



**INTEGRATED**  
SUPPLEMENTS

**Newsletter**

**Our Mission:** To provide the highest quality nutritional supplements available, teach of their value, and help our customers integrate them into a lifestyle of real, minimally processed foods, and intelligent exercise; so that they may live closer to their full human potential.

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January 2007 Volume 1 Issue 1

Throughout the latter half of the last century the research documenting the harmful effects of the trans fats found in hydrogenated oils had become so overwhelming that only now, almost 100 years after commercial hydrogenated oils were introduced to the marketplace, are we seeing legislation requiring trans fat content to be disclosed on food labels, or in some places, banned altogether.

Biologically, the health-damaging effects of the trans fats speak to the breathtaking precision of nature; illustrating that when biological molecules are changed only slightly, the results on our health can be disastrous.

## What the Trans Fat Story Can Teach Us About Oxidized Cholesterol

The story of hydrogenated oil and trans fat in America can teach us many valuable lessons about the culture in which we live; where we've been, and where we're going as a people. Despite the best efforts of lawmakers and policymakers, our health as a nation continues to decline, as the incidence of diet-related disorders including overweight, obesity, diabetes, and heart disease have reached epidemic proportions. Many people are starting to suspect that maybe there's something fundamentally wrong with our food supply, and maybe we should eat the way we ate before these maladies were so common.

Hydrogenated oils are perhaps the pre-eminent example of what Dr. Weston A. Price called "Foods of Commerce," foods which are harmful to our health, but which are produced and sold solely for their profitability, and not their nutritive value. In order to maintain and increase this profitability, food marketers engage in campaigns of large-scale misinformation, political lobbying and scientific deception. This sort of dishonesty can delay informed decision making by consumers and lawmakers for decades. Such was the case with hydrogenated oils for much of the twentieth century.



*More and more people are shunning artificial food and choosing natural alternatives.*

*Integrated Supplements offers you only All-Natural products made with the highest quality ingredients and absolutely nothing artificial.*

Similar to trans fats, the damaging effects of oxidized cholesterol are well known among researchers; but unlike trans fats, there has yet to be any major public discourse on the harmful nature of oxidized cholesterol. Since cholesterol oxidizes under conditions which create other "foods of commerce" (i.e. spray drying cholesterol-containing foods into profitable powders) the food industry is sure to downplay the damaging role of this compound in much the same way they downplayed the damaging role of trans fats for decades.

**Because many nutritional supplements contain large amounts of oxidized cholesterol from dairy powders like whey protein concentrate, people who take them may unknowingly be doing themselves much more harm than good.**

Like hydrogenated oil, whey concentrate is a cheaper and more harmful ingredient which merely serves to improve the profits of the company selling it. In both cases much healthier alternatives exist, and in the case of protein supplementation, this alternative is called whey protein isolate. Integrated Supplements uses only the highest quality CFM<sup>®</sup> whey protein isolate which contains zero milligrams of cholesterol per serving.



*Integrated Supplements Whey Protein Isolate is formulated using 100% CFM<sup>®</sup> Whey Protein, containing zero milligrams of cholesterol per serving. Absolutely no whey concentrate is used.*

We hope that the lessons of hydrogenated oil can make you wary of these “foods of commerce” and help you avoid similarly harmful compounds like oxidized cholesterol – years before their dangers become “common knowledge.”

## **Would You Eat A Candle For Breakfast?**

In the latter part of the 19<sup>th</sup> century, candle maker William Proctor and his brother-in-law, soap-maker James Gamble, using good old American ingenuity, joined forces to gain competitive advantage in their respective industries. Their invention, as much as any other, inadvertently ushered in the era of processed

foods in America, creating fortunes for giant food companies who replaced natural, traditional foods with highly processed artificial ones. The repercussions of their partnership are still being felt to this day.

Proctor and Gamble realized that as the meat industry controlled the prices for lard and beef tallow (the starting raw materials for both candles and soaps) it would make economic sense to “go vertical” and oversee the production of a new raw material to be controlled from the seed to the finished product. Towards this end, the pair sought to take control of the cottonseed oil industry, and had purchased eight cottonseed mills in Mississippi by 1905. With the help of the German chemist E.C. Kayser, Proctor and Gamble were able to develop a process whereby liquid cottonseed oil was able to be hardened into a useable substrate for both candles and soap.

