

INFANT FORMULA INCREASES DIABETES RISK

Posted By Dr. Mercola | July 30 2000 |

<http://articles.mercola.com/sites/articles/archive/2000/07/30/formula-diabetes.aspx>

This study, from Arizona State University, found that the early ingestion of cow's milk-based formula increases the risk of diabetes, despite the fact that this association is controversial.

Rats who were fed Enfamil or Nutramigen were significantly more likely to develop diabetes than those not fed any cow's milk based formula.

At 120 days, 100% of the formula-fed rats developed diabetes verses 60% in the control group, which was fed only a milk-free rat food. In addition, the average age of onset of diabetes was 4-10 days earlier in the formula fed animals.

Of course, since rats' life spans are much shorter than humans, this time frame corresponds to a much longer period in humans.

Life Sciences July 2000;66:1501-7

Dr. Mercola's Comments:

This helps to confirm the earlier studies that have been published over the last decade confirming the association between drinking milk and diabetes.

If, for whatever reason, you are unable to breastfeed your baby and you will require formula please click on the following links below for guidance on how to minimize the side effects and potential complications to your child.

INGESTION OF COW'S MILK IN EARLY INFANCY MAY LEAD TO DIABETES

Children fed cow's milk during the first 8 days of life are twice as likely to develop insulin-dependent diabetes mellitus [IDDM] as children who are not fed cow's milk during the first week of life. This study suggests a causal link between early introduction to cow's milk and IDDM may exist, and that exclusive breast-feeding may play a protective role against this disease.

- Diabetes Care August 1997;20:1256-1259

Milk Increases Risk of Type 1 Diabetes

A new study suggests that consumption of cow's milk during childhood may increase the risk of developing type 1 diabetes in children who are genetically susceptible to the disorder.

Researchers found that children who had a sibling with diabetes were more than five times as likely to develop the disorder if they drank more than half a liter (about three glasses) of

cow's milk a day, compared with children who drank less milk.

While it is not clear which component of cow's milk may increase risk of diabetes, researchers suspect that one of several proteins may be to blame by causing the immune system to attack insulin-producing cells in the pancreas.

Type 1 diabetes is usually diagnosed in children or adults under 30. People with type 1 diabetes usually take life-long insulin injections to control their blood sugar.

In addition to the milk connection, a greater number of children who developed diabetes were found to be genetically susceptible to the disease. Seventy-nine percent of these children carried a particular genetic variation associated with diabetes while only 30% of those who did not develop diabetes had the variation.

- Diabetes 2000;49:912-917.

COMMENT: This is another affirmation of the original report of milk causing this problem which was published in NEJM in the 90s. There are many reasons why one should not drink milk. Prevention of diabetes in children is an important, although uncommon reason. Milk is the most common food allergy and most of use would do well do avoid it in all forms. The only acceptable form of milk from my perspective is raw, unpasteurized, unhomogenized milk, which is illegal in virtually all states due to fears of bacterial contamination.

SUPPLEMENTED FORMULA UPS INFANT INTELLIGENCE

Infant formula supplemented with long-chain polyunsaturated fatty acids (LCPUFA) appears to boost infant intelligence. Long-chain polyunsaturated fatty acids, found naturally in breast milk, seem to play a role in early neurological development. Levels of these fatty acids are "preferentially accumulated" in infant brains late in pregnancy and in the first few months of life. It was thought that infants' bodies could make these fatty acids, but studies have shown that formula-fed babies have lower levels of them in their blood and brain tissue than infants fed breast milk or supplemented formula. Some European formula makers now include them in formulas. But Ruth Welch, a spokesperson for the US Food and Drug Administration, told Reuters Health that these compounds have not yet been approved for use as ingredients in infant formulas manufactured in the US.

