

Lab Results and Diagnoses Report

Lab Date: 17-Jan-2017 Gender: Male

Patient: MATTHEW ABISCH Age: 43



Diagnoses:

- None -

Lab Results:

Test Name	Results	Units	Clinical Range		Functional Range	
			Adult Male		Adult Male	
ALBUMIN	4.4	g/dL	3.50	5.70	4.00	4.75
ALK.PHOSPHATASE	78	U/L	34.00	104.00	75.00	100.00
CARBON DIOXIDE	24	mEq/L	17.00	32.00	L	25.00 - 30.00
BUN	15	mg/dl	7.00	25.00		11.50 - 17.00
GLUCOSE	101	mg/dL	H	70.00 - 99.00	H	82.00 - 99.00
HEMOGLOBIN A1c (HGB A1C)	5.2	%		4.00 - 5.60	H	4.20 - 5.00
POTASSIUM	3.6	mmol/L		3.50 - 5.10	L	4.00 - 4.50
SODIUM	139	mmol/L	136.00	145.00		137.50 - 142.50
CHLORIDE	104	mmol/L	98.00	107.00		100.00 - 104.00
CREATININE SERUM	0.89	mg/dL	0.70	1.30		0.40 - 1.10
BUN/CREATININE RATIO	17	Ratio	8.00	28.00		10.00 - 20.00
URIC ACID	4.9	mg/dL	4.40	7.60		3.00 - 5.00
GLOBULIN	2.3	g/dL	1.80	4.00	L	2.40 - 3.00
A/G RATIO	1.9	Ratio	0.80	2.70		1.40 - 2.00
CALCIUM	9.3	mg/dL	8.60	10.50		9.20 - 10.10

MAGNESIUM	2.3	MG/DL		1.70 - 2.70	L	3.00 - 6.00
PROTEIN TOTAL	6.7	g/dL		6.40 - 8.90	L	7.00 - 7.50
BILIRUBIN,Total	0.5	mg/dl		0.20 - 1.00		0.10 - 1.20
AST (SGOT)	24	U/L		11.00 - 39.00		10.00 - 26.00
ALT (SGPT)	27	U/L		7.00 - 52.00	H	10.00 - 26.00
FERRITIN	134.5	ng/mL		23.90 - 336.20		40.00 - 200.00
TSH 3RD GENERATION	0.542	uIU/mL		0.34 - 4.41	L	1.80 - 3.00
T4 TOTAL	7.45	ug/dL		6.09 - 12.20	L	7.50 - 12.00
T3 UPTAKE	51.1	%	H	32.00 - 48.00	H	27.50 - 40.10
T3,TOTAL	81	ng/dL	L	87.00 - 178.00		80.00 - 185.00
WBC	7.5	10 ³ /uL		4.20 - 11.80		4.95 - 8.90
RBC	5.3	10 ⁶ /uL		4.40 - 5.80	H	4.30 - 4.90
HEMOGLOBIN	16.2	g/dL		13.10 - 17.10	H	13.50 - 15.00
HEMATOCRIT	46	%		40.00 - 50.40		40.00 - 48.00
MCV	88			80.80 - 97.40		85.00 - 92.00
MCH	30.6	pg		26.60 - 33.00		27.00 - 32.00
MCHC	34.9	g/dL		32.00 - 34.90	H	31.50 - 34.45
RDW	13.3	%		11.80 - 15.50		0.00 - 14.00
PLATELET	212	10 ³ /uL		147.00 - 365.00		162.00 - 312.50
MPV	8.39	fL		6.00 - 12.00	L	9.50 - 10.00
MONOCYTES %	13.9	%	H	3.80 - 10.00	H	2.00 - 7.00
MONOCYTES #	1	10 ³ /uL	H	0.20 - 0.90	L	200.00 - 950.00
EOSINOPHILS #	0.12	10 ³ /uL		0.00 - 0.50	L	15.00 - 550.00

EOSINOPHILS %	1.66	%		0.00 - 6.10		0.00 - 5.00
BASOPHILS #	0.04	10 ³ /uL		0.00 - 0.10		0.00 - 200.00
BASOPHILS %	0.51	%		0.00 - 0.90		0.00 - 2.00
HOMOCYSTEINE,SERUM	7.5	uMOL/L		5.00 - 12.00	H	0.00 - 6.00
CRP CARDIO/NEO (HS)	36.7	MG/L	H	0.00 - 3.00	H	0.00 - 2.00
DHEA-SULFATE	308.2	ug/dL		34.50 - 568.90		200.00 - 400.00
IMMUNOGLOBULIN E,SERUM	8.41	IU/ml		2.00 - 114.00	L	40.00 - 400.00
IMMUNOGLOBULIN M	74	mg/dL		45.00 - 281.00		53.00 - 300.00
IMMUNOGLOBULIN A	181	mg/dL		66.00 - 433.00		90.00 - 475.00
GLIADIN IGG	0.4	U/ml		0.00 - 6.99		0.00 - 10.00
GLIADIN IGA	0.5	U/ml		0.00 - 6.99		0.00 - 15.00
RHEUMATOID FACTOR	6.6	IU/mL		0.00 - 14.00		0.00 - 50.00
VITAMIN D-25 HYDROXY	16	ng/mL	L	30.00 - 100.00	L	50.00 - 120.00
VITAMIN B12	418	pg/mL		180.00 - 914.00	L	800.00 - 1500.00
Zinc, Serum/Plasma	76	ug/dL		60.00 - 120.00	H	11.00 - 16.00
Vitamin A (Retinol)	0.44	mg/L		0.30 - 1.20	L	20.00 - 100.00
Vitamin E (Alpha-Tocopherol)	13.4	mg/L		5.50 - 18.00		8.00 - 15.00
Vitamin B2	9	nmol/L		5.00 - 50.00	L	53.00 - 0.00
FOLATE	15.2	ng/mL		5.90 - 24.80	L	32.00 -
Selenium, Serum/Plasma	160	ug/L		23.00 - 190.00		74.00 - 0.00

Evaluation Report

Lab Date: 17-Jan-2017 **Gender:** Male

Patient: MATTHEW **Age:** 43
ABISCH



Below are listings of various aspects of your report. Your practitioner has very carefully chosen certain portions of your report to view. Feel free to read your report in its entirety and discuss with your practitioner during your consultations.

Body System: Acid-Base Balance

The Acid-Base Body System involves maintaining physiologic pH and other homeostatic mechanisms in all body systems and compartments. One or more laboratory measurements for this patient suggest a potential or present disturbance of acid-base (pH) balance. The kidneys, lungs and gastrointestinal tract play a major role, but not the entire role, of both metabolic and respiratory pH (or relative alkalinity and acidity) within the body. Physiological pH, as well as other related physiological processes, are required to create the appropriate internal environment allowing for optimal enzyme action, nutritional and pharmacological activity, detoxification mechanisms and a myriad of essential processes.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
BICARBONATE CO2	24	mEq/L	17.00 - 32.00	L 25.00 - 30.00

Test Description: Bicarbonate is an important buffer in the blood. The blood pH must be maintained between 7.35 and 7.45 (physiologic range). If the laboratory does not mark bicarbonate, look for total carbon dioxide content. Total carbon dioxide content or carbon dioxide capacity will reflect the bicarbonate component of the blood.

Findings and Considerations: A clinically or functionally low level of bicarbonate is present.

Common Conditions: Diarrhea, starvation, salicylate intoxication, diabetic acidosis, thiazide administration, renal tubular acidosis, chronic renal failure, and acute renal failure. Bicarbonate is decreased during normal pregnancy.

Lab Relationships, Evaluations and Followup: The underlying cause of abnormal CO₂ values must be identified. Nutritional efforts should be directed to the underlying cause(s) of the CO₂ abnormality. Perform a spirometry when the CO₂ is above 32 mEq/L. Consider the following conditions relative to CO₂ levels: - Mild acidosis 18-24 mEq/L - Moderate acidosis 18-15 mEq/L - Severe acidosis less than 14 mEq/L - Serum levels of CO₂ are inversely proportional to chloride levels. - A low CO₂ level is consistent with metabolic alkalosis. - A low HC0₃⁻ is consistent with metabolic acidosis. - A high CO₂ is consistent with metabolic acidosis. - A high HC0₃⁻ is consistent with metabolic alkalosis.

Drug-Nutrient / Drug-Laboratory Interactions: Aspirin, nitrofurantoin, tetracycline (antibiotics in general).

Recommended Nutritional Products:

Magnesium Complex (*Blood Detective Nutritionals*) : Take one twice per day or as directed by your health care provider.

Reds Protect (*Blood Detective Nutritionals*) : Take two scoops per day dissolved into a chilled beverage unless otherwise instructed by your health care provider.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
CHLORIDE	104	mmol/L	98.00 - 107.00	100.00 - 104.00

Test Description: The balance of this important electrolyte is dependent upon sodium and potassium levels. Chloride functions to help maintain physiologic pH in the body, and is essential for water balance in the inter- and extracellular fluid compartments. Chloride is predominantly found in the extracellular fluid in combination with sodium for proper maintenance of osmotic pressure in the serum and is the principal negative ion in the extracellular fluid. Chloride is found with sodium in a variety of foods. A diet restricting sodium will generally restrict chloride, but will not cause chloride insufficiency.

Body System: Cardiovascular

The Cardiovascular Body System has been selected because one or more laboratory measurements for this patient suggest a potential or present disturbance of cholesterol (excess or deficiency) metabolism. High cholesterol levels indicate an increased predisposition for cardiovascular disease may exist, or an increased propensity for other degenerative conditions (with low levels). Genetics, lifestyle factors including stress, exercise and nutrition must all be considered in terms of their potential role in both the genesis or resolution of cardiovascular and other degenerative diseases.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
PLATELETS	212	10 ³ /uL	147.00 - 365.00	162.00 - 312.50

Test Description: Platelets may represent the smallest elements in the blood, are essential for vascular integrity, vasoconstriction, and blood clotting mechanisms. Platelets promote aggregation and adhesion for the formation of what is known as a platelet plug which helps repair increased vascular permeability in small blood vessels. The production of platelets is controlled by thrombopoietin. Platelets have a life span in the blood between 8 to 10 days in length. Most platelets, approximately two-thirds are in the circulation while the remaining one-third is sequestered to the spleen.

Body System: Gastrointestinal

The Gastrointestinal Body System has been selected because one or more laboratory measurements for this patient suggest a potential or present disturbance involving gastrointestinal (GI) function. The GI system includes the anatomic and physiological relationship between

the stomach, small intestines, pancreas, large intestines.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
GLIADIN AB IGA	0.5	U/ml	0.00 - 6.99	0.00 - 15.00

Test Description: Gliadin antibodies increase in celiac disease and in non-celiac gluten sensitivity (both commonly involving HLA B8). In celiac disease, gliadin IgG and IgA antibodies, as well as transglutaminase and reticulín antibodies, will increase. In non-celiac-gluten sensitivity, the latter two AB are often (but not always) increased. Continued dietary consumption of gluten containing foods such as barley, rye, oats, and wheat will raise some or all of the ABs in both celiac disease and non-celiac gluten sensitivity. Complete withdrawal of gluten foods will reduce the high ABs to normal within 12-16 months in celiac disease, and within 6-8 weeks in non-celiac-gluten sensitivity. In the former, lifelong gluten avoidance is necessary to prevent the destruction of the small intestinal mucosa and continued malabsorption that defines celiac disease. In the non-Celiac gluten sensitive form, lifelong avoidance of gluten containing foods is almost never necessary.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
GLIADIN AB IGG	0.4	U/ml	0.00 - 6.99	0.00 - 10.00

Test Description: Gliadin antibodies increase in celiac disease and in non-celiac gluten sensitivity (both commonly involving HLA B8). In celiac disease, gliadin IgG and IgA antibodies, as well as transglutaminase and reticulin antibodies, will increase. In non-celiac-gluten sensitivity, the latter two AB are often (but not always) increased. Continued dietary consumption of gluten containing foods such as barley, rye, oats, and wheat will raise some or all of the ABs in both celiac disease and non-celiac gluten sensitivity.. Complete withdrawal of gluten foods will reduce the high ABs to normal within 12-16 months in celiac disease, and within 6-8 weeks in non-celiac-gluten sensitivity. In the former, lifelong gluten avoidance is necessary to prevent the destruction of the small intestinal mucosa and continued malabsorption that defines celiac disease. In the non-Celiac gluten sensitive form, lifelong avoidance of gluten containing foods is almost never necessary.

Body System: Genitourinary & Renal

The Genitourinary and Renal Body System has been selected because one or more laboratory measurements for this patient suggest a potential or present disturbance involving either the bladder, kidneys or ancillary connections such as the urethras, renal pelvis, etc.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
BUN	15	mg/dl	7.00 - 25.00	11.50 - 17.00

Test Description: BUN is primarily a test of renal function and a low value may suggest renal insufficiency or frank renal disease. BUN, or blood urea nitrogen, is produced by the liver from protein metabolism as a byproduct of urea metabolism. Increased levels are generally from one of two main causes: increased hepatic production of BUN and/or reduced renal clearance. Elevated blood urea nitrogen (nitrogenous urea) may be from acute infections.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
BUN/CREATININE	17	Ratio	8.00 - 28.00	10.00 - 20.00

Test Description: An elevated BUN/creatinine ratio is characteristic of renal disease. When values are greater than 25 in a female or 18 in a male, consider a diet too high in protein, catabolic stress that can occur during burns, fever, and trauma to tissues. Consider gastrointestinal bleeding as red blood cell breakdown results in increased release of nitrogenous compounds.

Test Name	Results	Units	Clinical Range	Functional Range
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			Adult Male	Adult Male
CREATININE (BLOOD)	0.89	mg/dL	0.70 - 1.30	0.40 - 1.10

Test Description: Creatinine is a protein that is normally excreted from the body by the kidneys. Creatinine is produced at a fairly constant rate proportional to muscle mass, and is a byproduct of muscle energy metabolism. Blood Creatinine levels are equivalent to the glomerular filtration rate (GFR). Various disorders of the kidney are associated with body retention of creatinine resulting in increased blood levels.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
VITAMIN D (25-OH)	16	ng/mL	L 30.00 - 100.00	L 50.00 - 120.00

Test Description: Vitamin D is a group of fat-soluble prohormones, the two major forms of which are vitamin D2 (or ergocalciferol) and vitamin D3 (or cholecalciferol).[1] The term vitamin D also refers to metabolites and other analogues of these substances. Vitamin D3 is produced in skin exposed to sunlight, specifically ultraviolet B radiation. Vitamin D plays an important role in the maintenance of organ systems.[2] Vitamin D regulates the calcium and phosphorus levels in the blood by promoting their absorption from food in the intestines, and by promoting re-absorption of calcium in the kidneys. It promotes bone formation and mineralization and is essential in the development of an intact and strong skeleton. It inhibits parathyroid hormone secretion from the parathyroid gland. Vitamin D affects the immune system by promoting immunosuppression, phagocytosis, and anti-tumor activity. Vitamin D deficiency can result from inadequate intake coupled with inadequate sunlight exposure, disorders that limit its absorption, conditions that impair conversion of vitamin D into active metabolites, such as liver or kidney disorders, or, rarely, by a number of hereditary disorders.[2] Deficiency results in impaired bone mineralization, and leads to bone softening diseases, rickets in children and osteomalacia in adults, and possibly contributes to osteoporosis. Vitamin D deficiency may also be linked to many forms of cancer. Vitamin D is best known for its synergism with calcium for maintaining bone integrity (density). Vitamin D is produced initially in the skin from cholesterol in the form of cholecalciferol (D3). Cholecalciferol is converted in the liver to 25-hydroxycholecalciferol. 25-hydroxycholecalciferol is converted in the kidney forming 1,25-cholecalciferol: 1,25-cholecalciferol is the active form of vitamin D3. Excessive levels of vitamin D3 known as hypervitamin D and is associated with hypercalcemia, hyperparathyroidism and tetany, vascular calcification and hyperparathyroidism. Low levels of vitamin D is associated with loss of bone density, malabsorption and malnutrition syndromes, inflammatory bowel diseases and an increased risk of many diseases including: breast, colon and prostate cancer.

Findings and Considerations: Low or low levels of vitamin D may be associated with malnutrition, malabsorption syndromes (i.e., celiac disease, non-celiac gluten intolerance), inflammatory bowel diseases, lack of sunlight, atherosclerosis and chronic kidney disease.

Common Conditions: Consider the following conditions: hyperthyroidism, hypothyroidism, immunodeficiency, malnutrition, coronary artery disease, malabsorption syndromes such as celiac disease and non-celiac gluten intolerance and inflammatory bowel diseases such as crohn's disease and ulcerative colitis. Vitamin D deficiency is known to cause several bone diseases[15] including: Rickets, a childhood disease characterized by impeded growth, and deformity, of the long bones. Osteomalacia, a bone-thinning disorder that occurs exclusively in adults and is characterised by proximal muscle weakness and bone fragility. Osteoporosis, a condition characterized by reduced bone mineral density and increased bone fragility. Prior to the fortification of milk products with vitamin D, rickets was a major public health problem. In the United States, milk has been fortified with 10 micrograms (400 IU) of vitamin D per quart since the 1930s, leading to a dramatic decline in the number of rickets cases.[10] Vitamin D malnutrition may also be linked to an increased susceptibility to several chronic diseases such as high blood pressure, tuberculosis, cancer, periodontal disease, multiple sclerosis, chronic pain, depression, schizophrenia, seasonal affective disorder and several autoimmune diseases (see role in immunomodulation).[10]

Lab Relationships, Evaluations and Followup: Consider the following tests in the presence of low or low normal vitamin D levels: - Cholecalciferol (D3) and 1,25-dihydroxycholecalciferol levels. -FMTTM analysis for this nutrient will reveal intracellular needs based on DNA stimulated response to radioactive thymidine in the laboratory. In many cases this author believes that this is the most clinical useful test measure available. Performed by SpectraCell Laboratories, Inc (1800-227-5227). -Bone density screening (current estimated degree of bone loss), and/or a hydroxyproline 24-hour urine test (for rate of bone loss). -Compare 1,25-vitamin D3 levels to 25-D3 levels: the 1, 25 D3 (the active form) is converted from 25-D3. Research has shown that a low level of 1, 25-D3 may predispose an individual to a variety of cancers or indicate a kidney issue. -Check for the presence of malnutrition/malabsorption: Transglutaminase, reticulon, gliadin IgA and IgG antibodies. - Measure vitamin A, vitamin E and betacarotene Notes and references ^Dietary Supplement Fact Sheet: Vitamin D. National Institutes of Health. Retrieved on 2006-06-10. ^ Vitamin D The Merck Manual of Diagnosis and Therapy. Last modified November 2005 ^ About Vitamin D Including Sections: History, Nutrition, Chemistry, Biochemistry, and Diseases. University of California Riverside ^ Norman, Anthony W. (1998) Sunlight, season, skin pigmentation, vitamin D, and 25-hydroxyvitamin D: integral components of the vitamin D endocrine system. *Am J Clin Nutr*;67:1108-10. ^ Fun with UVB Includes calculations and measurements of UVB levels at various angles of solar rays. ^ Laura A. G. Armas, Bruce W. Hollis and Robert P. Heaney (2004). "Vitamin D2 Is Much Less Effective than Vitamin D3 in Humans Full Text". *The Journal of Clinical Endocrinology & Metabolism* 89 (11): 5387-5391. ^ Coates, M. E. (1968). "Requirements of different species for vitamins Full Text-pdf". *Proceedings of the Nutrition Society* 27 (2): 143-148. PMID 5755261. ^ Vitamin D The Physicians Desk Reference. 2006 Thompson Healthcare. ^ Matsuoka LY, Wortsman J, Haddad JG, Kolm P, Hollis BW. Racial pigmentation and the cutaneous synthesis of vitamin D. *Arch Dermatol* 1991;127:536-8. ^ Holick MF (2004). "Sunlight and vitamin D for bone health and prevention of autoimmune diseases, cancers, and cardiovascular disease". *American Journal of Clinical Nutrition Full Text* 80 (6): 1678S-1688S. ^ In scientific literature, vitamin D dosage is usually reported in micrograms, whereas food and supplement regulations typically require dosages on labels to be in International Units (IU). 1 microgram vitamin D equals 40 IU vitamin D. ^ Nowson C, Margetson C (2002). "Vitamin D intake and vitamin D status of Australians". *Med J Aust* 177 (3): 149-52. PMID 12149085. ^ "Bringing Mushrooms Out of the Dark", MSNBC, April 18 2006. Retrieved on 2007-08-06. ^ Rajakumar K (2003). "Vitamin D, cod-liver oil, sunlight, and rickets: a historical perspective". *Pediatrics* 112 (2): e132-5. PMID 12897318. ^ Grant WB, Holick MF (2005). "Benefits and requirements of vitamin D for optimal health: a review". *Altern Med Rev* 10 (2): 94-111. PMID 15989379. ^ "Low vitamin D levels linked to poor physical performance in older adults", EurekaAlert, April 23 2007. Retrieved on 2007-04-24. ^ Heaney RP (2004). "Functional indices of vitamin D status and ramifications of vitamin D deficiency Full Text". *Am J Clin Nutr* 80 (6 Suppl): 1706S-9S. ^

Vitamin D Supplementation for Breastfed Infants - 2004 Health Canada Recommendation ^ Holick MF (2005). "The vitamin D epidemic and its health consequences Full Text". J Nutr 135 (11): 2739S-48S. ^ Sayre, Robert M.; John C. Dowdy (2007). "Darkness at Noon: Sunscreens and Vitamin D3". Photochemistry and Photobiology 83 (2): 459. DOI:10.1562/2006-06-29-RC-956. ^ Grant WB (2002). "An estimate of premature cancer mortality in the U.S. due to inadequate doses of solar ultraviolet-B radiation". Cancer 94 (6): 1867-75. PMID 11920550. ^ Saadi HF, Dawodu A, Afandi BO, Zayed R, Benedict S, Nagelkerke N (2007). "Efficacy of daily and monthly high-dose calciferol in vitamin D-deficient nulliparous and lactating women". Am. J. Clin. Nutr. 85 (6): 1565-71. PMID 17556694.

Drug-Nutrient / Drug-Laboratory Interactions: Anticonvulsants, bile acid sequestrants, corticosteroid medications, cimetidine, isoniazid, mineral oil, rifampin and orlistat all interfere with vitamin D absorption.

Recommended Nutritional Products:

Calcium Micro Complex (Blood Detective Nutritionals) : Take two capsules or more as directed with foods or as directed by your health care provider.

Longevity Factors OX-Redox Agents (Blood Detective Nutritionals) : Take as directed unless otherwise instructed by your health care provider.

Vegetarian Omega 3 Smoothie (Blood Detective Nutritionals) : Take one tsp twice per day with or without meals unless otherwise directed by your health care provider.

Vitamin D 5000 (Blood Detective Nutritionals) : Take one per day with meals unless otherwise directed by your health care provider.

Body System: Hepato-Biliary

The Hepato-Biliary system has been selected because one or more laboratory measurements for this patient suggest a potential or present disturbance involving either the liver, biliary tree, gallbladder, pancreas and/or the main pancreatic duct as it enters into the first part of the duodenum (small intestine).

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
A/G RATIO	1.9	Ratio	0.80 - 2.70	1.40 - 2.00

Test Description: An increase in the ratio is generally due to an increase in the globulin and/or a decrease in the albumin. Globulin is a large protein composed of over 60 separate smaller proteins. It assists in maintaining immune function and combating infection. The serum total protein value is composed of various serum proteins such as albumin and globulin. The various subtypes of globulin's may be measured with protein electrophoresis (PEP), yielding the percentages of alpha-1 globulin's, alpha-2 globulin's, B-1 globulin's, B-2 globulin's, and gamma-globulins. Osmotically, albumin plays an important role in keeping an optimum balance and function of water within the blood vessels and tissue spaces, transports fatty acids, many steroids and medications.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
ALBUMIN	4.4	g/dL	3.50 - 5.70	4.00 - 4.75

Test Description: Albumin is produced in the liver and comprises two thirds of the circulating blood protein. As a transport protein albumin together with serum globulin, make up the total protein value. Osmotically, albumin plays an important role in keeping an optimum balance of water within the blood vessels and tissue spaces. Albumin transports fatty acids, many steroids and medications.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
ALK PHOSPHATASE	78	U/L	34.00 - 104.00	75.00 - 100.00

Test Description: This enzyme works best in an alkaline environment thus the name, "alkaline" phosphatase. Increased levels substantially beyond the clinical range (in the hundreds) may indicate bone, intestinal, or liver disease. Growing children and adolescence commonly have elevated alkaline phosphatase levels due to the normal growth process. Decreased levels of AP may be the desired outcome of therapeutic efforts.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
ALT (SGPT)	27	U/L	7.00 - 52.00	H 10.00 - 26.00

Test Description: ALT, also known as aspartate-amino-transferase, is a vitamin B6 dependent liver test important for energy transformations in various cells across many tissues. The highest amounts of these enzymes are found in high-energy tissues such as skeletal muscle, heart, and liver. ALT is found mainly in the liver with lesser stores in heart, muscle, and kidney tissue.

Findings and Considerations: A clinically or functionally high ALT level is present. Consider vitamin B6 deficiency: ALT (alanine transaminases) is required in its activated B6 form (pyridoxyl-5-phosphate) as a coenzyme for transamination and deamination reactions.

Common Conditions: Consider liver dysfunction or disease with increased levels of AST, LDH, ALT, total bilirubin (direct bilirubin), increased serum iron, ferritin, and monocytes along with decreased levels of BUN, albumin, albumin-globulin ratio, cholesterol, total protein, and triglycerides.

Cirrhosis, ethanol ingestion, hepatitis, infectious obstructive jaundice, mononucleosis, liver metastasis, pancreatitis and renal disease are associated with elevated levels of ALT (SGPT).

ALT is normally higher in newborns.

Lab Relationships, Evaluations and Followup: Investigate infectious causes of hepatitis: Order a hepatitis viral syndrome profile consisting of Epstein-Barr Virus Antibody (IgM) to viral capsid antigen (VCA-IgM), hepatitis B core total antibody, hepatitis B surface antibody, hepatitis B surface antigen, cytomegalovirus antibody (IgM), hepatitis A total antibody immune status and, if clinically warranted, a PCR (qualitative, polymerase chain reaction) hep C testing for viral load.

- Review the entirety of the liver panel enzymes (ALT, AST, GGT, LDH) along with alkaline phosphatase. Elevated levels of these factors suggests a highly destructive liver process.

Considering ordering a total & fractionated bile acids tests that includes: cholic acid, deoxycholic acid, chenodeoxycholic acid, and total bile acids, as a true liver function test.

Consider hypoglycemia with increased levels of ALT, C-peptide, reduced serum glucose, increased hemoglobin A1c and possibly glycosylated albumin, and reduced levels of LDH.

