

# EVALUATING VITAMIN & MINERAL PRODUCTS: PILLS, POWDERS, BEVERAGES AND BARS

Read the information labels and calculate your daily intake from supplement pills, powders, beverages and bars:

- Using all the products you consume, calculate your intake of key vitamins and minerals

**SNAC** Sport Nutrition Advisory Committee  
Comité consultatif sur la nutrition sportive



| NUTRIENT                               | Multivitamin/<br>mineral | Product 1 | Product 2 | Product 3 | Your TOTAL<br>NUTRIENT<br>INTAKE from<br>pills, powders,<br>beverages & bars | Recommended<br>Dietary<br>Allowance for<br>Adults<br>(to age 50 years) | Upper Limits (UL)<br>for Adults<br>Per day: |
|--|--------------------------|-----------|-----------|-----------|--|--|---|
| Vitamin A                              |                          |           |           |           |  | 700–900 mcg  | 3,000 mcg                                   |
| Beta-carotene                          |                          |           |           |           |  | 3–6 mg**   | To be decided                               |
| Vitamin D                              |                          |           |           |           |  | 5 mcg or 200 IU <sup>†</sup>   | 50 mcg or 2000 IU                           |
| Vitamin E                              |                          |           |           |           |  | 15 mg  | 1,000 mg*                                   |
| Niacin (niacinamide)                   |                          |           |           |           |  | 14–16 mg   | 35 mg*                                      |
| Vitamin B <sub>6</sub><br>(pyridoxine) |                          |           |           |           |  | 1.3 mg   | 100 mg                                      |
| Folic acid                             |                          |           |           |           |  | 400 mcg  | 1,000 mcg*                                  |
| Vitamin C<br>(ascorbic acid)           |                          |           |           |           |  | 75–90 mg   | 2,000 mg                                    |
| Iron                                   |                          |           |           |           |  | 8–18 mg  | 45 mg                                       |
| Calcium                                |                          |           |           |           |  | 1,000 mg   | 2.5 g (2500 mg)                             |
| Zinc                                   |                          |           |           |           |  | 8–11 mg  | 40 mg                                       |
| Selenium                               |                          |           |           |           |  | 55 mcg   | 400 mcg*                                    |
| Chromium                               |                          |           |           |           |  | 25–35 mcg  | To be decided                               |

\* From supplements, fortified foods, or a combination of the two

\*\* This is a suggested daily intake because of the absence of an established RDA.

† Health Canada is currently reviewing the Vitamin D research and will likely raise the daily requirement to 400-800 IU per day.

- Compare your intake to the “Recommended Dietary Allowance for Adults, Upper Limits”, and “Possible Adverse Effects from Large Doses of Selected Vitamins and Minerals”.
- Consult a registered dietitian with sport knowledge, physician or pharmacist if you are consuming large amounts of some vitamins and minerals. You can contact the dietitian at your [Canadian Sport Centre](#) or someone listed under the [Sport Nutrition Registry](#) on the CAC website. If there is no dietitian with expertise in sport listed in your area, [Dietitians of Canada](#) may list a dietitian near where you live.

**Tolerable Upper Intake Level (UL)** is the highest level of daily intake from food, water, and supplements that is likely to pose no risk of adverse health effects for almost all individuals in the general population. As intake increases above the UL, the risk of adverse effects increases. The term was chosen to avoid implying a possible beneficial effect from large doses.

For information on nutritional supplements, see the “[Position Statement on Nutritional Supplements](#)” and the “[Nutritional and Dietary Supplements \(FAQs\)](#)” from the Sport Nutrition Advisory Committee of the Coaching Association of Canada.



