This BodyChem™ Report Prepared For:
Dr. Sample    11/11/11
Patient: Sample Patient

Your BodyChem™ Report
Report Disclaimer:

The information found in this report has not been evaluated by the Food and Drug Administration and is not intended to diagnose, treat, cure or prevent any disease. This program is not a substitute for an examination by a qualified medical doctor or for regular medical care. We encourage you to share all your laboratory results with your physician.

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### Body Chemistry Associates

**Mineral Analysis**

**Report Date: 10/10/2011**

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Symbol</th>
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<th>Optimum</th>
<th>Scale Value</th>
<th>Analysis</th>
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<tr>
<td>Calcium</td>
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<td>40.00</td>
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<td>Manganese</td>
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<td>Zinc</td>
<td>Zn</td>
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<td>21.00</td>
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<td>Chromium</td>
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<td>0.10</td>
<td>0.00</td>
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<td>Selenium</td>
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<table>
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<th>Toxic Metals</th>
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<th>Analysis</th>
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<tr>
<td>Lead</td>
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<tr>
<td>Cadmium</td>
<td>Cd</td>
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<td>&lt;0.06</td>
<td>0.60</td>
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<tr>
<td>Aluminum</td>
<td>Al</td>
<td>1.60</td>
<td>&lt;0.5</td>
<td>3.20</td>
<td>Very High</td>
</tr>
</tbody>
</table>
VERY HIGH CALCIUM/ MAGNESIUM RATIO:

The above information on high Calcium level is especially found true when Calcium is elevated compared with Magnesium in the analysis, or a high Calcium/Magnesium ratio.

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VERY LOW MAGNESIUM

Magnesium is essential for normal blood sugar metabolism, energy production, bone metabolism and many aspects of cardiovascular health. Magnesium deficiencies can contribute to cardiac arrhythmias, or abnormal heart rhythm, atherosclerosis, the buildup of plaque in the arteries; cardiomyopathy or weakness of the heart muscle, and even heart attack leading to sudden death. Non cardiovascular consequences of a Magnesium deficiency include: osteopenia, osteoporosis, fatigue, insomnia, constipation, anxiety, ADHD, Magnesium has been shown to inhibit the absorption of Lead and Aluminum and when supplemented, will help to detoxify those heavy metals, (see table below for information on Magnesium deficiency from Stephen Sinatra, M.D., board certified cardiologist.)

Possible Consequence of a Magnesium Deficiency

- Cardiac arrhythmias (abnormal rhythm)
- Atherosclerosis
- Cardiomyopathy (weakness of heart muscle)
- Coronary vasospasm (chest pain)
- Heath attack- sudden death
- Osteoporosis (J.Reprod.Med.1990)
- Fibromyalgia, Chronic Fatigue
- Protects against Aluminum toxicity


Magnesium Deficiency in the Pathogenesis of Disease, (Link also found here) Complete Book by Dr. Mildred S. Seelig.


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HIGH SODIUM:

High levels of Sodium in the hair sample are not an indication of high dietary intake of salt, but rather suggestive of sub clinical and slight overactive adrenal activity. When we see adrenal imbalances, we are not looking for severe imbalances like Cushing’s or Addison’s Diseases, which would have to be diagnosed by a physician, but slight imbalances, high or low. Slightly overactive adrenal profiles are consistent with symptoms including anxiety, nervousness, irritability, hyperactivity, hypertension, insomnia and insomnia. This has been taken into consideration and nutritional support has been recommended at the end of this report.

HIGH POTASSIUM

High levels of Potassium in the hair sample are not an indication of high dietary intake of potassium, but rather suggestive of possible slight kidney stress and/or sub-clinical and slightly overactive adrenal activity. Any kidney stress would show up in the blood chemistry and will be taken into consideration in the nutritional formulas found at the end of this report. When we see adrenal imbalances, we are not looking for severe imbalances like Cushing’s or Addison’s Diseases, which would have to be diagnosed by a physician, but slight imbalances, high or low. Slightly overactive adrenal profiles are consistent with symptoms including anxiety, nervousness, irritability, hyperactivity, hypertension and insomnia. This has been taken into consideration and nutritional support has been recommended at the end of this report.

LOW IRON

Low hair Iron levels do not necessarily mean that you should take Iron, nor that your Iron levels in the blood are low. We examine several parameters regarding Iron status and anemias in your blood test results, which are discussed later in this report.
Low hair Copper levels, especially in conjunction with a low Copper/Zinc Ratio are indicative of low tissue Copper levels. Copper is essential to many enzymatic reactions, including those involved in liver metabolism (AST, ALT) and the production and metabolism of catecholamines, including adrenaline (epinephrine)(see fig. 12). Copper is also essential to the production of the Thyroid hormones, T3 & T4 (Thyroxine) in its role in the metalloenzyme, iodide peroxidase.

**Fig. 12** Copper is essential to the production of adrenaline.


Dopamine beta hydroxylase, From Wikipedia, the free encyclopedia


VERY LOW MANGANESE

Manganese is an important cofactor for many different enzymes and is involved in the maintenance of healthy bones and teeth and is involved in blood sugar metabolism. Very low levels of Manganese, as shown in your profile, are common in many areas of the United States. Most people that we test have a very low Manganese level, like yours. Supplementation over time will slowly bring these levels back to normal, a process that could take years. Too much Manganese will interfere with Magnesium metabolism.