This process is called hydrogenation and, in a basic sense, involves exposing liquid (unsaturated) oils to hydrogen gas, producing a solid and more stable oil.



*The hydrogenated shortening, Crisco<sup>®</sup> originally contained cottonseed oil. Later, the less expensive soybean oil was used.*

As the electric light became more widely used, the candle industries’ days were clearly numbered, and the pair looked for new markets in which to sell their revolutionary product. They decided that since the product was produced from seed oils, and was hardened in such a way as to make it stable in baking and frying that they could sell it as food.

In 1911 their invention, Crisco<sup>®</sup> (short for crystallized cottonseed oil), was introduced to the

American public. Crisco's aggressive marketing campaign attempted to dissuade the American housewife from cooking with animal fats such as butter and lard; fats which had been used by traditional cultures for thousands of years.

Proctor and Gamble began the process of demonizing animal fats, and promoting their oil made from "vegetable" sources. This coupled with the fact that Crisco® was cheaper than butter, convinced many families to switch to this completely artificial food (and similarly produced margarine.) Such is the seemingly innocuous beginning of the hydrogenated oil industry in this country. No one seemed to suspect at the time the enormous toll such an artificial compound would take on the health of millions of people worldwide in the coming decades.

Nor would people have suspected how completely hydrogenated oils would replace traditional animal fats and palm oils in our food supply, and how profitable some processed food companies would become as a result.

In a business move that illustrates the profitability of hydrogenated oil, even despite the increasing awareness of their negative effects on health; in 2001 the Proctor and Gamble company sold the Crisco® brand along with the Jif® Peanut Butter brand (also made with hydrogenated oil) to the J.M. Smucker Company in a deal worth one billion dollars.

## Early Studies on Cholesterol and Heart Disease

As the twentieth century progressed, rates of heart disease in America rose to alarming levels and researchers began to look to our diet for the reasons why. When researchers performed studies on rabbits in the early and middle part of the twentieth century, the cholesterol added to the test animal's food greatly contributed to the production of arterial plaque. When artificially saturated fats (i.e. the hydrogenated oils) were added to the diet the ill effect was even more pronounced than when corn oil was added (Kritchevsky 1954.)

In the early days of hydrogenation scientists imagined that they were merely creating a saturated fat out of an unsaturated vegetable oil, that is, adding hydrogen to the fatty acid molecules, creating a harder,

more stable fat. They apparently didn't realize that they were, in fact, creating completely artificial and toxic molecules via the process. It is for this reason that much of the early research on "saturated fats" (i.e. artificially saturated fats, i.e. hydrogenated oils) must be discarded. **True saturated fats were rarely used; what researchers used in their studies were hydrogenated vegetable oils containing trans fats which have completely different metabolic effects.**

Based upon the results of similar studies, many health authorities urged Americans to restrict their use of animal foods containing saturated fats and cholesterol while increasing their use of unsaturated oils. Why hydrogenated oils were not suspect at this time one can only guess, but marketers of hydrogenated oil certainly capitalized this anti-saturated fat/cholesterol trend to sell more margarine and shortening. Fear of animal fats and cholesterol built throughout the rest of the twentieth century and continues to this day.

Some people at the time, however, questioned the logic of replacing these animal based, traditional foods which had nourished human beings for as long as history records, with artificial foods like refined oils and margarine. After all, epidemiological data shows that traditional cultures at all times in history, and of all geographical locations prized nutrient-rich animal fats as being integral to their health. Degenerative disease, including heart disease as we know it, was unknown in these cultures, and even largely unknown in the United States until the late 1920s.



*Lawmakers in New York City recently banned the use of trans-fat-containing cooking oils in the cities 20,000 restaurants.*

## Trans Fats Deadly – Who Knew?

**As it turns out, the artificial fats endorsed to prevent heart disease have now, beyond any reasonable doubt, been shown to contribute to**

**heart disease even more than the traditional saturated fats they were meant to replace.**

These artificial fats are produced by a process as previously mentioned, called hydrogenation, and the hydrogenation process creates particularly toxic lipid molecules known as trans fats.

