Special Report

DEFIBRILLATORS VERSUS FISH OIL

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HUNDREDS OF THOUSANDS OF AMERICANS DIE SUDDENLY AND PREMATURELY DUE TO INEPTNESS OF PUBLIC HEALTH AUTHORITIES

An estimated 300,000 sudden cardiac deaths occur annually in the USA. Most of these deaths are preventable, but there is considerable debate on how these deaths should be averted. Should Americans be left to experience a sudden heart seizure, come dauntingly close to death, and then have their hearts electrically shocked back into normal rhythm, or should these abnormal heart rhythms be prevented from ever occurring in the first place through simple dietary measures? Sadly, thanks to misdirected public health authorities and political influence exerted by the medical products industry, electrical shock treatment to restore normal heart rhythm is being pushed on the American public despite the fact it appears to be such a flawed and ineffective approach to saving lives.

The American public is familiar with electrical shock to jolt the heart back into normal rhythm, a practice called defibrillation. When the muscles of the major heart chambers (the ventricles) quiver, this is called ventricular fibrillation and it often leads to sudden death. Defibrillators deliver an electrical shock to restore normal heart rhythm.

More and more external defibrillators are being placed in public places (airports, sports stadiums, commercial aircraft) and implantable defibrillators are being promoted for high-risk patients who have already experienced a heart attack. Vice-president Dick Cheney has an implantable defibrillator which automatically detects an abnormal heart rhythm and releases an electrical impulse to re-synchronize heart muscle contractions.

Why be without a defibrillator on your next airplane flight when you don't have one at home! Very soon, one surmises, there will be vacuum cleaners with built-in defibrillators. The Harvard Health Letter says *"a shock at home can save a life. For some people, it makes sense to have an automated external defibrillator at home."* [Harvard Heart Letter 13:6-7, 2003]

The National Center for Early Defibrillation is a not-for-profit information resource center based at the University of Pittsburgh. Funded by the defibrillator companies, the center publicizes skewed statistics and stories of people whose lives were allegedly saved by an external defibrillator.

At the other end of the spectrum is prevention, which can now be accomplished with economical low-technology – omega-3 fish oil.

For unexplained reasons, the high-tech, expensive defibrillator technology continues to prevail over the use of fish oil.

Defibrillation

Successful resuscitation and restoration of normal heart rhythm outside of a hospital is a daunting task with only 2 to 25 percent surviving such an event. [Review Cardiovascular Medicine 2:197-205, 2001] Most of the efforts by paramedics to revive a heart attack patient in ventricular fibrillation end up in failure. While airlines are placing defibrillators on commercial aircraft, survival after cardiac arrest during air flight, even with automatic external defibrillators, is a rare occurrence. [Annals French Anesth Reanim 22: 235-37, 2003] In a practiced drill using a mannequin, only 20 percent of the general population can successfully implement defibrillation with an external defibrillator. [J Dent Education 67:1355-61, 2003]

Reports like those above, which reveal the drawbacks of external defibrillation, are frequently used to justify the implantation of internal defibrillators.

Among the 300,000 sudden cardiac deaths annually in the USA, in most of these cases the individuals had experienced a previous heart attack. If the ability of the heart to pump (called the ejection fraction) is significantly compromised after a heart attack then an implantable defibrillator is considered.
One report says, among patients who do not respond to heart rhythm drugs, internal cardiac defibrillators *"may be the only realistic option."* [Cardiology Clinics 11: 97-108, 1993]

But a recent study suggests handing heart attack patients a bottle of fish oil rather than implanting wires and batteries.

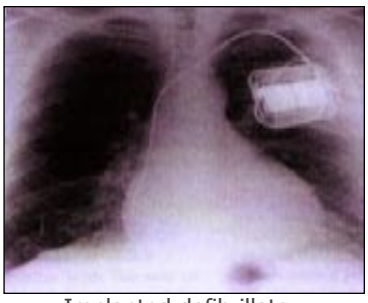
Who has a lower risk of experiencing a sudden-death heart attack? Vice-president Dick Cheney, who has an implantable defibrillator in his chest, or the Eskimos who are reported to consume as much as 13,000 milligrams of fish oil per day?

Do implantable defibrillators work?

Many reports suggest drug therapy (beta blockers, other drugs) results in unacceptably high recurrence rates of abnormal heart rhythm and internal defibrillators are superior to the best medical therapy. [Current Cardiology Reports 1: 268-73, 1999]

Among patients who have received an implantable defibrillator, 64% will likely experience another abnormal heart rhythm event within 3 years. So the need for defibrillation at the moment of crisis appears to justify the implantable machinery.

Richard N. Fogoros MD claims that thousands of people are needlessly dying suddenly each year because they didn't get an implantable defibrillator.



Implanted defibrillator

Shock and Awe

Do internal defibrillators work? The stated figure is that internal defibrillators reduce mortality rates by 28%. [Current Opinion Cardiology 19:26-30, 2004] Another study indicates internal defibrillators reduce the risk of sudden cardiac death by as much as 50% among adults who have experienced previous heart attacks. [European Heart Journal 21:2071-8, 2000]

While the advertised numbers used to justify implantation of defibrillators in humans are in the range of 30 to 50 percent, these are deceiving figures. When hard rather than relative numbers are used, there is only a difference of about 7 to 10%. [An Audit of Electrophysiological Services at Manchester Royal Infirmary, 1995 – 2000, Dr Adam P Fitzpatrick MD, Dr Clifford J Garratt MD] This is how science skews numbers to justify a particular medical technology. The above hard numbers mean better than 9 out of 10 patients with implantable defibrillators will not experience benefit.

Actually a recent study showed that the reduction in mortality due to an abnormal heart rhythm produced by internal defibrillators is statistically insignificant compared to medications. [Circulation 101:1297-302, 2000] Another recent study showed no significant benefit for internal defibrillators compared to drug therapy. There were 7 deaths among 52 cardiac patients given drugs (amiodarone) and 6 deaths among 51 patients with the internal defibrillator. [Expert Opinion Pharmacotherapy 4:2111-4, 2003] No measurable difference.

Reports like these are generally ignored.
One study shows the median survival for patients with internal defibrillators is about 5.7 years compared to 4.6 years for patients receiving medications alone. So the net benefit is only about a year of extra life over

and above less expensive medical therapy. [May 2002 American Journal of Medicine 112, pp. 519-527]

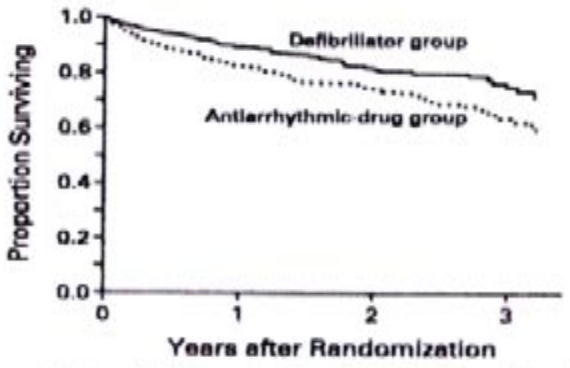


Figure 5. Antiarrhythmics vs implantable defibrillators (AVID) trial survival curves (AVID Investigators, 1997).

The above diagram indicates internal defibrillators produce greater survival than drug therapy. But the use of fish oil would likely reduce the overall numbers of patients who would even require an internal defibrillator as well as increase survival rates independent of accompanying drug therapy.

Omega-3 fish oil saves lives

Here's the breakthrough study. German researchers just announced they tested high-risk patients who had previously experienced a heart attack and had implanted defibrillators. All subjects were given omega-3 oils intravenously while they were experiencing sustained ventricular tachycardia (excessively fast heartbeat). Five of seven patients on fish oil experienced an immediate reduction in their heart rate irritability. [The Lancet Volume 363, Number 9419, May 1, 2004] Instead of drugs or defibrillators, the fish oil worked immediately to prevent heart muscle spasm.

Dogs given fish oil are protected from fatal heart rhythms.

A few years ago researchers at Ohio State University intentionally blocked circulation to a coronary artery among dogs pacing on a treadmill, which caused the dog hearts to spasm (ventricular fibrillation). But when omega-3 oils were given to the dogs, 5 of 7 dogs were protected from fatal heart rhythms. [Circulation 99: 2452-57, 1999]

The tragedy of all this is that so many lives have been needlessly lost that could have been spared with low-cost technology. **Death from cardiovascular disease is rare among Eskimos who traditionally consume massive amounts of omega-3 fish oil.** [Lancet 2: 433-35, 1979]