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Serum trace element levels in COPD patient: The relation between trace element supplementation and period of mechanical ventilation in a randomized controlled trial,El-Attar M, Ashour L, et al, Respirology, 2009 Sep 16

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VERY LOW ZINC

Zinc is important to normal blood sugar metabolism, insulin function, wound healing and is involved in over 300 different enzymatic reactions, including alkaline phosphatase, lactate dehydrogenase and alcohol dehydrogenase (see fig. 3) High concentrations of Zinc are found in the eye, prostate, skin, hair and nails. Hair Zinc levels are always interpreted in consideration with Copper levels and the Copper/Zinc ratio. Zinc supplementation, like other antioxidants, prevents the oxidation of LDL cholesterol, thereby preventing the early stages of atherosclerosis.
Chromium is intimately involved in blood sugar metabolism. The initial stages of a chromium deficiency include unstable blood sugar and hypoglycemia and later stages include Type II Deficiency that can even aggravate blood sugar control in Type I Diabetes. Many studies indicate the benefits of chromium supplementation on stabilizing blood sugar metabolism. Chromium deficiencies have also been linked to hyperlipidemia, including high cholesterol and triglycerides.


VERY LOW SELENIUM

Selenium is an essential antioxidant and is a vital part of the metalloenzyme, glutathione peroxidase. Selenium deficiencies have been linked to higher rates of certain cancers and Selenium supplementation has been shown to significantly reduce the risk of many cancers. Selenium also will protect against and detoxify heavy metal toxins, including Lead, Mercury, Cadmium and we think, Aluminum. Selenium is vital to normal thyroid function in the conversion of T4 to T3 by the liver enzyme, thyroxine deiodinase.

On December 25, 1996, Dr. Larry Clark and his colleagues from The University of Arizona Cancer Center, published a research paper in the Journal of American Medical Association (JAMA). They conducted an experiment that showed that supplementing the diet with just 200mcg of Selenium dramatically reduced the incidence of cancer. They had 1312 volunteers take 200mcg of Selenium for an average of 4 ½ years and compared them to controls who took no selenium.

The Selenium supplemented group showed the following results:

- 37% decrease in cancer incidence, compared with controls
- 50% decrease in cancer-related deaths
- 63% decrease in prostate cancer
- 58% decrease in colorectal cancer
- 46% decrease in lung cancer
- Guess what, folks; no prescription drug can claim these results. Selenium is found in the ground and cannot be patented, nor profited from. Since there are no financial incentives, you never hear of this.
- We recommend adults take 200mcg Selenium daily, and children should take 50mcg or more if test results indicate. People going through the BodyChem™ Program will have the appropriate amount of Selenium recommended to them.


"Whole blood selenium levels (WBSL) in patients with prostate cancer (PC), benign prostatic hyperplasia (BPH) and healthy male inhabitants (HMI) and prostatic tissue selenium levels (PTSL) in patients with PC and BPH," Muecke R, Klotz T, et al, Acta Oncol, 2009; 48(3): 452-6. (Address: Department of Radiotherapy, St. Josefs-Hospital, Wiesbaden, Germany).


NORMAL PHOSPHORUS:

Phosphorus in the hair profile is not reliably indicative of Phosphorus metabolism in the body. Blood Phosphorus is reliable and will be reported on below.
NORMAL LEAD

Your Lead levels were within normal limits in the toxic metal analysis.

HIGH MERCURY

Mercury is a known poison to the brain and nervous system, as well as to the kidneys. Common symptoms of Mercury toxicity include: anxiety, nervousness, irritability, depression, concentration difficulties, memory problems and headaches. Silver dental filings are mostly made of Mercury and should never be used… there are safer alternatives. Mercury is found as thimerosol in mascara and some other cosmetics. Thimerosol is still found in adult vaccines. Exposure to mercurial antiseptics in childhood, like Mercurochrome and products with thimerosol may be the source for Mercury toxicity into adulthood and may be detected for 50-60 years or more. Selenium and Vitamin C help to combine with Mercury, make it less toxic and remove it from the body over time.


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NORMAL CADMIUM

Your Cadmium levels were within normal limits on the heavy metal analysis.
Aluminum is the most common toxic metal we find in hair samples these days. Aluminum affects the brain, nervous system and neuromuscular system, as well as the kidneys, bones and liver. Symptoms of Aluminum toxicity include: memory loss, muscular fatigue and weakness, muscle pain, calcium deposits, kidney dysfunction, concentration difficulties and developmental delays in children. Common sources of Aluminum exposure include: soft aluminum cookware, cans and foil, antacids that include aluminum hydroxide on the label, some buffered aspirins and vaccines. Most over the counter antiperspirant roll-ons are ok, as the aluminum from those products does not absorb across the skin barrier very well. However you should avoid the “deodorant stones” and “crystal rock” antiperspirants from the health food stores, if they contain alum or aluminum sulfate, as this is well absorbed into the system. Finally, certain cosmetics contain a very absorbable form of aluminum, aluminum stearate. You will find this in certain Nivea brand of products, as well as in Ultra Sheen that some people use as a hair grease. Whereas aluminum stearate is absorbed and dangerous, aluminum silicate is not, and is therefore safe in cosmetics. Magnesium supplementation will help to displace the Aluminum in the body.


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## Patient Information

- **DOB:** 07/13/1954
- **AGE:** 56
- **Gender:** M
- **Fasting:** Y
- **Phone:** NG
- **Patient ID:** NG

## Specimen Information

- **Specimen:** MR502409P
- **Requisition:** 5146805
- **Collected:** 10/02/2010 / 10:00 EDT
- **Received:** 10/02/2010 / 19:08 EDT
- **Reported:** 10/04/2010 / 21:37 EDT

## Client Information

- **Client #:** 16556
- **BODY CHEMISTRY ASSOCIATES**
  - 9200 S DADELAND BLVD STE 320
  - MIAMI, FL 33156-2711

## Test Results

<table>
<thead>
<tr>
<th>Test Name</th>
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<th>Lab</th>
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<td>M</td>
<td>MI</td>
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<td>HDL CHOLESTEROL</td>
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<td>L</td>
<td>OR = 40 mg/dL</td>
<td>MI</td>
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<td>TRIGLYCERIDES</td>
<td>&lt;150</td>
<td>H</td>
<td>MI</td>
<td>MI</td>
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<tr>
<td>LDL-CHOLESTEROL</td>
<td>&lt;130 (calc)</td>
<td>H</td>
<td>MI</td>
<td>MI</td>
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</tbody>
</table>