As of today, in 2007, the detrimental effects of trans fats are well known among the general public. In one of the largest public health stories in memory, New York City lawmakers recently banned the use of trans-fat-containing oils in the city's restaurants. This may seem like good news until you realize that responsible lipid scientists have known of the harmful nature of trans fats for at least four decades. Any laws limiting the use of trans fats now could be a classic case of "too little, too late."

**That is, it took at least forty years for the honest scientific community to make any headway against the giant food industry. Experts in the field repeatedly pleaded for a ban on hydrogenated oil, and a return to a more traditional food supply – to no avail. All the while the poisoning of the American people continued unabated.**

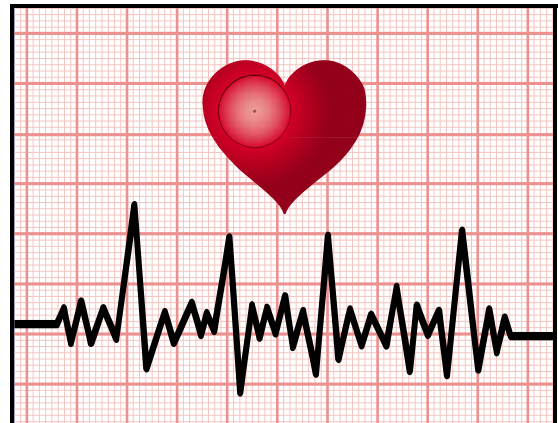
The Food and Drug Administration of the United States now requires trans fats to be listed in the Nutrition facts panel on packaged foods. This new law, coupled with the fact that trans fats have rapidly achieved a negative connotation amongst consumers, has forced the makers of many fried snack foods to look for ways to minimize these toxic lipids in their products.



*The harmful effects of hydrogenated oils, commonly found in fried foods, have been known for decades.*

It's worth noting that FDA guidelines for listing trans fats allow any amount of trans fat under 0.5 grams per serving to be listed as 0 grams. **In the shell game that is nutritional labeling, companies will manipulate serving sizes, and continue to use the harmful hydrogenated oils in any amount which allows trans fats to creep below the 0.5 gram cut-off.**

Considering the fact that any amount of trans fat from hydrogenated oil is harmful, and that experts recommend limiting trans fat intake to a paltry 2 grams per day, the educated consumer would be well served to banish hydrogenated oils from the diet completely. The "No Trans Fat" claim commonly seen on many processed foods often serves to give the consumer a false sense of security. Like so many times before, what started out as an initiative for public health has turned into another opportunity for the food industries to pat themselves on the back, without truly rectifying the problem at hand.



*As researchers unravel the mysteries of heart disease, it is clear that trans fats and oxidized cholesterol are partly to blame. These components are commonly found in processed food.*

## **Oxidized Cholesterol – Enemy of the Arteries**

This is the first lesson we can take from trans fats and apply to oxidized cholesterol - the fact that **structurally similar molecules often have vastly different effects on the body.** Like trans fats, the cholesterol molecule used in many influential heart-disease studies was slightly different, but much more harmful, than the researchers expected it to be. In the

early 1970's, decades after the influential studies were done, researchers realized that the cholesterol used in the animal feed was powdered – a completely artificial food. In this form significant amounts of cholesterol are known to go rancid, or chemically, oxidize.

**“Around 1971, someone noticed that the commercial cholesterol used in feeding experiments was oxidized, that is, it wasn't really cholesterol. Comparing carefully prepared, unoxidized cholesterol with the oxidized degraded material, it was found that pure dietary cholesterol was relatively non-atherogenic.”**

-Ray Peat PhD.  
Ray Peat's Newsletter September 2005

So, in fact, the lesson that the general public should have received, if the studies were interpreted properly, is not to avoid all cholesterol and saturated fat, but **to avoid hydrogenated oil and powdered, oxidized cholesterol.**



*Soft-Serve ice cream has been shown to contain higher levels of oxidized cholesterol than traditionally produced hard ice cream. The reason? – Soft-Serve ice cream is often produced from a powdered mix containing powdered milk and cream.*

Oxidized cholesterol forms during the drying of cholesterol-containing foods into powders and can be

commonly found in foods like powdered eggs, powdered milk, powdered cheese, protein powders, or foods containing these ingredients like pancake mix; or made with them; like soft-serve ice cream.

