

## All Vitamins and Pseudo-Vitamins

### Vitamin A

**Chemical Names-** Retinol, Beta Carotene (pro-vitamin A)

**Deficiency-** Night blindness

**RDA-** 5,000 IU

**Optimal Intake-** 2,000-5,000 IU

**Good Sources-** Liver, carrots, spinach

**Discussion-** Vitamin A is fat soluble, and can be toxic in large amounts. Beta-Carotene, which the body converts into Vitamin A as needed, is an antioxidant, and non-toxic. Synthetic Beta-Carotene (sold in supplement stores) is ineffective in preventing cancer in humans, and seems to harm smokers. Consuming over the **RDA** of Vitamin A is associated with a shorter lifespan.

### Vitamin B1

**Chemical Names-** Thiamine

**Deficiency-** Beriberi

**RDA-** 1.5 mg

**Optimal Intake-** 5-15 mg

**Good Sources-** Brewer's yeast, peanuts, milk, rice

**Discussion-** Thiamine is relatively safe.

### Vitamin B2

**Chemical Names-** Riboflavin

**Deficiency-** Lesions on mouth, lips, skin, etc.

**RDA-** 1.7 mg

**Optimal Intake-** 5-20 mg

**Good Sources-** Milk, cheese, leafy vegetables

**Discussion-** Riboflavin is a mild antioxidant. Its bright yellow color colors urine after it is taken. Also known as Vitamin G

### Vitamin B3

**Chemical Names-** Niacin, Niacinamide, Nicotinic Acid

**Deficiency-** Pellagra

**RDA-** 20 mg **Optimal Intake-** 50-500 mg

**Good Sources-** Lean meat, whole wheat, brewer's yeast

**Discussion-** Niacin, but not Niacinamide, in high doses results in a "flush" reaction. Niacinamide does not have anti-cholesterol properties, and will not raise HDL cholesterol as Nicotinic Acid will. Also known as Vitamin PP for "pellagra-preventative"

### Vitamin B4\*

**Chemical Names-** Adenine

**Deficiency-** Muscular weakness (in rats and chicks)

**Good Sources-** Widespread in animal and plant tissues

**Discussion-** Adenine is a purine base of nucleic acids. Its status as a human vitamin is doubtful.

## Vitamin B5

**Chemical Names-** Pantothenic Acid, Panthenol, Pantethine, (Calcium) Pantothenate

**Deficiency-** Hypoglycemia, ulcers, skin disorders.

**RDA-** 10 mg **Optimal Intake-** 15-500 mg

**Good Sources-** Meat, whole grains, leafy vegetables

**Discussion-** Studies with rats by Dr. Roger Williams showed that Pantothenic Acid may be highly beneficial in fighting the effects of stress.

## Vitamin B6

**Chemical Names-** Pyridoxine

**Deficiency-** Anemia, dermatitis, glossitis

**RDA-** 2 mg **Optimal Intake-** 10-100 mg

**Good Sources-** Brewer's yeast, soy beans, wheat germ **Discussion-** As a methylating agent, B6 has potential to reduce blood levels of homocysteine, possibly reducing the risk of heart disease. Amounts in excess of 200 mg/day might lead to toxicity, expressed in nerve problems.

## Vitamin B7\*

**Deficiency-** Digestive disorders in pigeons.

**Good Sources-** Rice polish **Discussion-** Also known as Vitamin I. See also Biotin which some have called "Vitamin B7."

## Vitamin B8\*

**Chemical Names-** 5'-Adenylic Acid, Ergadenylic Acid, Adenosine Monophosphate

**Deficiency-** Decreases RNA, ADP, and ATP synthesis, inhibits breakdown of food into energy, reduces hormone function.

**Good Sources-** Yeast

**Discussion-** This nucleotide is still listed as a "Nutrient" by the Merck Index. Many sources now claim this substance is indeed an essential vitamin.