Desirable range <100 mg/dL for patients with CHD or diabetes and <70 mg/dL for diabetic patients with known heart disease.

| **CHOL/HDL C RATIO**            | 5.9 H    |              | OR = 5.0 (calc)               | MI  |
| **HOMOCYSTEINE**                |          |              | M                             | MI  |
| CARDIOVASCULAR                  | 10.7     |              | <11.4 mmol/L                  | MI  |
| **COMPREHENSIVE METABOLIC**     |          |              | M                             | MI  |
| PANEL W/BGFR                    | 116 H    |              | 65–99 mg/dL                   | MI  |

Fasting reference interval

| **UREA NITROGEN (BUN)**         | 14       |              | 7–25 mg/dL                    |     |

Verified by repeat analysis.

| **CREATININE**                  | 1.00     |              | 0.76–1.46 mg/dL               | MI  |
| **eGFR NON-APR. AMERICAN**      | >60      |              | OR = 60 mL/min/1.73m2         | MI  |
| **eGFR AFRICAN AMERICAN**       | >60      |              | OR = 60 mL/min/1.73m2         | MI  |
| **BUN/CREATININE RATIO**        | NOT APPLICABLE |        | 6-22 (calc)                  |     |

Sun/creatinine ratio is not reported when the BUN and creatinine values are within normal limits.

<p>| <strong>SODIUM</strong>                      | 138      |              | 135–145 mmol/L                |     |
| <strong>POTASSIUM</strong>                   | 4.7      |              | 3.5–5.3 mmol/L                |     |
| <strong>CHLORIDE</strong>                    | 101      |              | 98–110 mmol/L                 |     |
| <strong>CARBON DIOXIDE</strong>              | 22       |              | 21–33 mmol/L                  |     |
| <strong>CALCIUM</strong>                     | 9.5      |              | 8.6–10.2 mg/dL                |     |
| <strong>PROTEIN, TOTAL</strong>              | 7.2      |              | 6.2–8.3 g/dL                  |     |
| <strong>ALBUMIN</strong>                     | 4.8      |              | 3.6–5.1 g/dL                  |     |
| <strong>GLOBULIN</strong>                    | 2.4      |              | 2.1–3.7 g/dL (calc)           |     |
| <strong>ALBUMIN/GLOBULIN RATIO</strong>      | 2.0      |              | 1.0–2.1 (calc)                |     |
| <strong>BILIRUBIN, TOTAL</strong>            | 0.6      |              | 0.2–1.2 mg/dL                 |     |
| <strong>ALKALINE PHOSPHATASE</strong>        | 63       |              | 40–115 U/L                    |     |
| <strong>AST</strong>                         | 17       |              | 10–35 U/L                     |     |
| <strong>ALT</strong>                         | 22       |              | 9–60 U/L                      |     |
| <strong>PHOSPHATE (AS PHOSPHORUS)</strong>   | 4.4      |              | 2.5–4.5 mg/dL                 | MI  |
| <strong>URIC ACID</strong>                   | 5.1      |              | 4.0–8.0 mg/dL                 | MI  |
| <strong>LD</strong>                          | 137      |              | 120–250 U/L                   | MI  |
| <strong>GOT</strong>                         | 28       |              | 3–85 U/L                      | MI  |
| <strong>T4 (THYROXINE), TOTAL</strong>       | 7.6      |              | 4.5–12.5 mcg/dL               | MI  |
| <strong>FREE T4 INDEX (T7)</strong>          | 2.4      |              | 1.4–3.8                       |     |
| <strong>T3 UPTAKE</strong>                   | 31       |              | 22–35 µL                      | MI  |
| <strong>CBC (INCLUDES DIFF/PLT)</strong>     |          |              | M                             | MI  |
| <strong>WHITE BLOOD CELL COUNT</strong>      | 7.4      |              | 3.8–10.8 Thousand/uL          |     |
| <strong>RED BLOOD CELL COUNT</strong>        | 4.61     |              | 4.20–5.80 Million/uL          |     |</p>
<table>
<thead>
<tr>
<th>Test Name</th>
<th>In Range</th>
<th>Out Of Range</th>
<th>Reference Range</th>
<th>Lab</th>
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<tr>
<td>HEMOGLOBIN</td>
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<td>13.2-17.1 g/dL</td>
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<td>MCH</td>
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<td>27.0-33.0 pg</td>
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<tr>
<td>MCHC</td>
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<td>RDW</td>
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<td>PLATELET COUNT</td>
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<tr>
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<tr>
<td>ABSOLUTE BASOPHILS</td>
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<td>NEUTROPHILS</td>
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<td>LYMPHOCYTES</td>
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<tr>
<td>MONOCYTES</td>
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<td>%</td>
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<td>EOSINOPHILS</td>
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<td>IRON, TOTAL</td>
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<td>FERRITIN</td>
<td>579 H</td>
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<td>20-380 ng/mL</td>
<td>MI</td>
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</tbody>
</table>

PERFORMING SITE:
MD  QUEST DIAGNOSTICS-MGAML 10100 COMMERCE PARKWAY, MIAMI, FL 33023-3918 Laboratory Director: ANTHONY SIMONETTI, MD, CLIA: 10D072234
QDB  QUEST DIAGNOSTICS DEERFIELD BEACH, 1300 E NEWPORT CENTER DRIVE, DEERFIELD BEACH, FL 33442-7727 Laboratory Director: ANTHONY SIMONETTI, MD, CLIA: 10D0288093
BLOOD CHEMISTRY – NUTRITIONAL INTERPRETATION:

HIGH TRIGLYCERIDES

Your Triglycerides were found to be elevated in the lipid panel of your blood test. Triglycerides come mostly from dietary sugars and carbohydrates, so when your Triglycerides are high, either it means that you are consuming too many carbohydrates, or that your body isn’t tolerating the amount that you are consuming. Either way, it’s best to cut out refined sugars and cut back on your intake of starches, including breads, pasta, potatoes, rice and cereals. While you are on this diet, we will add in nutrients designed to support healthy carbohydrate metabolism and hopefully you will be able to add some healthy complex carbohydrates and fruits back to your normal diet.


HIGH CHOLESTEROL

Your cholesterol level was elevated in your blood test. Since more than 80% of the cholesterol found in your blood comes from your liver and very little from dietary cholesterol, it is not necessary for you to restrict eggs, butter or other sources of dietary cholesterol in your diet. Consumption of casein from cow’s milk products (butter ok) and refined sugars (sucrose, dextrose, high fructose corn syrup) has been shown to raise cholesterol in laboratory animals and humans. Avoiding the dairy and sugars and taking the nutrients we have recommended should support normal, healthy cholesterol metabolism, which we will monitor on a future blood test.

Laboratory Animal Science 45(6):663-70, 1995 Dec


Atherosclerosis 76:125-180, 1989


American Journal of Clinical Nutrition 2002; 76: 78-84


LOW HDL

High Density Lipoprotein, or HDL, is considered to be the “good cholesterol”. This lipoprotein carries harmful cholesterol away from the arteries, to be metabolized out of the body. Exercise, chromium, and magnesium help to support normal HDL levels.


HIGH LDL

Your Low Density Lipoprotein, or LDL, is considered to be the “bad cholesterol”. This lipoprotein carries harmful cholesterol to the arteries, where it helps to form plaque in the process of atherosclerosis. What is not widely publicized is that it is the oxidized form of LDL that is harmful and only the oxidized LDL that
contributes to heart disease. Although the same nutrients we have recommended to control the total cholesterol will also support healthy LDL cholesterol levels, taking antioxidants, like Vitamin E and Coenzyme Q10 will protect your arteries from the damaging effects of oxidized LDL.


**HIGH CHOLESTEROL/HDL RATIO**

Your Cholesterol/HDL Ratio was elevated in the blood profile. This has been considered the main coronary risk profile and should be less than 4.5 for both men and women. Lowering high cholesterol and building up the HDL cholesterol, as discussed above will allow this profile to return to normal levels.


**NORMAL GGT**

Your GGT levels were within normal limits.

**NORMAL IRON**

We like your serum iron to be between 50 and 125. Your serum iron level will be taken into consideration with your ferritin level and some of the values from the CBC, below.

**LOW LD (LDH)**

LD or Lactate Dehydrogenase is a zinc requiring metallo-enzyme and levels below 175 may be another indication of a need for zinc supplementation. Zinc is involved in many steps of protein, carbohydrate and fat metabolism, as mentioned above in the information on hair zinc levels. Low activity of zinc enzymes, including lactate dehydrogenase and alcohol dehydrogenase can be expected. This will be taken into consideration in the recommendations for nutrients.

![Active site of alcohol dehydrogenase, showing Zinc molecule](image)


*Biol Trace Elem Res. 2011 Feb 1.*

*Biol Trace Elem Res. 2011 Jan 29*
HIGH PHOSPHATE

Serum Phosphate or Phosphorus should be less than 4.0 for adults. Children that are still growing usually have an elevated phosphorus level in the blood, which is normal. In adults, high serum phosphorus levels may lead to removal of calcium from the bones, possibly leading to osteopenia or osteoporosis. (See also Ca/P Ratio) Avoiding dairy products, refined sugars, and supplementing with magnesium and other trace elements and bone nutrients, like the Bone Appetit® formula should help this profile return to normal.


NORMAL URIC ACID

Your Uric Acid level was found to be within normal limits in the blood analysis.

HIGH GLUCOSE

Your fasting glucose was found to be elevated in your blood test. Although this is not an absolute sign of Type I or II diabetes, it does show that you are starting to lose control over your glucose levels. In many cases, this is reversible through following a lower carbohydrate diet and supplementing with nutrients that support healthy blood sugar levels, including Chromium, Manganese, Zinc, Magnesium and some of the B vitamins. When your blood glucose levels remain high for an extended period of time, sugar molecules begin to be attached to proteins circulating in your blood stream, including Hemoglobin. We can measure this “glycosylated hemoglobin or Hemoglobin A1C as an extra blood test every four months to monitor your glucose metabolism imbalance. We have made specific dietary and nutritional supplement recommendations at the end of this report.


NORMAL BUN

Your Blood Urea Nitrogen (BUN) was within normal limits on your blood test.

NORMAL BUN/CREATININE RATIO

Your BUN/CREATININE RATIO was within normal limits on your blood test.

NORMAL eGFR

Your eGFR (estimated globular filtration rate) was within normal limits on your blood test.

NORMAL CALCIUM

Your Calcium level was within normal limits in the blood analysis. Calcium must be taken into consideration with serum phosphorus levels (See Ca/P Ratio below) and tissue levels of magnesium in the mineral analysis. (See Ca/Mg Ratio in mineral analysis, above).

LOW CA/P RATIO

Your Ca/P Ratio was low in your blood chemistry report. Many years ago, Dr. Melvin Page studied many patients using this ratio in determining their body chemistry balance. In general, lowered calcium to
phosphorus ratio could lead to the loss of calcium from the bones and teeth, leading to osteopenia, osteoporosis, periodontal disease and other degenerative conditions. Dr. Page found that by avoiding cow’s milk products and refined sugars, together with mineral balancing, would normally correct this ratio and the tendency to lose calcium from bones and teeth.


NORMAL TOTAL PROTEIN

Your Total Protein level was within normal limits in your blood test.