**“The cholesterol in fresh milk, eggs and meat is not oxidized and is utilized by the body to strengthen cell membranes, synthesize vital hormones, and build brain and nerve tissue. The drying process in making powdered milk, cheese, and eggs fully oxidizes the cholesterol in these products. Once oxidized it can not be utilized in the normal fashion to build and strengthen body tissues, but is packed away into the plaque of injured arteries. Eating such foods will surely clog your arteries faster than any other substance known on the face of the earth.”**

-Bruce Fife N.D.  
Saturated Fat May Save Your Life p. 173

**Again, the effects of oxidized cholesterol are completely different, and much more harmful than non-oxidized (known as reduced) cholesterol.** When similar studies were done using cholesterol carefully prepared to prevent oxidation, **the non-oxidized cholesterol proved to be harmless to the test animals.**

**“The type of cholesterol that builds up in the arteries is oxidized cholesterol and oxidized fatty acids. These are the only types of fats found in plaque.”**

-Bruce Fife N.D.  
Saturated Fat May Save Your Life p. 97

**“One of the most fundamental causes of atherosclerosis is not the presence of cholesterol, but the oxidation of cholesterol (particularly of LDL, the so-called “bad” cholesterol). Oxidized LDL is dangerous; it promotes the destruction of blood vessels by creating a chronic inflammatory response. Oxidized LDL can also provoke the release of metalloproteinase enzymes. These enzymes cause blood vessel destruction,**

**partly by interfering with the HDL (“good” cholesterol) protective effect.”**

-Guy R. Schenker, D.C.  
The Nutri-Spec Letter Vol. 14 Num. 9



*Eating foods containing oxidized cholesterol may not raise cholesterol levels in the blood, but may cause the oxidized cholesterol to be deposited in arterial plaque – Exactly what we don’t want!*

When only 1% of the cholesterol used in the new feeding studies was oxidized, test animals developed blockages in the arteries. This illustrates that oxidized cholesterol is toxic in very small amounts, and any amount of powdered cholesterol should be avoided if at all possible.

**“Rabbits fed a diet containing a mere 1% oxidized cholesterol developed extensive obstructions in their coronary arteries. In another group, rabbits ate the same amount of fat and cholesterol which was protected from oxidation, and their arteries remained disease-free. So, even a tiny amount of oxidized oil can have a very significant impact on health.”**

-Bruce Fife N.D.  
Saturated Fat May Save Your Life p. 98

## **If Knowledge is Power – How Do We Get the Power to the People?**

The second lesson from the trans fat story which we can apply to oxidized cholesterol concerns the “lag time” between scientific knowledge and public knowledge - the time it takes for information to make it from the laboratory to the general public before it can impact consumer buying patterns and public health policy.



*Researchers have found high levels of oxidized cholesterol in pancake mix formulated with powdered milk and eggs.*

Again, it took four decades before trans fats even had to be labeled on foods. And it took **almost three decades** for scientists themselves to realize the fact that the cholesterol in these influential studies was oxidized, and that oxidized cholesterol (and not unoxidized cholesterol or saturated fat) could be responsible for the studies’ outcomes. The time until this information becomes well known among the public is anyone’s guess, but you can be sure that, as they did with trans fats, the processed food industry will try to suppress this information as long as they possibly can to protect their bottom line.

Both of these elements – hydrogenated oil and oxidized cholesterol, for years, were not even suspected of causing harm. Now, their harmful nature is beyond any doubt. These compounds were largely non-existent in the food supply of our ancestors.

The fact is that our defenses against oxidized cholesterol are few. Even a high intake of antioxidants will not help us if the cholesterol we are eating is already oxidized (i.e. cholesterol in powdered form.)