## Vitamin B9\*

**Chemical Names-** Mixture of multiple B Vitamins

**Discussion-** See Folic Acid. Some later researchers used Vitamin B9 to classify Folic Acid

## Vitamin B10\*

**Chemical Names-** Pteroylmonoglutamic acid mixed with other B vitamins

**Deficiency-** Depressed growth and feathering in chicks.

**Discussion-** Also known as "The Feather Factor," Vitamin R and "Factor R."

## Vitamin B11\*

**Chemical Names-** Pteryl-hepta-glutamic acid (?)

**Deficiency-** Depressed growth and feathering in chicks

**Discussion-** Also called "The Growth Factor," Vitamin S and "Factor S."

## Vitamin B12

**Chemical Names-** Cobalamin, Cyanocobalamin, Methylcobalamin

**Deficiency-** Pernicious Anemia

**RDA-** 6 mcg **Optimal Intake-** 100-1,000 mcg

**Good Sources-** Animal products, cheese

**Discussion-** Like Folic Acid, B12 reduces homocysteine levels. B12 is present in animal products, so vegans need to supplement. B12 vegetable "analogues" do not treat a B12 Deficiency, and may exacerbate it. B12 needs "intrinsic factor" to be absorbed, and some stomachs do not produce enough, hence the need for injections or sublingual absorption.

## Vitamin B13\*

**Chemical Names-** Orotic Acid, Pyrimidinecarboxylic Acid

**Deficiency-** Possibly Multiple Sclerosis **Good Sources-** Whey, root vegetables

**Discussion-** Orotic Acid, a "mineral transporter," is commercially available in the form of mineral orotates. Its vitamin status is unlikely. Aspartic Acid and Colamine Phosphate (Calcium AEP) are "mineral transporters," and might have some claim as "B13."

Vitamin B14\*

**Deficiency-** Anemia

**Good Sources-** Yeast, grains, legumes, organ meats, wine.

**Discussion-** Little is known about this; it might be similar to B10 and B11. Perhaps a substance isolated from wine that prevents cancer.

## Vitamin B15 \*

**Chemical Names-** Pangamic Acid, Pangametin, Calcium Pangamate; Some B15 tablets contain either Dimethylglycine, diisopropylamine dichloroacetate, or other chemicals **Optimal Intake-** 50-150 mg **Good Sources-** Yeast, apricot seeds, corn

**Discussion-** The chemical identity of Pangamic Acid is disputed. It is believed to be Dimethylglycine (DMG) and Gluconic Acid, although mixtures vary. If DMG is responsible for the benefits often attributed to Pangamic Acid, then Trimethylglycine may be considered to have "B15" activity. Both DMG and TMG act as methylators, reduce homocysteine in the blood, and are good for liver health. Vitamin status is unlikely. "Discovered," along with laetrile, by Ernst Krebs, Sr., MD and Ernst Krebs, Jr.

## Vitamin B16\*

**Discussion-** Perhaps studied in Russia, but vitamin status never fully developed.

## Vitamin B17\*

**Chemical Names-** Amygdalin, Prunasin (d-mandelonitrile glucoside), Dhurrin, Linamarin, Lotaustralin, Sambunigrin (l-mandelonitrile glucoside), Prulaurasin (dl-mandelonitrile glucoside), Triglochinin, Linustatin, Neolinustatin, Laetrile, oratrile.

**Deficiency-** Possible increased incidence of cancer

**Optimal Intake-** 25-100 mg

**Good Sources-** Apricot seeds, buckwheat, millet, lima beans, flax

**Discussion-** Supposed anti-cancer substances, Vitamin B17 is a group of cyanide producing sugars known as "cyanogenic glycosides" or "nitrilosides" that release cyanide when acted upon by the enzyme beta-glucosidase (emulsion). Often taken in concentrated form of amygdalin, one particular glycoside, but soon after mixed with water, the chemical is subject to epimerization, so quality is poor when stored in water. Laetrile is a patented formula that contains amygdalin, and is no longer available commercially. Rodent research suggests anti-metastatic effect at high injectable doses. Is an unproven therapy for cancer. Vitamin status unlikely.