NORMAL TOTAL BILIRUBIN

Your Total Bilirubin level was normal in your blood chemistry report.

NORMAL ALKALINE PHOSPHATASE

Your Alkaline Phosphatase appeared within normal limits in the blood chemistry profile.

LOW AST

AST and ALT are metalloenzymes that require copper and Vitamin B6 for normal activity. Reduced levels of activity for AST and ALT indicate a possible deficiency of copper, and/or vitamin B6. Copper deficiencies will affect all copper-requiring enzymes in the body, including dopamine beta hydroxylase and iodide peroxidase. Examining the copper/zinc ratio in the hair analysis will help to distinguish the deficiency affecting these enzymes, as well as to determine need for nutritional supplementation of these nutrients to help support normal enzyme function.

Bioelectrochemistry. 2009 Sep 24. [Epub ahead of print]
Do copper ions activate tyrosinase enzyme? A biosensor model for the solution. Akyilmaz E, Yorganci E, Asav E. Department of Biochemistry, Faculty of Science, Ege University 35100 Bornova-Izmir, Turkey.

Annual Review of Biochemistry, 1989 – Dopamine Beta Hydroxylase

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Annual Review of Biochemistry, 1989 – Dopamine Beta Hydroxylase
CBC

NORMAL WBC - WHITE BLOOD CELLS

Your WBC (White Blood Cell) count was normal in the CBC.

NORMAL PLATELET COUNT

Your platelet count was normal in your blood test.

NORMAL EOSINOPHILS

Your eosinophils were normal in your blood test.

HIGH HOMOCYSTEINE

Your Homocysteine level was elevated. Homocysteine is a toxic amino acid metabolite that, when elevated, is an independent risk factor for: heart attack, stroke, certain cancers, osteoporosis, Alzheimer’s & Parkinson’s diseases, depression and probably other conditions we haven’t figured out yet. Elevated homocysteine is an indication of a need to supplement B vitamins, especially, Folic Acid, B12 and B6. This has been taken into consideration in the recommendations for nutritional supplements at the end of the report.

*The Homocysteine Revolution by Kilmer McCully, M.D.©1997, Keats Publishing, New Canaan, CT*


NORMAL T3 UPTAKE

Your T3 Uptake level in your blood test was normal.

NORMAL T4 (THYROXINE)

Your T4 (Thyroxine) level was normal in your blood test result.

HIGH FERRITIN

Your ferritin level was high in your blood report. Elevated ferretin levels may be due to short term inflammation, somewhere in the body. In addition, elevated ferritin may be indicative of Iron accumulation in the liver. We will examine your hair copper and serum iron levels to further evaluate your iron storage status as well as which nutrients are needed to bring this level into balance.

The most common biochemical reason for symptoms you report, including fatigue and anxiety is a condition we call unstable blood sugar. This can include a range of conditions from mild hypoglycemia up through and including Type II diabetes. (Type I diabetics also benefit from nutritional support.) When blood sugar levels drop in the body and brain, a cluster of symptoms can result, including fatigue, headaches & migraines, concentration difficulties, short term memory loss, depression, mood swings, afternoon slump in energy and sweet cravings. If the blood sugar continues to drop all the way down, one lapses into a coma. To prevent this, the brain declares an emergency and sends a signal to have the adrenal glands release the fight or flight hormones, including adrenaline or epinephrine. The excess adrenaline can produce its own set of symptoms, including: anxiety, irritability, nervousness, and heart palpitations. See fig. 23
Blood Sugar Imbalances

- **Sugar Intake**
  - Excess Insulin Release
  - Loss of Minerals
    - Zn, Cr, Mn, Mg

- **Progression**:
  1. Hypoglycemia
  2. Insulin Insensitivity
  3. Type II Diabetes
  4. Heart Disease

- **Blood Sugar Drops**
  - Fatigue
  - Headaches
  - Migraines
  - Concentration Difficulties
  - Cloudy Thinking
  - Short Term Memory Loss
  - Depression, Mood Swings
  - Learning Disorders
  - Sleepiness after meals
  - 4 o’clock slump, sweet cravings

- **Adrenaline Released**
  - Nervousness
  - Anxiety
  - Irritability
  - Hyperactivity
  - Heart Palpitations
  - Insomnia
  - Acid Indigestion/ Nausea

ALLERGIC SYMPTOMS

Allergic symptoms like you report may be due to underlying food sensitivities. These allergic symptoms include any or all of the following: sinus congestion, shortness of breath, asthma and ear infections in children. We suggest you avoid the most common food sensitivity behind these symptoms, which is casein from all cow’s milk products (cow’s milk, lactose free milk, cheese, yogurt and ice cream). Real butter and Publix brand of heavy whipping cream in dark purple containers is ok.

HIGH ADRENAL SYMPTOMS

Some of the symptoms you report are common with those of overactive adrenal glands or adrenal stress. Common symptoms include any or all of the following: anxiety, irritability, nervousness, heart palpitations, low back pain, hyperactivity & ADHD. Nutritional support for this profile has been recommended at the end of this report.

![Adrenal glands and Kidney](image)

HORMONAL IMBALANCE SYMPTOMS

Hormonal imbalances can have many symptoms, including early menopause, decreased sex drive and hair loss. To better evaluate the reason behind these symptoms we recommend you get a salivary hormone test we do in our Life Cycle Profile. When we get the results back, we can recommend over the counter and natural hormonal support if indicated on your test results. Please contact our office at 1-800-CHEMIST or visit us online at [www.1800chemist.com](http://www.1800chemist.com) for more information.

