

Heart Health: Aspirin is Not a Vitamin – Margarine is Not a Food

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Abstract: Healthy essential fatty acid (EFA) metabolism, which is a prerequisite for a healthy cardiovascular system, depends on proper dietary intake of essential fatty acids and avoidance of trans (partially hydrogenated) fats. This can be demonstrated by unique muscle testing screening procedures.

There are good fats and bad fats which affect our cardiovascular systems, and in fact, all systems in our bodies. The worst of the

bad fats consumed in our society are those which have been processed from their natural state by a method called partial hydrogenation. Regarding these partially hydrogenated fats, in a paper by this author published in 1995¹ and 1996², the following was stated:

HYDROGENATED or PARTIALLY HYDROGENATED FATS OR OILS - Do not eat these.

If the label contains the words **HYDROGENATED** or **PARTIALLY HYDROGENATED** - do not let your family eat it.

If the label contains the words **HYDROGENATED** or **PARTIALLY HYDROGENATED** - do not let your friends eat it.

If the label contains the words **HYDROGENATED** or **PARTIALLY HYDROGENATED** - do not let your patients or clients eat it.

If the label contains the words **HYDROGENATED** or **PARTIALLY HYDROGENATED** - get it out of your family's kitchen.

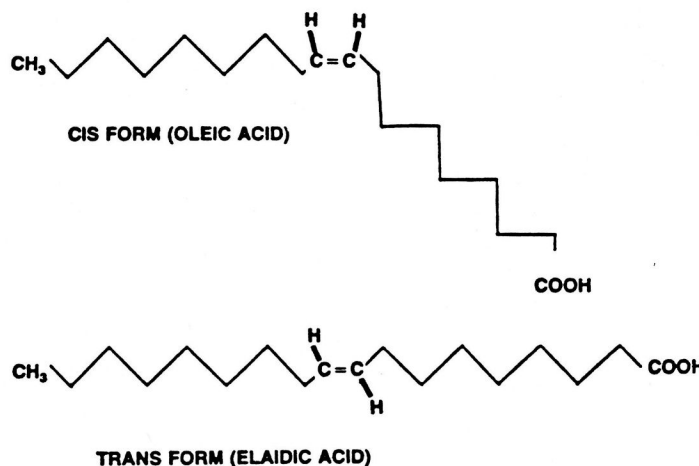
HYDROGENATED or PARTIALLY HYDROGENATED FATS OR OILS - Read labels and avoid these substances like they are poisons...which they are.

Nothing has changed in subsequent years to alter this position. In fact, even more data implicating the harmful effects of partially hydrogenated (trans) fats has come to the public eye.

Partially hydrogenated fats and oils are processed versions of naturally occurring fats and oils. In nature, most dietary fats and oils exist in a structural form that is called the "cis" form. When these natural fats are processed by bubbling hydrogen gas through them at high temperatures, they become partially hydrogenated, changing their structure to the "trans" form. Cis fats have a bend in them; the processing that produces trans fats removes that bend. See figure 1. Partially hydrogenated oils do not exist in nature. (Some short chain trans fatty acids do exist in nature, in milk products, for example, but are not naturally occurring long chain trans fatty acids.) Therefore, although they start out as "natural" fats, this processing changes them into unnatural substances.

Differences in the shapes of the cis form and trans form of the same fat are of major significance. Cis form fats and oils are easily metabolized by our bodies. On the other hand, the body cannot use fats and oils in their trans forms. When eaten, fats and oils are incorpo-

rated into cell membranes altering the composition of these delicate structures. When they interact with normal essential fatty acid metabolism, they disturb function in a most deleterious manner. As described below, these substances meet the definition of a "poison."



"POISONS" IN OUR DIETS

In Dorland's Medical Dictionary "poison" is defined as "any substance which, when relatively small amounts are ingested . . . has chemical action that may cause damage to structure or disturbance of function, producing symptomatology, illness, or death."³ As described in the paragraphs above and below, trans fats damage structure (in cell membranes), disturb function (inhibit enzymes) and lead to health problems. They certainly meet the definition of poison.

