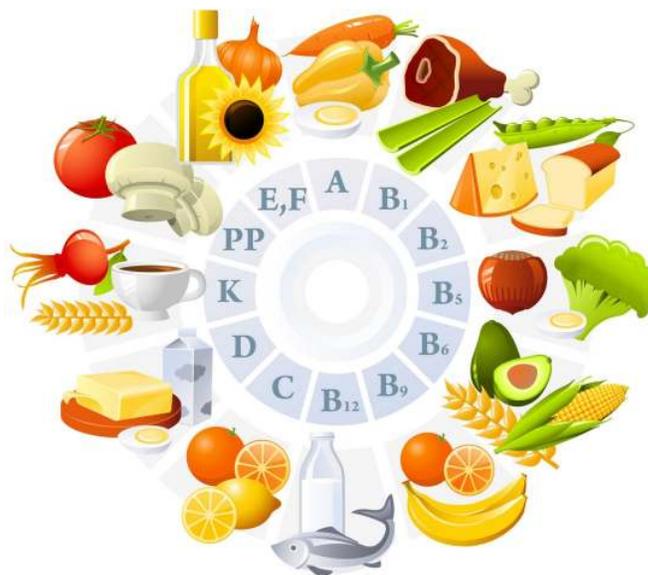


## The Function of Vitamins

Semester A: Basics, Class # A5, Oct 27, 2015

### Session Outline

- Introduction
- Carotenoids Vs Vitamin A
- Vitamin C
- Vitamin B
- Biotin
- The Last Word
- Resources



## Introduction

While not technically so, Vitamins should be thought of as coenzymes. Enzymes cause every activity to occur in the body. Without Vitamins, many functions could not occur.

There are 13 vitamins in two main groups:

- Oil soluble, which dissolve in fats and are stored in fat cells (i.e. vitamins A, D, E & K)
- Water-soluble which can be stored only in small amounts and if not used in a relatively short time, are excreted from the body in urine. (i.e. vitamins C and B)

While Vitamins should be considered as essential nutrients in the body, there is a group classified as "essential", meaning that they cannot be made in the body and must therefore be obtained from food or supplements. Minerals fall into the same classifications and functions and will be discussed separately.

RDA- Recommended dietary (daily] allowance revised in 1993 by the FDA and health Canada to prevent nutrient deficiencies that could contribute to deficiency diseases. While there is a somewhat loose consensus on the definition, I believe Daily optimum allowance is a better term.

## Synthetic versus Natural

Synthetic vitamins are produced in the lab and are only an isolated component proposed to be the active ingredient of that found in nature. Natural vitamins never occur in isolation and are always combine with other nutrient elements synergistically.

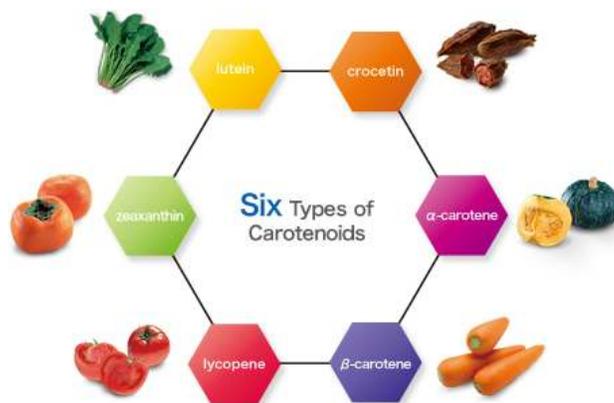
## Carotenoids Vs Vitamin A

They are vitamin like compounds.

Since several of them can convert to vitamin A when needed, they also form the largest anti-oxidant group as well as other important nutrient functions.

As of 2002 over 600 carotenoids have been discovered. While beta-carotene is the best known of this group, it is only one of some 30 to 50 carotenes that have vitamin A activity.

A supplement containing a mixed carotene complex is best since it mimics how it occurs in nature and since carotenes are water-soluble, it is a safer way to get your vitamin A.



## Vitamin C (ascorbic acid)

*Is arguably the single, most important substance in the human body.*

As well as being the key element in the production of collagen, the connective tissue that holds our body together; i.e. skin, tendons, cartilage, bone, organs.  
It is also an essential catalyst in some 350 bodily functions.

A few of its functions include:

- Tissue growth and repair.
- Aids in production of anti-stress hormones and amino acids.
- Important to the immune system function and production of interferon.
- Needed to metabolize folic acid.
- Protects against harmful pollution.
- Increased intake required by diabetic persons.
- Has been shown to decrease LDL and increase HDL in serum cholesterol.
- Can decrease both systolic and diastolic levels in high BP.
- Decreases gum bleeding in periodontal disease.
- Can reduce severity and duration of the common cold.

Vitamin C (ascorbic acid) is shown to play a major role in eye health, including preventing and/or slowing the progression of cataracts.

Has been demonstrated to protect against the formation and progression of many cancers.

Actively functions both in and outside the cells to maintain healthy functions.

Plus, plus, plus..



## Vitamins- B1 (Thiamine)

Is most important in the production of cellular energy particularly in the brain and heart. As such, has an important affect on mental acuity and the ability to learn and remember.

Other functions of Vitamins- B1 (Thiamine) include:

- Blood formation
- Production of hydrochloric acid
- Good muscle tone in the stomach, intestines and heart.
- Plays a role in normalizing growth, appetite and vitality.

- Acts as an antioxidant, protects against degenerative effects of aging.
- Helps protect the liver from effects of alcohol and smoking.

**A deficiency of thiamin (B1) can contribute to:**

Constipation, edema, fatigue, nervousness, enlarged liver, irritability, forgetfulness, weak muscles, labored breathing, loss of appetite, Weight loss, poor coordination, numbness and/or tingling.

**Causes of Deficiency**

Antibiotics, supra drugs, oral contraceptives and heavy caffeine as well as alcohol use can reduce body levels of B1. Some other prescription meds have similar effects. High carbohydrate intake increases need for thiamine.

**Vitamin B2 (Riboflavin): Essential for**

The production of energy by activating two specific enzymes. The body to use vitamin B6 which is itself important to a host of essential bodily functions. Together with vitamin A, it improves and maintains the mucous membranes in the gastrointestinal tract. It facilitates the bodily use of oxygen.

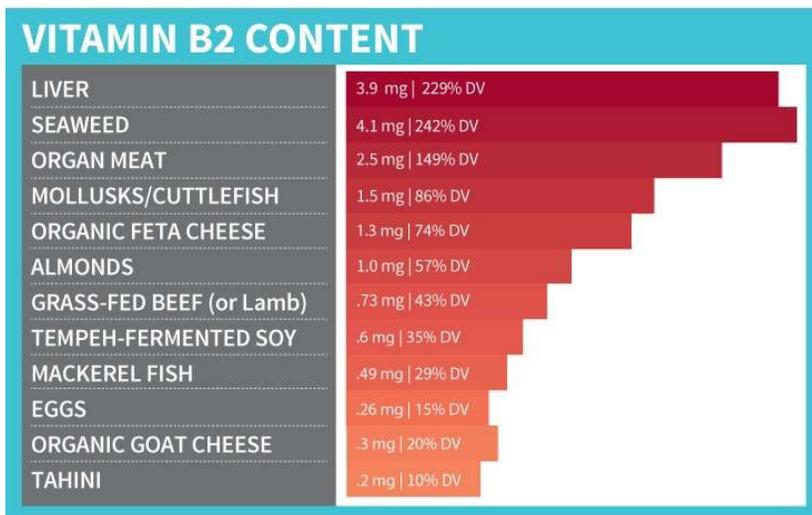
**Vitamin B2 (Riboflavin): Essential for**

- Red blood cells.
- Make anti-bodies.
- Reduces Eye fatigue
- It is important in the prevention and treatment of cataracts.
- It aids in the metabolism of fats, carbohydrates and proteins.
- Helps to absorb iron
- is needed to metabolize the amino acid tryptophan which, among other uses is converted to vitamin B3.

**Vitamin B2 (Riboflavin) NOTES**

While riboflavin is useful in the treatment of cataracts, it is noted it can interact with sunlight and oxygen to produce free radicals and potentiate cataract production. Therefore, good U.V. Blocking sunglasses should be worn.

The use of oral contraceptives and strenuous exercise increases the need for vitamin B2. It is also easily destroyed by antibiotics, light and alcohol.



**B3 (niacin/niacinamide): Essential for:**

- Balance the levels of high density and low density cholesterol in your blood.
- Proper blood circulation
- Healthy skin
- Nervous system function
- To make hydrochloric acid
- To metabolize fats, carbohydrates and proteins
- Used in the normal secretion of bile
- Functions as a memory enhancer.
- NADH (Niacinamide adenine dinucleotide) is the activated form of niacin. It is required by the brain to make several neurotransmitters and for chemical energy.
- This is very helpful to offset the effects of aging. It is sold under the brand-name Enada.
- Inositol Hexaniacinate, another form of vitamin B3, is effective in reducing leg muscle pain (claudication), And in correcting cold hands and feet syndrome.

## B5 (pantothenic acid)

- is an essential component in the production of cellular energy within the mitochondria.
- It is a stamina enhancer.
- It is important to utilize other vitamins.
- It is important in the gastrointestinal function.
- It is also involved in neurotransmitter production.
- needed to convert fats and carbs into energy.
- has been reported to support adrenals
- has been reported to improve symptoms of rheumatoid arthritis

## B6 (pyridoxine)

B6 (pyridoxine) is involved in more bodily functions than almost any other single nutrient.