Consider heavy metal toxicity with increased serum total globulin levels along with reduced levels of cholesterol, HDL, MCV, MCHC, TSH, reduced platelets, low serum uric acid and increased LDH. Order serum, RBC and 24-hr metals testing as all three of these tests are necessary to demonstrate adequate clearance of heavy metals of these three physiologic compartments.

Drug-Nutrient / Drug-Laboratory Interactions: Acetaminophen, acetohexamide, albendazole, allopurinol, aminosalicic acid, amiodarone, amrinone, anabolic steroids, anesthetic agents (ketamine), antibiotics (e.g, amoxicillin, ampicillin), anticonvulsants (e.g, carbamazepine), antifungals (e.g, fluconazole), antineoplastic agents (e.g, aminoglutethimide), ardeparin, arsenicals, aspirin, barbiturates (e.g, phenobarbital), benzodiazepines (e.g, alprazolam, chlordiazepoxide, diazepam, flurazepam, oxazepam), beta-blockers (e.g, betaxolol), bismuth subsalicylate, bromocriptine, buspirone, calcifediol, calcitriol, chenodiol, chloral hydrate, chlorzoxazone, cimetidine, clofibrate, clonidine, codeine, colchicine, cortisone, cycloserine, dantrolene, dapson, delavirdine, diocumarol, dienestrol, diethylstilbestrol, disopyramide, disulfiram, diuretics, omeprazole, ondansetron, oral contraceptives, oxymetholone, papaverine, pegaspargase, pemoline, pentoxifyline, phenazopyridine, phenothiazines, sulfonyleureas, tacrine, thiabendazole, thiothixene, ticlopidine, tocinide, tretinoin, tricyclic antidepressants, trioxsalen, ursodiol, verapamil, warfarin, zidovudine and zileuton.

Recommended Nutritional Products:

Longevity Complete (*Blood Detective Nutritionals*) : Take one scoop twice per day dissolved into a chilled beverage unless otherwise directed by your health care provider.

Milk Thistle - Sylimarin (*Blood Detective Nutritionals*) : Take 1 tablet twice daily with meals unless otherwise directed by your health care provider.

Multivitamin Mineral Complex (*Blood Detective Nutritionals*) : Take two twice per day with meals or as directed by your health care provider.

N-Acetyl-L-Cysteine (*Blood Detective Nutritionals*) : Take one twice per day with meals or as directed by your health care provider.

Vitamin C Synergy (*Blood Detective Nutritionals*) : Take one capsule twice per day with meals unless otherwise recommended by your health care provider.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
AST (SGOT)	24	U/L	11.00 - 39.00	10.00 - 26.00

Test Description: AST was formally known as SGOT and is found primarily in the liver, heart, and muscle tissues although all tissues contain some of this enzyme. Transaminase enzymes such as AST are important for energy transformations. The greatest amounts of these enzymes are found in high-energy tissues such as skeletal muscle, heart, and liver. The highest concentration of ALT is in the liver making this test good for the identification of liver necrosis.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
BILIRUBIN (TOTAL)	0.5	mg/dl	0.20 - 1.00	0.10 - 1.20

Test Description: A pigment in the blood that normally forms from the breakdown of old red blood cells by the spleen. The total bilirubin is a measurement of two types of bilirubin including the unconjugated and conjugated forms. It is the test for gallbladder and liver dysfunction and disease, and reflects toxic reactions to various medications, environmental toxins, hemolytic diseases, and pathologies of the biliary tree and liver.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
PROTEIN, TOTAL	6.7	g/dL	6.40 - 8.90	L 7.00 - 7.50

Test Description: The total protein value represents the sum of the serum albumin and globulin. An increase in the total protein could be from an increased level of either albumin, globulin or both.

Findings and Considerations: A clinically or functionally low serum protein (hypoproteinemia) is present. Low values suggest the possibility of undernutrition. Consider supplementation with protein, pancreatic enzymes and/or HCL/pepsin.

Common Conditions: Achlorhydria, autoimmune disease, burns, cirrhosis, dermatitis, hypochlorhydria, gastrointestinal protein loss (gastritis, gastric ulcers), malabsorption, malnutrition, overhydration, nephrosis.

Lab Relationships, Evaluations and Followup: Reduced protein and albumin/globin ratio is characteristic of protein malnutrition. - Consider hypochlorhydria or achlorhydria with increased serum total globulin and BUN, but may rise due to inadequate hydrochloric acid secretion and digestion of proteins leading to an increased production of nitrogenous wastes. - Consider ordering tests of increased intestinal permeability. - A heidleberg capsule test is available that exposes the contents of the stomach to a potent parietal cell stimulator. If there is no response to the parietal cell stimulator then the patient is said to have achlorhydria, a small response is indicative of hypochlorhydria and hyperresponsiveness is termed, hyperchlorhydria. - Hypochlorhydria will also involve normal or low total protein, normal or low serum albumin, and low levels of phosphorus. Low total protein along with low or low normal hemoglobin and/or hematocrit, high or high normal RDW (red blood cell distribution width) consider iron anemia along with protein anemia (secondary to malabsorption or malnutrition). - Low total protein along with high homocysteine or methylmalonic acid consider B12 and/or folic acid, anemia along with protein anemia and/or malabsorption/malnutrition. - Decreased protein, BUN and a normal high or reduced SGPT, may be due to dysfunctional hepatic protein metabolism. - Decreased protein, SGPT, and cholesterol are typical of fatty liver and/or liver congestion. Order: liver sonogram. - Low or low normal total protein along with low or low normal calcium, consider difficulty with protein assimilation. Order an ESR to evaluate the potential of for an inflammatory process if clinical coorelation exists. If elevated, consider: ANA, anti-centromere AB, Scl-70, RF, anti-citrulline AB.

Drug-Nutrient / Drug-Laboratory Interactions: An interpretation is not clinically relevant.

Recommended Nutritional Products:

Betaine Hydrochloride - Absorption Support (*Blood Detective Nutritionals*) : Take once capsule just before or during each meal, or as directed by a physician.

Enzyme Complex (*Blood Detective Nutritionals*) : Take 1 with all meals for digestive improvements; take 1 with meals 30 minutes either before or after meals for metabolic (non-digestive_ antiinflammatory effects. Your health care provider may suggest a different supplement schedule.

Milk Thistle - Sylimarin (*Blood Detective Nutritionals*) : Take 1 tablet twice daily with meals unless otherwise directed by your health care provider.

Nitric Oxide Boost (*Blood Detective Nutritionals*) : Take one with foods twice per day or as directed by your health care provider.

Whey 26 Vanilla Powered Protein (*Blood Detective Nutritionals*) : Take two scoops per day mixed in a chilled beveraged or more as directed by your health care provider.

Zinc Picolinate (*Blood Detective Nutritionals*) : Take one tablet with meals per day unless otherwise instructed by your health care provider.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
URIC ACID	4.9	mg/dL	4.40 - 7.60	3.00 - 5.00

Test Description: Uric acid is the product of purine and pyrimidine metabolism. This molecule is the ash resulting from protein digestion, primarily of purines and pyrimidines. Gout is characterized by high levels of uric acid due to a metabolic derangement of purine and pyrimidine metabolism. Low uric acid levels may result from a low protein diet, malnutrition, malabsorption, hypochlorhydria or achlorhydria, or as a result of certain medications/nutrients including folic acid and colchicine

Body System: Hormone Balance

The Hormone Balance Body System has been selected because one or more laboratory measurements for this patient suggest a potential or present disturbance involving either the ovaries, testes, adrenal glands, thyroid gland, parathyroid glands, the pineal gland, thalamic structures and/or the anterior or posterior pituitary gland.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
DHEA SULFATE (PLASMA)	308.2	ug/dL	34.50 - 568.90	200.00 - 400.00

Test Description: DHEA (dehydroepiandrosterone) is an adrenal hormone that represents the predominant hormone in the human body prior to age thirty. Reduced secretion or production of DHEA is associated with a long list of autoimmune disease and other chronic degenerative conditions. Low DHEA levels can also result from adrenal atrophy or loss of adrenal reserve, malnutrition, malabsorption and various forms of mental and physiologic stress. High levels are seen typically in hyperandrogenic states such as polycystic ovarian syndrome, infertility and exogenous administration of DHEA hormone. DHEA sulfate levels are far more stable, and of higher concentration in the blood, compared to the unsulfated form of DHEA.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
GLUCOSE	101	mg/dL	H 70.00 - 99.00	H 82.00 - 99.00

Test Description: Glucose is a simple sugar (containing six carbons) and is required as an energy source for all cells, tissues, and organ systems of the body. Glucose is also the major energy source for the brain. Low levels produce hypoglycemia and high levels, hyperglycemia. High levels are commonly known as diabetes mellitus. Blood sugar problems are associated with many symptoms, dysfunctional and disease states. Dietary carbohydrates are a major source of glucose although the liver will convert protein and fats into glucose when not enough glucose is available to the cells for energy. Glucose is stored in the liver in the form of glycogen. Excess glucose that is not stored as glycogen will be converted into fat (adipose tissue). Several hormones influence serum glucose levels, including insulin (secreted by the beta-cells of the pancreas helping to transport potassium and glucose into cells), glucagon, growth hormone and cortisol. A diet higher in proteins and complex carbohydrates and low glycemic foods favors more balanced blood sugar levels. A diet high in fat, high glycemic foods and lower in protein tends to promote high blood sugar levels.

Findings and Considerations: A clinically or functionally high serum glucose level is present. Consider diabetes type I (insulin dependent) in the presence of elevated glucose. This form of diabetes is due to destruction of the beta cells of the pancreas through an autoimmune or an idiopathic process. If uncontrolled, Type I diabetes may lead to ketoacidosis and diabetic coma. Type II diabetes is the more prevalent form and is related to insulin resistance. Both forms of diabetes are generally treated with insulin or various other oral antidiabetic agents. Both conditions will result in serious complications if glucose levels are not adequately controlled. Protein, low glycemic foods, chromium, and B-complex nutritional compounds should be recommended.

Common Conditions: IV glucose, diabetes mellitus, thiazides, cushing's syndrome, hyperthyroidism, pheochromocytoma, corticosteroids (for such conditions as crohn's disease and ulcerative colitis), hepatic disease, hemochromatosis, brain damage, nephrosis, stress, anesthesia, burns, emotion, shock, chronic or acute pancreatitis, epinephrine, hypervitaminosis A (chronic), phenytoin, estrogens, ethanol, propranolol, wernicke's encephalopathy (vitamin B1 deficiency).

During pregnancy, human placental lactogen will increase glucose levels. Estrogens, prolactin, and progesterone during pregnancy generally act as insulin antagonists.

Lab Relationships, Evaluations and Followup: Order a hemoglobin A1c and a 6-hr glucose-insulin tolerance test for those with glucose values above 140 or those with values above 120 on several occasions. The hemoglobin A1c is used for monitoring the ongoing progress of a diabetic patient. If diabetes is strongly suspected order an insulin AB test.

- Diagnosis of diabetes mellitus is based on fasting plasma above 140 mg/dL on more than one occasion.
- Glucose greater than 100 and glycosylated hemoglobin A1c greater than 6%, diabetes is strongly suggested.
- Consider insulin resistance with increased serum glucose, glycosylated hemoglobin, cholesterol, triglycerides and order a C-peptide.

Glucose levels may be influenced by cortisol, epinephrine and thyroxine that act upon the liver promoting gluconeogenesis. Serum, challenge and urine forms of these tests are available.

Check triglycerides and cholesterol: In diabetes, triglycerides are higher than cholesterol. HDL is usually decreased.

BUN and creatinine are generally increased indicating kidney damage that may accompany diabetes. Evaluate the serum creatinine level or the more accurate 24-hr urinary creatinine clearance test to assess potential kidney involvement. Order serum creatinine; if increased, order a 24-hr creatinine clearance test.

Triglyceride is greater than 110, cholesterol greater than 220, HDL decreased, obesity, increased insulin, glucose, and blood pressure (hypertension), consider metabolic syndrome X.

Many factors may affect the reliability of this test such as trauma, infections, or various medications such as cortisone, diuretics, and birth control pills. The oral glucose tolerance test is generally not recommended in a hospital setting, as patients are generally under moderate-to-extreme stress that may affect the glucose tolerance test values. Consider that, in real life, no one generally sits and drinks pure glucose, therefore the response to pure glucose, which is used to this test, does not represent a normal situation.

FMTM analysis for this nutrient, or for nutritional factors affecting this laboratory parameter, will reveal intracellular needs based on DNA stimulated response to radioactive thymidine in the laboratory. In many cases this author believes that this is the most clinical useful test measure available. Performed by SpectraCell Laboratories, Inc (1-800-227-5227).

Drug-Nutrient / Drug-Laboratory Interactions: Estrogens, cefotaxime, corticosteroids (eg, dexamethasone), growth hormone, epinephrine and phenytoin.

Recommended Nutritional Products:

Blood Sugar Balance (*Blood Detective Nutritionals*) : Take one tablet daily with food or as directed by your health care provider.

Vitamin C Synergy (*Blood Detective Nutritionals*) : Take one capsule twice per day with meals unless otherwise recommended by your health care provider.

Whey 26 Chocolate Powder Protein (*Blood Detective Nutritionals*) : Mix two scooper per day in a chilled beverage approved by your health care provider or more as directed.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
HEMOGLOBIN A1C	5.2	%	4.00 - 5.60	H 4.20 - 5.00

Test Description: When blood sugars levels remain elevated (hyperglycemia) the hemoglobin within the RBCs remain saturated with glucose in the form of glycohemoglobin for the 120 day life cycle of the red blood cell. The hemoglobin A1c is an average of blood glucose values over the previous four months as red blood cells are continually being replaced. The last month of newly replaced red blood cells

accounts for approximately one-half of the total hemoglobin A1c count. Damage to various tissues increase proportionately to the length of time hyperglycemia exists. Hypoglycemia may be present when the HgA1c level is less than or equal to 3.0%.

Findings and Considerations: A clinically or functionally high hemoglobin A1c is present. Protein, low glycemic foods, chromium, and B-complex nutritional compounds should be recommended.

Common Conditions: Hyperlipidemia, diabetes, hypertension, other forms of cardiovascular disease, hyperglycemia.

Lab Relationships, Evaluations and Followup: Consider diabetes or severe hyperglycemia when hemoglobin A1c, C-peptide, glycated albumin, cholesterol, triglycerides, BUN, creatinine and serum glucose are increased along with reduced HDL. - Ongoing monitoring of the diabetic with glycosylated hemoglobin and perhaps fructosamine help to monitor the patient ongoingly. Fructosamine measures the glucose average over just a few weeks as compared to HgA1c which provides approximately a 4-week average of glucose molecules covalently bound to hemoglobin. HgA1c is the preferred test. Confirm and measure the extent of hyperglycemia by ordering C-peptide and a 6-hour glucose-insulin tolerance test. - An insulin AB test confirms the presence of an autoimmune component of diabetes.. Examine CO2 levels and if depressed, consider metabolic acidosis of hyperglycemia. Order: lung spirometry. Blood lipids are commonly increased: particularly triglyceride levels. - Elevated lipids may be part of a metabolic derrangement that directly relates to the process of hyperglycemia and hypertension. This triad of metabolic derrangements are known as Metabolic Syndrome X. Examine urine for the presence of glucose, albumin and ketones: these markers are often increased. - Examine the urine using an in-office urine dipstick for the presence of protein (predominantly albumin). The presence of albumin in the urine is considered one of the best indicators of the presence of diabetes. - Urinary ketone values should certainly be performed when certain symptoms manifest such as flu, cold or concurrent illnesses, vomiting, nausea, polyuria and abdominal pain. FMTTM analysis for this nutrient, or for nutritional factors affecting this laboratory parameter, will reveal intracellular needs based on DNA stimulated response to radioactive thymidine in the laboratory. In many cases this author believes that this is the most clinical useful test measure available. Performed by SpectraCell Laboratories, Inc (1-800-227-5227).

Drug-Nutrient / Drug-Laboratory Interactions: Aspirin, gemfibrozil, hydrochlorothiazide, indapamide, lovastatin, niacin, propranolol, alcohol, lead toxicity, glucose administration.

Recommended Nutritional Products:

Blood Sugar Balance (*Blood Detective Nutritionals*) : Take one tablet daily with food or as directed by your health care provider.

Longevity Factors (*Blood Detective Nutritionals*) : Take one per meal or as directed by your health care provider.

Magnesium Complex (*Blood Detective Nutritionals*) : Take one twice per day or as directed by your health care provider.

Whey 26 Vanilla Powered Protein (*Blood Detective Nutritionals*) : Take two scoops per day mixed in a chilled beverage or more as directed by your health care provider.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
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T3 UPTAKE	51.1	%	H	32.00 - 48.00	H	27.50 - 40.10
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Test Description: There are several thyroid-binding proteins including thyroid binding globulin, albumin, and transthyretin. The T3 uptake test is not a direct measure of the actual T3 serum levels, but an indirect measure of the number of unoccupied or unsaturated binding sites for T3 on the various thyroid-binding proteins. This test should be included as part of a complete thyroid panel.

Findings and Considerations: A clinically or functionally high T3 value is present and may represent a hyperthyroid condition. Provide generalized thyroid support including, tyrosine, vitamin D3, vitamin B2, a comprehensive antioxidant formula and selenium. The thyroid hormones T3 and T4 are transported in the blood bound to plasma proteins such as albumin and thyroid binding globulin (TBG). Only the unbound forms of T3 and T4 are biologically active T3 being far more active than T4 although less abundant in circulation. T3 uptake (aka, T3 Resin) helps to estimate the available TBG. The higher the T3 uptake (or resin) the lower the available TBG available. Low T3 uptake (or resin) means that there is plenty of TBG present. Conditions such as hyperthyroidism are associated with high T3 uptake (resin) levels.

Common Conditions: Hyperthyroidism, nephrotic syndrome, protein malnutrition and renal failure.

Lab Relationships, Evaluations and Followup: Abnormal T3U must always be considered along with a complete thyroid blood panel and various serum proteins such as albumin, globulin and TBG.

Drug-Nutrient / Drug-Laboratory Interactions: Anabolic steroids, androgens, aspirin, colestipol, corticosteroids, cytostatic therapy, dicoumarol, heparin, phenytoin, propranolol, salicylates, sulfonamides, thyroid agents, warfarin.

Recommended Nutritional Products:

Test Name	Results	Units		Clinical Range	Functional Range
				Adult Male	Adult Male
T3, TOTAL	81	ng/dL	L	87.00 - 178.00	80.00 - 185.00

Test Description: T3 is considered the most biologically active of the thyroid hormones, particular free T3. It is produced by the removal of an iodine molecule from T4 (thyroxin). Most of the available T3 in the blood stream is bound to protein and is therefore inactive. When considered in context with other thyroid and pituitary tests, a diagnoses of euthyroid, hypothyroid and hyperthyroidism can be made

Findings and Considerations: A clinically or functionally low total T3 is present. Provide generalized thyroid support including, tyrosine, vitamin D3, vitamin B2, a comprehensive antioxidant formula and selenium. The thyroid hormones T3 and T4 are transported in the blood bound to plasma proteins such as albumin and thyroid binding globulin (TBG). Only the unbound forms of T3 and T4 are biologically active, T3 being far more active than T4 although less abundant in circulation. Supplement with a well-balanced antioxidant formula, vitamin B2, and possibly a thyroid glandular.

Common Conditions: Hypothyroidism, third trimester of pregnancy.

Lab Relationships, Evaluations and Followup: Abnormalities of any of the thyroid hormones should always be considered in context with a full thyroid-pituitary panel including: TSH, total T4, free T3. Low levels of T3 could indicate the presence of hypothyroidism in the presence of an elevated TSH. Order thyroglobulin and thyroid peroxidase AB to check for the possibility of hashimoto's thyroiditis. Salivary thyroid hormone levels may reveal deficiency even in the absence of low levels upon blood testing. Correlate with medical history and physical examination including noting the presence or absence of a sluggish achilles reflex: a sluggish reflex indicating an increased probability of suboptimal thyroid output. Axillary temperature testing (Broda Barne's method) may reveal a morning axillary temperature of 96 degrees . Procedure for axillary temperature: shake the glass thermometer down at night (prior to the first temperature reading), in the morning take the axillary temperature before arising for a full ten minutes. Menstruating women should take their temperature on the 2nd through the 4th day of their menstrual cycle. Normal axillary temperature falls between 97-98,2.

Drug-Nutrient / Drug-Laboratory Interactions: Amiodarone, carbamazepine, corticosteroids, methimazole, phenytoin, propranolol, radiographic agents, somatostatin.

Recommended Nutritional Products:

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
T4, TOTAL	7.45	ug/dL	6.09 - 12.20	L 7.50 - 12.00

Test Description: The majority of circulating thyroid hormone in the bloodstream is thyroxin (T4), although free T3 is considered far more active biologically. T4 is converted into the active T3 thyroid hormone when deiodinated by the deiodinase enzymes. When considered in context with other thyroid and pituitary tests (e.g., TSH), a diagnoses of euthyroid, hypothyroid, and hyperthyroidism can be made. Total T4 is a measurement of the free and protein-bound thyroxin. The "T" of T3 stands for the amino acid tyrosine to which three iodines are attached (in the case of T3), and four iodines to produce T4. The conversion of T4 to T3 requires the enzyme thyroid peroxidase.

Findings and Considerations: A clinically or functionally low T4 level is present. Low levels of T4 may indicate the presence of hypothyroidism. Provide generalized thyroid support including, tyrosine, vitamin D3, vitamin B2, a comprehensive antioxidant formula and selenium.

Common Conditions: Hypothyroidism (involving hashimoto's thyroiditis, cretinism), myxedema, goitrous disease, scleroderma, amyloid goiter, hemochromatosis, aging (nonspecific), malabsorption, and/or malnutrition and fasting may result in decreased availability of plasma proteins lowering total T4 values and celiac disease.

Lab Relationships, Evaluations and Followup: Low T4 levels may suggest hypothyroidism particularly in the presence of high TSH. Related Tests include calculated T7, T3 uptake, high sensitivity TSH, T3 RIA, sensitive TSH, free T4, free thyroxine index, thyroglobulin

AB and thyroid peroxidase AB.

Drug-Nutrient / Drug-Laboratory Interactions: Amiodarone, anabolic steroids, anticonvulsants (eg, carbamazepine), asparaginase, clofibrate, corticosteroids, furosemide, isotretinoin, levothyroxine, methadone, methimazole, octreotide, oral contraceptives, phenobarbital, phenytoin, ranitidine, dexmethosone, propranolol, lithium, iodine, methimazole, propylthiouracil and interferon alfa.

Recommended Nutritional Products:

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
TSH	0.542	uIU/mL	0.34 - 4.41	L 1.80 - 3.00

Test Description: Thyroid-stimulating hormone (TSH) is secreted by the anterior pituitary gland in response to thyrotropin-releasing hormones (TRH) secreted by the hypothalamus. TSH is sensitive to TRH from the hypothalamus and measurement of TSH is considered the gold standard laboratory test for determining whether hypo-functioning of the thyroid is a primary or is secondary to anterior pituitary gland dysfunction. TSH is ordered to evaluate the potential for pituitary failure as a cause of hypothyroidism. Low TSH levels are characteristic of hyperthyroidism and high levels are characteristic of hypothyroidism. Free T3 and T4 as well as thyroid antibodies will help to distinguish the nature of the thyroid abnormality.

Findings and Considerations: A clinically or functionally low TSH is present. Myxedema may be developing or present. Low normal or borderline TSH levels are strongly suggestive of hyperthyroidism and this state is confirmed in the presence of high free T4 and/or free T3. Consider supplementation with selenium, B2, vitamin D, calcium and an antioxidant formulation.

Common Conditions: Primary hyperthyroidism, secondary or tertiary hypothyroidism, grave's disease (treated), ethyroid sick disease, over-replacement of thyroid hormone supplementation in treated hypothyroidism.

Lab Relationships, Evaluations and Followup: Low TSH suggests hyperthyroidism and should be compared against free T3 levels, total T4 and TBG.

- Consider ordering a thyroid ultrasound to check for the presence of nodules. If nodules are present, and meet the criteria for biopsy (i.e., size, consistency, etc.), the endocrinologist may elect to perform a thyroid nodule biopsy and/or iodine 131 uptake procedure.

Elevated thyroid hormones with a decreased BUN/Creatinine and a low or low normal TSH, consider iodine deficiency.

Order thyroid peroxidase AB and thyroglobulin AB. High levels are typical of hashimoto's thyroiditis and also grave's disease. Thyroid peroxidase is an enzyme required for the conversion of thyroxine (T4) to the active thyroid hormone T3 (triiodothyronine). Thyroglobulin AB are antibodies directed against thyroid tissue directly.

Bone density testing, urinary hydroxyproline, high sensitivity TSH, free T4, total T4, free thyroxine index, T3 uptake should be included for those patients with a low TSH level as hyperthyroidism may precipitate bone loss.

Drug-Nutrient / Drug-Laboratory Interactions: Amiodarone, anabolic steroids, antithyroid drugs, aspirin, carbamazepine, clofibrate, corticosteroids, danazol, dobutamide, dopamine, fenoldopam, growth hormone-releasing hormone, hydrocortisone, interferon, levodopa, levothyroxine, nifedipine, octreotide, phenytoin, pimozide, pyridoxine, somatostatin, thyroxine, troleandomycin.

Recommended Nutritional Products:

Body System: Immune

The Immune Body System has been selected because one or more laboratory measurements for this patient suggest a potential or present disturbance involving either the bone marrow, white blood cells, thymus gland, enteric (GI tract) immune system (MALT), or other immune-related systems.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
BASOPHILS %	0.51	%	0.00 - 0.90	0.00 - 2.00

Test Description: Basophils are a type of white blood cell. They are phagocytic in nature and also produce and release serotonin, heparin, and histamine from their cytoplasmic granules. The basophil is known as a mast cell when it is located within tissues. Basophils are likely involved in the inflammatory process due to the release of various compounds named above.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
BASOPHILS (ABSOLUTE)	0.04	10 ³ /uL	0.00 - 0.10	0.00 - 200.00

Test Description: Basophils are a type of white blood cell. They are phagocytic in nature and also produce and release serotonin, heparin, and histamine from their cytoplasmic granules. The basophil is known as a mast cell when it is located within tissues. Basophils are likely involved in the inflammatory process due to the release of various compounds named above.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
EOSINOPHILS %	1.66	%	0.00 - 6.10	0.00 - 5.00

Test Description: Eosinophils release interferons and are associated with antigen-antibody reactions. Allergic response seen in many skin diseases, environmental and food allergies, and parasitic infections may increase the eosinophil count.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
EOSINOPHILS (ABSOLUTE)	0.12	10 ³ /uL	0.00 - 0.50	L 15.00 - 550.00

Test Description: Eosinophils release interferons and are associated with antigen-antibody reactions. Allergic response seen in many skin diseases, environmental and food allergies and parasitic infections may increase the eosinophil count.

