Nutritional Supplements: The Good, the Bad, & the Ugly

Gary E. Foresman, MD

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The Good (Best, Actually)
“Face it, Fred—you’re lost.”
Multivitamins (MVIs)

Life Force Multiple by Source Naturals – 2 caps twice per day with food. Nationally recognized as the highest ranked MVI (by The Comparative Guide to Nutritional Supplements), it provides a broad basis of B-vitamins, anti-oxidants, and multi-nutritional support meant to optimize wellbeing. MVIs have been shown to decrease the risk of colon cancer by 75% (in some trials), decrease the risk of infections, and are recommended by all health organizations, even the American Medical Association.
Multivitamins (MVIs)

Other good MVIs include **Ultra Nutrient** (esp. for athletes) and **Daily Stress Formula** (for those under stress) by **Pure Encapsulations**, and **Ultra Preventative – X** (includes many phytonutrients for those with low fruit and vegetable intake) by **Douglas Labs**. For people who have difficulty tolerating multivitamins I suggest food - based MVIs such as **Life’s Fortune and Pure Food Nutrients**.
Multivitamins (MVIs)

Most men’s and women’s MVIs are poorly formulated and made only as a marketing ploy. The following exceptions are unique MVIs for specific groups:

**Women’s Nutrients by Pure Encapsulations** (for premenopausal woman balancing their hormonal cycle), **Fem Prenatal by Metagenics** (true nutritional support for women who are trying to conceive or who are pregnant – far, far superior to prescription prenatal MVIs), **Menopause Multiple by Source Naturals** (great support for help of perimenopausal symptoms), and finally **Men’s Nutrients by Pure Encapsulations** (a men’s multi with excellent herbal support for prostate, strength, and libido).
Although most multi vitamins contain a multi-mineral, the level of minerals is not enough to help most women or men with osteopenia or osteoporosis to adequately maintain and improve bone health, and an additional multi-mineral may be required.
“MVI Use...In the Women’s Health Initiative”

- 161,808 participants, postmenopausal women
- 41.5% of participants used MVIs, primarily Centrum-type MVIs
- After a median follow up of eight years, MVIs had no influence on the risk of common cancers, cardiovascular disease, or total mortality in postmenopausal women

Arch Int. Med. Feb 9, 2009. 294-304
“MVI Use and Risk of Prostate Cancer”

- 295,344 men, part of NIH-AARP Diet and Health Study
- Self-reported use of MVI was ascertained and patients were followed prospectively for five years
- 32% increased risk of advanced prostate cancer
- 98% increased risk of fatal prostate cancer

_J Natl Cancer Inst_. May 2007. 754-64
“MVI Use and Breast Cancer Incidence”

• Prospective examination of the association between MVI use and the incidence of invasive breast cancer
• 35,329 cancer free women followed for 9.5 years
• MVI users had a 19% increased risk of invasive breast cancer

Dietary Supplements and Mortality in Older Women
The Iowa Women’s Health Study

• Assess mortality in 38,772 women (avg age 61.6) from 1986 thru 2008 and utilizing self-report of supplement use in 1986,’97 and ‘04.
• 99.2% Caucasian, 98.6% post-menopausal
• By 2004 only 19,124 women with evaluable questionnaires. By 2008 15,594 deaths were registered.
• Calcium supplements associated with a 13% reduction (entirely from a decreased cancer risk - plausible) in all-cause mortality. Accompanying editorial notes that this is the only study ever to hint at such an outcome that this study and goes against every other study published documenting an average 30% increased cardiovascular risk with calcium supplements.
• Iron and copper supplements associated with worsening cardiovascular and cancer risks – plausible.
• Valid Conclusion: If you are a white, post-menopausal women only take well-balanced multi-vitamin and multi-mineral preparations after careful evaluation with a health-care professional knowledgeable about supplements.
Calcium Supplements and the Risk of Cardiovascular Events in the Women’s Health Initiative
British Medical Journal 2011

• A review of five previous trials notes an increased risk of myocardial infarction of 31% in women on calcium supplements. Increased overall mortality ranges from 7%-20%.