## Vitamin B22\*

**Discussion-** Listed in Linda Clark's "Know Your Nutrition." Otherwise, unknown. Aloe Vera is a possible source.

**Vitamin Bc-** See Folic Acid

**Vitamin Bh-** See Inositol

**Vitamin Bp-** See Choline

## Vitamin Bt\*

**Chemical Names-** L-Carnitine, Acetyl L-Carnitine

**Optimal Intake-** 500 mg

**Good Sources-** Chicken, red meats, fish

**Discussion-** L-Carnitine is an amino acid, and not essential as a protein or vitamin. It has been promoted as a treatment for heart disease. Its acetylated form has been promoted as good for brain health.

**Vitamin Bx-** See PABA

**Vitamin Bw-** See Biotin Folic Acid

**Chemical Names-** Folacin, Pteroylglutamic Acid, Folate, Folinic Acid

**Deficiency-** Nutritional macrocytic anemia

**RDA-** 400 mcg **Optimal Intake-** 400-1,000 mcg

**Good Sources-** Green leafy vegetables, soy beans, oranges

**Discussion-** Folic Acid lowers blood levels of homocysteine, perhaps reducing heart disease. Folic Acid is a key factor in the prevention of many birth defects. Consuming too much may contribute to the development of colon cancer. Also known as Vitamin M

## Biotin

**Deficiency-** Eczema, improper fat metabolism

**RDA-** 300 mcg

**Optimal Intake-** 300-10,000 mcg

**Good Sources-** Brewer's yeast, soy beans, egg yolk

**Discussion-** A Biotin

**Deficiency** is rare. Unless raw egg whites are eaten often (they contain a substance that binds Biotin), we get ample Biotin. Recently high-dose Biotin has been found to benefit Diabetes. Also known as Coenzyme R, Factor W, Factor S, Factor H, Factor X, and Vitamin H

## Choline\*

**Deficiency-** Liver problems

**AI (Adequate Intake)-** 425 to 550 mg

**Optimal Intake -** 100-1000 mg

**Good Sources-** Brewer's yeast, lecithin, wheat germ

**Discussion-** Choline is not a vitamin, defined strictly, because it can be made by the human body. However, Choline is considered an essential nutrient because it is often needed in amounts greater than the body is able to synthesize. Choline does not have an RDA, but the Institute of Medicine has established an "adequate intake" for it.

## Inositol\*

**Deficiency-** possibly Eczema

**Optimal Intake-** 100-1,000 mg

**Good Sources-** Brewer's yeast, grapefruits, lecithin, peanuts

**Discussion-** Inositol is present in many B-Complex formulas, and is probably best thought of as a B-Complex "factor," appearing with the B vitamins in many foods and supplements, rather than an actual vitamin. It is a component of Lecithin with Choline.

## PABA\*

**Chemical Names-** Para-Aminobenzoic Acid

**Deficiency-** Graying of hair, eczema in animals

**Optimal Intake-** 10-100 mg

**Good Sources-** Brewer's yeast, wheat germ, sunflower seeds

**Discussion-** PABA has been used topically as a sunscreen, although it is rarely used now. Like Choline and Inositol, it still appears in B-Complex formulas, despite not actually being essential for humans. It is an essential nutrient for some bacteria.

## PQQ\*

**Chemical Names-** Pyrroloquinoline Quinone

**Deficiency-** fertility issues in mice

**Optimal Intake-** unknown

**Good Sources-** Natto, parsley, green tea, green peppers, papaya, and kiwi

**Discussion-** Some Japanese researchers at the Institute of Physical and Chemical Research in Tokyo believe that PQQ (discovered in 1979) may actually be a vitamin, within the B-Complex. If so, it is the first new vitamin to be discovered in over 55 years!