LOW MAGNESIUM SYMPTOMS

When Magnesium is deficient, or relatively deficient compared to calcium, it can present a myriad of symptoms, including any or all of the following: muscle twitches, muscle cramps, restless leg syndrome (RLS), ringing in the ears, heart palpitations, bone loss, fatigue, unstable blood sugar, hypertension, and hyperactivity in children. Correcting the Magnesium level and Calcium/Magnesium Ratio through supplementation can help bring these areas back into balance.
HISTORY YOU REPORTED:
DIETARY & NUTRITIONAL CONSIDERATIONS

FAST OXIDIZER

Your profile indicates a tendency toward a metabolic condition we refer to as a Fast Oxidizer. Fast Oxidizers metabolize fats and proteins well, but do not handle carbohydrates and sugars very well. The best analogy is that a fast oxidizer is like a fast burning campfire. If you come across a fast burning fire and throw loose papers and kindling on it, it will flare up, burn out and you will freeze to death all night. On the other hand, if you put heavy logs on the fast burning fire, it will calm down and give you consistent heat energy for hours. If you have a slow burning fire (Slow Oxidizer) and throw heavy logs on the fire, it will go out. You need to put loose papers, branches and kindling on a slow burning fire to bring it back to life. Out of the analogy, the logs represent dietary fats and proteins and the loose papers and branches represent dietary carbohydrates and sugars. Fast oxidizers do better on high fat and protein breakfasts, like eggs, breakfast meats and little to no starches and sugars. Some fast oxidizers crave fats to the extent that they even enjoy butter on their steaks. Slow oxidizers still need protein at breakfast, but can also tolerate a little fruit and whole grain toast, depending on their blood sugar balance and food sensitivities. Further dietary suggestions can be found at the end of this report.

FOR WEIGHT LOSS WITH YOUR METABOLISM

We have found one of the most successful diets to safely lose weight is the diet recommended by Robert Atkins, M.D. in his book, Dr. Atkins New Diet Revolution
The induction diet can be followed for two to four weeks, or even longer if you are doing very well on the plan. We like to see follow-up blood chemistry within a month of going on the diet. Our only modifications are to use goat or sheep cheese whenever he recommends cow cheese. If you have further questions on this diet, we recommend you consult the book or call our office for further guidance.

Dr. Atkins' New Diet Revolution, Revised Edition by Dr. Robert C. Atkins MD (Jul 29, 2002)

RINGING IN THE EARS

Ringing in the ears may be due to several factors. If you have any cow’s milk products in your diet, (cow’s milk, cheese, yogurt, ice cream, etc), discontinuing them for a month may show benefits. We generally recommend people avoid cow’s milk products for all the health problems they can contribute to, but especially for children with chronic ear infections and adults with any type of ringing in the ears (tinnitus).

PROTEIN AT BED FOR BETTER SLEEP

People that have trouble getting to sleep or staying asleep often benefit from having a protein snack at bedtime. This may work for two reasons. Number one, protein stabilizes blood sugar and prevents the blood sugar crash in the middle of the night that produces adrenaline. It is the excess production of adrenaline that wakes people up and prevents them from going back to sleep. The protein also provides the basic substances that the brain turns into melatonin, a neurohormone necessary for normal sleep. 100-200mg of Magnesium may also help a person get to sleep and stay asleep. If the dietary and nutritional supplement program we have recommended for you does not help to improve your sleep patterns, please contact us for additional recommendations.
CONSIDER IGG TEST

Hidden Food Sensitivities can express themselves with a diverse set of symptoms that include: Allergic symptoms, sinus congestion, asthma, joint stiffness, joint pain, problems losing weight, ADD and ADHD, headaches, digestive problems and others. Many of our clients with allergic symptoms like you report have benefited from information they have received from our IgG Food Sensitivity Test. This is a blood test that screens for 115 individual food sensitivities. What makes this test special is that the IgG test helps to identify delayed food sensitivities. Whereas common IgE food reactions happen within maybe 30-60 minutes and are easy to identify, IgG reactions may happen anywhere from a few hours to a few days after eating the foods. This makes it almost impossible for the person to figure out. For example, you may eat a food at lunch today and don’t react until after dinner tomorrow. You may believe that it is something at dinner that bothered you, but it was really something you had a day or two before. When food allergies are hard to figure out, we recommend the IgG Food Sensitivity Test.

Toxic Food Syndrome, by Jeffrey S. Zavik and Jim Thompson, Copyright@2002, Fun Publishing.

CONSIDER SALIVARY HORMONE TEST

Hormone imbalances can be the cause of many symptoms, including: PMS, hot flashes, bone loss, mood swings and hair loss. If these symptoms persist or are severe, we recommend you order a salivary hormone test kit from us. The famed hormone specialist, the late John Lee, M.D. said that the saliva test is much more accurate to test the steroid hormones, than the blood or other samples. We screen for imbalances in four hormones and make recommendations for natural, over the counter (OTC) replacement where indicated. Please contact our office for further information.

What Your Doctor May Not Tell You About Menopause (TM): The Breakthrough Book on Natural Hormone Balance by John R. Lee and Virginia Hopkins (Sep 1, 2004)

REFINED SUGAR INTAKE

You report that you eat products containing refined sugar. Refined sugar intake has been linked to various health problems and symptoms that range from hypoglycemia to diabetes and heart disease to cancer. Common symptoms of too much refined sugar intake include: headaches, fatigue, concentration difficulties, memory loss, depression, mood swings, anxiety, sleep disorders periodontal disease, ADD and ADHD. By avoiding refined sugar intake, while supplementing with nutrients that support your blood sugar balance, will lead to a reduction in cravings for refined carbohydrates. We will recommend natural and safe sugar substitutes later in this report.

CAFFEINE REDUCTION

Excess caffeine can lead to symptoms like anxiety, irritability and nervousness to fibrocystic breasts in women. If you are having regular caffeine intake and have any of these symptoms, we recommend you gradually reduce your caffeine intake. For example, if you are drinking 4-6 cups of coffee per day, cut it to 2-3 for a week, then 1-2 for a while, until you see if you can remove it from your diet. In addition, please be sure to only use approved sweeteners and approved heavy whipping cream if you do take coffee or tea. Replacing regular coffee or tea with green tea is a big improvement, due to its antioxidant qualities.