Trans fats and oils are not inert. In fact, they interfere with important, normal functions by acting as enzyme inhibitors – inhibiting enzymes that are necessary for the body's normal metabolism of fats. Whereas the half-life of normal cis form fats in the body is 18 days, the half-life of partially hydrogenated trans fats is 51 days. This means that half of the trans fats in the potato chip or French fry that you might eat today will still be inhibiting essential enzyme systems in your body 51 days from now.⁴

Essential fatty acids are naturally occurring cis fatty acids that are converted to the important substances called prostanooids which includes prostaglandins (PGs), leukotrienes, and thromboxanes. We will focus on the three major groups of PGs in the body: PG 1, PG 2, and PG 3 families. See figure 2. (Figure 2 also shows the leukotrienes (LT) and thromboxanes (TX) from the PG 2 family. These have harmful effects.)

One of the major enzymes in our essential fatty acid metabolism is called delta-6-desaturase (D6D). D6D is inhibited by trans fatty acids. The D6D enzyme is necessary for the body to produce the normal prostaglandins of the PG 1 and PG 3 families. See figure 2.

A MAJOR SOURCE OF CHRONIC DISEASE

In our society most of the ill effects of chronic disease are caused by or contributed to by the PG 2 family. This includes heart attacks and cardiovascular disease, cancer and inflammatory conditions including arthritis and autoimmune diseases. The PG 2 family is derived directly from naturally occurring fat, arachidonic acid (AA), found in red meat, shellfish and dairy products. The body converts AA directly into the PG 2 family.

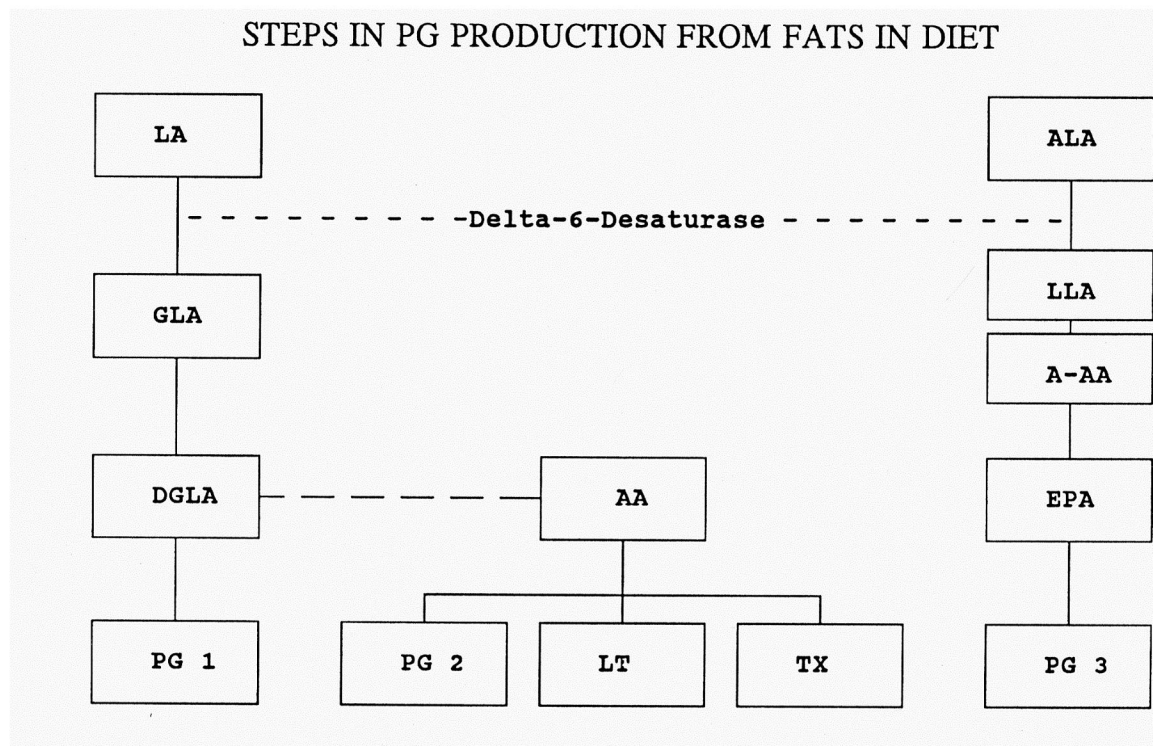
PG 2 family reactions include: increasing blood clotting,⁵ increasing blood pressure,⁶ increasing cholesterol and causing other heart attack risk factors to be made worse.⁵ PG 2 family substances increase inflammatory activity thereby perpetuating free radicals and the tissue destruction associated with everything from trauma to autoimmune diseases.^{7,8,9} PG 2 family chemicals also cause a decrease in natural killer cells that are part of our body's anti-cancer protection. Because of this fact, tumors increase in size under the influence of PG 2.^{10,11}