Findings and Considerations: A clinically or functionally low eosinophil (absolute) count is present.

Common Conditions: A low value of this lab parameter may be the desired outcome of therapeutic efforts.

Lab Relationships, Evaluations and Followup: A low value of this lab parameter may be the desired outcome of therapeutic efforts.

Drug-Nutrient / Drug-Laboratory Interactions: Amphotericin B aspirin, captopril, desipramine, glucocorticoids (eg. cortisone, hydrocortisone, prednisone), granulocyte colony-stimulating factor, indomethacin, interferon-alpha, niacin/niacinamide, procainamide.

Recommended Nutritional Products:

Immuno Balance-20 (Blood Detective Nutritionals) : Take one twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
GLOBULIN	2.3	g/dL	1.80 - 4.00	L 2.40 - 3.00

Test Description: Globulin is a vital protein composed of over 60 separate proteins. Globulins assist in maintaining immune function and combating infection. The serum total protein value is actually composed of various serum proteins such as albumin and globulin. The various subtypes of globulins may be measured with protein electrophoresis (PEP) yielding the percentages of alpha-1 globulins, alpha-2 globulins, B-1 globulins, B-2 globulins, and gamma-globulins. Further analysis with immunoelectrophoresis measurements or quantitative analysis will further yield percentages of IgG, IgA, IgM, IgD, and IgE. The alpha and beta types of serum globulins are produced in the liver.

Findings and Considerations: A clinically or functionally low total globulin level is present. Low serum globulin may result from various degrees of splenic dysfunction or disease, protein insufficiency and or malnutrition and malabsorption syndromes. Consider supplementation with hydrochloric acid and a high-quality protein.

Common Conditions: Chronic digestive tract inflammation, heavy metal toxicity, anemia, chronic viral and or bacterial infection, degenerative arthritis, hypochlorhydria, hepatic dysfunction, immune disorder, inflammatory bowel disorders (i.e., crohn's disease and ulcerative colitis), cardiac dysfunction, renal dysfunction, alcoholism, exercise, obstructive jaundice. Consider an inflammatory gastrointestinal digestive process with reduced levels of serum albumin, globulin, creatinine, phosphorus, and total proteins. Reduced globulin levels might suggest chronic immune activation as the globulins are used up immunologically by various tissues, including but not limited to the kidneys, liver, heart, thymus, joints/cartilage and spleen.

Lab Relationships, Evaluations and Followup: As globulin is a protein composed of many immunoglobulins, a low value suggests either a greater need for precursor amino acids to generate immunoglobins and/or a reduced production by the immune system. Considering ordering IgG, IgM and IgA to differentiate which of these common immunoglobins are low. - Low immunoglobulin M (IgM): Found principally in the blood and is the first antibody produced as a result of antigenic challenge. Most effective against invading organisms serving as a cell agglutinator and cytolytic agent. Importantly, low IgM levels are often associated with mercury toxicity. Paradoxically, high levels of IgM may also be associated with mercury toxicity. - Order RBC, 24-hr urine and serum metals: testing in all three tissue compartments is necessary given the ability of metals to sequester (accumulate and gravitate) to various tissue compartments. Order gliadin AB (IgG and IgG) serum tests for gluten sensitivity that contributes to varying degrees of malabsorption and low globulin levels. - Order serum hemoglobin, hematocrit and total protein. Low or low normal levels are suggestive of malnutrition and/or malabsorption. - A malabsorption panel should include: transglutaminase, reticulon and gliadin IgA and IgG antibodies. A low phosphorous and globulin value concomitant with an increased basophil count, BUN, ESR and/or CRP (cardio) suggests a condition affecting the digestive tract. - Hypochlorhydria may result in a low total protein, normal or low serum albumin, and low levels of phosphorus. Heidelberg capsule testing is available, but is not particularly reliable, for determining relative states of hypo-, hyper- and achlorhydria. Clinical response to HCL/pepsin is probably the most appropriate test. - When albumin, globulin or total protein levels are

low: measure urinary protein (high levels concomitant with low serum levels consider renal dysfunction or disease process). - Retinyl-binding globulin is a good test for overall protein nutriture. If low, protein (amino acid) supplementation may be helpful.

Drug-Nutrient / Drug-Laboratory Interactions: A low value of this lab parameter may be the desired outcome of successful therapeutic endeavors.

Recommended Nutritional Products:

Active Folate (Blood Detective Nutritionals) : Take one twice per day with food or as directed by your health care provider.

B12-Methylated (Blood Detective Nutritionals) : Take 1 dropper or more per day or more with or without food as directed by your health care provider.

Betaine Hydrochloride - Absorption Support (Blood Detective Nutritionals) : Take once capsule just before or during each meal, or as directed by a physician.

Green Detox (Blood Detective Nutritionals) : Take two scoops per day dissolved in a chilled beverage or more as directed by your health care provider.

Longevity Factors (Blood Detective Nutritionals) : Take one per meal or as directed by your health care provider.

Milk Thistle - Sylimarin (Blood Detective Nutritionals) : Take 1 tablet twice daily with meals unless otherwise directed by your health care provider.

Reds Protect (Blood Detective Nutritionals) : Take two scoops per day dissolved into a chilled beverage unless otherwise instructed by your health care provider.

Whey 26 Vanilla Powered Protein (Blood Detective Nutritionals) : Take two scoops per day mixed in a chilled beverage or more as directed by your health care provider.

Zinc Picolinate (Blood Detective Nutritionals) : Take one tablet with meals per day unless otherwise instructed by your health care provider.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
IMMUNOGLOBIN A	181	mg/dL	66.00 - 433.00	90.00 - 475.00

Test Description: Immunoglobulin A is the most common Ig that is found to be deficient in the general population. Approximately 20% of the population also show a lack of IgG2 and IgG4 increasing the risk of infection. Five common types of immunoglobins are known and include: IgA, IgG, IgM, IgD, and IgE. Immunoglobulin levels may change as a response to various immunological stimuli. Immunoglobins are secreted by B-lymphocytes as a part of the humoral immune system and may be measured in a variety of body fluids including tears, saliva, colostrum, and other secretions as well as the blood. As immune responses progress, the B-lymphocytes produce more IgA, IgG,

and/or IgE. The switch of production of the various immunoglobins is due to a collaborative effort between the B-lymphocytes and the CD4 plus T-lymphocytes (helper cells). The complement system will increase the antibody antigen response of the humoral immune system.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
IMMUNOGLOBIN E	8.41	IU/ml	2.00 - 114.00	L 40.00 - 400.00

Test Description: IgE represents the Ig that is involved in Type I Hypersensitivity reactions in response to allergens and parasites. Five common types of immunoglobins are known and include: IgA, IgG, IgM, IgD, and IgE. Immunoglobulin levels may change as a response to various immunological stimuli. Immunoglobins are secreted by B-lymphocytes as a part of the humoral immune system and may be measured in a variety of body fluids including tears, saliva, colostrum, and other secretions as well as the blood. The IgM class of immunoglobins is the first response to potential infection. IgA is the predominant form of Ig found in the mucous membranes. IgG tend to reflex prior immune system exposure to a toxin, and are the most abundant class in most tissues and in the plasma. As immune responses progress, the B-lymphocytes produce more IgA, IgG, and/or IgE. The switch of production of the various immunoglobins is due to a collaborative effort between the B-lymphocytes and the CD4 plus T-lymphocytes (helper cells). The complement system will increase the antibody antigen response of the humoral immune system.

Findings and Considerations: A low value of this laboratory parameter may be the desired outcome of therapeutic efforts.

Common Conditions: A reduction if IgE may represent a beneficial response to successful therapeutic efforts.

Lab Relationships, Evaluations and Followup: An interpretation is not clinically relevant except to evaluate the reduction of elevated IgE levels from previously elevated values. CLINICAL PEARL Supplementation with immunoglobulins of any class may either decrease and/or increase immunoglobulin levels depending upon the needs of the individual. It is appropriate for the practitioner to consider supplementation, for example, with immunoglobulin G, even in those patients with high or low IgG levels: this concept applies to all immunoglobulin classes.

Drug-Nutrient / Drug-Laboratory Interactions: Phenytoin, ZYRTEC® (cetirizine HCl), Alavert® (oratadine), Brompheniramine (brand names: Dimetapp Cold & Allergy Elixir, Robitussin Allergy & Cough Liquid) , Chlorpheniramine (one brand name: Singlet) , Dimenhydrinate (one brand name: Dramamine Original) , Diphenhydramine (Benadryl Allergy, Nytol, Somnex) , Doxylamine (Vicks NyQuil, Alka-Seltzer Plus Night-Time Cold Medicine)

Recommended Nutritional Products:

Test Name	Results	Units	Clinical Range	Functional Range
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IMMUNOGLOBIN M	74	mg/dL	Adult Male 45.00 - 281.00	Adult Male 53.00 - 300.00
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Test Description: The IgM class of immunoglobins is the first response to potential infection. Five common types of immunoglobins are known and include: IgA, IgG, IgM, IgD, and IgE. Immunoglobulin levels may change as a response to various immunological stimuli. Immunoglobins are secreted by B-lymphocytes as a part of the humoral immune system and may be measured in a variety of body fluids including tears, saliva, colostrum, and other secretions as well as the blood. IgA is the predominant form of Ig found in the mucous membranes. The switch of production of the various immunoglobins is due to a collaborative effort between the B-lymphocytes and the CD4 plus T-lymphocytes (helper cells). The complement system will increase the antibody antigen response of the humoral immune system.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
MONOCYTES %	13.9	%	H 3.80 - 10.00	H 2.00 - 7.00

Test Description: Monocytes are a type of white blood cell produced in the bone marrow. Monocytes survive for about a day in the general circulation before they enter tissues. Once in tissues monocytes mature into macrophages. Monocyte numbers increase during times of immune activation taking up residence in tissues keeping them clear of debris and antigen. Monocytes can travel from tissue to tissue as needed in response to body needs.

Findings and Considerations: A clinically or functionally high level of monocytes is present. Supplement with bioflavanoids, vitamin C, immunoglobulins and n-acetylcysteine.

Common Conditions: Consider viral, parasitic bacterial infection, urinary tract infection or congestion, prostate hypertrophy when the creatinine is elevated, hepatic dysfunction.

Lab Relationships, Evaluations and Followup: Compare with total white blood cells count as well as the percentage and absolute numbers of the other white blood cell subtypes. - Order a complete immune complex test for this patient that includes Type III immune reactions. - Order serum immunoglobulin levels of the IgA, IgG and IgM class. Order a high-sensitivity C-Reactive Protein (CRP) and an ESR (erythrocyte sedimentation rate) to determine the extent, if any, of an inflammatory component. Consider the presence of intestinal parasites with increased serum eosinophils, increased IgE, the presence of parasites and/or ova in a comprehensive digestive stool analysis, and normal or increased levels of monocytes and basophils. Parasites increase the tendency for metals accumulation. Consider intestinal parasites with decreased or normal serum iron as well as hemoglobin and hematocrit. Consider liver dysfunction or disease with increased levels of AST, LDH, ALT, total bilirubin (direct bilirubin), increased serum iron, ferritin, and monocytes along with decreased levels of BUN, albumin, albumin-globulin ratio, cholesterol, total protein, and triglycerides.

Drug-Nutrient / Drug-Laboratory Interactions: Ampicillin, carbenicillin, granulocyte colony-stimulating factor, griseofulvin, haloperidol, interleukin-3, methsuximide, phosphorus, piperacillin, prednisone, propylthiouracil, tumor necrosis factor.

Recommended Nutritional Products:

Immuno Balance-20 (Blood Detective Nutritionals) : Take one twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range		Functional Range	
			Adult Male	Adult Male	Adult Male	Adult Male
MONOCYTES (ABSOLUTE)	1	10 ³ /uL	H	0.20 - 0.90	L	200.00 - 950.00

Test Description: Monocytes are a type of white blood cell produced in the bone marrow. Monocytes survive for about a day in the general circulation before they enter tissues. Once in tissues monocytes mature into macrophages. Monocyte numbers increase during times of immune activation taking up residence in tissues keeping them clear of debris and antigen. Monocytes can travel from tissue to tissue as needed in response to body needs.

Findings and Considerations: A clinically or functionally low level of absolute monocytes (monocytopenia) is present. A reduced absolute monocyte count is associated with a reduced ability to fight infections (mainly viral), impaired ability to gather cellular debris of old and dying cells and abnormal cells (i.e., cancer cells). Supplement with vitamin C, bioflavonoids and n-acetylcysteine.

Common Conditions: Immune disorders, infections, inflammation, myeloproliferative disorders, medications and toxicants.

Lab Relationships, Evaluations and Followup: Consider congestion of urinary tract with increased creatinine and monocytes. Compare with total WBCs, percentage, and absolute numbers of individual subgroups of white blood cells to more fully evaluate immune function.

Drug-Nutrient / Drug-Laboratory Interactions: Asparaginase, captopril, chloramphenicol, corticosteroids, cimetidine, cyclophosphamide, fluorouracil, gold salts, imipramine, indomethacin, methimazole, methotrexate, nitrofurantoin, penicillins, phenothiazines, phenylbutazone, phenytoin, procarbazine, propylthiouracil, sulfonamides, thioridazine, estrogens, chemotherapy and radiation, heavy metal toxicity, granulocyte colony-stimulating factor.

Recommended Nutritional Products:

Immuno Balance-20 (Blood Detective Nutritionals) : Take one twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range		Functional Range	
			Adult Male	Adult Male	Adult Male	Adult Male
MPV	8.39	fL		6.00 - 12.00	L	9.50 - 10.00

Test Description: MPV (mean platelet volume) is associated with platelet activity and an increased risk of vascular events when elevated. An increased MPV may also indicate enlarged platelets and activation of the adrenergic nervous system (thrombocytopoiesis).

Findings and Considerations: A clinically or functionally low MPV level is present. An increased number of platelets may be associated with an increased cardiovascular risk (thrombotic). Consider supplementation with zinc, vitamin C, folic acid, vitamin B12 and folic acid.

Common Conditions: Chronic bacterial and/or viral infections, lupus, bone marrow depression (from radiation chemotherapy or heavy-metal toxicity and oxidative stress), pancreatic deficiency, diet high in raw foods, hepatitis, neoplasms, anterior pituitary dysfunction, rheumatoid arthritis, food allergies, weak adrenals and dysfunction, vitamin B6, B12, and folic acid deficiency.

Lab Relationships, Evaluations and Followup: Retest CBC and chemistry in several weeks. Order a platelet aggregation test if a hereditary or acquired qualitative platelet defect is suspected.

Drug-Nutrient / Drug-Laboratory Interactions: Amoxapine, auranofin, clindamycin, danazol, dipyridamole, gemfibrozil, glucorticoids, imipenem, interferon-alpha, interleukin-1-beta, interleukin-3 isotretinoin, lithium, metoprolol, miconazole, moxalactam, oral contraceptives, phosphorus, propranolol, tumor necrosis factor, zidovudine.

Recommended Nutritional Products:

Green Detox (*Blood Detective Nutritionals*) : Take two scoops per day dissolved in a chilled beverage or more as directed by your health care provider.

Immuno Balance-20 (*Blood Detective Nutritionals*) : Take one twice per day with meals or as directed by your health care provider.

Longevity Complete (*Blood Detective Nutritionals*) : Take one scoop twice per day dissolved into a chilled beverage unless otherwise directed by your health care provider.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
RHEUMATOID FACTOR	6.6	IU/mL	0.00 - 14.00	0.00 - 50.00

Test Description: RF is a non-specific test for rheumatoid arthritis. This test measures the amount of RF antibody produced by the immune system. This antibody attaches to several tissues causing tissue destruction. A high level of RF can result from many diseases of the immune system (typically of the autoimmune type). An asymptomatic individual, or a person who does not have RA, may occasionally have high RF levels

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
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WBC, TOTAL	7.5	10 ³ /uL	4.20 - 11.80	4.95 - 8.90
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Test Description: WBCs are the principal cells of the cell mediated immune system. The major function of this part of the immune system is to combat infection, and defend against endogenous and exogenous toxic insults. Very high values are seen in leukemia and in acute/chronic immune responses. Low levels are often seen in bone marrow depression, malnutrition/malabsorption and may also be genetically low.

Body System: Inflammatory

The Inflammatory Body System has been selected because one or more laboratory measurements for this patient suggest a potential or present disturbance involving inflammatory regulation and control. The inflammatory response is always a reaction to some degenerative and/or oxidative process. A large variety of disease and dysfunction states may result from or cause an acute or chronic inflammatory process. Different types of inflammatory and immune markers may help to elucidate the origin and/or extent of either local or system inflammatory responses.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
CRP (CARDIO)	36.7	MG/L	H 0.00 - 3.00	H 0.00 - 2.00

Test Description: The main function of CRP is to collect and transport cellular debris that have been formed from a degenerative process. As a scavenger protein, CRP presents debris to phagocytic cells of the reticuloendothelial system for elimination. In this capacity, CRP actually take part in the metabolic "clean-up" process. Therefore, similar to cholesterol, cardio- and the standard CRP measurement are responding to the inflammatory-degenerative process. CRP is produced in the intestinal tract by the GALT (gut-associated lymphoid tissue), and its production may be increased as a response to an inflammatory and/or destructive process. C-reactive protein was originally discovered by Tillett and Francis in 1930 as a substance in the serum of patients with acute inflammation that reacted with the C polysaccharide of pneumococcus [1].

Findings and Considerations: A clinically or functionally high CRP is present. Consider the presence of an infective and/or inflammatory process. Consider supplementation with lipoic acid, vitamin C, niacin, echinacea, fish oil, glutamine, acidophilus, saccromyces boulardii and pancreatic enzymes. Cardiology diagnostic test - Low risk: <1mg/L - High risk: >3mg/L - How to lower: Exercise, stop smoking, flaxseed, aspirin, niacin, statins, alcohol, clean teeth

Common Conditions: Cardiovascular disease, bacterial infections (including those of periodontal origin), toxicity, coronary artery disease, diabetes mellitus, familial factors, hypothyroidism, obstructive jaundice, nephrosis, pancreatitis, colon cancer, inflammatory bowel conditions (i.e., crohn's disease and ulcerative colitis), pregnancy, and many other conditions of a degenerative and/or inflammatory nature. Role in cardiovascular disease - Recent research suggests that patients with elevated basal levels of CRP are at an

increased risk for diabetes, hypertension and cardiovascular disease. A study of over 700 nurses showed that those in the highest quartile of trans fat consumption had blood levels of C-reactive protein (CRP, a pro-inflammatory cytokine which is a cardiovascular disease risk factor) that were 73% higher than those in the lowest quartile. Although one group of researchers indicated that CRP may only be a moderate risk factor for cardiovascular disease, this study (known as the Reykjavik Study) was found to have some problems for this type of analysis related to the characteristics of the population studied, and there was an extremely long follow-up time which may have attenuated the association between CRP and future outcomes. Others have shown that CRP can exacerbate ischemic necrosis in a complement-dependent fashion and that CRP inhibition can be a safe and effective therapy for myocardial and cerebral infarcts. To measure the CRP level, a "high-sensitivity" CRP or hs-CRP test needs to be performed and analyzed by a laboratory. This is an automated blood test designed for greater accuracy in measuring low levels of CRP, which allows the physician to assess cardiovascular risk. If a result in the low-risk range is found (< 1 mg/L), it does not need repeating. Higher levels need repeating, and clinical evaluation as necessary. Role in colon cancer - Role of inflammation in cancer is not well known. Some organs of the body show greater risk of cancer when they are chronically inflamed. Blood samples of persons with colon cancer have an average CRP concentration of 2.69 milligrams per liter. Persons without colon cancer average 1.97 milligrams per liter. The difference was statistically significant [9]. These findings concur with previous studies that indicate that anti-inflammatory drugs could lower colon cancer risk .

Lab Relationships, Evaluations and Followup: Consider increased RBC destruction with increased total bilirubin (increased indirect bilirubin) along with reduced RBC: increased levels of LDH, basophils, MDA (malonyldialdehyde), CRP, ESR, and fibrinogen may be present. If protein malnutrition exists, CRP levels may fail to rise until the malnutrition is corrected. Order: total WBC count, retinyl binding protein and review a 3-day dietary log of the patient to further evaluate overall nutritional status. Consider a chronic viral infectious process with increased or decreased serum iron, serum ferritin, CRP, and viral loads along with reduced total WBCs and reduced lymphocytes (chronic). Consider increased intestinal permeability (Leaky Gut Syndrome) with increased levels of serum alkaline phosphatase, uric acid, and increased C-reactive protein or a normal or high-normal serum fibrinogen. Infections - Examine the total WBCs and percentage of WBCs as increases in CRP may indicate an infectious process. - Order an ESR (erythrocyte sedimentation rate) to further assess the extent of the inflammatory process. - Helicobacter pylori antibodies (IgM, IgG and IgA) of the stool, or measured by endoscopy - H. Pylori testing indicates whether or not this opportunistic infectious is responsible for the increased CRP value. - Plasma H. pylori AB levels are not reliable for determining the presence of an active infection. - Other tests of an infectious or immune process that could increase the CRP include, but are by no means limited to: - Mycoplasma pneumonia AB (Multiple Sclerosis) - Bacterial lipopolysaccharides (LPS) - Comprehensive digestive stool analysis - Cultures (urine, blood, stool, etc.) - Serum immunoglobins IgM, IgG and IgA - Viral capsid antigen (EB-VCA) along with an early antigen D (EB-anti-D). - When positive along with chronic fatigue and malaise helps to determine if infection is past or new or is a re-infection. - Fungal Panel - Candida AB - Histoplasma AB - Aspergillus AB - Coccidioides AB - Blastomyces AB - Candida immunoglobulins (IgG, IgA, IgM) - Stool analysis (specific organisms) - *mycoses are opportunistic and not usually pathogenic unless they enter a compromised host. - Exposure to ionized radiation, corticosteroids, immunosuppressants, antimetabolites, AIDS, diabetes, lymphoma, etc. Laboratory Indicators of Increased Cardiovascular Risk that should be considered along with elevated CRP (cardio) include: - High cholesterol/HDL ratio - LDL/HDL ratio - Low HDL - High LDL - High Triglycerides - High platelet count - High uric acid levels - High fibrinogen levels (or other coagulation markers) - Low selenium levels (inversely proportional to cardiovascular risk) - Low carotene levels (inversely proportional to cardiovascular risk) FIATM analysis for this nutrient, or for nutritional factors affecting this laboratory parameter, will reveal intracellular needs based on DNA stimulated response to

radioactive thymidine in the laboratory. In many cases this author believes that this is the most clinical useful test measure available. Performed by SpectraCell Laboratories, Inc (1-800-227-5227).

Drug-Nutrient / Drug-Laboratory Interactions: No medications are thought to increase CRP levels. A reduced level of this laboratory parameter may be the desired outcome of therapeutic efforts.

Recommended Nutritional Products:

Alpha-Lipoic Acid (Blood Detective Nutritionals) : Take one tablet daily with foods unless otherwise directed by your health care provider.

Longevity Factors OX-Redox Agents (Blood Detective Nutritionals) : Take as directed unless otherwise instructed by your health care provider.

Reduced Glutathione (Blood Detective Nutritionals) : Take one tablet twice per day with meals unless otherwise directed by your health care provider.

Vitamin E Complex (Blood Detective Nutritionals) : Take one per day with meals unless otherwise directed by your health care provider.

Body System: Mineral Balance

The Mineral Balance Body System has been selected because one or more laboratory measurements for this patient suggest a potential or present disturbance involving electrolytes (minerals) including, calcium, magnesium, chloride and sodium. However, disturbances of function of the lungs, kidney's, adrenals, gastrointestinal tract and/or hormonal and nervous system may also cause or contribute to mineral disturbances. Therefore, this body system may have been selected when it is not obvious that a mineral imbalance(s) exists.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
CALCIUM	9.3	mg/dL	8.60 - 10.50	9.20 - 10.10

Test Description: This mineral is the most abundant in the body and is stored mostly in the bones and teeth. One percent of the body calcium is used for blood clotting mechanisms, muscle and nervous system function, and for various enzymatic processes, and approximately 50% is bound to albumin. High calcium levels may be due to laboratory error, a metastatic cancerous process or hyperparathyroidism. Low calcium levels may result from laboratory error, calcium deficiency, malabsorption/malnutrition, and a variety of other causes.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
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POTASSIUM	3.6	mmol/L	3.50 - 5.10	L	4.00 - 4.50
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Test Description: Potassium is an electrolyte that is essential for a variety of intercellular functions. Along with sodium, potassium is important for “water balance” in the body. Like sodium, it assists in the regulation of the body’s fluid balance and pH. Potassium is the primary intracellular ion because it is in higher concentration than other electrolytes. Small amounts of potassium are in the serum and is essential for cardiac and neuromuscular function. Only small changes in serum potassium levels are needed to have profound effect on cardiac muscle tissue.

Findings and Considerations: A clinically or functionally low level of serum potassium is present. Low potassium may have resulted from chronic diarrhea or dehydration. Supplement with a potassium-magnesium supplement and an adrenal glandular.

Common Conditions: Essential hypertension (benign), Beta-hydroxylase deficiency, cirrhosis, diuretics, ectopic ACTH excess, familiar periodic paralysis, hyperadrenalism, hyperglycemia, malnutrition, metabolic acidosis, vomiting, nephrosis, periodic paralysis, acute renal failure.

Lab Relationships, Evaluations and Followup: Order a full electrolyte panel that includes chloride, sodium and magnesium. Zinc may also be included. Order RBC zinc for the best longterm evaluation. Consider metabolic acidosis with increased CO2 coupled with reduced levels of serum calcium, chloride, and potassium. Order a serum or urinary malonyldialdehyde (MDA) for excess oxidative stress. MDA is a measure of cell membrane peroxidation. Antioxidant supplementation should be continued and adjusted as needed until normal values of MDA are present.

Drug-Nutrient / Drug-Laboratory Interactions: Heavy glucose loading, some diuretics including the so-called “potassium sparing” types.

Recommended Nutritional Products:

Magnesium Complex (*Blood Detective Nutritionals*) : Take one twice per day or as directed by your health care provider.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
SELENIUM	160	ug/L	23.00 - 190.00	74.00 - 0.00

Test Description: Trace amounts of selenium are necessary for cellular function in most, if not all, animals, forming the active center of the enzymes glutathione peroxidase and thioredoxin reductase (which indirectly reduce certain oxidized molecules in animals and some plants) and three known deiodinase enzymes (which convert one thyroid hormone to another). Selenium has a biological role, and is found in organic compounds such as dimethyl selenide, selenomethionine, selenocysteine and methylselenocysteine. It is a component of the unusual amino acids selenocysteine and selenomethionine. In humans, selenium is a trace element nutrient which functions as

cofactor for reduction of antioxidant enzymes such as glutathione peroxidases and certain forms of thioredoxin reductase found in animals and some plants (this enzyme occurs in all living organisms, but not all forms of it in plants require selenium).