## Vitamin C

**Chemical Names-** Ascorbic Acid, Ascorbyl Palmitate

**Deficiency-** Scurvy

**RDA-** 60 mg

**Optimal Intake-** 250-1,000 mg

**Good Sources-** Citrus fruits, strawberries, broccoli

**Discussion-** Vitamin C is an antioxidant, and it is claimed to have a positive effect against cancer, infections, and other health disorders, including the prevention and treatment of the common cold. It is generally non-toxic.

## Vitamin D

**Chemical Names-** Ergocalciferol (D2), Calciferol, Cholecalciferol (D3)

**Deficiency-** Rickets

**RDA-** 400 IU

**Optimal Intake-** 800-4000(?) IU

**Good Sources-** Milk, fatty fish, sunlight

**Discussion-** Vitamin D, a hormone in its bioactive form, is essential for bone health, and shows promise in the prevention of cancer, multiple sclerosis, and perhaps even autism. Some experts suggest supplementation at over 1,000 IU/day in order to consume amounts produced by regular adequate sun exposure, although taking more than the RDA has been linked with an increased number of calcium deposits in the brain. Generally, doses up to 10,000 IU per day, for a limited period, are deemed safe. Vitamin D3 is thought to be better utilized than D2.

## Vitamin E

**Chemical Names-**  $\alpha$ -tocopherol,  $\alpha$ -tocopheryl

**Deficiency-** possibly infertility

**RDA-** 30 IU

**Optimal Intake-** 100-300 IU

**Good Sources-** Sunflower seeds, wheat germ

**Discussion-** Vitamin E is an antioxidant;  $\alpha$ -tocopherol is a vitamin, although other tocopherols, e.g.  $\gamma$ -tocopherol exist in nature, and might be beneficial. Consuming 400 IU/day has been linked to increased mortality. Supplements sold with "d- $\alpha$ -tocopherol" contain the natural, more potent, form of vitamin E, while "dl- $\alpha$ -tocopherol," is synthetic.

## Vitamin F\*

**Chemical Names-** Linoleic Acid, Linolenic Acid, Arachadonic Acid

**Deficiency-** Similar to those associated with lack of fat in diet

**RDA-** None established

**Good Sources-** Vegetable oils

**Discussion-** Vitamin F is a term for the macronutrients known as Essential Fatty Acids. They are essential, but not vitamins.

**Vitamin G** - See Vitamin B2

**Vitamin H** - See Biotin

**Vitamin I\*** - See Vitamin B7

## Vitamin J\*

**Chemical Names-** Catechol, Flavin

**Good Sources-** Higher woody plants

**Discussion-** Catechol is a flavonoid. Vitamin J has also been applied to Choline

## Vitamin K

**Chemical Names-** Menadione, Phytomenadione, Phylloquinone, Menaquinone

**Deficiency-** Hemorrhage

**RDA-** 80 mcg

**Optimal Intake-** 100-150 mcg

**Good Sources-** Green leafy vegetables, many cheeses

**Discussion-** Essential for blood clotting; is now recognized as a key factor in bone health.

## Vitamin L1\*

**Chemical Names-** Ortho-Aminobenzoic Acid, Anthranilic Acid

**Good Sources-** bovine liver

**Deficiency-** Lactation problems in animals. Anthranilic Acid is an amino acid.

## Vitamin L2\*

**Chemical Names-** Adenyl Thiomethylpentose

**Good Sources-** Yeast

**Deficiency-** Lactation problems in animals

**Vitamin M-** See Folic Acid

## Vitamin N\*

**Chemical Names-** Thiocctic Acid,  $\alpha$ -lipoic acid

**Deficiency-** Lack of growth in protozoa and bacteria.

**Optimal Intake-** 50-100 mg

**Discussion-**  $\alpha$ -Lipoic Acid has been used to regulate blood sugar, and is a universal antioxidant, i.e. the chemical is fat and water soluble. It is not a vitamin, strictly defined.