- The Lancet August 29,1998;352:688-691

COMMENT: Clearly breast milk is the best option for nearly all babies. I believe it is a sad tragedy when children are not provided with this option as all other choices are inferior replacements. I learned several weeks ago that soy formula is an utter disaster and should never be used for children. A child receiving soy formula will receive the hormone equivalent of three birth controls per day as the phytoestrogens in the soy will stimulate hormone receptors. This is not even mentioning the other problems with soy that are outlined in the article on my web site. Fatty acid supplementation is also an incredibly important issue. This article references the long chain, but the essential fats which are MUCH more important. If you are using an infant formula, I would strongly recommend considering adding one 1300 mg Evening Primrose Oil capsule and one half fish oil capsule to the formula every day. These are HIGHLY perishable oils which is the main reason they are not added to conventional formulas. The fish oil should be molecularly distilled. Nordic Natural (800-662-2544) is the one I recommend for this purpose as it does not have any mercury or PCB's. The primrose oil should be hexane free.

DHA Improves Vision in Preterm Infants

Non breast-fed preterm infants who are given formula supplemented with DHA, an essential omega-3 fatty acid, show better visual acuity than those receiving standard formula, says a recent study.

The authors state that their results show the importance of omega-3 fatty acids in the early development of the visual system. Additionally, they make the point that intake of these essential nutrients may confer lasting advantages on other developmental processes, although these need to be studied further.

- Pediatrics 2000; 105: 1292-1298.

COMMENT: It has become quite clear that the addition of DHA to formula is important and quite beneficial. It does bring the formula one small step closer to breastmilk, but even with the DHA, it is really not in the same league. It is my understanding that this is available in Europe, but for whatever reason is not yet available here. However, I don't think that the DHA by itself is the best solution. Ideally there should be a balance between DHA and EPA. Fortunately, for less than the cost of the 10%-15% likely increase in price for DHA supplemented formula, when it is finally approved, anyone can add one fish oil capsule every other day to the formula and receive the benefit. One does not have to wait for government approval on this one. Please review other studies (see below) that document this also and includes specific recommendations on how you can incorporate the fish oil capsules into the formula program.

Fish Oil Improves DHA Status Of Malnourished Infants

Fish oil supplementation in malnourished infants improves their DHA status. Researchers from the Netherlands found that fish oil is apparently well-absorbed and increased red blood cell (RBC) DHA levels by over 47%. This was achieved by giving a 500 mg supplement of fish oil daily, each containing 112 mg of DHA, for a period of 9 weeks. The researchers noted that these increased DHA levels did not significantly affect the concentration of RBC omega-6 fatty acids, which was a concern since there is a competitive relationship between omega-3 and omega-6 fatty acids. The study was performed on malnourished, predominantly breastfed, Pakistani children, aged 8-30 months.

- Arch Dis Child 2000; 82: 366-369

COMMENT: Although these children were being breastfed, their mothers were malnourished, and therefore so were the children. This study illustrates the importance of proper nutrition, especially essential fatty acids, in breastfeeding women. I believe it is criminal that formula is not DHA supplemented in this country despite being supplemented in most other countries.

I have posted an earlier article which carefully reviews the importance of DHA in formula for brain development. An earlier Lancet study has already demonstrated that this will actually increase the baby's intelligence. It is VERY important to NEVER give soy formula if you are not breast feeding. This is clearly the WORST formula you can give to your baby.

I strongly believe that DHA should be given to all infants as a supplement if they are getting formula. It needs to be balanced with EPA and I would recommend the brand by Artic Omega which is a very pure source. They have one specifically designed for this purpose which

has a pleasant strawberry flavor and can be used in the formula every other day. If the child is breast fed than the mom should be taking one fish oil capsule per day. This is FAR better than flax seed oil, which most people can not properly metabolize due to the excessive amounts of grains and sugars they are metabolizing. It is also important to recognize that the body is always right and if any belching occurs after taking the fish oil it should be stopped. Generally most natural medicine physicians should be able to help determine why the oil is not tolerated which is usually due to an allergy or absorption problem.