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
SODIUM	139	mmol/L	136.00 - 145.00	137.50 - 142.50

Test Description: Sodium is an electrolyte that is essential for proper "water-balance" in the body. Problems with sodium balance may be a sign of sodium deficiency, kidney problems, and conditions of the adrenal glands and heart. This electrolyte has the highest serum concentration of any electrolyte. Changes in serum sodium are rarely seen as varying levels are correlated with fluid imbalance. Sodium is the primary electrolyte responsible for maintaining osmotic pressure in extracellular fluid. As "water goes where salt is" one must interpret changes in serum sodium along with other markers of either fluid overload or dehydration.

Body System: Nutrition

The Nutrition Body System has been selected because one or more laboratory measurements for this patient suggest a potential or present disturbance involving micro- and macro-nutrition balance. Deficiencies, excesses or inappropriate metabolism of vitamins, minerals, enzymes, proteins, carbohydrates and/or fats may exist in this patient. It is essential to realize that abnormal serum or plasma levels of these nutritional elements may not actually exist upon laboratory testing. A "normal" clinical or functional value of a nutritional element does not indicate whether or not optimal metabolic function is present. Nutritional interpretation of the CBC, Chemistry and supportive tests help uncover functional nutritional needs. Blood Logic can also interpolate nutritional inadequacies indirectly. Either high or low clinical or functional levels of many of the Recommended laboratory panels may either directly or indirectly correlate with inadequate nutritional levels or utilization.

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
FERRITIN	134.5	ng/mL	23.90 - 336.20	40.00 - 200.00

Test Description: This molecule is a protein-bound form of iron. Serum and red blood cell ferritin levels reflect longterm iron deficiency, or excess ferritin-iron storage in tissues. Ferritin is an excellent marker of inflammation in the absence of iron anemia, or iron storage anemia. As ferritin is a protein bound form of iron low ferritin levels may indicate inadequate dietary protein.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
FMT™ FOLATE	15.2	ng/mL	5.90 - 24.80	L 32.00 -

Test Description: Folic acid is essential to the development of healthy blood cells, nerve cells, and proteins in the body. As a nutritional supplement folic acid treats or prevents folic acid deficiency and certain types of anemia. It helps treat tropical sprue, a condition sometimes seen in people who travel to tropical climates, in which food nutrients are not properly absorbed. There is also increasing evidence that some birth defects (neural tube defects or spina bifida) are related to lack of folic acid. These may be prevented if the mother has enough folic acid before and during her pregnancy. Generic folic acid tablets are available. Some multivitamin products for use as dietary supplements contain small amounts of folic acid.

Findings and Considerations: FMT™ testing reveals a functional inadequacy of folate. Folic acid supplementation is suggested by itself and/or in addition to a comprehensive multivitamin. Hydrochloric acid may also improve the metabolic activation of folic acid. Folate is necessary for the production and maintenance of new cells. This is especially important during periods of rapid cell division and growth such as infancy and pregnancy. Folate is needed to replicate DNA. Thus folate deficiency hinders DNA synthesis and cell division, affecting most clinically the bone marrow, a site of rapid cell turnover. Because RNA and protein synthesis are not hindered, large red blood cells called megaloblasts are produced, resulting in megaloblastic anemia.[2] Both adults and children need folate to make normal red blood cells and prevent anemia.[3]

Common Conditions: - Pernicious anemia, gout, atrophic gastritis, malabsorption and inflammatory conditions including, crohn's disease, ulcerative colitis, celiac disease, spina bifida, depression, anecephaly, neural tube defects, cognitive impairment, cardiovascular disease, blood clots, hyperhomocysteinuria, hypermethyurea, increased stroke risk, greater risk of cancer of the breast, prostate and colon and deficiency associated with excessive alcohol consumption. - Folic acid and methotrexate for cancer Folate is important for cells and tissues that rapidly divide. Cancer cells divide rapidly, and drugs that interfere with folate metabolism are used to treat cancer. Methotrexate is a drug often used to treat cancer because it inhibits the production of the active form, tetrahydrofolate. Unfortunately, methotrexate can be toxic,[44][45][46] producing side effects such as inflammation in the digestive tract that make it difficult to eat normally. - Folinic acid is a form of folate that can help "rescue" or reverse the toxic effects of methotrexate.[47] Folinic acid is not the same as folic acid. Folic acid supplements have little established role in cancer chemotherapy. There have been cases of severe adverse effects of accidental substitution of folic acid for folinic acid in patients receiving methotrexate cancer chemotherapy. It is important for anyone receiving methotrexate to follow medical advice on the use of folic or folinic acid supplements. - Folic acid and methotrexate for non-cancerous diseases Low dose methotrexate is used to treat a wide variety of non-cancerous diseases such as rheumatoid arthritis, lupus, psoriasis, asthma, sarcoidosis, primary biliary cirrhosis, and inflammatory bowel disease. Low doses of methotrexate can deplete folate stores and cause side effects that are similar to folate deficiency. Both high folate diets and supplemental folic acid may help reduce the toxic side effects of low dose methotrexate without decreasing its effectiveness. Anyone taking low dose methotrexate for the health problems listed above should consult with a physician about the need for a folic acid supplement. - Folate is necessary for fertility in both men and women. In men, it contributes to spermatogenesis. In women, on the other hand, it contributes to oocyte maturation,

implantation, placentation, in addition to the general effects of folic acid and pregnancy. Therefore, it is necessary to receive sufficient amounts through the diet, in order to avoid subfertility.

Lab Relationships, Evaluations and Followup: - An abnormal FMT™ percentage for this nutritional factor indicates an increased lymphocyte requirement for this patient. FMT™ retesting is recommended no later than three months from the date of the test abnormality. Folic acid deficiency, when chronic, will result in hyperlobulation of WBC nuclei as a consequence of overaging. - Consider the following tests for folic acid assessment: homocysteine and methylmalonic acid, RBC folacin, neutrophil hypersegmentation and the CBC (looking for macrocytic anemia). - Organic acid analysis may be of use for functional utilization of vitamin overall B-vitamin status: Examples of abnormal levels of organics and specific vitamin indicators in a urine sample indicating increased need for B-vitamins in general include - - alpha-ketoglutarate, malate, pyruvate, alpha-ketoisovalerate, kynurenate, xanthurenate, methylmalonate, FIGLU, , alpha-hydroxybutyrate, adipate, suberate and ethymalonate. FIGKU is specific for an increased need for folic acid. - Malabsorption (i.e., celiac disease), malnutrition, inflammatory bowel disorders such as crohn's disease and ulcerative colitis. - Consider order tests for the presence of malabsorption syndrome including gluten intolerance in the form of celiac disease: transglutaminase, reticulin and gliadin IgA and IGG. - Heidelberg Capsule Test: This test is used to evaluate the HCL and pepsin output of the parietal and chief cells of the stomach. - Pancreatic Function: amylase and lipase levels may be low or low normal indicating a need for supplementary pancreatic enzymes that have resulted in malabsorption syndrome. - Endoscopy: the test of choice to determine the presence of atrophic gastritis - Pernicious Anemia: Perform the Shilling's Test - Homocysteine: used to determine the functional need for folic acid, B12 and vitamin B6. - Methylmalonic acid: used to determine the functional need for B12, folic acid and vitamin B6 (not as accurate as homocysteine for vitamin B12 status).

Drug-Nutrient / Drug-Laboratory Interactions: - Magnesium and aluminum antacids, bile acid sequesterants, H2 blockers, PPIs, potassium sparing diuretics, alcoholic beverages, anticonvulsants, salicylates, corticosteroids, NSAIDs, oral contraceptives, metformin, methotrexate, trimethoprim containing antibiotics and sulfasalazine reduce the absorption of folic acid.

Recommended Nutritional Products:

Test Name	Results	Units	Clinical Range Adult Male	Functional Range Adult Male
HEMATOCRIT	46	%	40.00 - 50.40	40.00 - 48.00

Test Description: The hematocrit is also known as the packed cell volume and is considered the best way to determine the percentage of red blood cells in the plasma. The hematocrit is a percentage and represents the proportion of RBCs to plasma. If dehydration is present the hematocrit will not be a reliable measurement of red blood cells.

Test Name	Results	Units	Clinical Range	Functional Range
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HEMOGLOBIN	16.2	g/dL	Adult Male 13.10 - 17.10	H	Adult Male 13.50 - 15.00
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Test Description: Hemoglobin contains a pigment known as heme which contains iron and the protein globulin. If the red blood cell has a normal amount of hemoglobin then the hematocrit value should be approximately three times that of the hemoglobin. Hemoglobin is the molecule that carries oxygen in the body. Hemoglobin is typically low in iron-deficiency anemia, and increased in conditions involving oxygen deficits.

Findings and Considerations: A clinically or functionally high hemoglobin level is present. Supplementation must be guarded so as not to interfere adversely with clotting mechanisms.

Common Conditions: Characteristic of emphysema and/or asthma, small intestine inflammation, myeloproliferative disorder, B6 deficiency, primary or relative polycythemia, dehydration, medications such as methyldopa and gentamicin, diarrhea, adrenal dysfunction and B6 anemia. Increased levels of hemoglobin may suggest a myeloproliferative disorder. Hemoglobin, hematocrit, and RBCs are higher in newborns, lower by one year of age, and adult levels by 8-13 years. Infants have some fetal hemoglobin and may thus have higher levels at birth and for several weeks after.

Lab Relationships, Evaluations and Followup: Consider an asthmatic condition with increased HCT, HGB, increased eosinophils, and neutrophils, and an increased or normal WBC (total) count. Smokers also often demonstrate elevated HCT and HGB levels as a metabolic compensation. Consider dehydration with increased levels of potassium, sodium, albumin, BUN, increased total protein, and increased hemoglobin, hematocrit, and red blood cells. Consider emphysema with increased or normal CO2 levels, increased hematocrit and red blood cells, along with a normal or decreased serum chloride level, and a reduced alpha-1 globulin level. Consider a B6 anemia and order serum B6 levels.

Drug-Nutrient / Drug-Laboratory Interactions: Diuretics may produce a falsely elevated hematocrit by inducing dehydration.

Recommended Nutritional Products:

Multivitamin Mineral Complex (Blood Detective Nutritionals) : Take two twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range Adult Male		Functional Range Adult Male
HOMOCYSTEINE	7.5	uMOL/L	5.00 - 12.00	H	0.00 - 6.00

Test Description: Homocysteine is an amino acid that is produced by the synthesis of the amino acid cysteine from the amino acid methionine. This amino acid conversion results from the enzyme reaction involving vitamin B12 (cobalamin) and folic acid acting as an

enzyme cofactor for the enzyme, methionine synthetase. Homocysteine transports free radicals in circulation directly damaging the endothelial lining of blood vessels and associated tissues. Homocysteine has only recently been accepted as a major determinant of not only cardiovascular risk, but for a large number of inflammatory and degenerative human diseases. An elevated homocysteine level in the plasma is an important independent risk factor for cardiovascular disease.

Findings and Considerations: A clinically or functionally high homocysteine level is present. Homocysteine is the amino acid that results from the synthesis of the amino acid cysteine from the amino acid methionine. This amino acid conversion results from the enzyme reaction of vitamin B12 (cobalamin) and folic acid. Provide folic acid, vitamin B12 and B6.

Common Conditions: Cardiovascular disease, diabetes, fatigue, autoimmune conditions such as multiple sclerosis, systemic lupus erythmatosis, peripheral and cerebrovascular disease. Over fifty different disease entities are associated with elevated homocysteine levels.

Lab Relationships, Evaluations and Followup: If methylmalonic acid and homocysteine levels are increased, and vitamin B12 concentrations are even mildly decreased, suspect early B12 deficiency. If only homocysteine is increased, then order RBC folic acid levels. If methylmalonic acid levels and homocysteine levels are completely normal, it is highly unlikely that a B12 deficiency exists. Microscopy is considered the best test for determining the presence of vitamin B12 deficiency can be performed for confirmation. To more fully evaluate overall cardiovascular risk in those patients with high homocysteine, consider these lab parameters: - Examine the complete lipid panel including triglycerides, HDL, LDL and the cholesterol/HDL and cholesterol/LDL ratio. - Consider including a VAP panel that includes stratified LDL and HDL levels. - Order a serum homocysteine level to assess the functional use of folic acid, B6 and B12. - Order a serum methylmalonic acid level for an accurate assessment of B12 nutriture and compare with homocysteine levels. - Order apolipoprotein A-1 and apolipoprotein B: the ratio will be calculated on the laboratory report automatically. - Order a CRP-cardio (high sensitivity) to further evaluate cardiovascular risk and the degree of inflammation. - Order a serum ferritin: elevated levels are a cardiovascular risk factor. - Examine the serum uric acid level: increased uric acid is an independant cardiovascular risk factor. - Order fibrinogen: increased levels are a risk factor of increased cardiovascular disease predisposition. - Consider an atherosclerotic process with increased or normal cholesterol, increased triglycerides, increased platelets, LDL, and cardio C-reactive protein. - Order: Methylmalonic acid: A better indicator of vitamin B12 deficiency than homocysteine, but not as good an indicator as homocysteine for folic acid. - Homocysteine and methylmalonic acid are commonly available by commercial laboratories as a combined panel. - Urinary methylmalonic acid or homocysteine levels are generally thought to be of equivalent value compared to serum levels. - For longitudinal comparison purposes serum tests should be compared to serum and urine to urine tests. Both homocysteine and methylmalonic acid can be measured in the serum and urine: these tissue types seem to be equally accurate. FMTTM analysis for this nutrient, or for nutritional factors affecting this laboratory parameter, will reveal intracellular needs based on DNA stimulated response to radioactive thymidine in the laboratory. In many cases this author believes that this is the most clinical useful test measure available. Performed by SpectraCell Laboratories, Inc (1-800-227-5227).

Drug-Nutrient / Drug-Laboratory Interactions: Deficiency of the B-vitamins folic acid, B6, and B12. Also, low levels of vitamin C, vitamin E, and B1 may raise homocysteine levels.

Recommended Nutritional Products:

Active Folate (Blood Detective Nutritionals) : Take one twice per day with food or as directed by your health care provider.

B12-Methylated (Blood Detective Nutritionals) : Take 1 dropper or more per day or more with or without food as directed by your health care provider.

Betaine Hydrochloride - Absorption Support (Blood Detective Nutritionals) : Take once capsule just before or during each meal, or as directed by a physician.

Cardio Complex (Blood Detective Nutritionals) : Take one tablet per day with food or as directed by your health care provider.

Cerebro-Neuroplex (Blood Detective Nutritionals) : Take 1 tablet twice per day with foods or as directed by your physician.

Longevity Factors OX-Redox Agents (Blood Detective Nutritionals) : Take as directed unless otherwise instructed by your health care provider.

Multivitamin Mineral Complex (Blood Detective Nutritionals) : Take two twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
MAGNESIUM (SERUM)	2.3	MG/DL	1.70 - 2.70	L 3.00 - 6.00

Test Description: Small amounts of magnesium appear in the blood, but most is complexed with calcium and phosphorus in bone storage sites. A large number of metabolic enzymes (approximately 500) depend on magnesium for their activation and it is an essential mineral for neuromuscular function. Proper magnesium levels promote the proper physiologic function and balance of other electrolytes including, phosphorous, potassium, and calcium.

Findings and Considerations: A clinically or functionally low level of magnesium is present. Supplement with magnesium.

Common Conditions: Renal tubular acidosis, diarrhea, acute tubular necrosis, malabsorption, drugs (antibiotics), diuretics, hyperthyroidism, hyperaldosteronism, nutritional deficit, hypercalcemia, uncontrolled diabetes (renal failure), chronic glomerulonephritis, diabetes; (uncontrolled), diarrhea, hypercalcemia, nutritional deficit, renal tubular acidosis, chronic malnutrition from alcoholism is a common cause of low serum magnesium levels, draining gastrointestinal fistulas or diarrhea. diabetes; hypercalcemia, and other metabolic disorders.

Lab Relationships, Evaluations and Followup: Order: RBC magnesium to assess longterm magnesium status. Red blood cells live an average of 120 days and thus levels in the membrane are a better indicator of longtime storage and/or deficiency as opposed to serum levels. However, magnesium RBC levels may vary as much as a factor of five depending upon erythrocyte age. - Organic acid analysis may be of use for functional utilization of magnesium status: Examples of abnormal levels of organics and specific magnesium indicators in a urine sample indicating increased need for magnesium in general include - - isocitrate, succinate, beta-hydroxyisovalerate, orotate

and quinolinate. - The magnesium retention and the leukocyte magnesium test are good indicators of magnesium need. - The magnesium retention test involves: First: injecting the patient with a 50% magnesium sulfate (MgSO₄) solution, Second: Pre- and postinjection 24-hour urine magnesium and creatinine levels measured, Third: twenty-five percent retention of magnesium indicates increased need (deficiency) of magnesium. Consider an increased need for magnesium, particularly in the presence of hypokalemia and hypocalcemia. FMYTM analysis for this nutrient, or for nutritional factors affecting this laboratory parameter, will reveal intracellular needs based on DNA stimulated response to radioactive thymidine in the laboratory. In many cases this author believes that this is the most clinical useful test measure available. Performed by SpectraCell Laboratories, Inc (1-800-227-5227).

Drug-Nutrient / Drug-Laboratory Interactions: Antibiotics, diuretics, cyclosporine, cisplatin, and aminoglycoside may cause hypomagnesemia.

Recommended Nutritional Products:

Magnesium Complex (*Blood Detective Nutritionals*) : Take one twice per day or as directed by your health care provider.

Multivitamin Mineral Complex (*Blood Detective Nutritionals*) : Take two twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
MCH	30.6	pg	26.60 - 33.00	27.00 - 32.00

Test Description: This calculated value represents the average weight of hemoglobin in the red blood cell. The MCH along with other laboratory indices such the MCV, the total RBC, and the RDW, are used to diagnose/differentiate various anemias. An increase in MCH value is generally indicative of a B vitamin deficiency including B12, B6, and folic acid, but also vitamin C, vitamin E, and B1.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
MCHC	34.9	g/dL	32.00 - 34.90	H 31.50 - 34.45

Test Description: Reflects the average hemoglobin within the RBC. MCHC is a valuable test for monitoring therapy for anemia because it is calculated using the two most important hematologic determinations namely hemoglobin and hematocrit.

Findings and Considerations: A clinically or functionally high MCHC value is present. An increase in MCHC is indicative of an increased need for B12, B6, folic acid and potentially vitamin C, vitamin E, and B1 - supplement accordingly.

Common Conditions: Megaloblastic anemia (vitamin B12 deficiency, folic acid deficiency, concomitant B12 and/B6 folic acid deficiency, vitamin C deficiency), malabsorption syndromes parasitic infections, pernicious anemia – a hereditary anemia, malnutrition, hypo- and achlorhydria, copper deficiency (sometimes a low ceruloplasmin level will be present), vegan diet, hyperthyroidism, cardiovascular diseases (Hypercholesteremia – increased MCV is most common when serum cholesterol levels are above 300 mg/dL), various autoimmune states (such as Celiac Disease).

Lab Relationships, Evaluations and Followup: Consider copper deficiency with normal or increased MCH, MCHC and low or high MCV and reduced ceruloplasmin. - Consider copper deficiency with reduced hemoglobin, hematocrit, total red blood cells, and reduced uric acid. A high MCHC is commonly associated with either a folic acid, vitamin B12 and or folic acid deficiency. Hypersegmented neutrophils (>5 lobes per cell) viewed upon microscopic examination (darkfield or staining) is indicative of folic acid and/or B12 deficiency. - Consider a megaloblastic anemia with increased MCH, MCV, MCHC, RDW, LDH, and increased serum iron. Consider vitamin C deficiency in the presence of reduced serum ascorbic acid levels, increased MCV, increased alkaline phosphatase, and increased fibrinogen along with decreased serum albumin, hemoglobin, hematocrit, and red blood cells, reduced MCH and MCHC, and reduced serum iron.

Drug-Nutrient / Drug-Laboratory Interactions: Numerous medications that deplete vitamin B12, B6 and folic acid may increase MCH, MCV, and MCHC levels. Homocysteine levels will generally increase as might methylmalonic acid.

Recommended Nutritional Products:

Multivitamin Mineral Complex (Blood Detective Nutritionals) : Take two twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
MCV	88		80.80 - 97.40	85.00 - 92.00

Test Description: This value represents the size of the average red blood cell (the actual volume occupied by erythrocytes in femtoliters). The MCV is increased as the size/shape of the RBC increases as can occur in vitamin B12/folic acid anemia. Reduced MCV values often occur in iron-deficiency anemia. The MCV is calculated by dividing the sum of the hematocrit times ten by the total red blood cell number.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
RBC	5.3	10 ⁶ /uL	4.40 - 5.80	H 4.30 - 4.90

Test Description: RBCs represent the major oxygen-carrying cell that exchanges carbon dioxide (with the lungs) and oxygen with tissues by means of the hemoglobin molecule. The biconcave shape of the RBC is essential for optimal carrying capacity of hemoglobin. Low levels commonly occur in iron-deficiency anemia and increased counts sometimes occur in smokers and dehydration.

Findings and Considerations: A clinically or functionally high RBC count (erythrocytosis) is present. Consider dehydration resulting in hemoconcentration of RBCs giving a falsely increased count. Sometimes increased in the presence of vitamin C deficiency: perform a vitamin C flush test (bowel tolerance test for vitamin C).

Common Conditions: Acute poisoning, ayerza's disease, heart disease (long standing), polycythemia vera, pulmonary fibrosis, respiratory distress, dehydration, vitamin C deficiency. If clinical correlation exists screen for a clonal myeloproliferative disorder, erythropoietin-producing neoplasms (e.g., renal cancer, cerebellar hemangioma), chronic hypoxemia (e.g., high altitude), pulmonary disease, carboxyhemoglobin excess (e.g., found in some smokers), Cushing's syndrome, androgen excess.

Lab Relationships, Evaluations and Followup: Consider dehydration with increased levels of potassium, sodium, albumin, BUN, increased total protein, and increased hemoglobin, hematocrit, and red blood cells. Consider emphysema with increased or normal CO2 levels, increased hematocrit and red blood cells, along with a normal or decreased serum chloride level, and a reduced alpha-1 globulin level. Order serum B12 as levels may be elevated in the presence of secondary polycythemia when in the presence of splenomegaly, leukocytosis, thrombocytosis and erythropoietin levels.

Drug-Nutrient / Drug-Laboratory Interactions: Antithyroid therapy (e.g., propylthiouracil), cobalt, gentamicin, glucocorticoids, hydrochlorothiazide, methyl dopa, pilocarpine, vitamin B12., Procrit, iron supplementation, methyl dopa, gentamicin.

Recommended Nutritional Products:

Multivitamin Mineral Complex (Blood Detective Nutritionals) : Take two twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
RDW	13.3	%	11.80 - 15.50	0.00 - 14.00

Test Description: The RDW, or red blood cell distribution, measures the variations of red blood cell size (volume). Red blood cells are on average proportional in size at times of optimal health. However, under certain circumstances significant variation in cell size occurs. A high RDW means that a greater variation of cell size is present

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male

VITAMIN A	0.44	mg/L	0.30 - 1.20	L	20.00 - 100.00
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Test Description: Vitamin A is an essential human nutrient. It exists not as a single compound, but in several forms. In foods of animal origin, the major form of vitamin A is an alcohol (retinol), but can also exist as an aldehyde (retinal), or as an acid (retinoic acid). Precursors to the vitamin (a provitamin) are present in foods of plant origin as some of the members of the carotenoid family of compounds.[1] All forms of Vitamin A have a Beta-ionone ring to which an isoprenoid chain is attached. This structure is essential for vitamin activity.[1] retinol, the animal form of Vitamin A, is a yellow fat-soluble, antioxidant vitamin with importance in vision and bone growth. other retinoids, a class of chemical compounds that are related chemically to Vitamin A, are used in medicine.[2]

Findings and Considerations: Vitamin A is an essential human nutrient. It exists not as a single compound, but in several forms. In foods of animal origin, the major form of vitamin A is an alcohol (retinol), but can also exist as an aldehyde (retinal), or as an acid (retinoic acid). Precursors to the vitamin (a provitamin) are present in foods of plant origin as some of the members of the carotenoid family of compounds. All forms of Vitamin A have a Beta-ionone ring to which an isoprenoid chain is attached. This structure is essential for vitamin activity. retinol, the animal form of Vitamin A, is a yellow fat-soluble, antioxidant vitamin with importance in vision and bone growth. other retinoids, a class of chemical compounds that are related chemically to Vitamin A, are used in medicine.

Common Conditions: Night blindness, corneal drying (xerosis), triangular gray spots on eye (Bitot's spots), corneal degeneration and blindness (xerophthalmia)[5], impaired immunity, hypokeratosis (white lumps at hair follicles), softening of the cornea (keratomalacia). Vitamin A deficiency is common in developing countries but rarely seen in developed countries. Approximately 250,000 to 500,000 malnourished children in the developing world go blind each year from a deficiency of vitamin A. Night blindness is one of the first signs of vitamin A deficiency. Vitamin A deficiency contributes to blindness by making the cornea very dry and damaging the retina and cornea.

Lab Relationships, Evaluations and Followup: Liver biopsy is the most accurate measure of vitamin A status but is obviously invasive and impractical. Vitamin A is commonly measured in the serum. Low levels may suggest malabsorption or malnutrition. Order serum vitamin D (25-D3), vitamin K and Vitamin E. Consider a malabsorption panel including: transglutaminase, reticulin and gliadin AB to test for celiac disease. FMTTM analysis for this nutrient, or for nutritional factors affecting this laboratory parameter, will reveal intracellular needs based on DNA stimulated response to radioactive thymidine in the laboratory. In many cases this author believes that this is the most clinical useful test measure available. Performed by SpectraCell Laboratories, Inc (1-800-227-5227).

Drug-Nutrient / Drug-Laboratory Interactions: Bile acid sequestrants, neomycin, mineral oil , vitamin A derivatives, orlistat, corticosteroid medications and vitamin E.