Our bodies also have naturally occurring substances, the PG 1 and PG 3 families that counteract the bad effects of the PG 2 family. The

PG 1 and PG 3 families decrease blood clotting,^{12,13,14} decrease blood pressure,^{5, 12} decrease cholesterol^{15,16,17} decrease inflammation,^{8, 9,} and increase natural killer cell activity that is necessary to fight tumors^{5.}

In one sense, you could think of the PG 1 and PG 3 families as the good PGs and the PG 2 family as the bad PGs, at least in our present society. Of course, there are not really good and bad PGs. But when an imbalance in the PG 1, 2 and 3 families exists in our Western world, it almost always favors excess production of the PG 2 family.

Unlike the easy conversion of AA to the PG 2 family, the body requires several chemical steps to convert other dietary fats into the PG 1 and PG 3 families. One of these essential steps is the D6D enzyme, mentioned earlier, which is blocked by partially hydrogenated (trans) fats and oils from the diet. When we eat these bad, trans fat containing substances, they block the PG 1 and PG 3 production, and by default, PG 2 substances are produced without opposition. The PG 2 imbalance created by the consumption of partially hydrogenated fats contributes to the production of chronic disease that is the enigma of our modern society.



LA = linoleic acid (most food oils)

GLA = gamma linoleic acid (black currant seed oil, evening primrose oil, borage oil)

DGLA = dihomogammalinolenic acid (precursor to PG 1)

AA = arachidonic acid (red meat, dairy, shellfish, mollusks: precursor to PG 2)

ALA = alpha linolenic acid (walnut oil, linseed oil, canola oil, other "cold weather" oils)

EPA = eicosapentaenoic acid (cold water fish oils: precursor to PG 3)

figure 2. Simplified Essential Fatty Acid Flowchart

Many studies now exist demonstrating these negative effects of trans fats, especially in relation to heart disease.^{5,20,21,22} Trans fats consumption also increases the risk for diabetes²³ breast cancer,²² and multiple sclerosis.²⁴ There are scores of peer reviewed papers documenting the ill effects of trans fatty acids. It is often difficult to convince people to change their habits for preventive benefits; the extensive references now available in the scientific literature are helpful in this effort.

ACUTE SYMPTOMS

There are also acute symptoms that are created by the PG 2 family. Headaches (including what people call “normal headaches”), joint pain including back pain and arthritis, and menstrual cramps are just a few of the symptoms that are related to PG 2 imbalances created by eating partially hydrogenated fats and oils. Millions of people take aspirin, acetaminophen and other non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen or naproxen to alleviate these symptoms. (This group also includes the COX-2 inhibitors that have recently been limited from public consumption due to increased cardiovascular events associated with their use.) A discussion of the harmful effects of these medications will be presented later in this paper. Avoidance of partially hydrogenated trans fats and consumption of natural fats and oils can often turn these symptoms around in as little as 3 to 4 weeks without any other intervention.

It has been said that in the history of the world, there has never been an aspirin deficiency or an NSAID deficiency. But there are millions, maybe billions, of people with essential fatty acid deficiencies of the PG 1 and PG 3 families who are suffering the ill effects of unopposed PG 2. This is due to either poor dietary intake of good fats and/or their consumption of partially hydrogenated fats and oils. In fact, if you, your family or friends, your clients or patients achieve symptom relief with aspirin, acetaminophen, or any other NSAID, it is almost certain that there is a fatty acid imbalance in the person's system.

