Vitamin/ Mineral Supplements

Is A Daily Multivitamin/ mineral Supplement Dietary Insurance?
Vitamins

- Vitamins are natural compounds needed in small quantities for normal bodily functions. With few exceptions, vitamins cannot be made by the body and must be gotten from the diet or dietary supplements.
- Fat-soluble vitamins: A, D, E, K
- Water-soluble vitamins: C and the eight B vitamins - biotin, folate, niacin, pantothenic acid, riboflavin (B2), thiamin (B1), pyridoxine (B6), cobalamin (B12)
Vitamins contain no calories and thus are not a source of energy.

Our bodies use them to make, maintain, and repair cells.

Also play a big part in metabolism – we could not absorb, process, store and use food without them.
Vitamin A

- Stimulates the production and activity of white blood cells
- Takes part in remodeling bone
- Helps maintain the health of endothelial cells (those lining the body’s interior surface)
- Helps develop/maintain normal vision
- Regulates cell growth and division
- Antioxidant
Vitamin A

- RI - 5,000 IU/day (men); 4,000 IU women
- In contrast to preformed vitamin A, beta carotene is not toxic at high levels of intake
- The body can form vitamin A from beta-carotene as needed
- It is preferable to choose a vitamin supplement that has all or the vast majority of its vitamin A in the form of beta-carotene

RI = Recommended Intake per day
The 3 Bs: B6, B12, Folic Acid

- Increasing intake of folic acid, vitamin B6, and vitamin B12 decreases homocysteine levels
- Studies show that high levels of homocysteine are associated with increased risks of heart disease and stroke

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Folic Acid

- Helps make DNA, essential for cell division, takes part in making red blood cells and metabolism of proteins
- **Too little** folic acid increases a woman’s chances of having a baby with spina bifida or anencephaly and getting enough folic acid could prevent these birth defects
- US Food and Drug Administration now requires folic acid be added to certain foods
Folic Acid

- Studies show that people who get higher than average amounts of folic acid from their diets or supplements have lower risk of colon cancer and breast cancer.

- RI – 400 mcg/day for adults; 600 mcg prior to conception and during pregnancy; 500 mcg while breastfeeding

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Vitamin C

- Acts as an antioxidant; aids in absorption of iron, wound healing, production of collagen and hormones, and resistance to infection; and helps keep bones, blood vessels, and teeth healthy

- Small studies suggest that the amount in a typical multivitamin taken at the start of a cold might ease symptoms, but there’s no evidence that megadoses make a difference or that they prevent colds.*

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Vitamin C

- RI – 90 mg for men/day; 75 mg for women/day
- Add an extra 35 mg/day for smokers
- 200 – 300 mg of vitamin C a day appears to be a good target (easily done with a good diet and a standard multivitamin supplement)*

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Vitamin D

- Helps ensure that the body absorbs and retains calcium and phosphorus
- Studies indicate that insufficient intake is associated with an increased risk of fractures*
- Studies also show that vitamin D helps keep cancer cells from growing and dividing*
- RI - 5 - 15 mcg/day; optimal intake - 25 mcg/day (multivitamin supplement suggested)*

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Vitamin E

- Results from the HOPE trial showed no benefit of 4 years worth of vitamin E supplementation among more than 9,500 men and women already diagnosed with heart disease or at high risk for it. 

- AHA has concluded that “the scientific data does not justify the use of antioxidant vitamin supplements [such as vitamin E] for CVD risk reduction.”

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Vitamin E

- There is a possibility that the use of drugs such as aspirin, beta blockers, and ACE inhibitors mask a modest effect of vitamin E, and that it may have benefits among healthier people (ongoing studies are underway)*
- RI – from food now stands at 15 mg/day; equivalent of 22 IU from natural source vitamin E or 33 IU of the synthetic form
- Some studies suggests that at least 400 IU/day are needed for optimal health

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Minerals

- Natural compounds; supply no calories
- They perform important functions that we could not live without – including helping transport oxygen to our cells, maintaining fluid balance throughout our bodies, manufacturing hormones, keeping our heart beating and our blood pressure at normal levels, forming our bones and more
Calcium (Ca)

- Helps keep bones strong; other functions
- RI – 1000 - 1500 mg/day
- The average American woman consumes only 625 mg/day; the average man, 865 mg
- When the diet doesn’t contain enough Ca to perform bodily functions, Ca is taken from the bones (the storage area for calcium)
- Food is the best source of calcium, however Ca-fortified foods and Ca supplements are often needed to meet the RI
Calcium (Ca)

- Best to take most Ca supplements with meals and combine with an exercise program
- Ca exists in nature only in combination with other substances called compounds. These compounds contain different amounts of elemental calcium (the actual amount of Ca in the supplement)
- Read label to determine how much elemental Ca is in the supplement
Chromium

- Builds muscle; helps cells respond properly to insulin; claim - might promote weight loss (no proven benefits)
- Might help people with Type II Diabetes or those at high risk for developing it (evidence of benefits in the US is not all clear)
- There is some evidence that the picolinate form may harm cells (not the chromium alone)
Chromium

- Best and safest source of chromium is food.
- It is not recommended to use chromium picolinate to control blood sugar levels; consult doctor.
A multivitamin/mineral supplement can provide nutrients to supplement a healthy (or unhealthy) diet, but **whole food nutrition is best**.

Surveys show that many Americans fall short in a variety of key vitamins and minerals.

Five key vitamins that may be important in preventing several chronic diseases: folic acid, B6, B12, vitamin D, vitamin E.
The Bottom Line

- Consider taking a multivitamin/mineral supplement if you are in one of these groups:
  - People over 60
  - Women of childbearing age, pregnant or breastfeeding women
  - Strict vegetarians
  - People on weight-loss diets
  - Anyone not eating a balanced diet
Resources

- http://www.hsph.harvard.edu/nutritionsource/vitamins.html
- http://www.berkeleywellness.com
  (Wellness Guide to Dietary Supplements, click on link at bottom of website page)
- The Everything Smart Nutrition Book by Barbara Ravage