Recommended Nutritional Products:

Multivitamin Mineral Complex (Blood Detective Nutritionals) : Take two twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range	Functional Range
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VITAMIN B12 (SERUM)	418	pg/mL	Adult Male 180.00 - 914.00	L	Adult Male 800.00 - 1500.00
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Test Description: Vitamin B12 has four essential chemical forms including, cyanocobalamine, hydroxycobalamine, adenosylcobalamine and methylcobalamine. Strictly speaking, only the cyano- form of vitamin B12 is considered true vitamin B12. B12 is bound to proteins in foods and must be cleaved by hydrochloric acid and pepsin for eventual binding to intrinsic factor in the small intestine. High levels of B12 are of no clinical significance. Low levels are associated with a large number of clinical conditions ranging from fatigue, poor memory, atrophic gastritis and neuropathy, just to name a few. B12 deficiency is thought to affect approximately 10%-15% of the population over 60 years of age.

Findings and Considerations: A clinically or functionally low level of serum vitamin B12 is present. Low vitamin B12 commonly occurs in the elderly even in the absence of clinical signs and symptoms. Vegetarians are commonly deficient in B12 as are those with malnutrition and/or malabsorption syndromes. Classical vitamin B12 malabsorption syndrome is termed pernicious anemia.

Common Conditions: Low levels of vitamin B12 may be associated with the following conditions: atrophic gastritis, inflammatory bowel diseases such as ulcerative colitis and crohn's disease, malnutrition, malabsorption disorders (i.e., celiac disease), strict vegetarianism, neuropathy (peripheral), certain central nervous system conditions such as multiple sclerosis, the use of certain medications, pernicious anemia, hypochlorhydria (as a result of autoimmune processes) and/or from hydrochloric acid lowering medications.

Lab Relationships, Evaluations and Followup: Low levels of vitamin B12 may indicate the presence of certain malabsorption syndromes. Consider ordering some of the following tests for confirmation: - Low serum B12 medically indicates potential deficiency. High methylmalonic acid alone or in combination with a high homocysteine strongly indicates B12 and/or folic acid deficiency. Serum B12 and urinary methylmalonic acid may be of some clinical usefulness. FMTTM analysis for this nutrient will reveal intracellular needs based on DNA stimulated response to radioactive thymidine in the laboratory. In many cases this author believes that this is the most clinical useful test measure available. Performed by SpectraCell Laboratories, Inc (1-800-227-5227). - Intrinsic Factor Antibodies: to check for the presence of pernicious anemia. - Schilling's Test: to check for intrinsic vitamin B12 malabsorption. - Reticulin, gliadin (IgA and IgG) antibodies, transglutaminase AB: to check for the presence of celiac disease (malabsorption syndrome) - Endoscopy: to rule in or out the presence of damage to the small intestine from inflammatory bowel disease. - Colonoscopy: to rule in or out the presence of certain characteristic forms of colonic damage as a result of inflammatory, infectious and/or autoimmune damage to the colonic mucosa, submucosa or deeper intestinal layers. - Heidleberg Capsule Testing: A direct test using a mechanized-capsule that the patient swallows that sends telemetry of measurements of the levels or absence of hydrochloric acid/pepsin secreted from the parietal cells of the stomach. A potent parietal cell stimulator is administered to the patient after baseline fasting. - Strongly consider hypo- or achlorhydria if low B12 levels are present along with low or low normal levels of: chloride (needed to make hydroCHLORIC acid, uric acid, globulin and/or albumin and total protein. - Test serum ferritin, hemoglobin and hematocrit levels: iron anemia commonly occurs concomitantly with vitamin B12 deficiency. - High MCV, MCH and/or MCHC values on blood chemistry are an indication of enlargement of the average red blood cell in circulation and strongly support vitamin B12 as well as vitamin B6 and/or folic acid deficiency. A macrocytosis or

enlargement of red blood cells will occur upon microscopic slide smear in the presence of chronic B12 deficiency: this is known as a megaloblastic anemia.

Drug-Nutrient / Drug-Laboratory Interactions: Aminosalicic acid, anticonvulsants, ascorbic acid, chllopromazine, cholestyramine, colchicine, laxatives, metformin, neomycin, oral contraceptives, ranitidine. Medications that lower hydrochloric acid and pepsin secretion by the parietal cells of the stomach may lower vitamin B12 levels by decreasing or preventing its absorption and utilization. Such medications include: PPIs include: Protonix, Nexium, Prevacid. H2-blockers include: Zantax, Pepcid, Tagamet/Axid. These antiviral and reverse transcriptase inhibitors reduce vitamin B12 levels in the body: zidovudine (azidothymidine; AZT; compound S), didanosine (ddl; dideoxyinosine), lamivudine (3TC), stavudine (d4T), zalcitabine (ddC; dideoxycytidine), abacavir sulfate . The biguanide medication metformin reduces B12 levels. Bile acid sequesterants decrease the absorption of vitamin B12. Clofibrate is reported to decrease the absorption of vitamin B12 from the digestive tract. Other "fibrates", such as fenofibrate could act in a similar way. Colchicine may cause changes to the lining of the digestive tract, which could inhibit the absorption of vitamin B12 from the digestive tract into the body. Antacids including H2 blockers and PPIs may inhibit B12 absorption by reducing the HCL required to cleave vitamin B12 from foods. Phenytoin may reduce the vitamin B12 uptake into certain cells. Sustained release medications such as potassium chloride reduce HCL levels decreasing vitamin B12 absorption.

Recommended Nutritional Products:

Active Folate (*Blood Detective Nutritionals*) : Take one twice per day with food or as directed by your health care provider.

B12-Methylated (*Blood Detective Nutritionals*) : Take 1 dropper or more per day or more with or without food as directed by your health care provider.

Multivitamin Mineral Complex (*Blood Detective Nutritionals*) : Take two twice per day with meals or as directed by your health care provider.

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
VITAMIN E	13.4	mg/L	5.50 - 18.00	8.00 - 15.00

Test Description: Tocopherol, known as vitamin E, describes a series of organic compounds consisting of a methylated phenols. The various derivatives are also vitamin E. Vitamin E is a fat-soluble antioxidant. Natural vitamin E exists in eight different forms, four tocopherols and four tocotrienols. All feature a chromanol ring, with a hydroxyl group that can donate a hydrogen atom to reduce free radicals and a hydrophobic side chain which allows for penetration into biological membranes. Both the tocopherols and tocotrienols occur in alpha, beta, gamma and delta forms, determined by the number of methyl groups on the chromanol ring. Each form has slightly different biological activity.[2]

Test Name	Results	Units	Clinical Range	Functional Range
			Adult Male	Adult Male
ZINC, RBC	76	ug/dL	60.00 - 120.00	H 11.00 - 16.00

Test Description: Zinc levels are best checked in the rbc to measure the prior 120 days of zinc storage. The rbc measurement is only an approximation of body stores as different tissues sequester zinc to various degrees. Serum zinc levels are not a reliable measure of zinc status except to measure perhaps 1-2 days of zinc intake from the diet. Zinc is required for over 100 different metallo-enzymes throughout the body and is an essential component of a healthy immune response. Zinc is also essential for proper wound healing, taste, smell, growth and development during pregnancy and adolescence and DNA synthesis. High levels of zinc are associated with lowered cell mediated immune response. Low levels of zinc may result from inadequate dietary intake (malnutrition), malabsorption syndromes, infectious disorders, copper excess or excessive chelation efforts. The best physiologically friendly form of zinc is zinc picolinate. Zinc is an essential element, necessary for sustaining all life. It is estimated that 3000 of the hundreds of thousands of proteins in the human body contain zinc prosthetic groups, one type of which is the so-called zinc finger. In addition, there are over a dozen types of cells in the human body that secrete zinc ions, and the roles of these secreted zinc signals in medicine and health are now being actively studied. Zinc ions are now considered neurotransmitters. Cells in the salivary gland, prostate, immune system and intestine are other types that secrete zinc.[citation needed] Zinc is an activator of certain enzymes, such as carbonic anhydrase. Carbonic anhydrase is important in the transport of carbon dioxide in vertebrate blood. It is also required in plants for leaf formation, the synthesis of indole acetic acid (auxin) and anaerobic respiration (alcoholic fermentation).

Findings and Considerations: A clinically high or high normal level of zinc is present. Consider excessive intake in the form of nutritional supplementation and discontinue. Zinc chelators include: n-acetylcysteine, vitamin C, lipoic acid, glutathione and copper.

Common Conditions: Even though zinc is an essential requirement for a healthy body, too much zinc can be harmful. Excessive absorption of zinc can also suppress copper and iron absorption. The free zinc ion in solution is highly toxic to plants, invertebrates, and even vertebrate fish. The Free Ion Activity Model (FIAM) is well-established in the literature, and shows that just micromolar amounts of the free ion kills some organisms. A recent example showed 6 micromolar killing 93% of all daphnia in water. Swallowing an American one cent piece (98% zinc) can also cause damage to the stomach lining due to the high solubility of the zinc ion in the acidic stomach. Zinc toxicity, mostly in the form of the ingestion of US pennies minted after 1982, is commonly fatal in dogs where it causes a severe hemolytic anemia. In pet parrots zinc is highly toxic and poisoning can often be fatal. There is evidence of induced copper deficiency at low intakes of 100-300 mg Zn/d. The USDA RDA is 15 mg Zn/d. Even lower levels, closer to the RDA, may interfere with the utilization of copper and iron or to adversely affect cholesterol.. References Los Alamos National Laboratory - Zinc WebElements.com – Zinc ^ Ananda S. Prasad, MD, PhD; James T. Fitzgerald, PhD; Bin Bao, MD, PhD; Frances W.J. Beck, PhD; and Pranatharthi H. Chandrasekar, MD.. Duration of Symptoms and Plasma Cytokine Levels in Patients with the Common Cold Treated with Zinc Acetate: A Randomized, Double-Blind, Placebo-Controlled Trial. Annals of Internal Medicine. Retrieved on 2007-07-19. ^ Rhys Jenkins, 'The Zinc Industry in England: the early years up to 1850' Transactions of the Newcomen Society 25 (1945-7), 41-52. ^ a b Neurobiology of Zinc-Influenced Eating Behavior. Retrieved on 2007-07-19. ^ Muyssen et al., (Aquat Toxicol. 2006) ^ Bothwell and Mair, PEDIATRICS 2003 ^ Stowe CM, Nelson

R, Werdin R, et al: Zinc phosphide poisoning in dogs. JAVMA 173:270, 1978 ^ See, for example, this list of common parrot illnesses and their causes. ^ Zinc toxicity by GJ Fosmire, American Journal of Clinical Nutrition. ^ Aydemir, T, B.; Blanchard, R.K.; Cousins, R.J (2006). "Zinc Supplementation of Young Men Alters Metallothionein, Zinc Transporter, and Cytokine Gene Expression in Leucocyte Populations". PNS 103 (3): 1699-1704. ^ Valko, M; Morris, H.; Cronin, MTD (2005). "Metals, Toxicity and Oxidative stress". Current Medicinal Chemistry (12): 1161-1208. ^ New Scientist, 26 May 2007. ^ a b c d Samans, Carl H.: Engineering Metals and their Alloys MacMillan 1949 Immune deficiency: this is a reverse effect (low zinc results in immune deficiency and excessive zinc results in the same).

Lab Relationships, Evaluations and Followup: High levels of zinc should be demonstrated in both a serum and rbc: these tests together demonstrate longstanding zinc excess. However, hair zinc measurements, especially if low, may be accurate for zinc depletion, but does not reliably rule out low tissue stores. Leukocyte zinc testing has demonstrated reliability for this subpopulation of white blood cell. FMTTM analysis for this nutrient, or for nutritional factors affecting this laboratory parameter, will reveal intracellular needs based on DNA stimulated response to radioactive thymidine in the laboratory. In many cases this author believes that this is the most clinical useful test measure available. Performed by SpectraCell Laboratories, Inc (1-800-227-5227).

Drug-Nutrient / Drug-Laboratory Interactions: Zinc supplementation either orally, intramuscular and/or intravenously can raise blood and or other tissue zinc levels.

Recommended Nutritional Products:

Longevity Factors OX-Redox Agents (Blood Detective Nutritionals) : Take as directed unless otherwise instructed by your health care provider.

Cumulative Body Systems

Lab Date: 17-Jan-2017 **Gender:** Male

Patient: MATTHEW **Age:** 43
ABISCH



The Body System listings below are meant to orient the health care provider towards the most predominant organ systems involved based on the blood work performed.

Body System Name	# Clinical Abnormal	# Functional Abnormal
Nutrition	0	9
Immune	2	6
Hormone Balance	3	5
Inflammatory	1	1
Genitourinary & Renal	1	1
Hepato-Biliary	0	2
Mineral Balance	0	2
Acid-Base Balance	0	1

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Cumulative Products

Lab Date: 17-Jan-2017 **Gender:** Male

Patient: MATTHEW **Age:** 43
ABISCH

The cumulative listing below is meant as a guide for the practitioner to choose among the nutrients determined as the best choices based on individual laboratory testing. One or more nutrients may be recommended, and others added on over time, as determined by the patients overall compliance and other clinical factors. It is not intended that the patient consume all of the nutrients listed. Please inquire of your health care provider whether or not these companies sell directly to patients: Allergy Research (800-545-9960), Biotics (800-231-5777), Freeda (212-685-4980), Key (800-325-9592), Orthomolecular Nutrition (800-476-4664), Perque (800-524-7372), Professional Health Products (PHP) 817-467-7567), Metagenics (800-638-2848), NutriWest (888-BCS-5469), Standard Process (800-848-5061), Thorne (800-228-1966).

Selected Body Systems: Nutrition, Immune, Hormone Balance, Inflammatory, Genitourinary & Renal, Hepato-Biliary, Mineral Balance, Acid-Base Balance

Unselected Body Systems: none

Active Folate (*Blood Detective Nutritionals*): Take one twice per day with food or as directed by your health care provider. Folate is a water-soluble essential B vitamin found in many foods, including leafy green vegetables, citrus fruits and beans. Research has established that supplementation with folate before and during the first two months of pregnancy can support proper

Alpha-Lipoic Acid (*Blood Detective Nutritionals*): Take one tablet daily with foods unless otherwise directed by your health care provider.

Alpha-lipoic acid is a non-vitamin coenzyme that is essential to carry out several important enzyme functions in human metabolism including one involved in energy production. Alpha-Lipoic acid is a fat and water-soluble antioxidant; a chelator of certain

B12-Methylated (*Blood Detective Nutritionals*): Take 1 dropper or more per day or more with or without food as directed by your health care provider.

B12 is required for a large variety of metabolic functions including healthy methylation and tissue repair, neurological support, detoxification, energy balance and enzyme functions. Methylated B12 is recognized as the most metabolically active form of B

Betaine Hydrochloride - Absorption Support (*Blood Detective Nutritionals*): Take once capsule just before or during each meal, or as directed by a physician.

The breakdown of dietary proteins begins in the stomach where gastric hydrochloric acid assumes an important role in protein digestion and other processes. Active pepsin is a proteolytic enzyme that splits large protein molecules into smaller polypeptides

Blood Sugar Balance (*Blood Detective Nutritionals*): Take one tablet daily with food or as directed by your health care provider. Made with a superb blend of herbs and nutrients, Blood Sugar Support is formulated to help the body maintain healthy blood sugar levels. The key herbs include Cinnamon, Gymnema Sylvestre, Banaba, Bitter Melon, and Guggule. Also added are effective amounts

Calcium Micro Complex (*Blood Detective Nutritionals*): Take two capsules or more as directed with foods or as directed by your health care provider.

Calcium Microcrystalline Hydroxyapatite provides a highly beneficial source of dietary calcium together with other nutrients that assist in the maintenance of healthy bone structure and function. For example, boron affects the composition, structure, and

Cardio Complex (*Blood Detective Nutritionals*): Take one tablet per day with food or as directed by your health care provider. Cardio-Complex is one of the most complete formulas on the market for supporting healthy levels of Cholesterol, Triglycerides, Blood Pressure, Homocysteine and CRP (C-reactive protein).

Cerebro-Neuroplex (*Blood Detective Nutritionals*): Take 1 tablet twice per day with foods or as directed by your physician. Cerebral-Complex is a proprietary blend of ingredients, which help support memory, concentration and increased circulation in the brain. The unique formulation consists of a comprehensive blend of ingredients to provide well rounded support.

Enzyme Complex (*Blood Detective Nutritionals*): Take 1 with all meals for digestive improvements; take 1 with meals 30 minutes either before or after meals for metabolic (non-digestive_ antiinflammatory effects. Your health care provider may suggest a different supplement schedule.

Enzyme Complex is Blood Detective™ Nutritionals natural dietary supplement specifically formulated with bile and active digestive enzymes that act synergistically to assist in the healthy functioning of fat, protein, and carbohydrate digestion.

Green Detox (*Blood Detective Nutritionals*): Take two scoops per day dissolved in a chilled beverage or more as directed by your health care provider.

Is a great tasting, easy-to-mix powder available in a 30 serving containers. This product combines nutrient rich vegetables, fruits and herbs with enzymes and probiotic cultures; supports the body's ability to cleanse, detoxify and rejuvenate; and the bo

Immuno Balance-20 (*Blood Detective Nutritionals*): Take one twice per day with meals or as directed by your health care provider. Guaranteed to be one of the most complete formulas on the market for helping to enhance the body's immune system, Immune Support contains a very extensive list of antioxidants and other nutrients. Included are Red Raspberry and Pomegranate extracts high i

Longevity Complete (*Blood Detective Nutritionals*): Take one scoop twice per day dissolved into a chilled beverage unless otherwise directed by your health care provider.

Longevity Complete is a delicious anti-aging drink mix supplement that combines 19 nutrient rich whole fruits and vegetables and extracts. Some of Nature's most protective foods are darkly colored fruits & vegetables because they contain potent antioxidant

Longevity Factors (*Blood Detective Nutritionals*): Take one per meal or as directed by your health care provider. Longevity Factors (Ox-Redox Agents), provided by Blood Detective™ Nutritionals, is a potent antioxidant dietary supplement that includes several vitamins and minerals that effectively participate in our body's antioxidant defense system.

Longevity Factors OX-Redox Agents (*Blood Detective Nutritionals*): Take as directed unless otherwise instructed by your health care provider.

Longevity Factors (Ox-Redox Agents), provided by Blood Detective Nutritionals, is a potent antioxidant dietary supplement that includes several vitamins and minerals that effectively participate in our body's antioxidant defense system.

Magnesium Complex (*Blood Detective Nutritionals*): Take one twice per day or as directed by your health care provider. Magnesium plays an essential role in a wide range of physiologic reactions. More than 500 enzymes require magnesium as a cofactor. Magnesium Complex is a chelated form of magnesium supporting superior metabolic utilization and absorption. Complexed with

Milk Thistle - Silymarin (*Blood Detective Nutritionals*): Take 1 tablet twice daily with meals unless otherwise directed by your health care provider.

Milk Thistle (Standardized Silymarin) capsules, provided by Blood Detective Nutritionals, contain 150 mg of milk thistle extract, standardized to contain a minimum of 80% of the flavonoid silymarin (120mg).

Multivitamin Mineral Complex (*Blood Detective Nutritionals*): Take two twice per day with meals or as directed by your health care provider.

Multivitamin-Mineral Complete® has been carefully developed to contain the right proportions of vitamins, minerals, and trace elements without danger of toxic build-up and without side effects. Each ingredient is selected in consideration of its absorbability

N-Acetyl-L-Cysteine (*Blood Detective Nutritionals*): Take one twice per day with meals or as directed by your health care provider. N-Acetyl-L-Cysteine vegetarian capsules, provided by Blood Detective™ Nutritionals, contain 500 mg pure N-Acetyl-L-Cysteine. N-Acetyl-L-Cysteine is a biologically active precursor for the amino acid cysteine which, in turn, is a precursor for glutathione

Nitric Oxide Boost (*Blood Detective Nutritionals*): Take one with foods twice per day or as directed by your health care provider. NOS or Nitric Oxide is defined as a chemical compound or nitrate and a 'messenger gas' that is actually generated from the amino acid L-arginine. Researchers first discovered the link between arginine and nitric oxide in the late 90s. The researchers found

Reds Protect (*Blood Detective Nutritionals*): Take two scoops per day dissolved into a chilled beverage unless otherwise instructed by your health care provider.

A delicious antioxidant drink mix supplement with ORAC berries to support immune system health. Reds Protect is: A tasty berry blend available in a 30 serving container packed with antioxidants designed to boost energy and support the body's antioxidant

Reduced Glutathione (*Blood Detective Nutritionals*): Take one tablet twice per day with meals unless otherwise directed by your health care provider.

Reduced Glutathione™ capsules, provided by Blood Detective Nutritionals, contain 50 mg of glutathione in its active reduced form, and 440 mg of N-acetylcysteine. Glutathione is a tripeptide with antioxidant properties, and N-acetylcysteine is a biological

Vegetarian Omega 3 Smoothie (*Blood Detective Nutritionals*): Take one tsp twice per day with or without meals unless otherwise directed by your health care provider.

The commonly sold form of CoQ10 is Ubiquinone, which is reduced by the body after absorption to the usable form, Ubiquinol. As the body ages, it produces less and less CoQ10 and becomes less efficient at converting CoQ10 to Ubiquinol. Studies indicate that

Vitamin C Synergy (*Blood Detective Nutritionals*): Take one capsule twice per day with meals unless otherwise recommended by your health care provider.

C-1000 Complex: Perhaps, the best known vitamin of all, Vitamin C is arguably the most important of the water-soluble nutrients. The human body cannot produce Vitamin C and must obtain it from food sources or supplements. Recognized for its benefits as an

Vitamin D 5000 (*Blood Detective Nutritionals*): Take one per day with meals unless otherwise directed by your health care provider. Vitamin D is an extremely important compound necessary for general health and wellbeing. Vitamin D is produced in the skin from sunlight's action upon cholesterol present in the dermis. However, ozone depletion and reduction of certain wavelengths of light

Vitamin E Complex (*Blood Detective Nutritionals*): Take one per day with meals unless otherwise directed by your health care provider.

Vitamin E is one of the body's most important antioxidant nutrients. Antioxidants protect healthy cells from oxidative and free radical damage. Free radicals are unstable chemicals formed in the body during metabolism and from exposure to environmental so

Whey 26 Chocolate Powder Protein (*Blood Detective Nutritionals*): Mix two scooper per day in a chilled beverage approved by your health care provider or more as directed.

Recent analyses of the dietary protein needs of people suggest that age and activity level may influence protein requirement for optimum health. For example, elderly adults may have a significantly higher protein requirement than that of young adults. Thi

Whey 26 Vanilla Powered Protein (*Blood Detective Nutritionals*): Take two scoops per day mixed in a chilled beverage or more as directed by your health care provider.

Protein turnover in these systems is continuous and can be substantial. The dynamics of this constant degradation and re synthesis demand a daily supply of dietary protein and their constituent amino acids. Essential or indispensable dietary amino acids

Zinc Picolinate (*Blood Detective Nutritionals*): Take one tablet with meals per day unless otherwise instructed by your health care provider.

Zinc Picolinate tablets, provided by Blood Detective™ Nutritionals, supply bioavailable zinc bound to picolinic acid. Each tablet contains 20 mg zinc, exclusively in the form of zinc picolinate. Zinc is an essential trace element involved in most major m

Cumulative Compounds

Lab Date: 17-Jan-2017 **Gender:** Male

Patient: MATTHEW **Age:** 43
ABISCH



The cumulative listing below is meant as a guide for you and your practitioner to choose among the nutrients determined as the best choices based on your individual laboratory tests. One or more nutrients may be recommended, and others added on over time, as determined by your ability to follow through with recommendations and other clinical factors. It is not intended that you consume all of the nutrients listed, but you should take only those supplements recommended by this office.

Selected Body Systems: Nutrition, Immune, Hormone Balance, Inflammatory, Genitourinary & Renal, Hepato-Biliary, Mineral Balance, Acid-Base Balance

Unselected Body Systems: none

Alpha-Lipoic Acid: As a non-vitamin nutritional factor, lipoic acid is a fat and water-soluble antioxidant. Studies have also demonstrated that lipoic acid is a detoxification element and is essential for energy production.

B12 Methylated: This product contains 1000 mcg of activated vitamin B12.

Betaine Hydrochloride - Absorption Support: Contains Betaine HCl648 mg

Blood Sugar Balance: A comprehensive formula containing: Vitamin C (ascorbic acid), Vitamin E (d-alpha toco acetate), Magnesium (oxide), Biotin, zinc (oxide), Manganese (as amino acid chelate), Chromium (amino acid chelate), Banaba (1% extract), Guggule, B

Calcium Micro Complex: Calcium-Micro Complex (Bone Support), provided by Blood Detective™ Nutritionals, supplies 500 mg of elemental calcium from 2,000 mg of microcrystalline hydroxyapatite(MCHC), a bioavailable source of calcium derived from whole bone.

Cardio Complex: Cardio-Complex is one of the most complete formulas on the market for supporting healthy levels of cholesterol, triglycerides, blood pressure, homocysteine and CRP (C-reactive protein).

Cerebro-Neuroplex: Developed by an anti-aging physician, Cerebral-Complex is a proprietary blend of ingredients, which help support memory, concentration and increased circulation in the brain. The unique formulation consists of a comprehensive blend of i

Enzyme Complex: Enzyme Complex is Blood Detective Nutritionals natural dietary supplement specifically formulated with bile and active digestive enzymes that act synergistically to assist in the healthy functioning of fat, protein, and carbohydrate digest

Green Detox: Contains a large number of synergistic plant compounds many of which have been studied for their detoxification properties, antioxidant abilities and overall health potential.

Immuno Balance-20: Guaranteed to be one of the most complete formulas on the market for helping to enhance the body's immune system, Immune Support contains a very extensive list of antioxidants and other nutrients. Included are Red Raspberry and Pomegran

Longevity Complete: This product was formulated to include a large number of naturally occurring compounds some studied for their antioxidant effects, detoxification potential, general health benefits and immune modulating properties

Longevity Factors: Longevity Factors (Ox-Redox Agents), provided by Blood Detective Nutritionals, is a potent antioxidant dietary supplement that includes several vitamins and minerals that effectively participate in our body's antioxidant defense system.