It is often useful to supplement people who have any of the previously mentioned chronic or acute symptoms using essential fatty acids. This is especially true if symptom relief is achieved by aspirin or similar NSAID substances. The PG 1 family can be supplemented with black currant seed oil (BCSO), evening primrose oil (EPO) or borage oil (BO). BCSO, EPO and BO contain gamma-linoleic acid (GLA) which supplies PG 1 family fats beyond the effects of D6D enzyme.

BCSO has about 17% to 19% GLA content; EPO has 7% to 9% GLA and BO has over 20% GLA content. This author prefers to use BCSO due to its higher GLA content, as well as its relatively good taste. The PG 3 family can be supplemented using flaxseed (linseed) oil and/or fish oils such as those containing EPA (eicosapentaenoic acid.) These are readily available from the health food and professional suppliers.

RELIEF OF “NORMAL” HEADACHES

Although supplementation with good EFA is useful, return to normal function will not be seen until the partially hydrogenated fats and oils are eliminated from the diet. I had a patient who I had been regularly treating for many years. I had explained these concepts of good and bad fats in the diet thinking that he understood. Somehow, however, he had never grasped the importance of avoiding partially hydrogenated fats and oils.

After explaining these principles to him one more time, he finally got it. One month later he told me that the daily headaches he had experienced for over twenty years had stopped three weeks af-

ter totally eliminating these processed fats from his diet. I told him that I never knew he had daily headaches. He replied that he never told me about them because he just thought that they were “normal” headaches. Of course, “normal” headaches do not exist. Even years of regular treatment were ineffective at relieving his daily headaches as long as he continued daily consumption of the partially hydrogenated poisons that were causing them.

Likewise, many women with menstrual cramps and premenstrual syndrome have been helped by totally avoiding partially hydrogenated fats and oils and/or by supplementing with the appropriate good fats. This is also true for many women with menopausal hot flashes. People with arthritic symptoms (stiff and achy muscles and joints) also improve when avoiding trans fats. When combined with supplementation of essential fatty acid products, results are even more dramatic. People are elated to find out that their daily nagging symptoms are not “normal,” nor due to “normal aging” or “just getting older.”

One must be both diligent and patient for the changes to take place due to the prolonged half-life of trans fatty acids. Within a few weeks to a couple of months, however, the results are usually noticeable and quite gratifying.

READ LABELS AS IF YOUR LIFE DEPENDED ON IT

Read labels. Read labels as if your life depended on it, which it does. As people say when they first look to avoid these poisons, “These fats are in everything on the grocery store shelves!” Well, not quite everything. But partially hydrogenated oils are found in margarines, vegetable shortenings, most chips, cookies, candy, cakes, popcorn and other similar snack foods, and are used in food preparation by most fast food companies. Typical ingredients sections of labels include such names as “partially hydrogenated soybean oil,” “hydrogenated vegetable oil,” “partially hydrogenated cottonseed oil,” and so on.

Far too few family doctors, internists or cardiologists are aware of the massive recent research evidence indicting trans fats as increasing their patients' risk of heart disease, much less the other adverse effects of consuming these poisonous substances. In fact, although the abundance of new literature is slowly changing these old attitudes, many doctors still recommend margarine instead of butter for patients trying to prevent or improve heart disease. The fact is that trans fats increase cardiac risk factors twice as much as saturated fat in the diet!²²

Still, many patients blindly follow their misinformed doctors advice and are unwittingly consuming foods thinking they will decrease their risk for heart disease when these foods will actually significantly worsen their cardiac risk factors, not to mention the other problems they create. We must stop the insanity of slowly poisoning ourselves and our society by replacing natural fats with processed trans fats. There are now consumer advocates who are devoted to removing these dietary poisons from our food supply. (See resources at end of this paper.)

ADVERSE EFFECTS OF NSAIDs

There has been much recent concern about the cardiovascular effects of the COX-2 inhibitor NSAIDs that have been removed from the market place. However, there are many other adverse effects of aspirin and all of the other NSAIDs on the market. These medications are often called pain killers, but they are really anti-inflammatory drugs which decrease pain by decreasing tissue inflammation.