TOXIC METAL OCCUPATIONAL EXPOSURE

You have reported that you have been exposed in the past to some type of toxic metal. Our tests screen for Lead, Mercury, Cadmium and Aluminum, and are a reliable indicator to exposure to any or all of these toxic metals. Please see information elsewhere in this report to see if any of your toxic metal levels were elevated in the test results.
MERCURY AMALGAM FILLINGS

We recommend everyone avoid any new dental fillings containing mercury, due to the toxicity of this heavy metal. On the other hand, we don’t recommend everyone run out and have their fillings removed without careful consideration. There are “biological dentists” around the country that have extra training in the safe removal of this toxic substance from your oral cavity. We have found that one of the safest and most effective ways to remove Mercury from the body is by adding Selenium and Vitamin C to your supplement program. If your hair sample showed high Mercury, we have recommended an appropriate amount of these nutrients to help you detoxify your system. Future hair profiles will help us monitor the detoxification process.


STRESS PARAGRAPH

You indicate that you are currently under a great deal of stress. Many different stressors can affect us, including: emotional stress, chemical stress, physical stress, etc. Dr. Hans Selye in the 1950’s, wrote a book called “The Stress of Life”, in which he documented his work with laboratory animals. In the experimental animals that he subjected to stress, he found the animals’ adrenal glands enlarged, the thymus (immune system) shrank and the intestines became inflamed. We see similar results in humans that are exposed to long-term stress. It is also well known that most mammals on the planet, except for humans and a few other animals, produce their own Vitamin C. Those that do produce their own Vitamin C, produce much higher amounts when the animal is under stress. For instance, goats at rest, sitting in a pasture, under a shady tree, thinking happy goat thoughts, produce 33 times more Vitamin C than we are told to take by our government. (RDA). If you put that goat under stress (not sure how they do this, maybe read it some scary goat stories, involving a wolf or something, their stress causes their bodies to make much more Vitamin C, up to 190 times what humans are told to take on a regular basis. Bottom Line: Since we humans cannot make Vitamin C, take more when you are under any type of stress, maybe 1-2 grams per day on a normal basis and maybe twice that if you are under stress. Stress reduction techniques, like laughter, meditation, prayer, exercise, etc are essential to keep your stress levels under control. We will also include nutritional support that will support your adrenal glands in their fight against stress.

Vitamin C
(Ascorbate)

Epinephrine
(Adrenaline)

The Stress of Life, by Hans Selye, Copyright@1978, McGraw-Hill.

PROSTATE SYMPTOMS:

Some of the symptoms you reported are common with issues with your prostate gland. Please consult your physician or urologist to further explore these symptoms.

DAIRY INTAKE

There are many symptoms associated with certain food sensitivities and we find that consumption of cow’s milk products can be the culprit. If you have any cow’s milk products in your diet, (cow’s milk, cheese, yogurt, ice cream, etc), discontinuing them for a month may show benefits. We generally recommend people continue to avoid cow’s milk products for all the health problems they can contribute to.

ADDITIONAL REFERENCES


Trace Elements and Other Essential Nutrients, by David L. Watts, Ph.D. Copyright©1995, Dr. David L. Watts

Soil, Grass & Cancer, by André Voisin. Copyright© 1999, Acres U.S.A.

The trace elements and man, by Henry A. Schroeder, M.D. Copyright©1973, The Devin-Adair Company

Trace Elements, Hair Analysis, and Nutrition, by Richard A. Passwater PhD and Elmer M. Cranton, M.D. Copyright©1983, Keats Publishing


Biochemical and Physiological Aspects of Human Nutrition, by Martha H. Stipanuk PhD, Copyright©2000, Saunders; 1st edition


Toxic Food Syndrome, by Jeffrey S. Zavik and Jim Thompson, Copyright©2002, Fun Publishing.


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The information in this report has not been evaluated by the Food and Drug Administration. This information is not intended to diagnose, treat, cure or prevent any disease.
Basic Nutritional Support Diet for Balancing Body Chemistry

**NOTE:** Foods that have been eliminated or restricted on this diet have been shown to upset the body chemistry and therefore prevent effective balancing of that chemistry with the nutritional supplements that have been recommended for you. In order to achieve the best chemical balance possible, we urge you to follow this diet as closely as possible. Please be sure to ask us about anything that you may not fully understand.

If you have had our IgG Food Sensitivity Test please make sure to adjust the diet recommendations below to exclude those food that you are sensitive to. Eating a varied, rotation diet will not only insure more balanced nutrient intake, but it will also be less likely to cause you to develop new food sensitivities.

**FOODS TO ENJOY:** Reduce or eliminate carbs for 30 days. For weight loss, follow modified Atkins induction diet, found in *Dr. Atkins New Diet Revolution*. No cow cheese, use goat or sheep cheese as replacements.

**VEGETABLES:** Non-starchy ones like broccoli and spinach are allowed, raw or steamed are best. Frozen are the next best to fresh vegetables if they have no sauce, sugar, or other additives. Sprouts are good additions to salads. Olive oil, other cold-pressed oils, and a good vinegar (i.e. Balsamic) or other low carb natural salad dressings may be used.

**EGGS:** Eggs are fine to eat. We recommend the organic, free-range eggs as being the healthiest, whenever they are available. Soft boiled or poached give the greatest nutritional value. If you happen to be sensitive to chicken eggs, quail eggs are available at most major markets or health food stores.

**DAIRY PRODUCTS:**

**MILK:** Small amounts of heavy whipping cream (important make sure it excludes casein and casienate. Try the dark purple carton from Publix and Organic Valley.

