

The Safety Of Supplements

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As discussed in the book's introduction (see Appendix of this article), the 2003 media circus that surrounded the problems with Pan Pharmaceuticals (regards their pharmaceutical drug *Travacalm*) has created an impression with some people that nutritional supplements are "dangerous". Let's add some perspective.

Comparison with pharmaceutical drugs and fast food

I'd like to compare figures from the USA first, as I have more details available. Following that some Australian statistics.

The dangers of pharmaceutical drugs

According to a 1994 study in the *Journal of the American Medical Association (JAMA)*, each year in the USA there are 180,000 deaths attributable to modern medicine - most due to prescribed pharmaceutical drugs.¹ A 1998 study in the *JAMA* stated that in a single year in the USA, "2,216,000 hospitalised patients had serious Adverse Drug Reactions and 106,000 had fatal Adverse Drug Reactions." The study concludes that reactions to pharmaceutical drugs are "between the fourth and sixth leading cause of death."² In other words, pharmaceutical drug-based medicine is a leading cause of death in developed countries. Strange how you don't hear much about that in the media. In contrast, if one person has a reaction to a nutritional supplement or a "health food" you don't hear the end of it for weeks.

The dangers of fast food meat

In his book *Fast Food Nation - what the all-American meal is doing to the world*, Eric Schlosser reports: "Every day in the United States, roughly 200,000 people are sickened by a foodborne disease, 900 are hospitalised, and 14 die."³ On a yearly basis that equates to 73,000,000 cases of illness, 328,500 hospitalisations and 5,110 deaths. Most of it is due to contaminated meat from fast food outlets. For instance, a 1996 nation-wide study by the USDA found that of samples of ground beef:

- 11.7% were contaminated with *Listeria monocytogenes* - food poisoning with this proves to be fatal in about 1 in 5 cases;
- 7.5% were contaminated with *Salmonella*;
- 30% were contaminated with *Staphylococcus aureus*; and
- 53.4% were contaminated with *Clostridium perfringens*.

1 - Lucian Leape, "Error in medicine", *Journal of the American Medical Association (JAMA)*, 1994, p1851, vol. 272, nr 23.

2 - Lazarou J, Pernerz B, Corey PN. "Incidence of adverse drug reactions in hospitalized patients: a meta-analysis of prospective studies," *JAMA*, 1998, vol. 279, nr 15, pp. 1200-1205.

3 - Eric Schlosser, *Fast Food Nation - what the all-American meal is doing to the world*, 2002, p195-196, Penguin Books.

Similarly, Dr Colgan reports that half of all chicken and eggs sold in the USA are contaminated with *Salmonella* or *Cambylobacter*.⁴

Schlosser continues: "According to the Centres for Disease Control and Prevention, more than a quarter of the American population suffers a bout of food poisoning each year. Most of these cases are never reported to authorities or properly diagnosed. The widespread outbreaks that are detected and identified represents a small fraction of the number that actually occurs. And there is strong evidence not only that the incidence of food-related illness has risen in the past few decades, but also that the lasting health consequences of such illnesses are far more serious than was previously believed... Recent studies have found that many foodborne pathogens can precipitate long-term ailments, such as heart disease, inflammatory bowel disease, neurological problems, autoimmune disorders and kidney damage."

Schlosser explains in his book how much of this is due to the nature of fast food and how it is produced. It is described as the "ideal system for new pathogens." Furthermore, he describes how the industry resolutely opposes "any further regulation of their food safety practices." This is often achieved through "sizable donations to members of Congress." The result is that while government can order the nation-wide recall of defective sports equipment, cuddly toys and clothing, it "cannot order a meatpacking company to remove contaminated, potentially lethal ground beef from fast food kitchens and supermarket shelves."⁵

The dangers of supplements

In stark contrast to pharmaceutical drugs and fast food, in the 5-year period 1985 to 1990 only one death was attributed to a nutritional supplement in the USA.⁶ This is according to the American Association of Poison Control Centers. They attributed the death to a large overdose of niacin, a form of vitamin B3, which is often medically employed to lower cholesterol. However, Dr Julian Whitaker strongly disputes that this death was due to a niacin overdose. The case history of the person in question shows that he was also on a cocktail of pharmaceutical drugs such as Lovastatin (Mevacor), acetaminophen (eg. Tylenol), Navane, Cogentin, Desipramine and Aspirin. The cause of death was severe liver damage.

