

Where Are the Bodies?

The Safety of Antioxidants and

Micronutrients
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"No one dies from vitamins."

(Abram Hoffer, MD, PhD)

Vitamin Supplement Safety Confirmed by America's Largest Database

- American Association of Poison Control Centers (AAPCC) data indicates **a total of 13 vitamin deaths in 29 years.**
- That is less than one-half a death per year.

Summary of Vitamin Fatality Data from Annual Reports of the American Association of Poison Control Centers <http://www.aapcc.org/annual-reports/>

2011: two	2001: zero	1991: two
2010: zero	2000: zero	1990: one
2009: zero	1999: zero	1989: zero
2008: zero	1998: zero	1988: zero
2007: zero	1997: zero	1987: one
2006: one	1996: zero	1986: zero
2005: zero	1995: zero	1985: zero
2004: two	1994: zero	1984: zero
2003: two	1993: one	1983: zero
2002: one	1992: zero	

Vitamin Supplement Safety Confirmed by America's Largest Database

- The zeros are not due to a lack of reporting.
- The American Association of Poison Control Centers (AAPCC), which maintains the USA's national database of information from 57 poison control centers, has noted that vitamins are among the 16 most reported substances.

Vitamin Supplement Safety Confirmed by America's Largest Database

- Even if these fatality figures were taken as correct, and even if they include intentional and accidental misuse, the number of alleged vitamin fatalities is strikingly low.
- **In 20 of the 29 years, AAPCC reports that there was not one single death due to vitamins.**

Vitamin Supplement Safety Confirmed by America's Largest Database

- Still, the *Orthomolecular Medicine News Service* Editorial Board was curious.
- Did thirteen people really die from vitamins?
And if so, how?

Vitamins Not THE Cause of Death

- In determining cause of death, AAPCC uses a four-point scale called Relative Contribution to Fatality (RCF).
- A rating of 1 means "Undoubtedly Responsible"
- 2 means "Probably Responsible"
- 3 means "Contributory"
- 4 means "Probably Not Responsible"

Vitamins Not THE Cause of Death

- In examining poison control data for the year 2006, listing one vitamin death, it was seen that the vitamin's Relative Contribution to Fatality (RCF) was a “4.”
- Since a score of “4” means “Probably Not Responsible,” it quite negates the claim that a person died from a vitamin in 2006.

Vitamins Not THE Cause of Death

- In other years, reporting one or more of the remaining twelve alleged vitamin fatalities, studying the AAPCC reports reveals an absence of RCF ratings for vitamins.
- If there is no Relative Contribution to Fatality at all, then the substance did not contribute to death at all.

Vitamins Not THE Cause of Death

- Two people are alleged to have died from vitamin supplements in the year 2011.
- One death was allegedly due to vitamin C; the other supposedly because of "Other B-Vitamins."
- The AAPCC report specifically indicates no deaths from niacin (B-3) or pyridoxine (B-6). That leaves folic acid, thiamine (B-1), riboflavin (B-2), biotin, and B-12 as the remaining B-vitamins that could be blamed.
- However, the safety record of these vitamins is extraordinarily good; no fatalities have been confirmed for any of them. Vitamin C is also an extraordinarily safe nutrient. No deaths have ever been confirmed from supplementation with vitamin C.

Vitamin Supplement Safety Confirmed by America's Largest Database

- If there is insufficient information about the cause of death to make a clear-cut declaration of cause, then subsequent assertions that vitamins cause deaths are not evidence-based.
- Although vitamin supplements have often been blamed for causing fatalities, there is no evidence to back up this allegation.

Vitamin Supplement Safety Confirmed by America's Largest Database

- There have been zero confirmed deaths from vitamin supplements.
- None at all in 29 years.

Vitamin Supplement Safety Confirmed by America's Largest Database

- Well over half of the U.S. population takes daily nutritional supplements.
- Even if each of those people took only one single tablet daily, that makes 165,000,000 individual doses per day, for a total of over 60 billion doses annually.
- Since many persons take far more than just one single vitamin or mineral tablet, actual consumption is considerably higher, and the safety of nutritional supplements is all the more remarkable.

Vitamin Supplement Safety Confirmed by America's Largest Database

- **Over 60 billion doses of vitamin and mineral supplements per year in the USA, and not a single fatality. Not one.**
- If vitamin and mineral supplements are allegedly so "dangerous," as the FDA, CODEX, and news media so often claim, then ***where are the bodies?***

Where are the bodies?

- 15 years ago, properly-prescribed pharmaceutical drugs, taken as directed, killed at least 80,000 people annually in the USA alone. (Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: a meta-analysis of prospective studies. *JAMA*, 1998. Apr 15;279(15):1200-5.)
- Some estimates place the yearly death toll from pharmaceuticals far higher, into the hundreds of thousands. (Null G, Dean C, Feldman M, Rasio D. Death by medicine. *J Orthomolecular Med*, 2005. 20: 1, 21-34.)