**CHEESE:** Cheese made from goat (Chavrie) or sheep’s milk is allowed. Sheep’s milk cheese like Manchego and Etorki are much more mild than cheese made from goat’s milk. Both these cheeses also melt in omelets and on burgers. Feta cheese made from sheep or goats milk and buffalo mozzarella are also allowed.
ICE CREAM: Small amounts of homemade ice cream made from just heavy whipping cream and approved sweeteners are permitted.

BUTTER: We recommend unsalted, real butter as being healthier than store-bought margarine.

SWEETENERS: Stevia, and the sugar alcohols: sorbitol, mannitol, maltitol, and xylitol. are all acceptable (The sugar alcohols may cause a mild laxative effect). Brown rice syrup and saccharin (sweet’ n low.) are also good substitutes. If you have to choose between blue, white, yellow, or pink at a restaurant always choose the pink packet.

MEATS: All meats, poultry and fish are permitted, including shellfish. Remember to cook your chicken extremely well done.

SNACKS: Nuts,(especially Macadamia Nuts) seeds, hard boiled eggs, tuna, egg or chicken salad, almond or other nut butters, raw, non-starchy vegetables, guacamole, etc.

SEASONINGS: All natural herbs and spices may be used, including Herbamare. Sea Salt is better in small amounts than regular table salt.

CONDIMENTS: Regular mayonnaise (not low fat) and mustard are okay. Use health food store brands whenever possible for the following: low carb ketchup, barbecue sauce, salad dressings, etc.

GRAINS: Avoid starches for weight loss or use in moderation for maintenance.

BEVERAGES: Water should be your main beverage. Carbonated waters are also okay. Avoid regular tap water. Distilled water from a stainless-steel distiller or reverse osmosis (R/O) is the best. Soft-plastic containers should be mostly avoided. (Glass containers are much better). Bottled mineral waters or sparkling waters (La Croix, Syfo, etc) are all much better than tap-water. 6 - 8 glasses daily is recommended. Instead of regular soda use club sodas with or without flavors added. (Try lemon/lime club soda with a packet or Stevia or Sweet N Low added). Herbal teas without caffeine are permitted, hot or cold.

FRUITS: Avoid for weight loss. For maintenance, keep to a maximum of 1-2 pieces per day if sugar sensitive. If you have a piece of fruit, have it near a meal as protein and fat will help stabilize your blood sugar. Fruit juices are high in sugar
and should be avoided or taken in extreme moderation on this diet. Berries are the best tolerated fruit and can be topped with small amounts of whipped heavy whipping cream. Make sure heavy whipping cream is casein and caseinate free.

**THE FOLLOWING FOODS ARE BEST TO AVOID:**

**CAFFEINE:** coffee, colas, regular tea and any herbal tea containing caffeine are best to avoid or have just once or twice daily. No regular or diet sodas are allowed.

**SUGARS AND SWEETENERS:** avoid white, brown, turbinado, cane, and raw sugars, and foods that contain refined sugars such as candies, pastries, ice cream, and other foods that contain excess sugar. Also read labels to avoid sucrose, dextrose, lactose, glucose, maltose, cane juice and high fructose corn syrup. Avoid the artificial sweeteners such as aspartame (Equal®, Nutrasweet®), sucralose (Splenda®). Green packets of Stevia and pink packets containing saccharin are permitted.

**DAIRY PRODUCTS:** cow's milk, cheese, yogurt, and ice cream should all be avoided. Use goat, sheep or other products mentioned above.

**WHITE FLOUR:** Avoid all refined carbohydrates. Follow a low starch diet.

**ALCOHOL:** Avoid or take in moderation. Distilled spirits have far less carbs than beer and wine.

**CONDIMENTS:** Avoid products containing refined sugars, artificial colors, flavors and preservatives. Avoid table salt, MSG (monosodium glutamate), Accent, etc.
Sample Diet
Lipid Lowering Diet

**Breakfast**

Chicken or quail eggs, any style. Turkey bacon or any regular breakfast meats or fish. If you are running late and cannot have a proper breakfast you may have our STAR Protein powder in a shake with approved heavy whipping cream and approved sweetener. Beverage: Water, coffee, tea or herbal tea.

**Snacks**

Nuts, nut butters on celery logs and sheep or goat cheese.

**Lunch**

Any meat, fowl, or seafood with a salad with low carb ingredients and dressing. Beverage: Same as above.

**Snacks**

Hard boiled egg, lettuce wraps with protein or STAR Protein powder from Chem*Star Formulations with approved heavy whipping cream and approved sweeteners.

**Dinner**

Any meat, fowl, or seafood with a salad with low carb ingredients and dressing is permitted. You may have frozen or fresh non-starchy vegetables such as broccoli, spinach, and cauliflower. Sheep, goat cheese and buffalo mozzarella can be added to any salad and melted on vegetables, omelets, and burgers (without the bun). You can top salad greens with chopped egg, real or turkey bacon (crumbled), goat or sheep’s cheese, mushrooms and anchovies. Beverage: Same as above.

**Before bed snack**

Pieces of sliced turkey, ham and cheese rolls, or lettuces wraps with a fatty protein. Approved condiments can be added. STAR Protein can be substituted for bedtime snack.
This is your Customized Nutritional Supplement Regimen.

The lipid lowering dietary suggestions we have recommended will allow your body to assimilate these nutrients.

Please notify us before taking any other vitamin supplements. Continue any medication prescribed by your physician.

Name: Sample        Referred by: Body Chemistry Associates, Inc.
Date: 11/17/10                       Dr. Sample

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It is extremely important to have a high protein breakfast and a protein snack at bedtime.

**It will be extremely important for you to follow the enclosed diet very closely, especially with the avoidance of refined sugars and dairy products.

RETESTS:

Next hair profile with blood - 3 months

To Re-order Supplements, please call 305-670-6702 in Miami or 1-800-243-6478 toll-free
for more info, call 1-800-CHEMIST or visit us on the web at www.1800chemist.com

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