As Dr Whitaker explains, "Reading the small print in the pharmaceutical ads reveals that Lovastatin as well as acetaminophen and Navane... can cause the type of liver damage produced in this patient..."

This patient also had a history of "hoarding his medication" for up to ten days. He would then take them all at once. The manufacturer of Lovastatin recommends never taking a double dose of the drug even if a dose is missed. Why? Because the drug can cause serious liver damage...

Given the known side effects of the drugs the patient was on, it is unlikely that the man's death was the result of niacin toxicity alone."⁷

4 - Dr. Michael Colgan, *The New Nutrition: Medicine for the Millenium*, 1995, p108, Apple Pub. Co. Ltd;

5 - Eric Schlosser, *Fast Food Nation - what the all-American meal is doing to the world*, 2002, p196-197, Penguin Books.

6 - Dr. Michael Colgan, *The New Nutrition: Medicine for the Millenium*, 1995, p108, Apple Pub. Co. Ltd;

7 - Dr. Julian Whitaker, *Dr. Whitaker's Guide to Natural Healing*, 1995, page 13, Prima Publishing, Ca, USA.

Lining them up for comparison:

If we compare these U.S. figures over a 5-year period there were:

- 900,000 deaths due to pharmaceutical-based medicine.
- 25,550 deaths due to fast-food-borne diseases.
- 0 deaths unquestionably due to a nutritional supplement.

Australian figures

Let's look at some Australian figures. The 2001 *Medications Safety Task Force* declared that there are an estimated 80,000 hospital admissions each year as a result of adverse reactions to pharmaceutical drugs. This costs some \$350 million to the health system.

This compares with just 23 admissions to hospital for reactions to the entire range of complementary health products - including herbs, homeopathic treatments and much more apart from vitamin and mineral supplements.⁸

To place these figures side by side to compare them more clearly:

- 80,000 hospital admissions each year as a result of adverse reactions to pharmaceutical drugs.
- 00,023 admissions for reactions to the entire range of complementary health products.

Call me strange, if you may, but it impresses me that supplements are far, far safer than are pharmaceutical drugs or fast food.

Common flaws of studies that fault supplements

Of course, there are many sound studies that find no benefit for a particular nutrient in regards to certain concerns. Obviously, that's because each nutrient can only do certain things and not others. For instance, 50 mg a day of vitamin C will not re-grow an amputated limb. Similarly, there could be sound studies that show, for instance, a certain dose of folic acid had no effect on reversing osteoporosis. What I would like to point out below, however, are some of the common flaws of many studies. Moreover, the way the results can be misrepresented in the media.

Flaw # 1: Studies aren't long enough.

Earlier I cited a study that showed women who took a multi-vitamin containing folic acid for over 15 years cut their risk of colon cancer by 75%.⁹ However, at the 4 year stage there was no evident benefit with respect to colon cancer. Imagine if you did not know this and tomorrow you read a short report in the media that said: "New study finds no benefit from multi-vitamins or folic acid regards colon cancer". Imagine if the media report didn't clearly state the study only lasted a few years and

8 - Senator Lyn Allison, Complementary Health Update, November 2003, page 3, [Http://www.Democrats.Org.Au/Docs/2003/0040/Pub%20comp%20health%20update%20nov%2003.Pdf](http://www.Democrats.Org.Au/Docs/2003/0040/Pub%20comp%20health%20update%20nov%2003.Pdf); Marcus Blackmore, "Marcus Blackmore sparks informed debate on the future of natural health in Australia", 2003, http://www.blackmores.com.au/news/news_detail.asp?art=750

9 - Giovannucci et al., "Multivitamin Use, Folate, and Colon Cancer in Women in the Nurses' Health Study", *Annals of Internal Medicine*, 1998, Vol 129 (7): 517

that major benefits were found from another study that lasted 15 years. You and millions of other busy people may well form your opinion based on that incomplete report. Imagine the tragedy of people discarding supplements and later developing colon cancer that could have been prevented.

Flaw # 2: Magic bullet approach - studies use just one or a few nutrients, not a comprehensive, balanced range.

Studies often ignore the synergistic effects of nutrients and concentrate on just one or a few nutrients. They are looking for a "magic bullet" type effect. This is an unfortunate carryover from testing pharmaceuticals. As we'll see in more depth later on, nutrients work best in the company of other complimentary nutrients.

