lifestyle issues like smoking, drinking, lack of exercise, and poor food choices. http://www.eurekalert.org/pub_releases/2004-03/jaa-j-pda030404.php

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An earlier version appeared at TriplePundit.org, <http://www.triplepundit.com/pages/guest-post-recipe-for-student--002402.php>

Also see related articles at [GoodSchoolFood.org](http://www.GoodSchoolFood.org)