Is DHA The Secret Of Breast Milk's Success?

By Mollie Martin WorldNetDaily.com

Despite a growing body of evidence that docosahexaenoic acid, or DHA, is the essential structural ingredient of breast milk lacking in infant formulas, the Food and Drug Administration continues to ban its use in the U.S. A recent series of studies conducted worldwide indicate that breast-fed babies have an IQ of 6-10 points higher than formula-fed babies. Scientists and nutritional experts attribute this to DHA, an essential structural component of the brain and retina, found naturally in mother's milk. DHA has received glowing recommendations from the World Health Organization, the Food and Agricultural Organization of the United Nations and the National Institutes of Health.

Approximately 60 percent of the human brain is composed of fatty material -- 25 percent of that material is DHA. Since humans cannot produce it, they must consume it. Studies show that the DHA level of women in America today are comparable to that of women in Third World countries. This is attributed to the trend against eating DHA-rich foods such as fish, liver and brain. During the last trimester of a pregnancy is when the mother transfers to her fetus much of the DHA needed for the development of its brain and nervous system. The DHA content in the mother's diet reflects in the amount of DHA passed on to the baby. If the baby is not breast-fed at all, it receives no DHA, thus hindering and impairing mental and visual acuity. DHA levels of pre-mature infants are especially low since they miss much of that last trimester. Premies are also more likely to be bottle-fed.

In 1996, Frank Oski, retired chairman of pediatrics at the Johns Hopkins University School of Medicine, led a DHA campaign in which a plethora of outraged researchers and pediatricians bombarded the FDA with over 1,000 letters pleading and demanding that they ensure the health and welfare of our children by mandating or at least allowing the addition of DHA to infant formula. The Infant Formula Act came about as a result of an infant formula company's decision to put soft water in their formula. Because of the low level of awareness at that time, not a lot of thought was given to the fact that they were removing an essential component -- chloride. The result was a surge of nightmare rushes to the emergency room. Babies were skipping heartbeats, getting severely ill, and dying. The formula was found to be chloride-deficient. After this fiasco, Congress decided that such a product needed to be more closely monitored. They passed the Infant Formula Act of 1980, which made the FDA the sole regulator of infant formula.

The WHO and the BNF (British Nutrition Foundation) recommend that infant formula be supplemented with DHA at .35-.5 percent by weight. At this suggestion, many European and Asian countries are producing infant formula with DHA and making recommendations of daily allowances. The American company, Wyeth Nutritionals, does make infant formula that contains DHA; however, it is marketed in Hong Kong, the Middle East and Australia since distribution is

banned in the US.

Formula-fed babies have far lower levels of visual and intellectual acuity than do their breast-fed peers. The issue is that the only way babies in America can get adequate amounts of DHA is from the mother. Therefore, mothers should breast feed as long as possible. Infant formulas are deficient. Formula-fed babies do much worse than breast fed babies. People are not willing to recognize that infant formula is a problem, but we do have a solution -- a way to make formula closer to breast milk. The simple addition of DHA fixes the problem.

Martek is one of the leading manufacturers of DHA supplements -- their algae-based Neuromins claim to provide DHA in its purest possible form. So what is holding back this "miracle drug?" FDA continues to insist that not enough research has been done to prove DHA's benefits, or to prove that DHA has no harmful side effects.

Dennis Hoffman of the Retina Foundation of the Southwest said that he and his organization supported the findings of the WHO and NIH. He also commented that the FDA has put other ingredients into infant formula with much less research behind them. The research has been minor, nothing compared to the hoops we're jumping through with DHA. DHA may have many uses beyond the cradle. Studies show that low DHA intake in infancy can lead or contribute to Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD).

