

## 90 Essential Nutrients

<b>Table 12-5. The 60 Essential Elements, Metals and Minerals</b>		
<b>Aluminum</b>	<b>Gold</b>	<b>Rhenium</b>
<b>Arsenic</b>	<b>Hafnium</b>	<b>Rubidium</b>
<b>Barium</b>	<b>Holmium</b>	<b>Samarium</b>
<b>Beryllium</b>	<b>Hydrogen</b>	<b>Scandium</b>
<b>Boron</b>	<b>Iodine</b>	<b>Selenium</b>
<b>Bromine</b>	<b>Iron</b>	<b>Silica</b>
<b>Calcium</b>	<b>Lanthanum</b>	<b>Silver</b>
<b>Carbon</b>	<b>Lithium</b>	<b>Sodium</b>
<b>Cerium</b>	<b>Lutecium</b>	<b>Strontium</b>
<b>Cesium</b>	<b>Magnesium</b>	<b>Sulphur</b>
<b>Chloride</b>	<b>Manganese</b>	<b>Tantalum</b>
<b>Chromium</b>	<b>Molybdenum</b>	<b>Terbium</b>
<b>Cobalt</b>	<b>Neodymium</b>	<b>Thulium</b>
<b>Copper</b>	<b>Nickle</b>	<b>Tin</b>
<b>Dysprosium</b>	<b>Niobium</b>	<b>Titanium</b>
<b>Erbium</b>	<b>Nitrogen</b>	<b>Vanadium</b>
<b>Europium</b>	<b>Oxygen</b>	<b>Ytterbium</b>
<b>Gadolinium</b>	<b>Phosphorus</b>	<b>Yttrium</b>
<b>Gallium</b>	<b>Potassium</b>	<b>Zinc</b>
<b>Germanium</b>	<b>Praseodymium</b>	<b>Zirconium</b>

<b>Table 12-7 The Essential Amino Acids</b>
<p style="text-align: center;"> <b>Valine</b>  <b>Lysine</b>  <b>Threonine</b>  <b>Isoleucine</b>  <b>Tryptophane</b>  <b>Phenylalanine</b>  <b>Methionine</b>  <b>Histadine</b>  <b>Arginine</b>  <b>Taurine</b>  <b>Arginine*</b>  <b>Taurine*</b>  <b>Tyosine*</b> </p>
<p>*While not considered essential amino acids, their deficiency does result in disease states.</p>

<b>Table 12-6. Essential Vitamins for Human Health</b>
<p style="text-align: center;"> <b>Vitamin A</b>  <b>Vitamin B, (Thiamine)</b>  <b>Vitamin B2 (Riboflavine)</b>  <b>Vitamin B3 (Niacin)</b>  <b>Vitamin B5 (Pantothenic acid)</b>  <b>Vitamin B6 (Pyridoxine)</b>  <b>Vitamin B12 (Cobalamin)</b>  <b>Vitamin C</b>  <b>Vitamin D</b>  <b>Vitamin E</b>  <b>Vitamin K</b>  <b>Biotin</b>  <b>Choline</b>  <b>Flavinoids and bioflavinoids</b>  <b>Folic Acid</b>  <b>Inositol</b> </p>

<b>Table 12-8. Essential Fatty Acids</b>
<p style="text-align: center;"> <b>Linoleic</b>    <b>Linolenic</b>    <b>Arachidonic</b> </p>