• As most trials utilizing vitamin D without calcium indicate prevention of cardiovascular events the actual risk associated with calcium-only supplements is assumed to be significantly worse.

• In the WHI alone, calcium supplements alone increased the risk of MI 24%!
"The first thing I'm gonna do is wipe that smile off your face!"
The European Prospective Investigation into Cancer and Nutrition in German cohort (EPIC-Heidelberg) 
Eur J Nutr, July 21, 2011

- 23,943 participants free of cardiovascular disease and cancer at baseline recruited in 1994-1998 and followed for an average of 11 years, 1101 deaths were registered.
- Overall no significant effect of supplement use and cancer or overall mortality were noted, however:
- People taking antioxidant vitamin supplements at the beginning of the trial, had a 48% reduction in cancer mortality, and an overall 42% reduction in all-cause mortality.
- Baseline non-users who started taking during the follow-up period had a 74% increase in cancer mortality and an overall 58% increase in all-cause mortality.
- Prospective Supplement studies need to be cautious of the “sick-user effect”!
“Use of MVIs, Vitamin C, and Vitamin E in Relation to Mortality”

- 77,719 Washington State residents (both men and women) aged 50-76
- Men and women without pre-existing heart disease had a 22% reduction in cardiovascular mortality
- People who took MVIs had much higher education status and healthy behaviors which “confounded” a statistically significant 13% reduction in overall mortality
- Addition of C and E led to further significant improvements in overall mortality, the higher the dose the better

“MVI Use and the Risk of Myocardial Infarction...”

- 31,671 women with no history of CVD, age 49-83, followed for 10.2 years
- MVI users had a 30% reduction in risk of MI
- Those who used an MVI for greater than five years in this trial had an overall 41% decreased risk of MI
- In a parallel trial of 2,262 women with a history of CVD, MVIs had no benefit

*Am J Clin Nutr.* Nov 2010. 1251-56
Multivitamins in the Prevention of Cancer in Men
JAMA. Nov 14, 2012-Vol 308, No. 18, 1871-1880

• 14,641 male US physicians over age 50 followed for an average of 11.2 years.
• Randomized to placebo over a “standard multivitamin”
• An overall decrease in cancer incidence of 8% (P=0.04), with an overall decrease in cancer mortality of 12% (P=0.07).
• In men with a previous treated cancer, total cancer incidence was decreased by 27%.
• Overall mortality was improved by 6%, a number approaching statistical significance (P=0.13).
• No effect was seen for incidence or mortality related to cardiovascular disease.
“You know, sometimes I sort of enjoy this herd mentality.”
Fish Oils/Essential Fatty Acids/EPA and DHA

Cod Liver Oil (flavored) by Carlson – one Tbsp. daily, or fish oil capsules daily as needed to add up to an average of EPA+DHA combined equal to 2000mg-3000mg per day, brands include Arctic Pure, Pure Encapsulations. Keep all oils refrigerated after opening. One of the most common nutritional deficiencies in America is the lack of healthy Omega 3 fatty acids. Important in brain health, joint health, the prevention of sudden cardiac death, immune health, emotional stability and a myriad of other documented benefits. Fish Oils are essential for anyone not eating 3 servings of cold-water fish per week.
Fish Oils/Essential Fatty Acids/EPA and DHA

Most fish oil supplements are rancid fat pellets that can hurt your health, so only buy the best quality when it comes to this supplement, or nothing at all. Flax oil *may* have unique health properties, but in no way shape or form can it replace fish oils. Don’t fall for the 3-6-9 combos out there as every American is oversaturated with Omega 6s and 9s and supplementing with these is totally unnecessary.
Vitamin D₃

Vitamin D₃ is the only “vitamin” repeatedly proven to prolong life. Vitamin D₃ is actually a steroid hormone which your body produces when exposed to the sun. D₃ helps prevent a variety of auto-immune diseases and cancers, including breast and prostate. Also, it helps decrease the risk of heart attack, so it does much more than just promote bone health. The optimal dosage is usually 2000 IU to 8000 IU daily and levels can be monitored by your nutritionally-knowledgeable doctor, a goal blood level of 70 – 90 ng/ml is optimal; avoid lab reference ranges.
### Disease Incidence Prevention by Serum 25(OH)D Level

| Serum 25(OH)D, ng/ml | 6  | 8  | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 | 52 | 54 | 56 | 58 |
|----------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Studies of Individuals |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cancers, all combined |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Breast Cancer         |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 30% |    |    |    |    |    |    |    |    |    |    |    |    |
| Ovarian Cancer        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 35% |    |    |    |
| Colon Cancer          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 31% |    |    |    |    |    |    |    |    |    |    |
| Non-Hodgkins Lymphoma |    |    |    |    |    |    |    |    |    |    |    |    | 12% |    | 38% |    |    |    |    |    |    |    |    |    |    |    |
| Type 1 Diabetes       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 66% |    |    |    |
| Fractures, all combined |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50% |    |    |
| Falls, women          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 72% |
| Multiple Sclerosis    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 33% |
| Heart Attack (Men)    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 30% |    |    |    |
| Natural Experiments   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kidney Cancer         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 23% |
| Endometrial Cancer    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 37% |
| Rickets               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 50% |

The table above illustrates the prevention potential of serum 25(OH)D levels in various diseases. The percentages indicate the reduction in disease incidence at different serum levels. For example, at 25(OH)D levels of 30 ng/ml, there is a 30% reduction in breast cancer risk compared to lower levels.
"We should write that spot down."
Cholecalciferol = Vitamin D₃

- Cholecalciferol is the naturally occurring form of vitamin D.
- Cholecalciferol is made in large quantities in your skin when sunlight strikes bare skin.
- Can synthesize 20,000 IU per day by direct sun exposure at lower latitudes, especially with sweating in the sun.
- It can also be taken as a supplement.
- Ergocalciferol = Vitamin D₂, which comes from ergosterol, the biological equivalent of cholesterol in fungal cell membranes when exposed to ultraviolet light.
- Not bioequivalent to D₃, only reason to use D₂ is to make Eli Lilly money.
Use Vitamin $D_3$

- Supplementation should be with $D_3$ not $D_2$


VITAMIN D INTAKE & TOXICITY*

- **no toxicity below 30,000 IU/d**
- **no toxicity below 500 nmol/L (200 ng/mL)**

- 15 studies of adults receiving vitamin D supplementation (means)
- 8 studies reporting toxicity (individual values)
Trying to calm the herd, Jake himself was suddenly awestruck by the image of beauty and unbridled fury on the cliff above. Pink Shadow had returned.
Anti-Oxidant Cocktail

Not everyone needs extra antioxidants, but this combination is especially useful for people under stress, smokers, exercisers, and for people with a low phase-angle on their BIA test. Although one can consider so many other antioxidants, these three have been proven to work synergistically and enhance your body’s own natural antioxidant system, glutathione. If you don’t consume 5-8 servings of fruits and vegetables daily I also strongly suggest supplementing with a well-balanced **Greens Supplement** such as **NanoGreens** one scoop per day in water (quite tasty).
Anti-Oxidant Cocktail

- **Vitamin C - Systemic C by Source Naturals** or **Emergen-C** at 1000mg twice per day with food. Look for non acidic forms of C such as these.

- **Vitamin E – Mixed Tocopherols (Unique E)** taken as a 400 IU soft gel daily

- **Alpha Lipoic Acid** - 300mg timed release, once or twice daily with food
Anti-Oxidant Cocktail

- **Vitamin C** is an essential water-soluble anti-oxidant which our body can absorb in higher and higher doses under times of stress, whether physical, emotional, or due to infection. Increasing dosage to 1000mg every 2-3 hours during high times of stress, such as for an acute infection, is recommended. Misinformation about Vitamin C is abundant, including the myth that it causes kidney stones, whereas in fact it has been shown to prevent them.
Anti-Oxidant Cocktail

- **Alpha Lipoic Acid** (a mixed anti-oxidant proven to help your body regenerate Vitamin E and Vitamin C) – it is also useful in decreasing insulin resistance, and it is part of many memory and nerve health protocols.