For an example, imagine if you read in a newspaper tomorrow "New study shows little benefit from calcium supplements in regards to long-term bone health". You might well conclude there's no point taking supplements in order to help your bones. Unless you read a quote from someone like Dr Michael Colgan stating: "We now suspect that calcium interacts with most of the other 58 essential nutrients that compose the human body. New studies show that supplements of multiple vitamins and minerals, yield much greater increases in bone density than calcium, or calcium and vitamin D. And the greater the number of the essential nutrients you add to the mix, the better the result."¹⁰

A second problem with the magic bullet approach is that too much of one nutrient can mask imbalances with others. For example, supplementing with folic acid may mask an underlying B12 deficiency.¹¹ Over time this undetected B12 deficiency could lead to serious health problems. These might be blamed as a result of using folic acid. When in fact the flaw was the single-nutrient magic bullet approach. The sensible approach is to use a broad and balanced range of nutrients.

A third problem of the magic bullet approach is that too much of one nutrient can create imbalances with others. Imagine a study gave subjects high doses of zinc by itself. Dr Colgan explains what could happen: "Excess zinc disrupts copper metabolism, which disrupts iron metabolism, which disrupts... You get the picture... Do not take zinc *except* as part of a multi-mineral supplement."¹²

Flaw # 3: Studies use medically insignificant, low quantities of nutrients.

Imagine you read in a newspaper "New study shows vitamin E yields no benefit to heart health." You might well conclude it was a waste of money to take vitamin E supplements for that reason. However, the newspaper article didn't tell you the study only used 25 IU of vitamin E a day. And they didn't quote someone like Dr Ray Strand saying: "According to medical literature, you do not begin to see any health benefits until ingesting 100 IU of vitamin E in supplementation... Most physicians who understand supplementation would agree that one must consume at least 400 IU of vitamin E daily."¹³

Or for another example, you hear a media report that says "Study shows vitamin C had no benefit on the common cold". However, an omitted detail is that the study used only 50 mg a day of vitamin C. Also, that placebo-controlled studies using 2,000

10 - Dr. Michael Colgan, *The New Nutrition: Medicine for the Millenium*, 1995, pages 107, Apple Pub. Co. Ltd.

11 - Dr. Ray Strand, *What your Doctor doesn't know about Nutritional Medicine may be killing you*, 2002, page 185, Thomas Nelson Publishers, Nashville.

12 - Dr. Michael Colgan, *The New Nutrition: Medicine for the Millenium*, 1995, Apple Pub. Co. Ltd., page 94-95

13 - Dr. Ray Strand, *What your Doctor doesn't know about Nutritional Medicine may be killing you*, 2002, page 180, Thomas Nelson Publishers, Nashville.

mg a day "have shown that vitamin C supplementation decreases the duration and severity of common cold infections."¹⁴

And one more example for good measure. Imagine you heard a media report like: "A new study has found supplementing with vitamin C and vitamin E over 7 years produced no benefits on slowing carotid atherosclerosis (cardiovascular disease)". However, the media report did not explain that the study employed low daily doses of just 120 mg of vitamin C and 30 mg vitamin E (equal to 25 IU).¹⁵ Moreover, the report did not mention that another study, which employed higher daily amounts of 500 mg of vitamin C and 272 IU of vitamin E, *did* produce benefits. It "slowed down the progression of carotid atherosclerosis".¹⁶ If you did not know about this higher dose study what would you think?

Flaw # 3: Studies use inferior versions of nutrients.

Imagine you heard on the radio "Study shows users of vitamin E pills were worse of than those without." However, the report did not state the study used the inferior synthetic version of vitamin E known as *dl*-alpha-tocopherol. Nor that this cheap version of vitamin E is already well known "to cause problems rather than reduce them".¹⁷ Nor that most studies use the superior natural *d*-alpha form of vitamin E. And they found no problems and in fact had shown great benefit for a variety of health issues, particularly regards heart disease and cancer.¹⁸

Flaw # 4: Studies use terminally ill patients.

Some studies use patients who are terminally ill and beyond the point of no return. Such studies are often destined to fail from the beginning if the subjects pass away before enough time has passed by for results to appear. It's even worse when these studies than attempt to extrapolate results to healthy people. Imagine if you read a media headline that said "High doses of Vitamin E associated with slightly higher death rate". What would you think? However, your opinion would probably be very different if the report stated that the people who took the high amounts were on

14 - Hemila H., "Vitamin C supplementation and common cold symptoms: factors affecting the magnitude of the benefit", *Medical Hypotheses* 1999;52:171-8 [review].

15 - Mahmoud Zureik, Pilar Galan et al, "Effects of Long-Term Daily Low-Dose Supplementation With Antioxidant Vitamins and Minerals on Structure and Function of Large Arteries", *Arteriosclerosis, Thrombosis, and Vascular Biology*, 2004;24:1485.

16 - Riitta M. Salonen, Kristiina Nyyssönen et al, "Six-Year Effect of Combined Vitamin C and E Supplementation on Atherosclerotic Progression - The Antioxidant Supplementation in Atherosclerosis Prevention (ASAP) Study", *Circulation*. 2003;107:947.

17 - Dr. Ray Strand, *What your Doctor doesn't know about Nutritional Medicine may be killing you*, 2002, page 189, Thomas Nelson Publishers, Nashville.

18 - Stephens NG, Parsons A, Schofield PM, et al, "Randomised controlled trial of vitamin E in patients with coronary disease: Cambridge Heart Antioxidant Study (CHAOS)", *Lancet*, 1996, March 23;347(9004):781-6; Rimm E. B., Stampfer M. J., et al, "Vitamin E Consumption and the Risk of Coronary Heart Disease in Men", *New England Journal of Medicine*, 1993; 328:1450-1456, May 20, 1993; Stampfer M. J., Hennekens C. H., et al, "Vitamin E Consumption and the Risk of Coronary Disease in Women", *New England Journal of Medicine*, 1993; 328:1444-1449; KG Losonczy, TB Harris and RJ Havlik, "Vitamin E and vitamin C supplement use and risk of all-cause and coronary heart disease mortality in older persons: the Established Populations for Epidemiologic Studies of the Elderly", *American Journal of Clinical Nutrition*, 1996, Vol 64, 190; Bostick RM, Potter JD, "Reduced risk of colon cancer with high intake of vitamin E: the Iowa Women's Health Study," *Cancer Research*, 1993 Sep 15;53(18):4230-7; Boaz M, Smetana S, Weinstein T, et al. "Secondary prevention with antioxidants of cardiovascular disease in endstage renal disease (SPACE): randomised placebo-controlled trial", *Lancet* 2000;356:1213-8; Heinonen OP, Albanes D, Virtamo J, et al. "Prostate cancer and supplementation with alpha-tocopherol and beta-carotene: incidence and mortality in a controlled trial", *Journal of the National Cancer Institute*, 1998;90:440-6.

death's door-step. Logically, you'd expect a higher death-rate in that group compared to a group of healthy people (who didn't take any vitamin E).

I trust the above examples demonstrate that short media news-bytes do not provide the whole story. The lesson is, we need to know the fine details, the specifics about a study to make it meaningful. Unfortunately, media editors and announcers often omit these important details.

Nevertheless, as we'll see in the next section, caution is certainly advised when supplementing with certain nutrients like vitamin A and iron...

Appendix: Introduction from the book

Why I wrote this book

Since the start of my university studies in 1991 I have taken a keen interest in health issues. I majored in biology, human health and developed a keen interest in the truth about medical history and iatrogenic illness. That's a fancy word for injuries and deaths caused by modern medicine. For about 6 years I did volunteer work for a group called the *Campaign Against Fraudulent Medical Research*. Our mission was to publicise the findings of medical studies and the voices of medical experts about the little known dangers posed by drug-based modern medicine. I authored articles for numerous health organisations and lobby groups. Many of these have been published in journals and magazines. You will find some of this kind of information within this book.

What brought my attention to supplements? Well I didn't really have much interest nor faith in them, until I did the research for this book. My interest was aroused in early 2003 when the Australian media was occupied with reports about a company called Pan Pharmaceuticals. It had been found that there were safety concerns about one of their pharmaceutical products called *Travacalm*.¹⁹ It just so happened that Pan Pharmaceuticals also manufactured nearly half of the apparently different brands you could find on store shelves. When the Therapeutic Goods Administration recalled Pan's products this meant a great number of vitamin and mineral products were taken off store shelves. (That is, until those companies found other manufacturers to produce their products.)

Strangely, instead of focussing on the dangers of pharmaceutical drugs, the media focus shifted to vitamin and mineral supplements. In the words of Marcus Blackmore: "It is incredulous that what started as serious adverse reactions to an orthodox pharmaceutical drug (*Travacalm HO*) has turned into a tirade of condemnation of complementary and alternative medicine."²⁰ Health activist Chris Gupta spells it out even more clearly: "It is the manufacturing procedures, quality control and ethical behaviour of those in the pharmaceutical industry which is in question. In spite of these facts, the health authorities and the media have largely succeeded in creating the

19 - Chris Gupta, "Regulatory Abuse", online at http://www.newmediaexplorer.org/chris/2003/12/14/regulatory_abuse.htm

20 - Marcus Blackmore, "Marcus Blackmore sparks informed debate on the future of natural health in Australia", 2003, http://www.blackmores.com.au/news/news_detail.asp?art=750

false perception that responsibility for the current crisis falls squarely on the shoulders of the alternative medicine industry."²¹

The end result of the media reports is that many people are left with an impression that supplements are "dangerous". Yet they apparently do not question the safety of pharmaceutical drugs. I have heard comments in this regard from numerous people over the last two years. So I decided to look into it for myself. As I found and as shown further on in this book, supplements are very safe to use. Particularly when used according to some sensible guidelines we'll look at. And we'll also see that the safety record for supplements is five-star when we compare them to the shameful records of pharmaceutical drugs and fast foods.

In response to the slanted media reports about supplements former president of the Australian Medical Association, Dr Kerry Phelps commented: "As an experienced clinician I am well aware of the importance of appropriate nutritional supplementation for optimum patient care in both prevention and management of illness. Recent events have hit the complementary medicine sector like a sledgehammer. A lot of innocent bystanders were affected. Of great concern have been a number of ill-informed comments made since then about complementary medicine and nutritional supplementation generally. Complementary medicines and therapies that are of high quality and are known to work should not be dragged down by the recent scandal. There are now literally many thousands of scientific studies supporting the use of nutritional supplements such as multivitamins, folic acid, iron, zinc, magnesium, probiotics and a vast range of herbal preparations in helping to prevent diseases and recover from illness."²²

More on what you'll find within

From my research in the early 1990s I have been aware that there are powerful interest groups who are most keen to discredit virtually anything that does not employ pharmaceutical drugs. After all, the pharmaceutical drugs business is one of the biggest in the world - closely linked to the chemical, petroleum and military industries. After the Pan media fiasco, I decided it was time for me to look into vitamin and mineral supplements in detail. I had dabbled with them now and then over the years but never really knew what, why, when, how or when to use them. I have to confess that my opinion at the start of doing this research was: "You can get all you need from a healthy diet of home-grown and organic foods. Supplements just give you expensive urine. They never did anything for me." However, the over-the-top media reaction aroused my curiosity. Over the past 2 years I have read dozens of books and scoured hundreds of articles from medical journals. My opinion has changed. In this book I have sought to provide the most important information I've come across in regards to obtaining optimum benefit from supplements. I have then applied much of this information to compare all of the multi-vitamin-mineral products I could find that are available for purchase in Australia. In brief, this book shows:

21 - Chris Gupta, "Regulatory Abuse", online at http://www.newmediaexplorer.org/chris/2003/12/14/regulatory_abuse.htm

22 - Dr Kerry Phelps quote obtained from the web-page <http://www.usenature.com/dieter.news.htm> in August 2004.

- medical studies recommend we need supplements in order to achieve and maintain optimal health;
- studies on supplements associate them with a greatly reduced risk for numerous degenerative diseases like heart disease, stroke, cancer, osteoporosis, diabetes and dementia amongst others;
- the recommended dietary intake (RDI) and recommended dietary allowance (RDA) guidelines appear irrelevant in regards to degenerative disease;
- it is not possible to obtain the optimum nutrition we need from modern foods alone;
- the vast majority of supplement products are of low nutritional quality; however,
- a few products are of very high quality.

This book was written to assist you to demand, seek out, and purchase the highest level of quality available. I have sought to provide Australian facts and references where I have been able to obtain them. Please bear with me, where in a few sections I quote overseas sources. Due to their large population, by far the most information on this subject comes from North America. In any case, the people of English-speaking countries like Australia, the USA, Canada, New Zealand and the United Kingdom share very similar lifestyle factors, diets, medical treatments and associated health problems. What can be said about health and disease in one of these countries generally rings true for the others.

Please note from the start: I am of the opinion that supplements are exactly that - *supplements*. They cannot make up for a bad diet and lifestyle. However, if you exercise regularly, do not smoke and eat a healthy diet, supplements can provide you with an extra boost towards obtaining or maintaining optimal health. I will elaborate on these points further on through the words of several doctors and nutritional experts.

This has been an excerpt from the upcoming book
How to live longer in good health through nutrition,
 Robert Ryan (BSc (biology, human health) Dip IT, Dip PA). Copyright 2005. All Rights Reserved. <http://www.healthpromotionaustralia.com>

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