

Date: \_\_\_\_\_

# HAIR ANALYSIS RATIO WORKSHEET for \_\_\_\_\_

Oxidation Type: \_\_\_\_\_

<p><b>Ca/Mg</b> Blood Sugar/ Pancreas</p> <p>_____</p>	<p>Ratio &gt; 13 = May be overeating carbs, emotional defensiveness/conflict, defending a lifestyle imbalance that is not in their best interest, cognitive dissonance 13 – 18 = Moderate &gt; 18 = Extreme            Ratio 10 – 13 = Overeating carbs, tendency towards Insulin Resistance            High Ca = Protection, defended, defensive, lowered cell permeability, calcium shell Ca &gt; 150 = Mild &gt;200=Moderate &gt;250 Extreme            Ideal ratio = 6.67 Good range = 3.3 - 10            Ratio &lt; 3.3 = Magnesium loss, may also have blood sugar issues, hidden Na/K inversion 2.5 – 3.3 = Moderate &lt; 2.5 = Extreme</p>	
<p><b>Ca/K</b> Thyroid (Defines Oxidation Rate)</p> <p>_____</p>	<p>High ratio = Decreased thyroid effect (<i>at the cellular level</i>) 8 - 50 = Moderate &gt; 50 = Extreme            High Ca = Protection, defended, defensive, lowered cell permeability, calcium shell Ca &gt; 150 = Mild &gt;200=Moderate &gt;250 Extreme            Low K (&lt;4) = Body exhausted but mind keeps pushing, "running on fumes," and Cu toxicity regardless of Cu level if Ca is &gt;50            Ideal ratio = 4 Good range = 3 - 8            Low ratio = Increased thyroid effect (<i>at the cellular level</i>) and/or toxicity 1 - 3 = Moderate &lt;1 = Extreme            Low Ca = hypersensitivity, hyperkinetic, anxiety, nervousness, muscle cramps, increased cell permeability, unprotected psychologically, tendency to Ca deficiency, lead toxicity (replaces Ca)</p>	
<p><b>Na/Mg</b> Adrenal (Defines Oxidation Rate)</p> <p>_____</p>	<p>High ratio = excessive adrenal effect (at the cellular level), alarm reaction, acute stress, and/or toxins (which can push Na up), tendency for Mg deficiency 7 - 20 = Moderate &gt; 20 = Extreme            Ideal ratio = 4.17 Good range = 3 - 6            Low ratio = decreased adrenal effect (at the cellular level), chronic stress, exhaustion reaction 1- 2.5 = Moderate &lt;1 = Extreme</p>	
<p><b>Na/K</b> Adrenal, Vitality, Immunity, Overall energy, Anabolic/Catabolic</p> <p>_____</p>	<p>~ ~ ~ MOST IMPORTANT RATIO ~ ~ ~ <u>To correct this ratio often requires dealing with the underlying emotions.</u>            High ratio = Alarm reaction, acute stress, inflammation, anger, (toxins can also elevate Na) 5 – 12 = Moderate &gt; 12 = Extreme            Ideal ratio = 2.5 Good range = 2.3 - 5            Low ratio (<i>inversion</i>) = decreased adrenal effect (exhaustion), chronic stress, lowered energy &amp; energy reserves, decreased immunity, protein catabolism, poor digestion, allergic tendencies, carbohydrate intolerance, diabetic tendency, liver &amp; kidney stress, cardiovascular stress, tendency toward degenerative disease, frustration, resentment, hostility            2 – 2.3 = Moderate 1 – 2 = Severe            &lt;1 = Extreme – (in addition to above possibilities) delusional, out of touch, decreased awareness of signs &amp; symptoms, feels like you are "beating your head against the wall," possible serious illness            Na is a rough indication of mineralocorticoid effect (aldosterone), pro-inflammatory            K is a rough indication of glucocorticoid effect (cortisol), anti-inflammatory</p>	
<p><b>Zn/Cu</b> Female / Male Hormones and Cardiovascular System</p> <p>_____</p>	<p>High ratio = CAUTION: the high ratio can be deceiving because of hidden Cu* (<i>see below</i>) 10 – 15 = Moderate &gt; 15 = Extreme            Female or male hormone imbalance, cardiovascular stress, tendency toward atherosclerosis, Zn loss, look for hidden Cu.* (<i>See below</i>)            Ideal ratio = 8 Good range = 6.5 - 10            Low ratio = below 6.5 - Cu toxicity (<i>see below</i>) Estrogen Dominance, female or male hormone imbalance, emotional problems, PMS, volatile, depressed, detached, cardiovascular stress, tendency to bruise, tendency for blood vessel weakening 3 – 6.5 = Moderate &lt; 3 = Extreme            Zn roughly correlates with progesterone effect in women, testosterone effect in men.            Cu roughly correlates with estrogen effect in both sexes.            *Hidden Cu Toxicity in slow oxidizers occurs when <u>ANY</u> of the following are present: Cu &lt;1, Ca &gt;50, Hg &gt;.06, Na/K ratio &lt; 2.5, K &lt; 4 Fast oxidizers usually have a true low Cu &amp; Zn.            NOTE: With hidden Cu, the symptoms of a low Zn/Cu ratio will be present.</p>	
<p><b>Ca/P</b> Sympathetic/Parasympathetic and Protein Usage</p> <p>_____</p>	<p>High ratio = &gt; 2.7 - parasympathetic state 2.7 – 8 = Moderate &gt; 8 = Extreme            Ideal ratio = 2.5            Good range = 2.3 – 2.7            Low ratio = &lt; 2.3 - sympathetic state 1.5 – 2.3 = Moderate &lt; 1.5 = Extreme</p>	<p style="text-align: center;"><b><u>PROTEIN USAGE</u></b></p> <p>PHOSPHORUS (P) LEVELS INDICATE PROTEIN USAGE, PROTEIN RESERVES, &amp; TISSUE BREAKDOWN.            WHEN P IS HIGH OR LOW ASK THE FOLLOWING QUESTIONS:            Eating enough protein? Good protein sources? Digesting protein (HCl)?            Low P <i>could be</i> protein deficiency, excessive tissue breakdown, impaired digestion, poor source of protein, (low P is worse than high), impaired protein synthesis (tends to be worse with low Zn)            High P <i>could be</i> a pubic hair sample or excessive tissue breakdown, impaired digestion</p>

\*See [www.restorativeendocrinology.com](http://www.restorativeendocrinology.com) for more on Copper Toxicity, Estrogen Dominance, and other Hormone Information. Also see [www.drlwilson.com](http://www.drlwilson.com) for more on Copper Toxicity and Hair Analysis.