- It affects both physical and mental health and is intricately involved in kidney function.
- It helps maintain sodium/potassium balance and proper water retention.
- It is critical in maintaining hormonal balance and proper immune function.
- It is important in preventing excess homocysteine which can damage the walls of the arteries.

### Other functions of B6 include:

- the production of hydrochloric acid
- The formation of red blood cells
- The absorption of fats and proteins
- Is needed for normal brain function and the synthesis of RNA and DNA.
- The production of all cells and normal cell growth- It activates many enzymes.
- It is important to absorb B12.
- It is important to the immune system function and in anti-body production.
- It helps prevent kidney stones
- B6 (pyridoxine)
- Other functions of B6 include:
- It has been shown to help heal carpal tunnel syndrome.
- It plays a role in preventing and controlling depression.
- It is shown to be important to alleviate asthmatic attacks.

### Foods containing B6 include:

- Highest:  
carrots, chicken, brewer's yeast, eggs, fish, sunflower seeds, meat, Peas, wheat germ, walnuts and spinach.
- Other sources  
beans, avocados, backstrap molasses, corn, dulse, Soybeans, bananas, broccoli, brown rice, cabbage, cantaloupe, plantain, potatoes, tempeh, Brown rice and all whole grains.
- Herbs: alfalfa, catnip and oat straw.

### Notes

- Anti-depressants, estrogen therapy and oral contraceptives will increase the need for B6.
- Prescription diuretics and cortisone drugs "Block" The absorption of B6.
- Recommended dose: 50 mg/2 times daily under normal conditions.
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## B12 (Cobalamin)

Together with folic acid it is essential in the production and regulation of red blood cells and hemoglobin as a preventative of ANEMIA.

It is also involved in nerve function by its involvement in myelin synthesis.

Although also a water soluble vitamin, it is the only one stored in the liver and other organs for several months, even years.

### B12 is also involved in:

- Synthesis of proteins
- Metabolism of carbs and fats
- Prevention of nerve damage
- Maintaining fertility
- Production of acetylcholine
- Cell formation and Cellular longevity.

The lack of B12 dietary intake and /or the lack of "intrinsic factor", needed to bind with B12 to facilitate absorption can cause rapidly producing cells that line the mouth and entire gastrointestinal system and cause them to be unable to replicate.

Note - folic acid supplements can mask this deficiency.

### Some symptoms of this deficiency include:

- Numbness or at pins and Needles sensation
- A burning sensation in the feet
- Impaired mental function that can mimic Alzheimer's disease in the elderly
- Nerve damage symptoms (neuropathy)
- A smooth, beefy, red tongue
- Diarrhea

### Some symptoms of this deficiency include:

- Heart palpitations
- Ringing in the ears
- Enlarged liver
- Eye disorders
- Headaches (migraines)

### The largest B 12 food sources are:

- Brewer's yeast
- Clams
- Eggs
- Liver
- Mackerel
- Herring
- Dairy products
- Sea foods including all sea vegetables and soy products.
- Herbs include: alfalfa, bladder rack and hops.

## Vitamin B7/Vitamin H(Biotin)

### Biotin is important for the utilization of:

- The other B vitamins
- Fatty acid production
- Metabolism of fats, carbohydrates and proteins
- Maintaining healthy hair skin and nails
- Healthy sweat glands

- Nerves and bone marrow
- Helps relieve muscle pain

### Food sources include:

- Brewer's yeast
- Cooked egg yolks
- Meat
- Poultry
- Sea fish
- Soybeans
- Whole grains
- Milk.

## Hand-out of Healthy Living Presentations

You can download this (and previous handouts) from Life Transformation Institute's Website:  
<http://tinyURL.com/healthhandouts>

There are two hand-outs for Vitamins:

1. Outline of Presentation
2. Vitamin Summary Chart

This is the Health Resource page, compiled from many classes, seminars and conferences I have attended and from research, I did for my published books. All health resources are grouped into seven sections.

Section 1: Phil Fields Course

Section 2: Dental Health

Section 3: Glossaries

Section 4: Food, Water and GMO

Section 5: Toxicity

Section 6: Miscellaneous

Section 7: :More Resources, like Books, Magazines, My Publications, etc.

## Additional Resources

Life Transformation Institute's website

Publications

Classic Book Guides

Reference Guides

Health Resources

Other Resources

## More Resources

Over twenty pages of Resources and links listed in the book:  
"7 Steps to Dental Health"

<http://7stepsdentalhealth.com>

- Health Websites
- Health Organizations
- Glossary of Holistic and Dental Terms
- Dental Knowledge Test

## Publications by Max Haroon

<http://tinyurl.com/maxpublications>

The subjects range from the Internet, career, technology, health, and self development.

- Books Authored
- Reference Guides

- Articles Written
- Reflections /Blogs/Messages
- Book Companions/Discussion kits written for the Inspirational Books Clubs  
Workshop Kits produced for the Society of Internet Professionals:
- Websites Published & Architected by Max Haroon
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