- *“What use do you make of your physician?”
said the king to Molière one day.*
- *“We chat together, sire; he gives me his
prescriptions; I never follow them, and so I get
well.”*
- (Taschereau J. Histoire de la vie et des ouvrages de Molière, 1825. Paris. Translated in: *The North American Review*, 1828. 27:60, [New Series 18:35]. Boston, p 386)

Safety of Mineral Supplements

- Minerals have an excellent safety record but not quite as good as vitamins.
- Until iron supplements were put in child-proof bottles, there were one or two fatalities per year attributed to iron poisoning from gross overdosing on supplemental iron.
- Deaths attributed to other supplemental minerals are very rare.

Mineral Supplement Safety Confirmed by America's Largest Database

- In 2010, AAPCC reports that three people died from non-supplement mineral poisoning
- Two from medical use of sodium and one from non-supplemental iron.
- On page 131, the AAPCC report specifically indicates that the iron fatality was not from a nutritional supplement.

Mineral Supplement Safety Confirmed by America's Largest Database

- In 2009, there were no deaths whatsoever from any dietary mineral supplement.
- Two people died from non-nutritional mineral poisoning, one from a sodium salt and one from an iron salt or iron. On page 1139, the AAPCC report specifically indicates that the iron fatality was not from a nutritional supplement.
- One other person is alleged to have died from an "Unknown Dietary Supplement or Homeopathic Agent."

Mineral Supplement Safety Confirmed by America's Largest Database

- There were zero deaths in 2008 from any dietary mineral supplement. This includes iron.
- However, two children died as a result of medical use of the antacid sodium bicarbonate. The other "Electrolyte and Mineral" category death was due to a man accidentally drinking sodium hydroxide, a highly toxic degreaser and drain-opener.

Mineral Supplement Safety Confirmed by America's Largest Database

- There were zero deaths in 2007 from any dietary mineral supplement, including iron.
- There was one death from chronic overdose of magnesium hydroxide, commonly known as the laxative/antacid milk of magnesia.
- It was inappropriately listed in the “dietary supplement” reporting category. Nutritional supplements do not contain magnesium hydroxide.

- “In decades of people taking a wide variety of dietary supplements, few adverse effects have been noted, and zero deaths as a result of the dietary supplements.” (Michael Janson, MD)

How do you make people believe
any anti-vitamin scare?

How do you make people believe any anti-vitamin
scare?

- It just takes lots of pharmaceutical industry cash.

How to Make People Believe Any Anti-Vitamin Scare:

Cash to study authors

- Many of the authors of a highly-publicized negative vitamin E paper have received substantial income from the pharmaceutical industry.
- The names are available in the last page of the paper (1556) in the "Conflict of Interest" section. A number of the study authors have received money from pharmaceutical companies, including Merck, Pfizer, Sanofi-Aventis, AstraZeneca, Abbott, GlaxoSmithKline, Janssen, Amgen, Firmagon, and Novartis.
- You will not see the conflicts in the brief summary at the JAMA website.
- The paper is Klein EA, Thompson Jr, IM, Tangen CM et al. Vitamin E and the Risk of Prostate Cancer: The Selenium and Vitamin E Cancer Prevention Trial (SELECT). JAMA, 2011; 306(14):1549-1556.
<http://jama.ama-assn.org/content/306/14/1549>

How to Make People Believe Any Anti-Vitamin Scare:

Advertising revenue

- Many popular magazines and almost all major medical journals receive income from the pharmaceutical industry. The only question is, how much?
- Look in them all: *Readers Digest, JAMA, Time, AARP, NEJM, Lancet, Archives of Pediatrics, Prevention* magazine. Practically any major periodical is full of pharmaceutical advertising.
- Count the number of pharmaceutical ads. The more space sold, the more revenue for the publication.

How to Make People Believe Any Anti-Vitamin Scare:

Rigged trials

- Studies of the health benefits of vitamins and essential nutrients can be easily rigged
 - 1) by using low doses to guarantee failure
 - 2) by biased interpretation to show a statistical increase in risk.

How to Make People Believe Any Anti-Vitamin Scare:

Rigged trials

- You can set up any study to fail. One way to ensure failure is to make a meaningless test.
- A meaningless test is assured if you make the choice to use insufficient quantities of the substance to be investigated.

How to Make People Believe Any Anti-Vitamin Scare:

Rigged trials

- If you shoot beans at a charging rhinoceros, you are not likely to influence the outcome.
- If you give every homeless person you meet on the street 20 cents, you could easily prove that money will not help poverty.
- If you give RDA levels of vitamins, do not expect therapeutic results.

How to Make People Believe Any Anti-Vitamin Scare:

Rigged trials

- One reason commonly offered to justify conducting low-dose studies is that high doses of vitamins are somehow dangerous.
- Nutritional supplementation is not dangerous.
- What is dangerous is failure to supplement.

How to Make People Believe Any Anti-Vitamin Scare:

Rigged trials

- The battle over vitamin supplements has been going on for nearly 70 years.
- You can say one thing for vitamin critics: at least they are consistent.
- Consistently wrong, but consistent.

How to Make People Believe Any Anti-Vitamin Scare:

Rigged trials

- The oldest political trick in the book is to create doubt, then fear, and then conformity of action.
- The pharmaceutical industry knows this full well.
- One does not waste time and money attacking something that does not work. Vitamin supplementation works well and works safely.

- “All attacks on supplement safety are really attacks on supplement efficacy.” (Abram Hoffer, MD, PhD)

How to Make People Believe Any Anti-Vitamin Scare:
Bias in what is published, or rejected for publication

- The largest and most popular medical journals receive very large income from pharmaceutical advertising.
- Peer-reviewed research indicates that this influences what they print, and even what study authors conclude from their data.
- <http://orthomolecular.org/resources/omns/v05n02.shtml>

How to Make People Believe Any Anti-Vitamin Scare:
Bias in what is published, or rejected for publication

- More pharmaceutical company advertising results in a medical journal having more articles with “negative conclusions about dietary supplement safety.”
- (Kemper KJ, Hood KL. Does pharmaceutical advertising affect journal publication about dietary supplements? BMC Complement Altern Med. 2008 Apr 9;8:11.)

How to Make People Believe Any Anti-Vitamin Scare:
Bias in what is published, or rejected for publication

- “The percentage of major articles concluding that supplements were unsafe was 4% in journals with fewest and 67% among those with the most pharmads (P = 0.02).”
- (Kemper KJ, Hood KL. Does pharmaceutical advertising affect journal publication about dietary supplements? BMC Complement Altern Med. 2008 Apr 9;8:11.)

How to Make People Believe Any Anti-Vitamin Scare:
Bias in what is published, or rejected for publication

- The authors concluded that “the impact of advertising on publications” is real, and said that “the ultimate impact of this bias on professional guidelines, health care, and health policy is a matter of great public concern.”
- (Kemper KJ, Hood KL. Does pharmaceutical advertising affect journal publication about dietary supplements? BMC Complement Altern Med. 2008 Apr 9;8:11.)

How to Make People Believe Any Anti-Vitamin Scare:
**Censorship of what is indexed
and available to doctors and the public**

- Taxpayer money pays for censorship at the largest medical library on the planet: the US National Library of Medicine (NLM), which is responsible for MEDLINE/PubMed.
- NLM refuses to index the *Journal of Orthomolecular Medicine* on MEDLINE.
- *JOM* is peer reviewed and has been continuously published for 46 years. NLM has repeatedly rejected it.

- “Let the opponents of vitamin therapy cite the double-blind placebo controlled studies upon which they have based their toxicity allegations. They can't, because there aren't any.” (Abram Hoffer, MD, PhD)

- It is ironic that critics of vitamins preferentially cite low dose studies in an attempt to show lack of vitamin effectiveness, yet they cannot cite any double-blind, placebo controlled studies of high doses that show vitamin dangers.
- This is because vitamins are ***effective at high doses***, and vitamins are also ***safe at high doses***.

Where Are the Bodies?

The Safety of Antioxidants and Micronutrients

- Probably the main roadblock to widespread examination and utilization of nutrition therapeutics is a widespread belief that there MUST be dangers with vitamin and mineral supplements.
- High-dose nutrient therapy was introduced in the early 1940s by Wilfrid Shute, MD, and Evan Shute, MD, (vitamin E); William Kaufman, MD, PhD, (niacinamide); and Fredrick R. Klenner, MD, (vitamin C).
- There is a long and extraordinarily safe track record.

- “Never put your trust into anything but your own intellect. The world progresses, year by year, century by century, as the members of the younger generation find out what was wrong among the things that their elders said. So you must always be skeptical — always think for yourself.” (Linus Pauling)

References

- **Most recent AAPCC Report:**
- Bronstein AC, Spyker DA, Cantilena LR et al. 2011 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 29th Annual Report. *Clinical Toxicology* (2012), 50(10), 911-1164. The data discussed above can be found on p1134, Table 22B.
- **Downloadable at no charge (along with previous years) at:**
<http://www.aapcc.org/annual-reports/>

- Data analysis by Jagan N. Vaman, M.D., and assistance from the members of the editorial board of the *Orthomolecular Medicine News Service* is acknowledged and appreciated.
- To access the complete archive of over 170 *Orthomolecular Medicine News Service* releases: <http://orthomolecular.org>

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- *Orthomolecular Medicine News Service* Editor-in Chief Andrew W. Saul taught nutrition, health science and cell biology at the university level, and has published over 180 reviews and editorials in peer-reviewed publications.
- Dr. Saul is featured in the documentary film *Food Matters*. He is author or coauthor of twelve books, including four with Dr. Abram Hoffer. He is a member of the board of the Japanese College of Intravenous Therapy and was inducted into the Orthomolecular Medicine Hall of Fame in 2013. His website is <http://www.doctoryourself.com> .
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