Common NSAIDs are listed in the following chart with their generic names followed by their product names in parentheses:

NONSTEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDs)

GENERIC NAME (PRODUCT)

DICLOFENAC (CATAFLAM, VOLTAREN)

DIFLUNISAL (DOLOBID)

ETODOLAC (LODINE)

FENOPROFEN (NALFON)

FLOCTAFENINE (IDARAC - CANADA)

FLURBIPROFEN (ANSAID)

IBUPROFEN (ADVIL, CRAMP END, DOLGESIC, EXCEDRIN IB, GENPRIL, HALTRAN, IBREN, IBU-200, IBUPRIN, IBUPROHM, IBU-TABS, MEDIPREN, MIDOL, MOTRIN, NUPRIN, PAMPRIN, Q-PROFEN, RUFEN, TRENDAR)

INDOMETHACIN (INDOCIN)

KETOPROFEN (ACTRON, ORUDIS, ORUVAIL)

MECLOFAMATE (MECLOMEN)

MEFENAMIC (PONSTEL)

NABUMETONE (RELAFFEN)

NAPROXEN (ALEVE, ANAPROX, NAPROSYN)

OXAPROZIN (DAYPRO)

PHENYLBUTAZONE (BUTAZOLIDIN - CANADA, COTYLBUTAZONE)

PIROXICAM (FELDEDN)

SULINDAC (CLINORIL)

TENOXICAM (MOBIFLEX - CANADA)

TIAPROFENIC ACID (ALBERT TIAFEN - CANADA, SURGAM - CANADA)

TOLMETIN (TOLECTIN)

NSAIDs decrease inflammation by blocking PGs. These drugs block PG production for all three of the PG families. In fact, aspirin and acetaminophen act by the same PG blocking mechanism. PG 1 and PG 3 normally block the adverse effects of PG 2 family substances in the body in the

presence of a balanced EFA metabolism. NSAIDs, aspirin and acetaminophen will only have a symptom lowering effect if there are more PG 2 precursors in the body than PG 1 and PG 3 precursors. The logical conclusion becomes that these drugs are only useful when there is an EFA imbalance in the first place.

Among the adverse effects of NSAIDs is gastrointestinal hemorrhage.²⁷ This occurs even at the lowest doses. The internal bleeding effect might be microscopic creating no symptoms, but it does occur. Consider the following statistics that are taken from the website of The American Gastroenterological Association and American Pharmacists Association. (See resources list at end of paper.)

- EACH YEAR 103,000 PEOPLE ARE HOSPITALIZED WITH SERIOUS SIDE EFFECTS FROM TAKING NSAIDs

- EACH YEAR 16,500 PEOPLE DIE FROM THE SERIOUS SIDE EFFECTS FROM TAKING NSAIDs
- MORE PEOPLE DIE FROM NSAID SIDE EFFECTS THAN FROM AIDS EACH YEAR
- MORE THAN 4 TIMES AS MANY PEOPLE DIE FROM NSAID SIDE EFFECTS AS FROM CERVICAL CANCER EACH YEAR
- ONLY 1 IN 5 PEOPLE WHO HAVE SERIOUS PROBLEMS FROM TAKING NSAIDs HAVE WARNING SYMPTOMS

There are many other significant adverse effects of consuming NSAIDs that include the following:

- DECREASE FOLIC ACID ACTIVITY
- INTERFERE WITH VITAMIN C ACTIVITY
- DECREASE GUT IMMUNITY AND INCREASE LEAKY GUT 27, , ,
- ENHANCE LEUKOTRIENES (WHICH ARE MORE INFLAMMATORY THAN THE INFLAMMATORY PGs)
- DECREASE THE AVAILABILITY OF SULFATES AND INTERFERE WITH THE SYNTHESIS OF GLYCOSAMINOGLYCANS / PROTEOGLYCANS (THE BASIS FOR CARTILAGE REPAIR) ,
- SLOW FRACTURE HEALING , , ,

These drugs may be of value immediately following a trauma to limit inflammatory destruction of tissues and set the stage for healing. However, they should not be used for more than two or at most three days, even in post trauma situations. A clinical response to these drugs that lasts longer than several days suggests that the person has an underlying EFA imbalance as the primary problem that should be addressed, not just covered up with these medications.