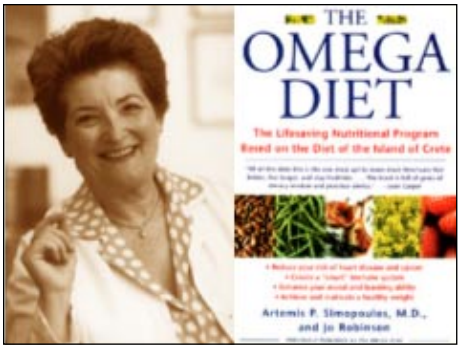
In the late 1970s, epidemiological studies revealed that Greenland Eskimos experience far fewer heart attacks than adults in Western countries. More than 4500 studies followed which confirmed the beneficial effects of omega-3 fish oils on cardiovascular health. **As little as 1000 milligrams a day of fish oil reduces the risk of sudden death.** About a 45% reduction in sudden-death heart attack is achieved with daily fish oil consumption. Higher doses, 3000 to 5000 mg, reduce triglycerides and minimize the risk of coronary heart disease. [Mayo Clinic Proceedings 75:607-14, 2000]

It has been known since the 1930s that omega-3 oils are essential for human life. Armed with all of this knowledge, do public health authorities mandate that foods be fortified with omega-3 oils? **No, to date, Dietary Reference Intakes have not been established by the Food & Nutrition Board of the Institute of Medicine.**

In 2000 Artemis SImopoulos, MD, convened a workshop of health authorities which concluded that **2220 mg of omega-3 fish oil represents adequate daily intake.** But her efforts have failed to influence governmental health agencies. [Nutrition Today. 35: 166-167, 2000]

Dr. Simopoulos warns of the mortal consequences when Americans consume so much omega-6 oil and so little omega-3. Fatal ventricular fibrillation in rats and sudden cardiac death in man are accompanied by a high ratio of omega-6 (corn, safflower, sunflower oil) to omega-3 oils (fish and flax) in the diet. [J Intern Med Supplement 225:117-28, 1989] To make matters worse, Americans consume more omega-6 oils than omega-3 oils by a ratio of 16.74 to 1. [Lipids 36: S83-89, 2001]

A European health researcher declares fish oil is superior to statin cholesterol-lowering drugs and equal to aspirin in reducing the risk for cardiac death. About 1 in 175 adults taking fish oil will be spared of sudden mortal heart attack by taking only 850



Dr. Artemis Simopoulos crusades for the establishment of a daily adequate consumption level for omega-e oils.

milligrams of fish oil and the benefits appear within 90 days of initial consumption. [European J Med Research 20: 332-36, 2003] We are talking about something that would save over a million lives! DHA-rich fish oil is preferred for heart conditions over EPA-rich fish oils. [Lipids 36: S111-14, 2001]

Are defibrillators cost effective?

It costs between $27,000 to $139,000 for every year of life added by the use of implantable defibrillators. [Cardiac Electrophysiology Review 7:479-82, 2003]

In the USA about 228 per million inhabitants receive an implantable defibrillator compared to only 45 per million in Western Europe. [Cardiac Electrophysiology Review 7:5-13, 2003] That's about 64,000 implantations a year in the USA at a cost exceeding $20,000 per device, or about $1.3 billion, not counting hospital and physicians fees. The implantable defibrillator industry has responded to criticism concerning the cost of these devices by marketing a less costly version with fewer programmable features ($10,000 per unit).

The total cost of the first year of care for a fast or irregular heart beat with a defibrillator is about $48,7000 compared to only $17,000 with medications. [American Journal of Medicine 112, 519-527, 2002] The implantable defibrillator market exceeds $3 billion of health care expenses per year. It's an industry physicians, medical device manufacturers, hospitals and paid-off politicians want to maintain. Imagine, such high technology is vulnerable to a lowly bottle of fish oil.

Allowing the heart to become irritable due to a widespread dietary deficiency of omega-3 oils and then attempting to fix the problem as one is near death is madness, especially when a proven preventive measure is at hand. Omega-3 oils cannot be used for cooking, but foods such as eggs could be fortified with omega-3 oils just as flour is fortified with essential vitamins and minerals by law. This is another example of why the American public can no longer trust public health authorities. Over seven decades of research and thousands of published studies has not been enough to motivate entrenched health authorities to mandate minimum intake levels and food fortification for omega-3 oils.

In Japan no mandate is needed to add omega-3 oils to foods. Per capita fish consumption there is the highest in the world and the incidence of ventricular fibrillation is remarkably low compared to some areas of Europe or the USA. [Resuscitation 59:329-35, 2003]

A recent scientific review of all the technologies available to prevent sudden cardiac death did not include omega-3 fish oil. [Pharmacological Therapy 100: 89-99, 2003] It is apparently outside the realm of modern medicine to seriously consider low-cost dietary or supplement regimens that would prevent sudden death.