Magnesium Complex: Magnesium 100 mg (from 500 mg Magnesium amino acid chelate) and nutritional synergists

Methyltetrahydrofolate

Milk Thistle - Silymarin: Silymarin is known as a hepatic-protectant, helping to protect the liver from various toxic compounds reducing tissue breakdown and promoting health function

Multivitamin Mineral Complex: Studies show that a high percentage of adults and children in North America and other developed countries eat less than the minimum daily allowance of 10 or more essential nutrients. Adequate amounts and proper balance of the

N-Acetyl-Cysteine: N-Acetyl-L-Cysteine vegetarian capsules, provided by Blood Detective Nutritionals, contain 500 mg pure N-Acetyl-L-Cysteine. N-Acetyl-L-Cysteine is a biologically active precursor for the amino acid cysteine which, in turn, is a precursor

Nitric Oxide Boost: This comprehensive formula contains several biochemical compounds that are known to enhance nitric oxide levels in some individuals, these include: A-AKG (arginine alpha-ketoglutarate), A-KIC (arginine ketoisocaproate), OKG (ornithine

Reds Protect: This comprehensive formula has been formulated to contain a large number of naturally occurring plant compounds some studied for their ability to: promote general health, reduction of chronic disease risk, immune-modifying potential, antioxidant

Reduced Glutathione: Glutathione is an essential tri-peptide and is known to be a major immune modifier in mammals. Glutathione has been studied as an antioxidant, detoxifying agent and is required for overall health and wellbeing

Vegetarian Omega 3 Smoothie: Vegetarian Omega 3 Smoothie, supplied by Blood Detective™ Nutritionals, provides omega-3, omega-6 and omega-9 fatty acids as a great tasting, pomegranate- blueberry flavored supplement with the texture of a fruit smoothie. Li

Vitamin C Synergy: Each tablet contains: Vitamin C Synergy Caps provides 1000mg of Vitamin C per tablet in a sustained release formula which can help maintain the body's access to Vitamin C for several hours longer than an immediate release tablet. In add

Vitamin D 5000: Vitamin D3, the form of vitamin D contained in this formula, can be obtained from the diet or made in the skin by UV rays reaching the skin (epidermis). Numerous studies have shown that it is either difficult or impossible to produce the

Vitamin E Complex: Vitamin E is the collective term for those eight compounds that have varying levels of vitamin E biological activity. These eight fat soluble compounds include the alpha, beta, gamma, and delta forms of tocopherol and tocotrienol. While

Whey 26 Chocolate Powder Protein: Recent analyses of the dietary protein needs of people suggest that age and activity level may influence protein requirement for optimum health. For example, elderly adults may have a significantly higher protein requirem

Whey 26 Vanilla Powered Protein: Recent analyses of the dietary protein needs of people suggest that age and activity level may influence protein requirement for optimum health. For example, elderly adults may have a significantly higher protein requireme

Zinc Picolinate: Zinc is an essential mineral that has been extensively studied for its immune supporting potential, detoxification abilities and for tissue repair. Required for over 150-metalloenzymes, zinc picolinate is thought to be the most biological

Software created by: www.EgozSolutions.com

Recommended Food Plans

Lab Date: 17-Jan-2017 **Gender:** Male

Patient: MATTHEW **Age:** 43
ABISCH



The Blood Detective Logic and Interpretive Program associates each laboratory value (test) with the most appropriate food plan based on nutritional associations. The Food Plans listed below are listed such that the first is associated with the greatest number of clinically abnormal laboratory (test) values, and the last is associated with the least number of abnormal laboratory (test) values. These associations allow for each patient to receive food/dietary recommendations that are biochemically accurate. The practitioner may decide, based upon other clinical and laboratory evidence, to prioritize food plans differently than they are listed here.

Food Plan	# Clinical Abnormal	# Functional Abnormal
Pure Vegan Sample Menu Plan	0	10
Moderate Protein Diet Sample Menu Plan (Fish, Eggs, Dairy)	1	9
Immune Enhancement Sample Menu Plan	2	5
Healthy Fat (Hormone Balancing) Sample Menu Plan	1	3
Moderate Protein Diet Sample Menu Plan (Vegan)	1	3
Detoxification Sample Menu Plan	0	2
Thyroid Support Sample Menu Plan	1	1

Software created by: www.EgozSolutions.com



Recommended Food Plans

Lab Date: 17-Jan-2017 **Gender:** Male

Patient: MATTHEW **Age:** 43
ABISCH

Food Plan - Pure Vegan Sample Menu Plan

Day 1

Breakfast: Amaranth Grain w/ Fresh Blueberries & Sliced Almonds
Lunch: Garbanzo Bean Delight w/ Arugula-Mesclun Salad
Snack: Red/Yellow/Green Pepper Slices w/ Pumpkin Seeds
Dinner: Black Japonica Chile Rice w/ Fresh String Beans & Pine Nuts
Snack: Sliced Apple w/ Cinnamon

Day 2

Breakfast: Steel Cut Oatmeal w/ Apricots & Walnuts
Lunch: Tomato & Sprout Hommus Pita w/ Miso Soup
Snack: Celery Sticks w/ Almonds
Dinner: Millet Sunflower Patties w/ Garlic Broccoli Florets
Snack: Fresh Melon

Day 3

Breakfast: Fresh Grapefruit & Ezekiel Toast w/ Almond Butter
Lunch: Lentil Bean Salad w/ Avocado & Endive Salad
Snack: Cucumber Slices w/ Sunflower Seeds
Dinner: Oregano-Basil Red Quinoa & Gingered Collard Greens
Snack: Black Grapes

Day 4

Breakfast: Very-Berry Shake w/ Whole Almonds
Lunch: Lemon-Ginger Tofu w/ Baked Yam & Fresh Arugala Salad
Snack: Carrot Sticks w/ Pecans
Dinner: Adzuki & Black Japonica Spiced Rice w/ Garlic Cauliflower
Snack: Navel Orange

Day 5

Breakfast: Amaranth Grain w/ Sliced Dates & Sunflower Seeds
Lunch: Navy Bean Salad over Mesclun Greens

Snack: Red/Yellow/Green Pepper Slices w/ Pumpkin Seeds
Dinner: Basil & Pine Nut Spaghetti Squash w/ Peppered Kale
Snack: Sliced Apple w/ Cinnamon

Day 6

Breakfast: Steel Cut Oatmeal w/ Apricots & Pecans
Lunch: Anasazi Bean Stew w/ Avocado & Endive Salad
Snack: Celery Sticks w/ Almonds
Dinner: Buckwheat Loaf w/ Vegetables and Garlic Swiss Chard
Snack: Red Grapes

Day 7

Breakfast: Fresh Grapefruit & Ezekiel Toast w/ Almond Butter
Lunch: Green Millet w/ Fresh Mesclun Salad
Snack: Cucumber w/ Walnuts
Dinner: Red Lentil & Vegetable Stew w/ Baby Romaine Salad
Snack: Navel Orange

Day 8

Breakfast: Very-Berry Shake w/ Whole Almonds
Lunch: Tomato & Sprout Hommus Pita w/ Miso Soup
Snack: Carrot Sticks w/ Sunflower Seeds
Dinner: White Quinoa w/ Adzuki & Garlic Broccoli Florets
Snack: Fresh Melon

Day 9

Breakfast: Amaranth Grain w/ Sweet Cherries & Shredded Coconut
Lunch: Black Bean Soup w/ Mesclun Greens
Snack: Red/Yellow/Green Pepper Slices w/ Pumpkin Seeds
Dinner: Gingered Wild Rice w/ Artichokes & Escarole-Dandelion Salad
Snack: Black Grapes

Day 10

Breakfast: Steel Cut Oatmeal w/ Blueberries & Almonds
Lunch: Garbanzo Bean Delight w/ Tomato & Sprout Salad
Snack: Celery Sticks w/ Almonds

Dinner: Buckwheat Stuffed Bell Peppers w/ Garlic Cauliflower
Snack: Sliced Apple w/ Cinnamon

Recipes & Cooking Instructions

Black Japonica Chile Rice:

Use one part grain to two parts vegetable stock. Add a pinch of herb or sea salt to the cooking water. Bring to a gentle boil and then simmer for 30 minutes. When the grain is fully cooked, turn off the heat and add 2-3 tablespoons of olive oil, 3-4 cloves of chopped garlic, 2 tablespoons of chile powder and 1 tablespoon of oregano. Cover and let stand for 5 to 10 minutes.

Millet Sunflower Patties:

Use one part grain to two parts vegetable stock. Add herb or sea salt to taste to the cooking water. Cook for 30 minutes. While the millet is cooking, puree 2-3 carrots, 1 bunch of fresh parsley or basil leaves and 2 cloves of garlic. When the millet is fully cooked, turn off the heat and mix in the pureed vegetables and $\frac{3}{4}$ a cup of ground sunflower seeds. Shape into individual patties or a loaf. Place into a 350 degree oven for 30 minutes, or pan sauté the patties.

Oregano-Basil Red Quinoa:

Use one part grain to two parts vegetable stock. Add 1 tablespoon of oregano and herb or sea salt to taste to the cooking water and simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add a small amount of olive oil, 2-3 cloves of chopped garlic and one bunch of freshly chopped basil leaves. Cover and let stand for 5 minutes.

Basil & Pine Nut Spaghetti Squash:

Rinse squash and cut off stem. Place squash into steamer and steam for 30-45 minutes or until your fork easily pierces the flesh. Allow the squash to cool for a few minutes, then cut in half (length-wise) and scoop out the seeds. With a fork, "rake" the squash out of its skin into a bowl. Add 1-2 cloves of chopped garlic, 1 bunch of freshly chopped basil leaves or flat leaf parsley, $\frac{1}{4}$ cup of pine nuts, 2-3 tablespoons of olive oil, freshly ground pepper and herb or sea salt to taste.

Adzuki & Black Japonica Rice:

Use one part grain to two parts vegetable stock. Add 1 tablespoon of oregano, 1teaspoon of celery seed and herb or sea salt to taste to the cooking water. Bring to a gentle boil and then simmer for 30 minutes. When the grain is fully cooked, turn off the heat and add 2-3 tablespoons of adzuki beans, 3-4 cloves of chopped garlic, a small amount of olive oil, 1 bunch of chopped dandelion greens and freshly grated gingerroot. Cover and let stand for 5 to 10 minutes.

Buckwheat Loaf:

Use one part grain to two parts vegetable stock. Add buckwheat grain to boiling vegetable stock. Turn off heat and cover. Let stand until liquid is absorbed. Chop 3-4 cloves of garlic, 2 red onions, 4 stalks of celery with leaves. Stir the chopped vegetables into the

buckwheat and add a small amount of olive oil, 1 bag of baby spinach greens, ½ cup sunflower seeds, 1 teaspoon of all purpose seasoning and herb or sea salt to taste. Coat baking dish with coconut oil and place into a 350 degree oven, covered for 30 minutes. Continue baking uncovered for 8 minutes. Remove and serve.

Green Millet:

Use one part grain to two parts vegetable stock. Add a pinch of chile pepper and herb or sea salt to taste to the cooking water. Cook for 30 minutes. While the millet is cooking, finely chop 1 bunch of kale and 2-3 cloves of garlic, When the millet is fully cooked, add the finely chopped kale and garlic. Turn off the heat. Cover and let stand for 5-10 minutes.

White Quinoa with Adzuki:

Use one part grain to two parts vegetable stock. Add 1 teaspoon of oregano, 1 teaspoon of thyme, 2 fresh sage leaves and herb or sea salt to taste to the cooking water. Bring to a boil and then simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add 1 chopped sweet red pepper, 1 chopped red onion and 2-3 tablespoons of adzuki beans. Let stand for 5-10 minutes.

Gingered Wild Rice:

Add one part wild rice to two parts vegetable stock and herb or sea salt to taste. Simmer for 30 minutes or until done. Turn off heat and add freshly grated gingerroot and 4-5 artichoke hearts. Cover and let stand for 5 minutes. Garnish with toasted sunflower seeds.

Buckwheat Stuffed Bell Peppers:

Use one part grain to two parts vegetable stock. Add buckwheat grain to boiling vegetable stock. Turn off heat and cover. Let stand until liquid is absorbed. Chop 3-4 cloves of garlic, 1 red onion, 1 bunch of flat leaf parsley or cilantro. Stir the chopped vegetables into the buckwheat and add a small amount of olive oil, ½ cup of pumpkin seeds, ½ teaspoon of cumin and herb or sea salt to taste. Stuff the buckwheat mixture into green bell peppers. Place into a 350 degree oven for 45 minutes or until peppers are easily pierced with a fork.

Garbanzo Bean Delight:

Soak one bag of garbanzo beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. When beans are fully cooked, turn off the heat and add a small amount of olive oil, 2-3 gloves of garlic, a ¼ cup of fresh tahini, 1 bag of baby spinach leaves, the juice of 1 freshly squeezed lemon and herb or sea salt to taste.

Lentil Bean Salad:

Soak one bag of petite French lentils or Black Beluga lentils 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour and set aside. Chop 1 red onion, 4

carrots and 4 stalks of celery and add to the cooked beans, along with fresh ground pepper and herb or sea salt to taste. Mix with chopped mesclun greens, olive oil and some fresh lemon juice.

Lemon-Ginger Tofu:

Slice fresh tofu and place into a pan with a few tablespoons of fresh lemon juice. Add freshly grated gingerroot. Cook on low heat for 5 minutes.

Navy Bean Salad:

Soak one bag of navy beans 8-10 hours (overnight). You may use canned beans if you prefer. Drain and rinse the beans. Set aside. Add one part dried beans to two parts water. Add a bay leaf or Kombu strip. Bring to a gentle boil and then simmer for one hour. Chop 1 red onion, 1 bunch of arugula leaves, 4 stalks of celery with leaves and 2 carrots. Add chopped vegetables, 1 freshly squeezed lemon, a bit of olive oil, herb or sea salt to taste to the cooked or canned beans.

Anasazi Bean Stew:

Soak one bag of anasazi beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Puree 3 red onions, 8 carrots w/ tops, 1 bunch of celery w/ leaves, 1 bunch of parsley, 1 bunch of basil and 3-4 cloves of garlic. Place beans and pureed vegetables into a large stock pot. Add 1 quart of vegetable stock, 1 jar of tomato paste, 1 tsp. tumeric, 1 bay leaf, ½ teaspoon of chile peppers and herb or sea salt to taste. Bring to a gentle boil and then simmer for 2 hours.

Red Lentil & Vegetable Stew:

Puree 8 carrots, 2 onions, 7 stalks of celery with leaves, 1 bunch of flat leaf parsley, 1 bunch of dandelion greens and 5 cloves of garlic. Quarter 4 yams. Place one bag of red lentils, pureed vegetables, yams, 1 quart of water, 1 can of whole peeled tomato, a pinch of tumeric, oregano, thyme, cayenne and herb or sea salt into stock pot. Bring to a gentle boil and simmer for 2 hours.

Black Bean Soup:

Soak one bag of black beans 8-10 hours (overnight). Drain and rinse the beans. You may use canned beans if you prefer. Chop 2 large onions, 1 bunch of celery with leaves, 1 bunch of cilantro and 2 sweet red peppers. Place 1 quart of vegetable stock and 1 can of pureed tomato in stock pot with the beans, chopped vegetables, 1 tsp. cumin, 1 bay leaf and herb or sea salt to taste to Bring to a gentle boil and then simmer 2 hours.

Cooked Amaranth Grain:

Lightly toast amaranth grain in a pan. Use one part grain to two parts water. Bring to a gentle boil and then simmer for 30 minutes. Add fresh fruit when ready to eat. Add frozen, dried fruit and/or spices a few minutes into the cooking time.

Very-Berry Shake:

Blend 1 banana, ¼ cup of raw almonds soaked overnight in water, ½ cup of fresh or frozen strawberries, ¼ cup of fresh or frozen blueberries or blackberries, ¾ cup of almond, rice or soy milk, 1 tablespoon of wheat or barley grass powder.

Steel Cut Oats:

Soak steel cut oats in spring water overnight (or for at least 7 hours before cooking). Cook for 10-15 minutes. Add fresh fruit when ready to eat. Add frozen, dried fruit and/or spices a few minutes into the cooking time.

Miso Soup:

Simmer 1 quart of vegetable stock or spring water with a few very thin slices of kombu and a few cubes of fresh tofu for 15 minutes. Turn off the heat and add ½ teaspoon of brown rice miso to the pot. Cover and let stand for 5 minutes.

Beneficial Beverages:

Warm or cool lemon and/or lime water, and helpful herbal teas for digestion and/or detoxification, include lemon balm, chamomile, ginger, nettle, dandelion and milk thistle.

Food Plan - Moderate Protein Diet Sample Menu Plan (Vegan)**Day 1**

Breakfast: Amaranth Grain w/ Almond Butter & Fresh Blueberries

Lunch: Garbanzo Bean Delight w/ Miso Soup & Sprout Salad

Snack: Red/Green Pepper Slices w/ Hommus

Dinner: Black Japonica Chile Rice w/ Tofu Baby Spinach & Pine Nuts

Snack: Sliced Apple w/ Cinnamon

Day 2

Breakfast: Steel Cut Oats w/ Apricots & Sunflower Seed Butter

Lunch: Tomato & Bean Sprout Hommus Pita w/ Miso Soup

Snack: Celery Sticks w/ Almond Butter

Dinner: Millet Sunflower Patties w/ Tempeh & Broccoli Florets

Snack: Fresh Melon

Day 3

Breakfast: Protein Power Shake w/ Ezekiel Toast & Almond Butter

Lunch: Lentil Bean Salad w/ Avocado & Arugula Salad

Snack: Cucumber Slices w/ Hommus

Dinner: Oregano-Basil Red Quinoa & Tofu-Gingered Collard Greens
Snack: Black/Red Grapes

Day 4

Breakfast: Teff Grain w/ Shredded Coconut & Sliced Banana
Lunch: Lemon-Ginger Tofu w/ Baked Yam & Fresh Bean Sprout Salad
Snack: Soynuts w/ Carrot Sticks
Dinner: Adzuki & Black Japonica Spiced Rice w/ Garlic Cauliflower
Snack: Tangerine

Day 5

Breakfast: Amaranth Grain w/ Sliced Dates & Almond Butter
Lunch: Navy Bean Salad over Mesclun Greens w/ Bean Sprout Salad
Snack: Red/Green Pepper Slices w/ Hommus
Dinner: Basil & Pine Nut Spaghetti Squash w/ Tofu-Peppered Kale
Snack: Nectarine

Day 6

Breakfast: Steel Cut Oats w/ Almond Butter & Fresh Blueberries
Lunch: Anasazi Bean Stew w/ Avocado & Bean Sprout Salad
Snack: Celery Sticks w/ Almond Butter
Dinner: Buckwheat Loaf w/ Vegetables & Tofu Swiss Chard
Snack: Apple Slices w/ Cinnamon

Day 7

Breakfast: Protein Power Shake w/ Ezekiel Toast & Sunflower Seed Butter
Lunch: Green Millet w/ Miso Soup & Bean Sprout Salad
Snack: Cucumber w/ Hommus
Dinner: Red Lentil & Vegetable Stew w/ Baby Romaine Salad
Snack: Fresh Melon

Day 8

Breakfast: Teff Grain w/ Sunflower Seed Butter & Fresh Blueberries
Lunch: Tomato & Bean Sprout Hommus Pita w/ Miso Soup
Snack: Soynuts w/ Carrot Sticks
Dinner: White Quinoa w/ Adzuki & Garlic Broccoli Florets

Snack: Black/Red Grapes

Day 9

Breakfast: Amaranth Grain w/ Almond Butter & Banana Slices

Lunch: Black Bean Soup w/ Baby Romaine & Bean Sprout Salad

Snack: Red/Green Pepper Slices w/ Hommus

Dinner: Gingered Wild Rice w/ Tempeh & Escarole-Dandelion Salad

Snack: Tangerine

Day 10

Breakfast: Steel Cut Oats w/ Sunflower Seed Butter & Apricots

Lunch: Garbanzo Bean Delight w/ Miso Soup & Sprout Salad

Snack: Celery Sticks w/ Almond Butter

Dinner: Buckwheat Stuffed Bell Peppers w/ Tofu-Peppered Kale

Snack: Nectarine

Recipes & Cooking Instructions

Black Japonica Chile Rice:

Use one part grain to two parts vegetable stock. Add a pinch of herb or sea salt to the cooking water. Bring to a gentle boil and then simmer for 30 minutes. When the grain is fully cooked, turn off the heat and add 2-3 tablespoons of olive oil, 3-4 cloves of chopped garlic, 2 tablespoons of chile powder and 1 tablespoon of oregano. Cover and let stand for 5 to 10 minutes.

Millet Sunflower Patties:

Use one part grain to two parts vegetable stock. Add herb or sea salt to taste to the cooking water. Cook for 30 minutes. While the millet is cooking, puree 2-3 carrots, 1 bunch of fresh parsley or basil leaves and 2 cloves of garlic. When the millet is fully cooked, turn off the heat and mix in the pureed vegetables and $\frac{3}{4}$ a cup of ground sunflower seeds. Shape into individual patties or a loaf. Place into a 350 degree oven for 30 minutes, or pan sauté the patties.

Oregano-Basil Red Quinoa:

Use one part grain to two parts vegetable stock. Add 1 tablespoon of oregano and herb or sea salt to taste to the cooking water and simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add a small amount of olive oil, 2-3 cloves of chopped garlic and one bunch of freshly chopped basil leaves. Cover and let stand for 5 minutes.

Basil & Pine Nut Spaghetti Squash:

Rinse squash and cut off stem. Place squash into steamer and steam for 30-45 minutes or until your fork easily pierces the flesh. Allow the squash to cool for a few minutes, then cut in half (length-wise) and scoop out the seeds. With a fork, "rake" the squash out of its skin into a bowl. Add 1-2 cloves of chopped garlic, 1 bunch of freshly chopped basil leaves or flat leaf parsley, ¼ cup of pine nuts, 2-3 tablespoons of olive oil, freshly ground pepper and herb or sea salt to taste.

Adzuki & Black Japonica Rice:

Use one part grain to two parts vegetable stock. Add 1 tablespoon of oregano, 1 teaspoon of celery seed and herb or sea salt to taste to the cooking water. Bring to a gentle boil and then simmer for 30 minutes. When the grain is fully cooked, turn off the heat and add 2-3 tablespoons of adzuki beans, 3-4 cloves of chopped garlic, a small amount of olive oil, 1 bunch of chopped dandelion greens and freshly grated gingerroot. Cover and let stand for 5 to 10 minutes.

Buckwheat Loaf:

Use one part grain to two parts vegetable stock. Add buckwheat grain to boiling vegetable stock. Turn off heat and cover. Let stand until liquid is absorbed. Chop 3-4 cloves of garlic, 2 red onions, 4 stalks of celery with leaves. Stir the chopped vegetables into the buckwheat and add a small amount of olive oil, 1 bag of baby spinach greens, ½ cup sunflower seeds, 1 teaspoon of all purpose seasoning and herb or sea salt to taste. Coat baking dish with coconut oil and place into a 350 degree oven, covered for 30 minutes. Continue baking uncovered for 8 minutes. Remove and serve.

Green Millet:

Use one part grain to two parts vegetable stock. Add a pinch of chile pepper and herb or sea salt to taste to the cooking water. Cook for 30 minutes. While the millet is cooking, finely chop 1 bunch of kale and 2-3 cloves of garlic. When the millet is fully cooked, add the finely chopped kale and garlic. Turn off the heat. Cover and let stand for 5-10 minutes.

White Quinoa with Adzuki:

Use one part grain to two parts vegetable stock. Add 1 teaspoon of oregano, 1 teaspoon of thyme, 2 fresh sage leaves and herb or sea salt to taste to the cooking water. Bring to a boil and then simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add 1 chopped sweet red pepper, 1 chopped red onion and 2-3 tablespoons of adzuki beans. Let stand for 5-10 minutes.

Gingered Wild Rice:

Add one part wild rice to two parts vegetable stock and herb or sea salt to taste. Simmer for 30 minutes or until done. Turn off heat and add freshly grated gingerroot and 4-5 cubes of tempeh. Cover and let stand for 5 minutes. Garnish with toasted sunflower seeds.

Buckwheat Stuffed Bell Peppers:

Use one part grain to two parts vegetable stock. Add buckwheat grain to boiling vegetable stock. Turn off heat and cover. Let stand until liquid is absorbed. Chop 3-4 cloves of garlic, 1 red onion, 1 bunch of flat leaf parsley or cilantro. Stir the chopped vegetables

into the buckwheat and add a small amount of olive oil, ½ cup of pumpkin seeds, ½ teaspoon of cumin and herb or sea salt to taste. Stuff the buckwheat mixture into green bell peppers. Place into a 350 degree oven for 45 minutes or until peppers are easily pierced with a fork.

Garbanzo Bean Delight:

Soak one bag of garbanzo beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. When beans are fully cooked, turn off the heat and add a small amount of olive oil, 2-3 gloves of garlic, a ¼ cup of fresh tahini, 1 bag of baby spinach leaves, the juice of 1 freshly squeezed lemon and herb or sea salt to taste.

Lentil Bean Salad:

Soak one bag of petite French lentils or Black Beluga lentils 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour and set aside. Chop 1 red onion, 4 carrots and 4 stalks of celery and add to the cooked beans, along with fresh ground pepper and herb or sea salt to taste. Mix with chopped mesclun greens, olive oil and some fresh lemon juice.

Lemon-Ginger Tofu:

Slice fresh tofu and place into a pan with a few tablespoons of fresh lemon juice. Add freshly grated gingerroot. Cook on low heat for 5 minutes.

Navy Bean Salad:

Soak one bag of navy beans 8-10 hours (overnight). You may use canned beans if you prefer. Drain and rinse the beans. Set aside. Add one part dried beans to two parts water. Add a bay leaf or Kombu strip. Bring to a gentle boil and then simmer for one hour. Chop 1 red onion, 1 bunch of arugula leaves, 4 stalks of celery with leaves and 2 carrots. Add chopped vegetables, 1 freshly squeezed lemon, a bit of olive oil, herb or sea salt to taste to the cooked or canned beans.

Anasazi Bean Stew:

Soak one bag of anasazi beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Puree 3 red onions, 8 carrots w/ tops, 1 bunch of celery w/ leaves, 1 bunch of parsley, 1 bunch of basil and 3-4 cloves of garlic. Place beans and pureed vegetables into a large stock pot. Add 1 quart of vegetable stock, 1 jar of tomato paste, 1 tsp. tumeric, 1 bay leaf, ½ teaspoon of chile peppers and herb or sea salt to taste. Bring to a gentle boil and then simmer for 2 hours.

Red Lentil & Vegetable Stew:

Puree 8 carrots, 2 onions, 7 stalks of celery with leaves, 1 bunch of flat leaf parsley, 1 bunch of dandelion greens and 5 cloves of garlic. Quarter 4 yams. Place one bag of red lentils, pureed vegetables, yams, 1 quart of water, 1 can of whole peeled tomato, a pinch of tumeric, oregano, thyme, cayenne and herb or sea salt into stock pot. Bring to a gentle boil and simmer for 2 hours.

Black Bean Soup:

Soak one bag of black beans 8-10 hours (overnight). Drain and rinse the beans. You may use canned beans if you prefer. Chop 2 large onions, 1 bunch of celery with leaves, 1 bunch of cilantro and 2 sweet red peppers. Place 1 quart of vegetable stock and 1 can of pureed tomato in stock pot with the beans, chopped vegetables, 1 tsp. cumin, 1 bay leaf and herb or sea salt to taste to Bring to a gentle boil and then simmer 2 hours.

