

Learning Guide – Vitamins and Minerals; Nutrition Labels  
Chem 1010

Now that we've discussed the macronutrients, it's time to talk about the micronutrients.

Vitamins

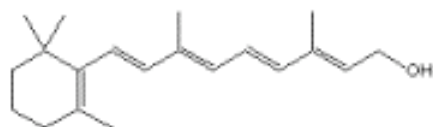
What vitamins are:

What are they useful for?

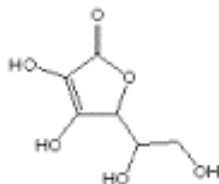
Vitamins can be divided into water-soluble and fat-soluble compounds.

Fat-soluble vitamins:	Water-soluble vitamins:
<ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li></ul>	<ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li><li>•</li></ul>

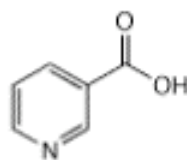
## Structures of Vitamins



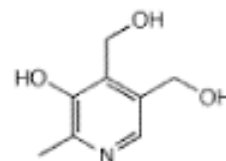
Vitamin A (retinol)



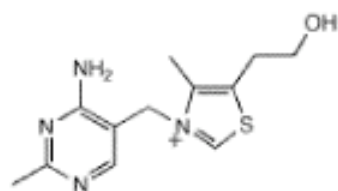
Vitamin C  
(ascorbic acid)



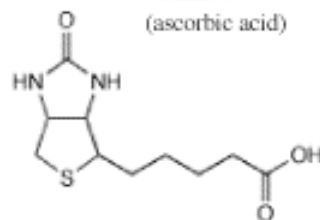
vitamin B<sub>3</sub> (niacin)



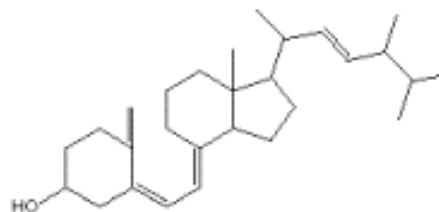
vitamin B<sub>6</sub> (pyridoxine)



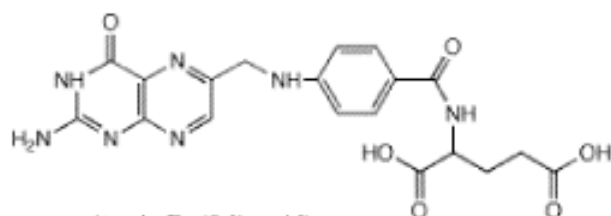
vitamin B<sub>1</sub> (thiamine)



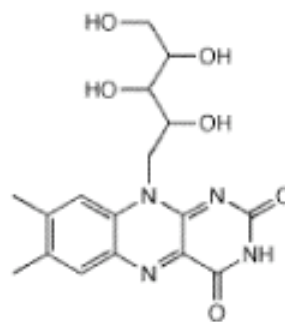
vitamin B<sub>7</sub> (biotin)



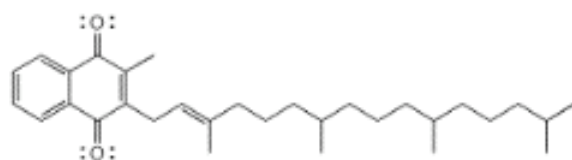
Vitamin D (cholecalciferol)



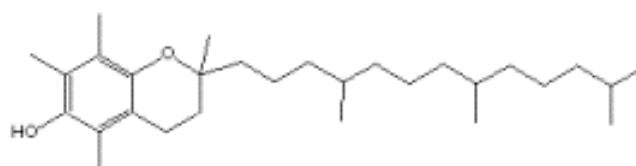
vitamin B<sub>9</sub> (folic acid)



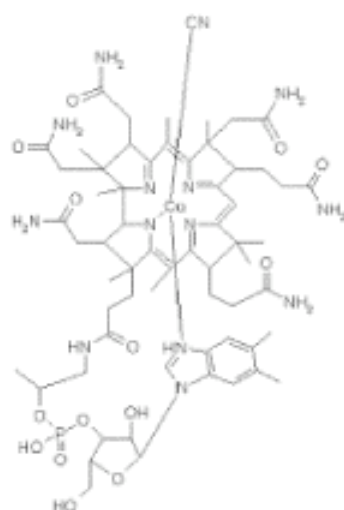
vitamin B<sub>2</sub> (riboflavin)



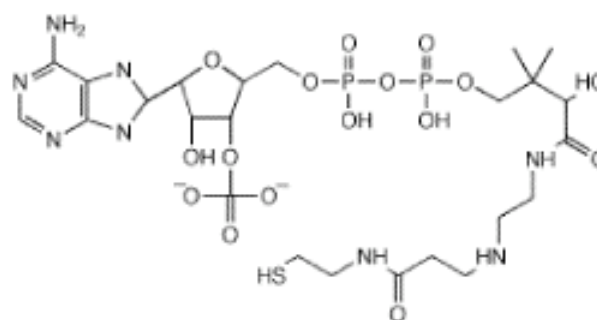
vitamin K (phylloquinone)



Vitamin E (α-tocopherol)



vitamin B<sub>12</sub> (cyanocobalamin)



vitamin B<sub>5</sub> (pantothenic acid)

Let's get a few more three of these vitamins:

### Vitamin A (retinol)

important for:

deficiency causes:

found in:

of interest:

### Vitamin C (ascorbic acid)

important for:

deficiency causes:

found in:

of interest:

### Vitamin D (cholecalciferol)

important for:

deficiency causes:

found in:

of interest:

## Minerals

What minerals are:

What are they useful for:

Minerals are divided into major minerals and minor minerals.

major minerals:

sulfur –

calcium, phosphorus –

magnesium –

sodium, potassium, chlorine –

minor minerals:

iron –

iodine –

cobalt –

others:

of interest:

Where do vitamins come from?

Where do minerals come from?

## Nutrition Labels

Good nutrition is extremely important for good health.

Four of the top ten causes of death are related to what we eat:

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Federal law requires nutrition labels, which are designed to help the public make informed decisions about what to include in their diet.

What information can you get from a nutrition label?

Nutrition Facts			
Serving Size 1 cup (228g)			
Servings Per Container 2			
Amount Per Serving			
Calories 260		Calories from Fat 120	
% Daily Value*			
Total Fat 13g		20%	
Saturated Fat 5g		25%	
Trans Fat 2g			
Cholesterol 30mg		10%	
Sodium 660mg		28%	
Total Carbohydrate 31g		10%	
Dietary Fiber 0g		0%	
Sugars 5g			
Protein 5g			
Vitamin A 4%		Vitamin C 2%	
Calcium 15%		Iron 4%	
* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g
Calories per gram:			
Fat 9	*	Carbohydrate 4	* Protein 4

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What do you think would be most helpful to look for when considering a purchase at the grocery store?

What things should be low:

What things should be high: