

## FOOD SOURCES OF NUTRIENTS

### General Principles

Foods high in refined sugar, refined flour and added fats tend to be low in many nutrients. Whole grains contain more vitamins and minerals than refined grains contain. Canned vegetables contain fewer nutrients than fresh vegetables and frozen vegetables contain intermediate amounts. Foods cooked at high temperatures or stored for long periods of time lose some nutrients.

### Food Sources of Vitamins

- **Vitamin A** - liver, cod-liver oil, eggs, dairy products
- **B Vitamins** -
  - **B1 (thiamine)** - wheat germ, whole wheat, peas, beans, enriched flour, fish, peanuts, and meat
  - **B2 (riboflavin)** - dairy products, eggs, and meat are the main sources of vitamin B2. Leafy green vegetables, whole grains, and enriched grains contain some vitamin B2.
  - **B3 (niacin/niacinamide)** - peanuts, brewer's yeast, fish, and meat. Whole grains contain some vitamin B3.
  - **B5 (pantothenic acid)** - liver, yeast, and salmon are the best sources of pantothenic acid. It is also found in most other foods, including vegetables, dairy, eggs, grains, and meat.
  - **B6 (pyridoxine)** - wheat bran, beans/lentils, sunflower seeds, walnuts, cashews, avocado, potatoes, bananas, and tuna
  - **Folic acid** - yeast, liver, uncooked vegetables, leafy green vegetables, beans, citrus fruits, beets, wheat germ, and meat
  - **B12** - all foods of animal origin, including dairy, eggs, meat, poultry and fish. Small, inconsistent amounts occur in seaweed (including nori and chlorella) and tempeh. It is the opinion of many researchers and healthcare professionals that people cannot rely on vegetarian sources to provide sufficient quantities of vitamin B12.
- **Vitamin C** - black currants, broccoli, Brussels sprouts, cauliflower, strawberries, citrus fruit, spinach, red peppers, parsley, potatoes, and tomatoes
- **Vitamin D** - Cod-liver oil, fatty fish, and vitamin D-fortified foods are the best food sources of vitamin D. Some trace amounts are found in egg yolks and butter. Sunlight exposure! Most vitamin D in the body is formed during a chemical reaction that occurs with exposure to sunlight on the skin. Cholecalciferol (vitamin D3) is the animal form of this vitamin
- **Vitamin E** - wheat germ oil, nuts and seeds, whole grains, egg yolks, and leafy green vegetables. Certain vegetable oils (corn oil, soybean oil, safflower oil, sunflower oil) should contain significant amounts of vitamin E. However, many of the vegetable oils sold in supermarkets have had the vitamin E removed in processing.
- **Vitamin K** - leafy green vegetables (spinach, kale, collards, and broccoli). The greener the plant is, the higher its vitamin K content. Soybean oil, olive oil, cottonseed oil, and canola oil also contain some vitamin K.

## Food Sources of Minerals

1. **Calcium** - dairy products are the best sources of calcium. Sardines, canned salmon, green leafy vegetables and tofu also contain calcium.
2. **Magnesium** – Nuts, grains, beans, dark green vegetables, fish, meat
3. **Iron** - "heme" iron is the most absorbable form of iron and is found in oysters, meat, poultry and fish. Dried fruit, molasses, leafy green vegetables, wine and iron supplements are forms of "non-heme" iron. Acidic foods (such as tomato sauce) cooked in an iron pan can also be a source of dietary iron.
4. **Zinc** - oysters, meat, eggs, seafood, black-eyed peas, tofu, wheat germ, whole grains
5. **Copper** - oysters are the best source of copper. It is also found in nuts, dried legumes, cereals, potatoes, vegetables and meat.
6. **Chromium** - true brewer's yeast is the best source of chromium. Nutritional yeast and torula yeast do not contain significant amounts of chromium and are not suitable substitutes for brewer's yeast. Chromium is also found in grains and cereals, although the refining of these foods depletes the content of chromium. Some brands of beer contain significant amounts of chromium.
7. **Selenium** - Brazil nuts, yeast, whole grains, and seafood
8. **Manganese** – nuts, seeds, wheat germ, wheat bran, leafy green vegetables, beet tops, tea, pineapple
9. **Iodine** - seafood, iodized salt, and sea vegetables. Processed food may contain added iodized salt. Iodine is frequently found in dairy products and in vegetables grown in iodine-rich soil.

## Resources

1. Healthnotes: <http://www.healthnotes.info/qs/index.cfm>.
2. Shils ME, Olson JA, Shike M (eds.). *Modern Nutrition in Health and Disease*, Eighth Edition. Lea & Febiger, Philadelphia, 1994.