Amaranth Grain:

Lightly toast amaranth grain in a pan. Use one part grain to two parts water. Bring to a gentle boil and then simmer for 30 minutes. Add fresh fruit when ready to eat. Add frozen, dried fruit and/or spices a few minutes into the cooking time.

Steel Cut Oats:

Soak steel cut oats overnight (or for at least 7 hours before cooking). Cook for 10-15 minutes. Add fresh fruit when ready to eat. Add frozen, dried fruit and/or spices a few minutes into the cooking time.

Protein Power Shake:

One scoop of your favorite protein powder, ½ cup of fresh or frozen strawberries, ¼ cup of fresh or frozen blueberries or blackberries, 2 cups of almond, rice or soy milk, 1 tablespoon of wheat or barley grass powder, 1 tablespoon of raw honey.

Teff Grain:

Soak teff grain overnight (or for at least 7 hours before cooking). Cook for 10-15 minutes. Add shredded coconut and fresh fruit.

Miso Soup:

Simmer 1 quart of vegetable stock or spring water with a few very thin slices of kombu and a few cubes of fresh tofu for 15 minutes. Turn off the heat and add ½ teaspoon of brown rice miso to the pot. Cover and let stand for 5 minutes.

Tofu Baby Spinach:

Add 4-5 cubes of fresh tofu and 2 cloves of chopped garlic to lightly cooked baby spinach greens. Garnish with toasted pine nuts.

Tempeh Broccoli Florets:

Add 4-5 cubes of tempeh and freshly grated gingerroot to lightly cooked broccoli florets.

Tofu Swiss Chard:

Add 4-5 cubes of fresh tofu and 2 cloves of chopped garlic to lightly cooked green or red swiss chard.

Tofu Peppered Kale:

Add 4-5 cubes of fresh tofu, ½ teaspoon of chile peppers and 2 cloves of chopped garlic to finely chopped, lightly cooked kale.

Beneficial Beverages:

Warm or cool lemon and/or lime water, and helpful herbal teas for digestion and/or detoxification, include lemon balm, chamomile, ginger, nettle, dandelion and milk thistle.

Food Plan - Moderate Protein Diet Sample Menu Plan (Fish, Eggs, Dairy)

Day 1

Breakfast: 1 Cup Organic Plain Yogurt w/ Fresh Blueberries

Lunch: Oregano-Basil Red Quinoa w/ Mesclun & Goat Cheese Salad

Snack: Red/Green Pepper Slices w/ Pumpkin Seeds

Dinner: Baked Halibut w/ Olive/Tomato Garnish & Garlic Kale

Snack: Sliced Apple w/ Cinnamon

Day 2

Breakfast: Fresh Grapefruit w/ Soft Boiled/Poached Eggs

Lunch: Tomato & Bean Sprout Hommus Pita w/ Miso Soup

Snack: Celery Sticks w/ Almonds

Dinner: Lemon Sole w/ Mesclun & Goat Cheese Salad

Snack: Fresh Melon

Day 3

Breakfast: Amaranth Grain w/ Fresh Strawberries

Lunch: Baked Salmon w/ Avocado & Endive Salad

Snack: Cucumber Slices w/ Sunflower Seeds

Dinner: Millet Sunflower Patties w/ Gingered Collard Greens

Snack: Black/Red Grapes

Day 4

Breakfast: 1 Cup Organic Plain Kefir w/ Fresh Raspberries

Lunch: Lemon-Ginger Tofu w/ Baked Yam & Fresh Bean Sprout Salad

Snack: Carrot Sticks w/ Pumpkin Seeds

Dinner: Basil & Pine Nut Spaghetti Squash w/ Tofu-Peppered Kale

Snack: Nectarine

Day 5

Breakfast: Scrambled Eggs w/ Scallion
Lunch: Black Japonica Chile Rice w/ Avocado & Endive Salad
Snack: Red/Green Pepper Slices w/ Pumpkin Seeds
Dinner: Lemon-Pepper Baked Halibut w/ Broccoli Florets
Snack: Sliced Pineapple

Day 6

Breakfast: 1 Cup Organic Plain Yogurt w/ Fresh Strawberries
Lunch: Anasazi Bean Stew w/ Tomato & Sprout Salad
Snack: Red/Yellow/Green Pepper Slices w/ Pumpkin Seeds
Dinner: Baked Salmon w/ Miso Soup & Garlic Cauliflower
Snack: Apple Slices w/ Cinnamon

Day 7

Breakfast: Fresh Grapefruit w/ Soft Boiled/Poached Eggs
Lunch: Black Bean Soup w/ Baby Romaine & Goat Cheese Salad
Snack: Celery Sticks w/ Almonds
Dinner: Lemon Sole & Carrot-Dill Soup w/ Garlic Swiss Chard
Snack: Fresh Melon

Day 8

Breakfast: Amaranth w/ Fresh Blueberries
Lunch: Lentil Bean Salad over Mesclun Greens
Snack: Cucumber Slices w/ Sunflower Seeds
Dinner: White Quinoa w/ Adzuki & Garlic Broccoli Florets
Snack: Black/Red Grapes

Day 9

Breakfast: 1 Cup Organic Plain Kefir w/ Raspberries
Lunch: Green Millet w/ Baby Romaine & Goat Cheese Salad
Snack: Carrot Sticks w/ Pumpkin Seeds
Dinner: Red Snapper w/ Lime & Escarole-Dandelion Salad
Snack: Nectarine

Day 10

Breakfast: Scrambled Eggs w/ Scallion

Lunch: Garbanzo Bean Delight w/ Arugula & Endive Salad

Snack: Red/Yellow/Green Pepper Slices w/ Pumpkin Seeds

Dinner: Lemon-Caper Talapia w/ Garlic Swiss Chard

Snack: Sliced Pineapple

Recipes & Cooking Instructions**Amaranth Grain:**

Lightly toast amaranth grain in a pan. Use one part grain to two parts water. Bring to a gentle boil and then simmer for 30 minutes. Add fresh fruit when ready to eat. Add frozen, dried fruit and/or spices a few minutes into the cooking time.

Oregano-Basil Red Quinoa:

Use one part grain to two parts vegetable stock. Add 1 tablespoon of oregano and herb or sea salt to taste to the cooking water and simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add a small amount of olive oil, 2-3 cloves of chopped garlic and one bunch of freshly chopped basil leaves. Cover and let stand for 5 minutes.

Millet Sunflower Patties:

Use one part grain to two parts vegetable stock. Add herb or sea salt to taste to the cooking water. Cook for 30 minutes. While the millet is cooking, puree 2-3 carrots, 1 bunch of fresh parsley or basil leaves and 2 cloves of garlic. When the millet is fully cooked, turn off the heat and mix in the pureed vegetables and $\frac{3}{4}$ a cup of ground sunflower seeds. Shape into individual patties or a loaf. Place into a 350 degree oven for 30 minutes, or pan sauté the patties.

Basil & Pine Nut Spaghetti Squash:

Rinse squash and cut off stem. Place squash into steamer and steam for 30-45 minutes or until your fork easily pierces the flesh. Allow the squash to cool for a few minutes, then cut in half (length-wise) and scoop out the seeds. With a fork, "rake" the squash out of its skin into a bowl. Add 1-2 cloves of chopped garlic, 1 bunch of freshly chopped basil leaves or flat leaf parsley, $\frac{1}{4}$ cup of pine nuts, 2-3 tablespoons of olive oil, freshly ground pepper and herb or sea salt to taste.

Black Japonica Chile Rice:

Use one part grain to two parts vegetable stock. Add a pinch of herb or sea salt to the cooking water. Bring to a gentle boil and then simmer for 30 minutes. When the grain is fully cooked, turn off the heat and add 2-3 tablespoons of olive oil, 3-4 cloves of chopped garlic, 2 tablespoons of chile powder and 1 tablespoon of oregano. Cover and let stand for 5 to 10 minutes.

White Quinoa with Adzuki:

Use one part grain to two parts vegetable stock. Add 1 teaspoon of oregano, 1 teaspoon of thyme, 2 fresh sage leaves and herb or sea salt to taste to the cooking water. Bring to a boil and then simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add 1 chopped sweet red pepper, 1 chopped red onion and 2-3 tablespoons of adzuki beans. Let stand for 5-10 minutes.

Green Millet:

Use one part grain to two parts vegetable stock. Add a pinch of chile pepper and herb or sea salt to taste to the cooking water. Cook for 30 minutes. While the millet is cooking, finely chop 1 bunch of kale and 2-3 cloves of garlic. When the millet is fully cooked, add the finely chopped kale and garlic. Turn off the heat. Cover and let stand for 5-10 minutes.

Baked Halibut w/ Olive/Tomato Garnish:

Preheat oven to 350 degrees. Brush fillet with olive oil or ghee. Sprinkle with lemon-pepper and lemon-thyme. Chop 4 green olives and 2 plum tomatoes. Place halibut, olives and tomato into oven for 20 minutes. Squeeze fresh lemon juice over the halibut before serving.

Lemon Sole:

Preheat oven to 350 degrees. Brush fillet with olive oil and add freshly ground pepper or cayenne. Bake for 15 minutes. Squeeze fresh lemon juice over the sole before serving. Garnish with finely chopped flat leaf parsley.

Baked Salmon:

Preheat oven to 350 degrees. Brush fillet with olive oil or ghee. Squeeze the juice of ½ a lemon over the top. Bake for 30 minutes.

Lemon-Peppered Baked Halibut:

Preheat oven to 350 degrees. Brush fillet with olive oil or ghee. Sprinkle fillet with lemon-pepper and lemon-thyme. Bake for 20 minutes. Squeeze fresh lemon juice over the halibut before serving. Red Snapper w/ Lime: Preheat oven to 350 degrees. Brush fillet with olive oil and dredge in Cajun spice mix. Bake for 30 minutes. Squeeze fresh lime juice over the snapper before serving. Garnish with finely chopped fresh cilantro.

Lemon-Caper Talapia:

Preheat oven to 350 degrees. Brush fillet with olive oil or ghee. Squeeze the juice of ½ a lemon over the top. Bake for 30 minutes. Garnish with ½ teaspoon of capers and finely chopped fresh flat leaf parsley.

Lemon-Caper Talapia:

Preheat oven to 350 degrees. Brush fillet with olive oil or ghee. Squeeze the juice of ½ a lemon over the top. Bake for 30 minutes. Garnish with ½ teaspoon of capers and finely chopped fresh flat leaf parsley.

Lemon-Ginger Tofu:

Slice fresh tofu and place into a pan with a few tablespoons of fresh lemon juice. Add freshly grated gingerroot. Cook on low heat for 5 minutes.

Navy Bean Salad:

Soak one bag of navy beans 8-10 hours (overnight). You may use canned beans if you prefer. Drain and rinse the beans. Set aside. Add one part dried beans to two parts water. Add a bay leaf or Kombu strip. Bring to a gentle boil and then simmer for one hour. Chop 1 red onion, 1 bunch of arugula leaves, 4 stalks of celery with leaves and 2 carrots. Add chopped vegetables, 1 freshly squeezed lemon, a bit of olive oil, herb or sea salt to taste to the cooked or canned beans.

Anasazi Bean Stew:

Soak one bag of anasazi beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Puree 3 red onions, 8 carrots w/ tops, 1 bunch of celery w/ leaves, 1 bunch of parsley, 1 bunch of basil and 3-4 cloves of garlic. Place beans and pureed vegetables into a large stock pot. Add 1 quart of vegetable stock, 1 jar of tomato paste, 1 tsp. tumeric, 1 bay leaf, ½ teaspoon of chile peppers and herb or sea salt to taste. Bring to a gentle boil and then simmer for 2 hours.

Black Bean Soup:

Soak one bag of black beans 8-10 hours (overnight). Drain and rinse the beans. You may use canned beans if you prefer. Chop 2 large onions, 1 bunch of celery with leaves, 1 bunch of cilantro and 2 sweet red peppers. Place 1 quart of vegetable stock and 1 can of pureed tomato in stock pot with the beans, chopped vegetables, 1 tsp. cumin, 1 bay leaf and herb or sea salt to taste to Bring to a gentle boil and then simmer 2 hours.

Lentil Bean Salad:

Soak one bag of petite French lentils or Black Beluga lentils 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour and set aside. Chop 1 red onion, 4 carrots and 4 stalks of celery and add to the cooked beans, along with fresh ground pepper and herb or sea salt to taste. Mix with chopped mesclun greens, olive oil and some fresh lemon juice.

Garbanzo Bean Delight:

Soak one bag of garbanzo beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. When beans are fully cooked, turn off the heat and add a small amount of olive oil, 2-3 gloves of garlic, a ¼ cup of fresh tahini, 1 bag of baby spinach leaves, the juice of 1 freshly squeezed lemon and herb or sea salt to taste.

Carrot-Dill Soup:

Place 2 bags of pureed carrots, 2 tablespoons of dried dill or one bunch of fresh dill, 1 quart of water or vegetable stock, 1 tablespoon of Ghee into stock pot. Bring boil them simmer for 30 minutes.

Miso Soup:

Simmer 1 quart of vegetable stock or spring water with a few very thin slices of kombu and a few cubes of fresh tofu for 15 minutes. Turn off the heat and add ½ teaspoon of brown rice miso to the pot. Cover and let stand for 5 minutes.

Beneficial Beverages:

Warm or cool lemon and/or lime water, and helpful herbal teas for digestion and/or detoxification, include lemon balm, chamomile, ginger, nettle, dandelion and milk thistle.

Food Plan - Detoxification Sample Menu Plan**Day 1**

Breakfast: Fresh Blueberries & Raspberries w/ Green Tea or Herb Tea

Lunch: Steamed Artichoke w/ Lemon & Fresh Vegetable Soup

Snack: Red Pepper Slices w/ Green Juice Drink

Dinner: Baked Yam w/ Steamed String Beans

Snack: Watermelon Slices

Day 2

Breakfast: Honeydew Melon w/ Green Tea or Herb Tea

Lunch: Brown Lentils w/ Chopped Green Scallion & Miso Soup

Snack: Celery Sticks w/ Green Juice Drink

Dinner: Nutmeg Baked Butternut Squash w/ Steamed Swiss Chard

Snack: Nectarine Slices

Day 3

Breakfast: Fresh Strawberries & Blackberries w/ Green Tea or Herb Tea

Lunch: Black Beans w/ Chopped Cilantro & Fresh Vegetable Soup

Snack: Cucumber Slices w/ Green Juice Drink

Dinner: Sesame White Quinoa w/ Chopped Basil & Steamed Broccoli Florets

Snack: Red or Black Grapes

Day 4

Breakfast: Fresh Grapefruit w/ Green Tea or Herb Tea

Lunch: Sunflower Wild Rice w/ Fresh Chopped Arugula Greens & Miso Soup

Snack: Carrot Sticks w/ Green Juice Drink

Dinner: Lemon-Ginger Tofu w/ Steamed Asparagus

Snack: Honeydew Melon Slices

Day 5

Breakfast: Fresh Blueberries & Strawberries w/ Green Tea or Herb Tea

Lunch: Mustard-Spinach Adzuki Bean Salad & Fresh Vegetable Soup

Snack: Red Pepper Slices w/ Green Juice Drink

Dinner: Spaghetti Squash w/ Fresh Chopped Basil & Steamed Kale

Snack: Watermelon Slices

Day 6

Breakfast: Fresh Blueberries & Raspberries w/ Green Tea or Herb Tea

Lunch: Baked Eggplant w/ Garlic Humus & Fresh Vegetable Soup

Snack: Red Pepper Slices w/ Green Juice Drink

Dinner: Garlic Green Millet w/ Steamed Swiss Chard

Snack: Watermelon Slices

Day 7

Breakfast: Honeydew Melon w/ Green Tea or Herb Tea

Lunch: Brown Lentils w/ Chopped Green Scallion & Miso Soup
Snack: Celery Sticks w/ Green Juice Drink
Dinner: Cinnamon Baked Acorn Squash w/ Steamed Kale

Snack: Nectarine

Day 8

Breakfast: Fresh Strawberries & Blackberries w/ Green Tea or Herb Tea

Lunch: Black Beans w Chopped Cilantro & Fresh Vegetable Soup

Snack: Cucumber Slices w/ Green Juice Drink

Dinner: Oregano Red Quinoa w/ Steamed Broccoli Florets

Snack: Red or Black Grapes

Day 9

Breakfast: Fresh Grapefruit w/ Green Tea or Herb Tea

Lunch: Sunflower Wild Rice w/ Fresh Chopped Arugula Greens & Miso Soup

Snack: Carrot Sticks w/ Green Juice Drink

Dinner: Baked Yam w/ Steamed String Beans

Snack: Honeydew Melon Slices

Day 10

Breakfast: Fresh Blueberries & Strawberries w/ Green Tea or Herb Tea

Lunch: Mustard-Spinach Adzuki Bean Salad & Fresh Vegetable Soup

Snack: Red Pepper Slices w/ Green Juice Drink

Dinner: Lemon-Ginger Tofu w/ Steamed Asparagus

Snack: Watermelon Slices

Recipes & Cooking Instructions**Steamed Artichoke:**

Trim the sharp tips of the artichoke leaves off and rinse the artichoke. Place the artichoke in steamer and squeeze the juice of ½ a lemon over the top and sprinkle with herb or sea salt to taste. Steam for 45 minutes.

Baked Yam:

Preheat oven to 350 degrees. Scrub and rinse yam "skin". Place into oven and bake for 45 minutes. (The skin is delicious to eat and adds good fiber).

Brown Lentils:

Soak small brown lentils 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. Chop 3 green scallion and 3 stalks of celery and herb or sea salt to taste. Squeeze fresh lemon juice over the beans.

Nutmeg Baked Butternut Squash:

Preheat oven to 350 degrees. Cut off the stem and slice down the middle. Scoop out seeds and place the squash and seeds into a baking dish with a small amount of water. Sprinkle with nutmeg. Bake for 45 minutes.

Black Beans:

Soak black beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. Chop 1 bunch of fresh cilantro and add ¼ teaspoon of cumin or chili powder and herb or sea salt to taste. Squeeze fresh lime juice over the beans.

Sesame White Quinoa:

Use one part grain to two parts vegetable stock. Add 1 teaspoon of oregano, 1 teaspoon of thyme, 2 fresh sage leaves and herb or sea salt to taste to the cooking water. Bring to a boil and then simmer for 20 minutes. When the grain is fully cooked, add 1 chopped sweet red pepper, 1 chopped red onion and 1 bunch of freshly chopped basil leaves. Garnish with roasted un-hulled sesame seeds.

Sunflower Wild Rice:

Add one part wild rice to two parts vegetable stock and herb or sea salt to taste. Simmer for 30 minutes or until done. Add freshly chopped Arugula greens and 1 teaspoon of toasted sunflower seeds.

Lemon-Ginger Tofu:

Slice fresh tofu and place into a pan with a few tablespoons of fresh lemon juice. Add freshly grated gingerroot, 1 tablespoon of tahini, ½ teaspoon of miso and cook on very low heat for 5 minutes.

Mustard-Spinach Adzuki Bean Salad:

Soak one bag of adzuki beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water and herb or sea salt to taste. Cook for 1 hour. Add freshly chopped baby spinach leaves, 2 scallions and 1 tablespoon of stone ground mustard to the beans.

Spaghetti Squash:

Rinse squash and cut off stem. Place squash into steamer and steam for 30-45 minutes or until your fork easily pierces the flesh. Allow the squash to cool for a few minutes, then cut in half (length-wise) and scoop out the seeds. With a fork, "rake" the squash out of its skin into a bowl. Add 2 cloves of chopped garlic, 1 bunch of freshly chopped basil leaves or flat leaf parsley, ¼ cup of roasted pumpkin seeds. ¼ teaspoon cumin and herb or sea salt to taste.

Baked Eggplant:

Slice eggplant into ½ inch sections and soak in a bowl of water for 1 hour. Preheat oven to 350 degrees. Drain the eggplant and sprinkle with garlic powder, oregano leaf and herb or sea salt to taste. Place into a baking dish with 1 can of whole peeled tomato. Bake for 45 minutes. Add 1 tablespoon of fresh garlic humus to the top of each eggplant slice.

Garlic Green Millet:

Use one part grain to two parts vegetable stock; Add a ¼ teaspoon cayenne and herb or sea salt to taste to the cooking water. While the millet is cooking, finely chop 1 bunch of kale and 2 cloves of garlic. When the millet is fully cooked, add the finely chopped kale and garlic. Turn off the heat. Cover and let stand for 5-10 minutes Oregano

Red Quinoa:

Use one part grain to two parts vegetable stock. Add 1 tablespoon of oregano, 1/4 teaspoon of cayenne and herb or sea salt to taste to the cooking water and simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add 2 cloves of chopped garlic and one bunch of freshly chopped basil leaves. Cover and let stand for 5 minutes.

Fresh Vegetable Soup:

Puree or chop the following vegetables – 2 red or yellow onion, 1 bunch of celery w/ leaves, 1 bunch of flat leaf parsley, 6 carrots, 1 bunch of cauliflower tops, 1 bunch of asparagus, 1 beet w/ leaves. Add the vegetables to 1 quart of vegetable stock or water and 1 quart of tomato puree. Add 1 tablespoon sage, 1 tablespoon of oregano, ¼ teaspoon cayenne and herb or sea salt to taste. Bring to a gentle boil then simmer for 20 minutes.

Miso Soup:

Simmer 1 quart of vegetable stock or spring water with a few very thin slices of Kombu and a few cubes of fresh tofu for 15 minutes. Turn off the heat and add ½ teaspoon of brown rice miso to the pot. Cover and let stand for 5 minutes.

Green Juice Drink Option 1:

Mix 1 tablespoon of barley grass powder and 1 tablespoon of chlorophyll in 8 ounces of pure water and drink.

Green Juice Drink Option 2:

Juice 6 stalks of celery with leaves and 1 bunch of fresh parsley leaves. Add 4 ounces of pure water and drink.

Beneficial Beverages:

Warm or cool lemon and/or lime water, and helpful herbal teas for digestion and/or detoxification, include lemon balm, chamomile, ginger, nettle, dandelion and milk thistle.

Suggestions for Eating:

Avoid all non-organic food. Have your largest meal between 1 and 3 in the afternoon. Breakfast & dinner should be light. Drink at least one gallon of fluids in the form of purified water/lemon water, herbal teas and juices each day.

Food Plan - Thyroid Support Sample Menu Plan**Day 1**

Breakfast: Shake Option w/ Fresh Blueberries & Strawberries

Lunch: Fresh Vegetable Soup & Steamed Artichoke w/ Lemon

Snack: Almonds w/ Celery Sticks & Hummus (Green Juice Drink)

Dinner: Spiced Tomato Turkey Breast w/ Baked Yam & Endive-Beet Salad

Snack: Watermelon

Day 2

Breakfast: Steel Cut Oats w/ Sliced Green Apple & Cinnamon

Lunch: Brown Lentils w/ Chopped Green Scallion & Miso Soup
Snack: Red Bell Pepper Slices w/ Hummus (Green Juice Drink)
Dinner: Nutmeg Baked Butternut Squash w/ Swiss Chard & Baby Romaine Salad
Snack: Dark Plum

Day 3

Breakfast: Shake Option w/ Fresh Apricots
Lunch: Black Beans w/ Chopped Cilantro & Fresh Vegetable Soup
Snack: Pumpkin Seeds w/ Celery Sticks & Hummus (Green Juice Drink)
Dinner: Sesame White Quinoa w/ Garlic Zucchini & Baby Spinach Salad
Snack: Black Grapes

Day 4

Breakfast: Steel Cut Oats w/ Fresh Blueberries
Lunch: Sunflower Wild Rice w/ Fresh Chopped Arugula Greens & Miso Soup
Snack: Cherry Tomatoes & Hummus (Green Juice Drink)
Dinner: Lemon-Pepper Baked Halibut w/ Steamed Swiss Chard & Endive-Beet Salad
Snack: Honeydew Melon

Day 5

Breakfast: Shake Option w/ Sliced Pear
Lunch: Garbanzo Bean Delight Salad & Fresh Vegetable Soup
Snack: Red Bell Pepper Slices w/ Hummus (Green Juice Drink)
Dinner: Basil Spaghetti Squash w/ Garlic Lima Beans & Arugula-Shitake Mushroom Salad
Snack: Dark Red Cherries

Day 6

Breakfast: Shake Option w/ Navel Orange Sections
Lunch: Baked Eggplant w/ Garlic Humus & Fresh Vegetable Soup
Snack: Almonds w/ Celery Sticks & Green Juice Drink
Dinner: Garlic Black Rice w/ Steamed Swiss Chard & Arugula-Tomato Salad
Snack: Red or Green Apple Slices w/ Cinnamon

Day 7

Breakfast: Steel Cut Oats w/ Green Apple & Cinnamon
Lunch: Brown Lentils w/ Chopped Green Scallion & Miso Soup

Snack: Pumpkin Seeds w/ Carrot Sticks & Green Juice Drink
Dinner: Cinnamon Baked Acorn Squash w/ Garlic Lima Beans & Endive-Beet Salad
Snack: Black Grapes

Day 8

Breakfast: Shake Option w/ Fresh Apricots
Lunch: Black Beans w Chopped Cilantro & Fresh Vegetable Soup
Snack: Cherry Tomatoes w/ Hummus & Green Juice Drink
Dinner: Oregano Red Quinoa w/ Garlic Asparagus & Dandelion-Tomato Salad
Snack: Red or Green Apple Slices w/ Cinnamon

Day 9

Breakfast: Steel Cut Oats w/ Fresh Blueberries
Lunch: Sunflower Wild Rice w/ Fresh Chopped Arugula Greens & Miso Soup
Snack: Carrot Sticks w/ Hummus & Green Juice Drink
Dinner: Spiced Tomato Turkey Breast w/ Garlic String Beans & Baby Spinach Salad
Snack: Honeydew Melon

Day 10

Breakfast: Shake Option w/ Sliced Pear
Lunch: Spinach Adzuki Bean Salad & Fresh Vegetable Soup
Snack: Red Bell Pepper Slices w/ Hummus & Green Juice
Dinner: Garlic Black Rice w/ Steamed Asparagus & Watercress Salad
Snack: Dark Plum

Recipes & Cooking Instructions**Steamed Artichoke:**

Trim the sharp tips of the artichoke leaves off and rinse the artichoke. Place the artichoke in steamer and squeeze the juice of ½ a lemon over the top and sprinkle with herb or sea salt to taste. Steam for 45 minutes.

Baked Yam:

Preheat oven to 350 degrees. Scrub and rinse yam "skin". Place into oven and bake for 45 minutes. (The skin is delicious to eat and adds good fiber).

Brown Lentils:

Soak small brown lentils 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. Chop 3 green scallion and 3 stalks of celery and herb or sea salt to taste. Squeeze fresh lemon juice over the beans.