# EVALUATING VITAMIN & MINERAL PRODUCTS: PILLS, POWDERS, BEVERAGES AND BARS, PAGE 2

## Possible Adverse Effects from Large Doses of Selected Vitamins and Minerals

|   |   |
|---|---|
| <b>Vitamin A</b>                          | Headache; nausea; vomiting; fever; dizziness; blurred vision; loss of appetite; hair loss; scaly skin; irritability; fatigue; mental disturbances; enlarged liver and spleen; plus many others.   |
| <b>Beta-carotene</b>                      | <b>(plant precursor of Vitamin A)</b> Yellow discoloration of skin. Not associated with toxic side effects but high doses of beta-carotene combined with smoking and drinking alcohol can increase risk of lung cancer and heart disease.   |
| <b>Vitamin D</b>                          | Excessive thirst; headache; irritability; nausea; excessive calcium deposited in soft tissue such as kidney and lung; kidney stones.  |
| <b>Vitamin E</b>                          | Increased tendency to hemorrhage. Anti-clotting action can increase the risk of stroke; thrombophlebitis (blood clot in the lower leg); pulmonary embolism (an obstruction in the lung); fatigue; high blood pressure; increased triglyceride levels; interference with vitamin A absorption. |
| <b>Niacin</b>                             | Diarrhea; nausea; vomiting; aggravation of ulcer; burning, flushed skin; rash; liver damage; low blood pressure; irregular heart beat.  |
| <b>Vitamin B<sub>6</sub> / Pyridoxine</b> | Depression; fatigue; irritability; nerve damage causing numbness of hands and feet; muscle weakness leading to inability to walk; poor reflexes.  |
| <b>Folic Acid</b>                         | Masks vitamin B <sub>12</sub> deficiency; insomnia; irritability.   |
| <b>Vitamin C (Ascorbic acid)</b>          | Diarrhea; nausea; abdominal cramps; may alter drug absorption; hemochromatosis (absorb too much iron from the digestive tract and store too much iron in the liver) from excess non-heme iron absorption.   |
| <b>Iron</b>                               | Interferes with absorption of other minerals. Iron overload leads to cellular damage; fatigue; infection; liver injury; may increase risk of colon cancer.<br><b>Note: Before taking an iron supplement, have your iron status checked by your physician.</b>                                 |
| <b>Calcium</b>                            | Interferes with zinc, iron and magnesium absorption; constipation; calcification of soft tissue; possible development of kidney stones.   |
| <b>Zinc</b>                               | Gastrointestinal irritation and vomiting; lack of muscle coordination; increased levels of LDL (bad) cholesterol; decreased levels of HDL (good) cholesterol; interference with calcium, copper, and iron absorption; suppression of the immune system.                                       |
| <b>Selenium</b>                           | Skin lesions; loss of hair and nails; fatigue; dental caries; nausea and vomiting; depression; nervousness.   |
| <b>Chromium</b>                           | Interferes with absorption of other minerals, especially iron. There is a possible link with muscle degeneration.   |

## Tolerable Upper Intake Level (UL) of Selected Minerals

| MINERAL           | UL             | MINERAL          | UL         | MINERAL           | UL        | MINERAL       | UL        |
|-------------------|----------------|------------------|------------|-------------------|-----------|---------------|-----------|
| <b>Boron</b>      | 20 mg          | <b>Copper</b>    | 10,000 mcg | <b>Fluoride</b>   | 10 mg     | <b>Iodine</b> | 1,100 mcg |
| <b>Magnesium</b>  | 350 mg         | <b>Manganese</b> | 11 mg      | <b>Molybdenum</b> | 2,000 mcg | <b>Nickel</b> | 1.0 mg    |
| <b>Phosphorus</b> | 4 g (4,000 mg) | <b>Vanadium</b>  | 1.8 mg     |                   |           |               |           |

Be aware that products may contain undeclared ingredients, contaminants, and/or banned substances and athletes are reminded that they take supplements at their own risk.

Health Canada established the **Natural Health Products Directorate** to ensure that all vitamins, minerals, herbal and homeopathic medicines meet their regulations for quality, safety, and efficacy. *Check labels for an eight-digit number, preceded by the letters DIN (Drug Identification Number), NPN (Natural Product Number), or DIN-HM (DIN-Homeopathic Medicine), which mean the supplement meets standards of formulation and labelling. None of these designations will guarantee that a dietary supplement meets the WADA criteria for prohibited substances.*

However, for a higher level of assurance, look for products tested by **NSF Certified for Sport™** or **HFL**. Products that have the NSF or HFL certification have been tested for the presence of banned substances.

**If you are convinced the product is safe and is based on scientific testing, try it in training. NEVER change your routine fluid or food intake prior to competition.**