Our only choice is to eat fresh, real, traditional foods and be very selective in which supplements we choose.

**“Powdered milk (and soft-serve ice cream), cheese, and eggs are all oxidized. These oils go directly into your arteries regardless of how many antioxidants you take.”**

-Bruce Fife N.D.  
Saturated Fat May Save Your Life p. 187

**“If you want to die from a heart attack or stroke, the foods that will contribute most towards this end are: powdered eggs; powdered milk; dehydrated cheddar, blue, parmesan and romano cheese powders, as well as sour cream and butter powders; and freeze-dried and cured meats. All of these foods contain variable but significant quantities of oxidized products capable of ripping free-radical holes through your cells, disintegrate DNA, and quickly age your skin, liver, kidneys, and brain. No organ is immune.”**

-Bruce Fife N.D.  
Saturated Fat May Save Your Life p. 173

**“Any oxidized cholesterol (or oxidized polyunsaturated fat) in the body is attracted to arterial plaque like a magnet and contributes to the clogging of the arteries.”**

-Bruce Fife N.D.  
Saturated Fat May Save Your Life p. 173

So, like trans fats, oxidized cholesterol is a major contributor to heart disease and many other degenerative conditions. Unlike trans fats, however, the public is still largely unaware of its harmful effects. I've yet to see any newspaper articles or television pieces on the damaging effects of oxidized cholesterol, but for those of us who have seen it, the scientific research, currently buried in academic journals, is impossible to ignore. **Oxidized cholesterol is widely found in our food supply, and is very harmful to our health.**



*Researchers believe that only oxidized cholesterol contributes to arterial plaque. Cholesterol can oxidize within our bodies, but many powdered foods contain oxidized cholesterol.*

How many decades will it take before the damaging effects of oxidized cholesterol are as well known, and as well publicized, as the damaging effects of trans fats? Will the FDA step in and ban oxidized cholesterol? It's not very likely that they ever will.

Unlike trans fats which are produced by a very specific hydrogenation process, oxidized cholesterol is produced when cholesterol containing foods are exposed to heat and oxygen. That is to say, oxidized cholesterol will increase in a food as time goes by, as a natural part of the spoiling of the food. A dairy based protein powder, like whey protein for example, may have very little oxidized cholesterol at the time of its manufacture, but after six months or more sitting in a warehouse, or on a store shelf, the oxidized cholesterol content may increase dramatically. Imagine what would happen if you let milk sit on your kitchen counter for six months. It would spoil; the fats and cholesterol in it would go rancid, or oxidize. It's a slower process in powders, but it still does happen. For this reason, it would be next to impossible for the FDA to regulate levels of oxidized cholesterol in food.

## **Oxidized Cholesterol in Nutritional Supplements**

As the hectic pace of modern society shows no signs of slowing, the nutritional supplement industry wants you to believe that they've answered the call of Americans for economical, convenient, and healthy “functional foods.” Health-conscious people with little

time to prepare “real food” are often attracted to the lure of dietary supplements – especially the dietary supplements which aim to replace foods, like diet shakes, meal replacements, protein bars, and protein powders.

Far too often, however, the quality of ingredients used in these nutritional supplements is not anywhere near what it should be. Many products which are marketed as healthy alternatives are no better than the junk foods they are meant to replace.

**In a very real sense the problems in the supplement industry mimic that of the junk food industry for one simple reason: they use the same ingredients.**

**I’m not kidding.**

**Artificial sweeteners, flavors, and colors, toxic additives like carrageenan; low quality proteins like soy, caseinates, and whey concentrate; rancid fats; hydrogenated fats (including mono and diglycerides), rancid (oxidized) cholesterol; and huge amounts of refined sugars and processed carbohydrates are VERY commonly found in the protein powders, energy bars, diet drinks, meal replacement powders, and “Ready-to-Drink” meal replacements sold as “dietary supplements.” Read those ingredient lists and you’ll see that it’s true.**

Remember the story of Crisco® with which we started this newsletter? In essence, a little slick marketing duped the American public into eating candle wax for the greater part of a century – with disastrous consequences for public health. The same sort of marketing is now being used to sell all sorts of newfangled processed foods – including protein powders containing oxidized cholesterol.