- **Vitamin E** (fat-soluble anti-oxidant) is one of today’s most misunderstood supplements. **Mixed Tocopherols (Unique E)** have been used successfully in treating liver disease, arthritis, allergies, and many other disorders; gamma tocopherol is essential in the prevention of breast and prostate cancer. **Tocopherol succinate** is useful as part of a cancer treatment/prevention regimen.
### Vitamin E & Mortality

<table>
<thead>
<tr>
<th>Source</th>
<th>α-T Mortality/Total</th>
<th>Control Mortality/Total</th>
<th>Relative risk (95% CI)</th>
<th>Favours α-T</th>
<th>Favours control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural α-T:</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Lonn et al. 2005</td>
<td>799/4761</td>
<td>801/4780</td>
<td>1.00 (0.92-1.10)</td>
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<tr>
<td>McNeil et al. 2004</td>
<td>20/595</td>
<td>11/598</td>
<td>1.83 (0.88-3.78)</td>
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<td>Manuel-y-Keenoy et al. 2004</td>
<td>1/12</td>
<td>0/12</td>
<td>3.00 (0.13-67.06)</td>
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<tr>
<td>Salonen et al. 2003</td>
<td>8/130</td>
<td>3/130</td>
<td>2.57 (0.70-9.48)</td>
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<td>Boaz et al. 2000</td>
<td>31/97</td>
<td>29/99</td>
<td>1.09 (0.72-1.66)</td>
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<td>Stephen et al. 1996</td>
<td>68/1035</td>
<td>52/967</td>
<td>1.22 (0.86-1.73)</td>
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<td>Takamatsu et al. 1995</td>
<td>1/74</td>
<td>0/73</td>
<td>2.96 (0.12-71.50)</td>
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<td>Gillilan et al. 1977</td>
<td>2/26</td>
<td>2/26</td>
<td>1.00 (0.15-6.57)</td>
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<td><strong>Pooled (Natural α-T)</strong></td>
<td>930/6730</td>
<td>898/6685</td>
<td>1.13 (1.04-1.23)</td>
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<td><strong>Synthetic α-T:</strong></td>
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<td>Petersen et al. 2005</td>
<td>5/257</td>
<td>5/259</td>
<td>1.01 (0.30-3.44)</td>
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<td>Marras et al. 2005</td>
<td>154/399</td>
<td>142/401</td>
<td>1.09 (0.92-1.10)</td>
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<td>Mezey et al. 2004</td>
<td>4/25</td>
<td>5/26</td>
<td>0.83 (0.25-2.75)</td>
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<td>Virtamo et al., 2003</td>
<td>2671/7286</td>
<td>2605/7287</td>
<td>1.03 (0.98-1.07)</td>
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<td>Hodis et al. 2002</td>
<td>2/177</td>
<td>1/176</td>
<td>1.99 (0.18-21.73)</td>
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<td>Graat et al. 2002</td>
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<td>5/153</td>
<td>0.56 (0.14-2.30)</td>
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<td>de Waart et al. 2001</td>
<td>0/109</td>
<td>1/109</td>
<td>0.33 (0.01-8.09)</td>
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<td>de Gaetano, 2001</td>
<td>72/2231</td>
<td>68/2264</td>
<td>1.07 (0.78-1.49)</td>
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<td>GISSI, 1999</td>
<td>488/5660</td>
<td>529/5664</td>
<td>0.92 (0.82-1.04)</td>
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<td>Sano et al. 1997</td>
<td>19/170</td>
<td>22/171</td>
<td>0.87 (0.49-1.55)</td>
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<tr>
<td><strong>Pooled (Synthetic α-T)</strong></td>
<td>3418/16478</td>
<td>3383/16510</td>
<td>0.99 (0.95-1.03)</td>
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<td><strong>Overall</strong></td>
<td>4348/23208</td>
<td>4281/23195</td>
<td>1.03 (0.99-1.07)</td>
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Vitamin E & Pneumonia in Smokers
Final Thoughts

Although there are many other healthy vitamins and supplements to consider for specific conditions, this is a good start on nutrients to support a general healthy lifestyle including exercise, stress-reduction and a good whole-food diet rich in fruits and vegetables and low in processed foods.
“Say ... what's a mountain goat doing way up here in a cloud bank?”