MUSCLE TESTING SCREENING PROCEDURES FOR EFA IMBALANCE

Due to the fact that aspirin, NSAIDs, and acetaminophen provide symptom relief only in the presence of an EFA imbalance, people who tell of being helped by these drugs will certainly have an EFA problem. The only time that aspirin, NSAIDs, or acetaminophen can help a person is if there is an EFA imbalance in the first place (with the exception of acute injuries mentioned above.) By applying this concept, we can use muscle testing and gustatory receptor challenging to identify those people who have an EFA imbalance. Although this procedure is merely a screening procedure and does not apply 100 % of the time, it is still an excellent screening test for routine use.

We know that people will show a muscle strengthening response on oral testing with substances compatible with their needs. We also know that muscle testing weakening responses will occur when an offending substance is placed in the mouth as has been shown with food allergies.

We can apply these principles to EFA imbalance by testing orally with a mixture of aspirin, ibuprofen (or other NSAID drug) and acetaminophen. The only times these artificial substances will cause a strengthening response of a previously weak muscle is when there is an EFA imbalance. Further, some people

will demonstrate a weakening response of a strong muscle when they taste this mixture (although this is a much smaller number of people than those who will strengthen on the mixture). Either a strengthening response or a weakening response to oral challenge with the aspirin, ibuprofen, acetaminophen mixture is an indicator of an EFA imbalance and a need for EFA.

PROCEDURE

If a muscle is weak (inhibited) "in the clear" – test with oral challenge using aspirin, and ibuprofen, and acetaminophen mixture.

1. If aspirin, etc. mixture facilitates the weak muscle, wipe off the tongue and then test for EFA by placing EFA in the mouth and retesting the inhibited muscle.
2. If aspirin, etc. mixture weakens a strong muscle, wipe off the tongue and then test for EFA by placing EFA in the mouth and retesting the weak muscle.
3. Test for strengthening with oral PG 1 and PG 3 precursor oils and cofactors.
 - a.) PG 1: Black Currant Seed Oil, Evening Primrose Oil, Borage Oil
 - b.) PG 3: Flaxseed Oil, Fish Oils (EPA-DHA).
 - c.) Test with cofactors for EFA conversion into PGs: B-6, magnesium, zinc and niacin.
4. Strengthening responses suggest that the strengthening substance may be beneficial to add to the person's dietary intake if there are other indications from the person's history, laboratory or examination to corroborate the usefulness of the substance. Never recommend any dietary substance based on muscle testing response alone.
5. Instruct the person to read labels and avoid hydrogenated and partially hydrogenated fats and oils.

CONCLUSIONS

Many of us, our family members, friends, clients and patients have nagging symptoms or major degenerative problems that are more or less take for granted. We refer to these symptoms as "normal" or "typical", which they are not. When they recur, we feel victims of an imperfect world. Or we write them off to the aging process. Or suppress the symptoms with aspirin, NSAIDs or acetaminophen and pay the price with side effects, consciously or otherwise.

There are tangible reasons for most everything we experience. The ingestion of hydrogenated and partially hydrogenated fats and oils contributes to the common aches and pains of daily life, as well as to slow degenerative processes and life ending illnesses. These symptoms can be changed and the quality of life improved by simply avoiding hydrogenated and partially hydrogenated fats and oils.

Now you can see why we say, "Get these out of your family's kitchen" and FRIENDS DON'T LET FRIENDS EAT PARTIALLY HYDROGENATED FATS!

SUGGESTED WEB RESOURCES

1. www.2reduce.com: a site of the The American Gastroenterological Association (AGA) and American Pharmacists Association (APhA) that offers informa-

tion and data concerning the overuse of NSAID drugs.

2. www.bantransfats.com: a consumer advocacy group working toward eliminating trans fats in the American diet.

3. <http://www.cfsan.fda.gov/~dms/transfat.html>: US Food and Drug Administration site on new labeling laws for trans fats as well as other consumer information on the ill effects of trans fats.

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