Nutmeg Baked Butternut Squash:

Preheat oven to 350 degrees. Cut off the stem and slice down the middle. Scoop out seeds and place the squash and seeds into a baking dish with a small amount of water. Sprinkle with nutmeg. Bake for 45 minutes.

Black Beans:

Soak black beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. Chop 1 bunch of fresh cilantro and add ¼ teaspoon of cumin or chili powder and herb or sea salt to taste. Squeeze fresh lime juice over the beans.

Garbanzo Bean Delight:

Drain and rinse 1 can of organic garbanzo beans. Set aside. Chop 3 gloves of garlic. Toss the beans and chopped garlic with 2 cups of baby spinach leaves, the juice of 1 freshly squeezed lemon, 2 tablespoons of tahini and herb or sea salt to taste.

Sesame White Quinoa:

Use one part grain to two parts vegetable stock. Add 1 teaspoon of oregano, 1 teaspoon of thyme, 2 fresh sage leaves and herb or sea salt to taste to the cooking water. Bring to a boil and then simmer for 20 minutes. When the grain is fully cooked, add 1 chopped sweet red pepper, 1 chopped red onion and 1 bunch of freshly chopped basil leaves. Garnish with roasted un-hulled sesame seeds.

Sunflower Wild Rice:

Add one part wild rice to two parts vegetable stock and herb or sea salt to taste. Simmer for 30 minutes or until done. Add freshly chopped Arugula greens and 1 teaspoon of toasted sunflower seeds.

Lemon-Ginger Tofu:

Slice fresh tofu and place into a pan with a few tablespoons of fresh lemon juice. Add freshly grated gingerroot (optional) and a pinch of herb or sea salt. Cook on very low heat for 5 minutes.

Spinach Adzuki Bean Salad:

Soak one bag of adzuki beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water and herb or sea salt to taste. Cook for 1 hour. Add freshly chopped baby spinach leaves, 2 scallions and 1 tablespoon of stone ground mustard to the beans.

Spaghetti Squash:

Rinse squash and cut off stem. Place squash into steamer and steam for 30-45 minutes or until your fork easily pierces the flesh. Allow the squash to cool for a few minutes, then cut in half (length-wise) and scoop out the seeds. With a fork, "rake" the squash out of its skin into a bowl. Add 2 cloves of chopped garlic, 1 bunch of freshly chopped basil leaves or flat leaf parsley, ¼ cup of roasted pumpkin seeds. ¼ teaspoon cumin and herb or sea salt to taste.

Baked Eggplant:

Slice eggplant into ½ inch sections and soak in a bowl of water for 1 hour. Preheat oven to 350 degrees. Drain the eggplant and sprinkle with garlic powder, oregano leaf and herb or sea salt to taste. Place into a baking dish with 1 can of whole peeled tomato. Bake for 45 minutes. Add 1 tablespoon of fresh garlic humus to the top of each eggplant slice.

Lemon-Pepper Baked Halibut:

Preheat oven to 350 degrees. Brush fillet with olive oil or Ghee. Sprinkle with lemon-pepper and lemon- thyme. Chop 4 green olives and 1 plum tomato. Place halibut and chopped olives and tomato into oven for 20 minutes or until done. Squeeze fresh lemon over halibut before serving.

Spiced Tomato Turkey Breast:

Preheat oven to 350 degrees. Thin the turkey cutlet to speed baking time. Coat the turkey with garlic powder, oregano, thyme, cayenne and sea salt. Place the turkey cutlet and one can of tomato sauce into baking dish. Cook for 45 minutes.

Garlic Black Rice:

Use one part grain to two parts water or vegetable stock; Add a pinch of cayenne and 1 tbsp paprika or chili powder and herb or sea salt to taste to the cooking water. While the rice is cooking, finely chop 1 bunch of swiss chard and 4 cloves of garlic. When the rice is fully cooked, add the finely chopped kale and garlic. Turn off the heat. Cover and let stand for 5-10 minutes

Oregano Red Quinoa:

Use one part grain to two parts vegetable stock. Add 1 tablespoon of oregano, 1/4 teaspoon of cayenne and herb or sea salt to taste to the cooking water and simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add 2 cloves of chopped garlic and one bunch of freshly chopped basil leaves. Cover and let stand for 5 minutes.

Fresh Vegetable Soup:

Puree or chop the following vegetables – 2 red or yellow onion, 1 bunch of celery w/ leaves, 1 bunch of flat leaf parsley, 6 carrots, 1 bunch of asparagus, 1 beet w/ leaves. Add the vegetables to 1 quart of vegetable stock or water and 1 quart of tomato puree. Add 1 tablespoon sage, 1 tablespoon of oregano, ¼ teaspoon cayenne and herb or sea salt to taste. Bring to a gentle boil then simmer for 20 minutes.

Miso Soup:

Simmer 1 quart of vegetable stock or spring water with a few very thin slices of Kombu and a few cubes of fresh tofu for 15 minutes. Turn off the heat and add ½ teaspoon of brown rice miso to the pot. Cover and let stand for 5 minutes.

Green Juice Drink:

Juice 6 stalks of celery with leaves and 1 bunch of fresh parsley leaves. Add 4 ounces of pure water and drink.

Optional Shake:

1 tablespoon ground flaxseeds, ½ a banana w/ two cups pure water and whey protein or rice protein.

Beneficial Beverages:

Warm or cool lemon and/or lime water, and helpful herbal teas include lemon balm, nettle, dandelion and rose hips, nettle particularly. Others beneficial include raspberry tea, peppermint tea, rooibos tea, green tea.

Suggestions for Eating:

Avoid all non-organic food. Have your largest meal between 1 and 4. Drink at least one gallon of fluids in the form of purified water/lemon water, herbal teas and fresh juices each day. Do not consume the following: Broccoli Cauliflower Cabbage Mustard Greens, Kale, Turnips, Rape seed (Canola Oil), Soy, Pine nuts, Millet, Peanuts Include plenty of these herbs and spices in your cooking and garnishing: Thyme, Basil, Dill, Oregano, Parsley, Rosemary, Garlic, Cinnamon, Cayenne, Cumin, Coriander, Chili, Paprika, Cloves, Turmeric, Garam Marsala.

Food Plan - Immune Enhancement Sample Menu Plan**Day 1**

Breakfast: Power Protein Shake w/ Red Apple Slices

Lunch: Fresh Vegetable Soup & Steamed Artichoke w/ Lemon

Snack: Endive & Beet Salad w/ Chopped Walnuts & Olive Oil & Lemon Dressing

Dinner: Fresh Chicken Soup w/ Baked Yam & Dandelion-Tomato Salad

Snack: Dark Red Cherries

Day 2

Breakfast: Steel Cut Oats w/ Fresh Blueberries

Lunch: Brown Lentils w/ Chopped Green Scallion & Miso Soup

Snack: Almonds & Celery Sticks w/ Green Juice Drink

Dinner: Lemon-Pepper Baked Halibut w/ Steamed Swiss Chard & Endive-Beet Salad

Snack: Honeydew Melon

Day 3

Breakfast: Power Protein Shake w/ Fresh Strawberries

Lunch: Black Beans w/ Chopped Cilantro & Fresh Vegetable Soup

Snack: Celery Sticks w/ Hummus & Green Juice Drink

Dinner: Sesame White Quinoa w/ Steamed Broccoli Florets & Baby Spinach Salad

Snack: Red or Black Grapes

Day 4

Breakfast: Steel Cut Oats w/ Green Apple Slices & Cinnamon

Lunch: Sunflower Wild Rice w/ Fresh Chopped Arugula Greens & Miso Soup

Snack: Carrot Sticks w/ Green Juice Drink

Dinner: Lemon-Ginger Tofu w/ Steamed Asparagus & Watercress Salad w/ Walnuts

Snack: Honeydew Melon Slices

Day 5

Breakfast: Power Protein Shake w/ Navel Orange Sections

Lunch: Mustard-Spinach Adzuki Bean Salad & Fresh Vegetable Soup

Snack: Cherry Tomatoes & Almonds w/ Green Juice Drink

Dinner: Spiced Tomato Turkey Breast w/ Steamed Kale & Endive-Beet Salad

Snack: Watermelon Slices

Day 6

Breakfast: Steel Cut Oats w/ Red Apple Slices

Lunch: Garlic Black Rice w/ Humus & Fresh Vegetable Soup

Snack: Red Pepper Slices w/ Hummus & Green Juice Drink

Dinner: Garlic Black Rice w/ Steamed Swiss Chard & Arugula-Tomato Salad

Snack: Nectarine

Day 7

Breakfast: Power Protein Shake w/ Red or Black Grapes

Lunch: Brown Lentils w/ Chopped Green Scallion & Miso Soup

Snack: Celery Sticks w/ Pecans & Green Juice Drink

Dinner: Cinnamon Baked Acorn Squash w/ Steamed Kale & Endive-Beet Salad

Snack: Honeydew Melon

Day 8

Breakfast: Power Protein Shake w/ Nectarine Slices
Lunch: Garbanzo Bean Delight w/ Fresh Vegetable Soup
Snack: Cucumber Slices w/ Hummus & Green Juice Drink
Dinner: Oregano Red Quinoa w/ Steamed Broccoli Florets & Dandelion-Tomato Salad
Snack: Dark Red Cherries

Day 9

Breakfast: Steel Cut Oats w/ Fresh Strawberries
Lunch: Sunflower Wild Rice w/ Fresh Chopped Arugula Greens & Miso Soup
Snack: Carrot Sticks w/ Hummus & Green Juice Drink
Dinner: Lemon-Ginger Tofu & Baked Yam w/ Steamed String Beans & Baby Spinach Salad
Snack: Dark Red Cherries

Day 10

Breakfast: Power Protein Shake w/ Fresh Blueberries
Lunch: Mustard-Spinach Adzuki Bean Salad & Fresh Vegetable Soup
Snack: Cherry Tomatoes w/ Hummus & Green Juice Drink
Dinner: Lemon-Pepper Baked Halibut w/ Steamed Asparagus & Watercress Salad
Snack: Watermelon

SlicesRecipes & Cooking Instructions**Steamed Artichoke:**

Trim the sharp tips of the artichoke leaves off and rinse the artichoke. Place the artichoke in steamer and squeeze the juice of ½ a lemon over the top and sprinkle with herb or sea salt to taste. Steam for 45 minutes.

Baked Yam:

Preheat oven to 350 degrees. Scrub and rinse yam "skin". Place into oven and bake for 45 minutes. (The skin is delicious to eat and adds good fiber).

Brown Lentils:

Soak small brown lentils 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. Chop 3 green scallion and 3 stalks of celery and herb or sea salt to taste. Squeeze fresh lemon juice over the beans.

Nutmeg Baked Butternut Squash:

Preheat oven to 350 degrees. Cut off the stem and slice down the middle. Scoop out seeds and place the squash and seeds into a baking dish with a small amount of water. Sprinkle with nutmeg. Bake for 45 minutes.

Garbanzo Bean Delight:

Drain and rinse 1 can of organic garbanzo beans. Set aside. Chop 3 gloves of garlic. Toss the beans and chopped garlic with 2 cups of baby spinach leaves, the juice of 1 freshly squeezed lemon, 2 tablespoons of tahini and herb or sea salt to taste.

Black Beans:

Soak black beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. Chop 1 bunch of fresh cilantro and add ¼ teaspoon of cumin or chili powder and herb or sea salt to taste. Squeeze fresh lime juice over the beans.

Sesame White Quinoa:

Use one part grain to two parts vegetable stock. Add 1 teaspoon of oregano, 1 teaspoon of thyme, 2 fresh sage leaves and herb or sea salt to taste to the cooking water. Bring to a boil and then simmer for 20 minutes. When the grain is fully cooked, add 1 chopped sweet red pepper, 1 chopped red onion and 1 bunch of freshly chopped basil leaves. Garnish with roasted un-hulled sesame seeds.

Sunflower Wild Rice:

Add one part wild rice to two parts vegetable stock and herb or sea salt to taste. Simmer for 30 minutes or until done. Add freshly chopped Arugula greens and 1 teaspoon of toasted sunflower seeds.

Lemon-Ginger Tofu:

Slice fresh tofu and place into a pan with a few tablespoons of fresh lemon juice. Add freshly grated gingerroot (optional) and a pinch of herb or sea salt. Cook on very low heat for 5 minutes.

Mustard-Spinach Adzuki Bean Salad:

Soak one bag of adzuki beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water and herb or sea salt to taste. Cook for 1 hour. Add freshly chopped baby spinach leaves, 2 scallions and 1 tablespoon of stone ground mustard to the beans.

Spaghetti Squash:

Rinse squash and cut off stem. Place squash into steamer and steam for 30-45 minutes or until your fork easily pierces the flesh. Allow the squash to cool for a few minutes, then cut in half (length-wise) and scoop out the seeds. With a fork, "rake" the squash out of its skin into a bowl. Add 2 cloves of chopped garlic, 1 bunch of freshly chopped basil leaves or flat leaf parsley, ¼ cup of roasted pumpkin seeds. ¼ teaspoon cumin and herb or sea salt to taste.

Baked Eggplant:

Slice eggplant into ½ inch sections and soak in a bowl of water for 1 hour. Preheat oven to 350 degrees. Drain the eggplant and sprinkle with garlic powder, oregano leaf and herb or sea salt to taste. Place into a baking dish with 1 can of whole peeled tomato. Bake for 45 minutes. Add 1 tablespoon of fresh garlic humus to the top of each eggplant slice.

Garlic Black Rice:

Use one part grain to two parts water or vegetable stock; Add a pinch of cayenne and 1 tbsp paprika or chili powder and herb or sea salt to taste to the cooking water. While the rice is cooking, finely chop 1 bunch of swiss chard and 4 cloves of garlic. When the rice is fully cooked, add the finely chopped kale and garlic. Turn off the heat. Cover and let stand for 5-10 minutes

Steel Cut Oats:

Soak steel cut oats in spring water overnight (or for at least 7 hours before cooking). Cook for 10-15 minutes. Add fresh fruit when ready to eat. Add frozen, dried fruit and/or spices a few minutes into the cooking time.

Oregano Red Quinoa:

Use one part grain to two parts vegetable stock. Add 1 tablespoon of oregano, 1/4 teaspoon of cayenne and herb or sea salt to taste to the cooking water and simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add 2 cloves of chopped garlic and one bunch of freshly chopped basil leaves. Cover and let stand for 5 minutes.

Fresh Vegetable Soup:

Puree or chop the following vegetables – 2 red or yellow onion, 1 bunch of celery w/ leaves, 1 bunch of flat leaf parsley, 6 carrots, 1 bunch of cauliflower tops, 1 bunch of asparagus, 1 beet w/ leaves. Add the vegetables to 1 quart of vegetable stock or water and 1 quart of tomato puree. Add 1 tablespoon sage, 1 tablespoon of oregano, ¼ teaspoon cayenne and herb or sea salt to taste. Bring to a gentle boil then simmer for 20 minutes.

Lemon-Pepper Baked Halibut:

Preheat oven to 350 degrees. Brush fillet with olive oil or Ghee. Sprinkle with lemon-pepper and lemon- thyme. Chop 4 green olives and 1 plum tomato. Place halibut and chopped olives and tomato into oven for 20 minutes or until done. Squeeze fresh lemon over halibut before serving.

Spiced Tomato Turkey Breast:

Preheat oven to 350 degrees. Thin the turkey cutlet to speed baking time. Coat the turkey with garlic powder, oregano, thyme, cayenne and sea salt. Place the turkey cutlet and one can of tomato sauce into baking dish. Cook for 45 minutes.

Miso Soup:

Simmer 1 quart of vegetable stock or spring water with a few very thin slices of Kombu and a few cubes of fresh tofu for 15 minutes. Turn off the heat and add ½ teaspoon of brown rice miso to the pot. Cover and let stand for 5 minutes.

Green Juice Drink:

Juice 6 stalks of celery with leaves and 1 bunch of fresh parsley leaves. Add 4 ounces of pure water and drink.

Power Protein Shake:

2 tablespoons finely ground flaxseeds, ½ a banana, two cups pure water and whey protein.

Beneficial Beverages:

Warm or cool lemon and/or lime water, and helpful herbal teas include lemon balm, chamomile, ginger, nettle, dandelion and milk thistle, rose hips, green tea, rooibos tea.

Suggestions for Eating: Avoid all non-organic food. Have your largest meal between 1 and 4.

Food Plan - Healthy Fat (Hormone Balancing) Sample Menu Plan

Day 1

Breakfast: Steel Cut Oats Ground Flaxseeds & Strawberries w/ Unsweetened Silk Soy Milk

Lunch: Fresh Vegetable Soup w/ Avocado-Tomato Salad

Snack: Walnuts & Red Bell Pepper Slices w/ Hummus

Dinner: Fresh Chicken Soup w/ Baked Yam & Baby Spinach-Tomato & Hummus Salad

Snack: Dark Red Cherries

Day 2

Breakfast: Power Protein Shake w/ Fresh Strawberries

Lunch: Brown Lentils w/ Chopped Green Scallion & Miso Soup

Snack: Almonds & Celery Sticks w/ Hummus

Dinner: Lemon-Pepper Baked Halibut w/ Zucchini & Cashew Spinach Salad

Snack: Nectarine Slices

Day 3

Breakfast: Steel Cut Oats Ground Flaxseeds & Apple/Cinnamon w/ Unsweetened Silk Soy Milk

Lunch: Black Beans w/ Chopped Cilantro & Fresh Vegetable Soup

Snack: Cashews & Celery Sticks w/ Hummus

Dinner: Sesame White Quinoa w/ Broccoli Florets & Baby Romaine & Walnut Salad
Snack: Red or Black Grapes

Day 4

Breakfast: Power Protein Shake w/ Fresh Blueberries
Lunch: Sunflower Wild Rice w/ Fresh Chopped Arugula Greens & Miso Soup
Snack: Pecans & Carrot Sticks w/ Hummus
Dinner: Lemon-Ginger Tofu w/ Steamed Asparagus & Cashew Watercress Salad
Snack: Honeydew Melon Slices

Day 5

Breakfast: Power Protein Shake w/ Navel Orange Sections
Lunch: Spinach Adzuki Bean Salad & Fresh Vegetable Soup
Snack: Walnuts & Cherry Tomatoes w/ Hummus
Dinner: Spiced Tomato Turkey Breast w/ Steamed Kale & Endive-Beet Salad
Snack: Watermelon Slices

Day 6

Breakfast: Steel Cut Oats Ground Flaxseeds & Nectarines w/ Unsweetened Silk Soy Milk
Lunch: Garlic Black Rice w/ Humus & Fresh Vegetable Soup
Snack: Cashews & Red Pepper Slices w/ Hummus
Dinner: Garlic Black Rice w/ Steamed Swiss Chard & Arugula-Tomato Salad
Snack: Nectarine Slices

Day 7

Breakfast: Power Protein Shake w/ Red or Black Grapes
Lunch: Brown Lentils w/ Chopped Green Scallion & Miso Soup
Snack: Pecans & Celery Sticks w/ Hummus
Dinner: Cinnamon Baked Acorn Squash w/ Steamed Kale & Endive-Beet Salad
Snack: Honeydew Melon Slices

Day 8

Breakfast: Power Protein Shake w/ Red & Green Apple Slices w/ Cinnamon
Lunch: Garbanzo Bean Delight w/ Fresh Vegetable Soup
Snack: Walnuts & Cucumber Slices w/ Hummus
Dinner: Oregano Red Quinoa w/ Steamed Broccoli Florets & Dandelion-Tomato Salad

Snack: Pear Slices

Day 9

Breakfast: Steel Cut Oats Ground Flaxseeds & Strawberries w/ Unsweetened Silk Soy Milk

Lunch: Sunflower Wild Rice w/ Fresh Chopped Arugula Greens & Miso Soup

Snack: Almonds & Carrot Sticks w/ Hummus

Dinner: Lemon-Ginger Tofu & Baked Yam w/ Cashew & Baby Spinach Salad

Snack: Dark Red Cherries

Day 10

Breakfast: Power Protein Shake w/ Fresh Blueberries

Lunch: Spinach Adzuki Bean Salad & Fresh Vegetable Soup

Snack: Pumpkin Seeds & Cherry Tomatoes w/ Hummus Dinner: Lemon-Pepper Baked Halibut w/ String Bean Almandine & Avocado-Tomato Salad

Snack: Watermelon Slices

Recipes & Cooking Instructions

Steamed Artichoke:

Trim the sharp tips of the artichoke leaves off and rinse the artichoke. Place the artichoke in steamer and squeeze the juice of ½ a lemon over the top and sprinkle with herb or sea salt to taste. Steam for 45 minutes.

Baked Yam:

Preheat oven to 350 degrees. Scrub and rinse yam "skin". Place into oven and bake for 45 minutes. (The skin is delicious to eat and adds good fiber).

Brown Lentils:

Soak small brown lentils 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. Chop 3 green scallion and 3 stalks of celery and herb or sea salt to taste. Squeeze fresh lemon juice over the beans.

Nutmeg Baked Butternut Squash:

Preheat oven to 350 degrees. Cut off the stem and slice down the middle. Scoop out seeds and place the squash and seeds into a baking dish with a small amount of water. Sprinkle with nutmeg. Bake for 45 minutes.

Garbanzo Bean Delight:

Drain and rinse 1 can of organic garbanzo beans. Set aside. Chop 3 gloves of garlic. Toss the beans and chopped garlic with 2 cups of baby spinach leaves, the juice of 1 freshly squeezed lemon, 2 tablespoons of tahini and herb or sea salt to taste.

Black Beans:

Soak black beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water. Cook for 1 hour. Chop 1 bunch of fresh cilantro and add ¼ teaspoon of cumin or chili powder and herb or sea salt to taste. Squeeze fresh lime juice over the beans.

Sesame White Quinoa:

Use one part grain to two parts vegetable stock. Add 1 teaspoon of oregano, 1 teaspoon of thyme, 2 fresh sage leaves and herb or sea salt to taste to the cooking water. Bring to a boil and then simmer for 20 minutes. When the grain is fully cooked, add 1 chopped sweet red pepper, 1 chopped red onion and 1 bunch of freshly chopped basil leaves. Garnish with roasted un-hulled sesame seeds.

Sunflower Wild Rice:

Add one part wild rice to two parts vegetable stock and herb or sea salt to taste. Simmer for 30 minutes or until done. Add freshly chopped Arugula greens and 1 teaspoon of toasted sunflower seeds.

Lemon-Ginger Tofu:

Slice fresh tofu and place into a pan with a few tablespoons of fresh lemon juice. Add freshly grated gingerroot (optional) and a pinch of herb or sea salt. Cook on very low heat for 5 minutes.

Spinach Adzuki Bean Salad:

Soak one bag of adzuki beans 8-10 hours (overnight). You may use canned beans rather than dried if you prefer. Drain and rinse the beans. Add one part bean to two parts water and herb or sea salt to taste. Cook for 1 hour. Add freshly chopped baby spinach leaves, 2 scallions and 1 tablespoon of stone ground mustard to the beans.

Spaghetti Squash:

Rinse squash and cut off stem. Place squash into steamer and steam for 30-45 minutes or until your fork easily pierces the flesh. Allow the squash to cool for a few minutes, then cut in half (length-wise) and scoop out the seeds. With a fork, "rake" the squash out of its skin into a bowl. Add 2 cloves of chopped garlic, 1 bunch of freshly chopped basil leaves or flat leaf parsley, ¼ cup of roasted pumpkin seeds. ¼ teaspoon cumin and herb or sea salt to taste.

Baked Eggplant:

Slice eggplant into ½ inch sections and soak in a bowl of water for 1 hour. Preheat oven to 350 degrees. Drain the eggplant and sprinkle with garlic powder, oregano leaf and herb or sea salt to taste. Place into a baking dish with 1 can of whole peeled tomato.

Bake for 45 minutes. Add 1 tablespoon of fresh garlic humus to the top of each eggplant slice.

Garlic Black Rice:

Use one part grain to two parts water or vegetable stock; Add a pinch of cayenne and 1 tbsp paprika or chili powder and herb or sea salt to taste to the cooking water. While the rice is cooking, finely chop 1 bunch of swiss chard and 4 cloves of garlic. When the rice is fully cooked, add the finely chopped kale and garlic. Turn off the heat. Cover and let stand for 5-10 minutes

Steel Cut Oats:

Soak steel cut oats in spring water overnight (or for at least 7 hours before cooking). Cook for 10-15 minutes. Add fresh fruit when ready to eat. Add frozen, dried fruit and/or spices a few minutes into the cooking time. Oregano

Red Quinoa:

Use one part grain to two parts vegetable stock. Add 1 tablespoon of oregano, 1/4 teaspoon of cayenne and herb or sea salt to taste to the cooking water and simmer for 20 minutes. When the grain is fully cooked, turn off the heat and add 2 cloves of chopped garlic and one bunch of freshly chopped basil leaves. Cover and let stand for 5 minutes.

Fresh Vegetable Soup:

Puree or chop the following vegetables – 2 red or yellow onion, 1 bunch of celery w/ leaves, 1 bunch of flat leaf parsley, 6 carrots, 1 bunch of cauliflower tops, 1 bunch of asparagus, 1 beet w/ leaves. Add the vegetables to 1 quart of vegetable stock or water and 1 quart of tomato puree. Add 1 tablespoon sage, 1 tablespoon of oregano, 1/4 teaspoon cayenne and herb or sea salt to taste. Bring to a gentle boil then simmer for 20 minutes.

Lemon-Pepper Baked Halibut:

Preheat oven to 350 degrees. Brush fillet with olive oil or Ghee. Sprinkle with lemon-pepper and lemon- thyme. Chop 4 green olives and 1 plum tomato. Place halibut and chopped olives and tomato into oven for 20 minutes or until done. Squeeze fresh lemon over halibut before serving.

Spiced Tomato Turkey Breast:

Preheat oven to 350 degrees. Thin the turkey cutlet to speed baking time. Coat the turkey with garlic powder, oregano, thyme, cayenne and sea salt. Place the turkey cutlet and one can of tomato sauce into baking dish. Cook for 45 minutes.

Miso Soup:

Simmer 1 quart of vegetable stock or spring water with a few very thin slices of Kombu and a few cubes of fresh tofu for 15 minutes. Turn off the heat and add 1/2 teaspoon of brown rice miso to the pot. Cover and let stand for 5 minutes.

Green Juice Drink:

Juice 6 stalks of celery with leaves and 1 bunch of fresh parsley leaves. Add 4 ounces of pure water and drink.

Power Protein Shake:

3 tablespoons finely ground flaxseeds, ½ a banana, two cups unsweetened Silk Soy Milk and rice protein.

Beneficial Beverages:

Warm or cool lemon and/or lime water, and helpful herbal teas include lemon balm, chamomile, ginger, nettle, dandelion and milk thistle, rose hips, green tea, rooibos tea. Suggestions for Eating: Avoid all non-organic food. Have your largest meal between 1 and 4.