## Vitamin P\*

**Chemical Names-** Rutin, Hesperidin, Quercetin, Citrus Bioflavonoids

**Deficiency-** Capillary fragility

**Optimal Intake-** 100-1,000 mg

**Good Sources-** Citrus fruits, onions, vegetables

**Discussion-** While not vitamins, Bioflavonoids are beneficial nutrients. Often associated with Vitamin C, many refer to Vitamin P as the "C-Complex." There are over 1000 chemicals that can be classified as Bioflavonoids. Quercetin may have anti-aging properties because of its relationship to sirtuin in the body. Resveratrol (not a bioflavonoid) has similar properties.

**Vitamin PP** - see Vitamin B3

## Vitamin Q\*

**Deficiency-** Inability of blood to clot in patients with telangiectasia

**Good Sources-** Soybeans, clover, alfalfa

**Discussion-** Named after Dr. Armand James Quick, who believed he had found a substance in soybeans that could prevent bleeding in people with telangiectasia. According to Quick, Vitamin Q is only essential in patients with that rare blood disorder. Quick apparently references Vitamin Q in his book Bleeding, Drugs, Vitamins: Their Impact on History. Occasionally, Co-Enzyme Q10 is called "Vitamin Q."

## Vitamin R\*

**Discussion-** Old name for Vitamin B10. Also on "The Simpsons" the vitamin in the "malk" drink, the kids drank at lunch during a budget crisis!

## Vitamin S\*

**Deficiency-** Sterility

**Good Sources-** kelp

**Discussion-** I found one reference to this in a book a long time ago. Kelp is known for its many nutrients, so it's likely that this substance is some other vitamin or mineral. Vitamin B11 was also called Vitamin S for awhile. Some have proposed that Salicylic Acid (Salicylates), a natural chemical related to aspirin, is Vitamin S. This is based on its anti-inflammatory effects, which may have a role in preventing cancer and other diseases.

## Vitamin T\*

**Chemical Names-** Tegotin, Termitin, Torutilin

**Deficiency-** Anemia, lack of growth

**Good Sources-** Yeast, termites, fungi, sesame seeds

**Discussion-** Vitamin T is a name for two substances. The first is a group of growth-promoting substances in termites, torula yeast and fungi. W. Goetsch, an Austrian, came up with this designation, and sometimes this Vitamin T is called "Vitamin T Goetsch," or "Vitamin T Complex." However, researchers Schiff and Hirschberger, in the 1930s, gave the name "Vitamin T" to a fat soluble blood health factor they believed was present in sesame seeds and egg yolks. Whatever this chemical is, it is different from "Vitamin T Goetsch."

## Vitamin U\*

**Chemical Names-** Methylmethioninesulfonium Chloride, Cabagin-U, S-Methylmethionine

**Deficiency-** Ulcers

**Good Sources-** Cabbage, alfalfa, green leafy vegetables, egg yolks

**Discussion-** Cabbage Juice often heals ulcers in a week or two, so Dr. Garnett Cheney of Stanford, whose research backed up this assertion, proposed it was a vitamin. However, while beneficial for treating ulcers, it is likely not a vitamin. It is possible that S-Methylmethionine, identified by Dr. Cheney, is not even the factor responsible for the "vitamin U" activity of cabbage. Another possible factor responsible might be Allantoin or possibly the amino acid Glutamine. Dr. Cheney believed that whatever factor was responsible, it was destroyed by cooking.

## Vitamin V\*

**Chemical Names-** Nicotinamide Adenine Dinucleotide, NAD

**Deficiency-** Developmental problems in chicks

**Discussion-** Vitamin V was also used of PABA

Vitamin W\*

**Discussion-** Possibly Biotin

## Vitamin X\*

**Deficiency-** Aging

**Good Sources-** Hydrocotyle Asiatica Minor (an herb)

**Discussion-** A proposed vitamin by certain researchers, I read about in *Worldwide Secrets For Staying Young* by Paavo Airola. Ultimately "Vitamin X" is used to describe any unknown vitamin, including PABA before it was isolated.

## Vitamin Y\*

**Discussion-** Perhaps Vitamin B6.

*\* (asterisk) – vitamin status unlikely*