Bill Taylor, a retired engineer who teaches elementary-aged ADD children as a volunteer, has seen first hand how DHA can be used to treat ADD. Mr. Taylor is also on the forefront of the infant formula debate. Taylor and others who have done their homework on the widespread DHA problem are suspicious that the government may be under pressure from prominent drug companies (such as Novartis who manufactures Ritalin) to keep DHA out of the mainstream. Recent studies have also indicated that low levels of DHA contribute to many major physical and psychological disorders such as depression, aggression, Alzheimer's disease, Schizophrenia, and Multiple Sclerosis.

A study done on Japanese students during the high stress period of final exams showed that students supplemented with DHA were significantly less aggressive than students who were not supplemented with DHA. Over 1200 patients participated in an epidemiological study that showed that people with high DHA levels were 45 percent less likely to develop dementia than people with low DHA levels. This suggests that proper DHA intake may reduce the risk of developing Alzheimer's.

A 1997 study showed that schizophrenic patients were less likely to have been breast-fed in infancy, and the lack of DHA during early brain development contributes to the development of schizophrenia. Studies show that symptoms of multiple sclerosis such as muscular weakness, loss of coordination, and speech and visual disturbances are linked to subnormal levels of omega-3 fatty acids such as DHA.

COMMENT: It is clear that DHA is an enormously useful food in optimizing development of the child's brain. It is important to remember that approximately 60 percent of the human brain is composed of fatty material -- 25 percent of that material is DHA. It is nearly criminal that this essential fatty acid is not included in some form in infant formula. The concern some of the researchers have about using it, though, is warranted. Although DHA is essential, if it is given out of balance, as in the form of Neuromins (from Martek), it is potentially problematic. I work closely with Dr. Patricia Kane who is one of the world's experts on clinical fatty acids and brain injured children. She has found this to be true. When DHA is given, it should be balanced with its cousin, EPA. This works out quite nicely as the processing to isolate DHA is quite expensive.

So an excellent brand of fish oil would provide both of these essential fatty acids. There is another caution here, though. It is important not to fall in the American trap of 'if a little is good, then more is better.' If one supplements infants (or adults) with large amounts of EPA/DHA, serious imbalances can occur. A safe form of supplementation for infants would be one half capsule every day or even every other day. This can be rubbed on their body as it will absorb directly into the bloodstream. Adults can take twice that dosage. It is also important to only use a high quality brand. Oxidized fats or fats contaminated with PCBs or mercury are worse than no fats at all. We use Artic Omega in our office, but there are other good brands.

Fish or EPA/DHA Supplements May Help Protect Vision

Chalk up another possible health benefit of eating fish: prevention of age-related macular degeneration, the leading cause of irreversible blindness in the US. The macula is the central portion of the retina in the eye and when it is damaged, visual problems -- including blindness -- are the unfortunate result. Australian researchers found that more frequent consumption of fish appeared to protect against late age-related macular degeneration. Only a moderate intake of fish was necessary for the protective effect. Those who ate fish one to three times a month had about half the risk of late-stage disease than those who ate fish less than once a month. And more fish was not necessarily better. The greatest amount of protection was seen in those who ate one serving of fish a week, and there was no additional benefit of consuming more. The investigators note that eating too much fish may interfere with the absorption of vitamin E in the elderly, which could explain the threshold protective effect from dietary fish.

- Archives of Ophthalmology March, 2000;118:401-404

COMMENT: Identifying preventable risk factors for age-related macular degeneration, now the most common cause of blindness in western countries, may be the only way of reducing the burden of this disease as current treatments are rarely effective in the longer term. It is important to recognize the threshold effect the authors describe. There did not appear to be any benefit of having fish more than once a week. The authors do not address the additional serious concern that virtually all waterways in the world are contaminated and there really is no such thing as organic commercial fish. If one is healthy, it is likely that they could effectively eliminate the heavy metals and PCBs that many fish have. So, it appears that fish more than once a week are not necessary. To obtain the benefits of fish one can use a high quality EPA/DHA supplement. Mega doses are not required and it is likely one a day would be sufficient.