Dairy-derived whey protein powders are of particular concern when it comes to oxidized cholesterol. Remember, from the quotes above that even *small* amounts of oxidized cholesterol can be harmful. A serving of powdered milk or dehydrated parmesan cheese, for example, may contain only 5 milligrams of cholesterol per serving, but even that small amount, if oxidized, is enough to slowly cause significant damage over time.



*Many nutritional supplements containing whey protein concentrate are loaded with oxidized cholesterol.*

The frightening thing is that many whey protein powders, formulated with cheaper whey protein concentrate, contain at least **ten times as much cholesterol per serving as powdered milk or cheese**. It’s not at all uncommon to see a whey protein containing product sold as a dietary supplement which contains 30 to 60 milligrams of powdered cholesterol per serving. The problem is only compounded by the large amounts of whey concentrate (and products made with it) which many people take daily.

The sad irony is that these whey-protein-containing products are sold in the name of health – but, in reality, the oxidized cholesterol these products contain is one of the most harmful components of our food supply.



*Integrated Supplements 100% Natural CFM® Whey Protein Isolate contains no whey concentrate and zero milligrams of cholesterol per serving.*

Concern over oxidized cholesterol is just one reason that we at Integrated Supplements formulate our products with absolutely no whey protein concentrate. We use only the highest quality CFM® Whey Protein Isolate – a whey protein with the lowest levels of undesirable components like lactose, fat, and of course, cholesterol.

## What Lessons Can We Learn?

We believe that achieving optimal health involves adding high-quality supplements to a balanced diet of minimally processed, real food. We also believe in providing our customers with the information they need to make fully informed decisions in an increasingly confusing marketplace.

The good news is that the research which can protect our health is constantly being conducted. Scientists are continuing to unravel the mysteries of disease and aging, and it seems that we are on the verge of an entirely new era of human potential – an era in which aging may be slowed dramatically at the same time our knowledge of how to protect our health increases exponentially. Imagine having the brainpower to study advanced physics at age 80, or being alive to see your great-great grandchildren graduate from high school. These possibilities are more than just science-fiction. They are our future if we act wisely.

The bad news is, that until people recognize their self-destructive actions, and make meaningful lifestyle changes, this new era will pass them by. They will sadly never reach their full human potential.

Rule number one is that in order to live long-term, you've got to *think* long-term. Hydrogenated oils and oxidized cholesterol represent the essence of what is rapidly becoming an obsolete model of food production. These compounds, and the health problems they cause, are the consequence of short-term thinking not only by the food industry, but also by those of us who unquestioningly buy their products. Convenience items like vegetable shortenings and powdered foods may be profitable for the food giants, and cheaper to us than wholesome foods, but it is now known that they can decimate our health – the greatest price of all.

The American public is just beginning to wake up from the nutritional nightmare which characterized

most of the twentieth century. Set like a time bomb, the repercussions of an increasingly processed food supply are now impossible to ignore. In what seems to be a frantic scramble to find solutions, the giant food industries, who bear much of the responsibility for causing the problem in the first place, are now claiming that they have the answers in the form of more processed food and dietary supplements. Do you believe them?



*A new era of food production may be on the horizon – one that will nourish our bodies for longer and better lives.*

Many people don't, and many people are learning how to nourish their bodies in accordance with nature's laws. If these positive trends continue, not just as a fad, but as a fundamental shift in how we see our food supply, it is entirely possible that the end of the processed food era is near. The new era of food production in which wholesome natural ingredients predominate is potentially on the horizon; if, and only if, we educate ourselves, and demand food and supplements which are truly nourishing in the long term.

So before you put another food or nutritional supplement in your body, ask yourself: "Are the people making this product thinking long-term?" You can bet that at Integrated Supplements – we most certainly are.



*These statements have not been evaluated by the FDA. No Integrated Supplements product is intended to diagnose, treat, cure or prevent any disease.*