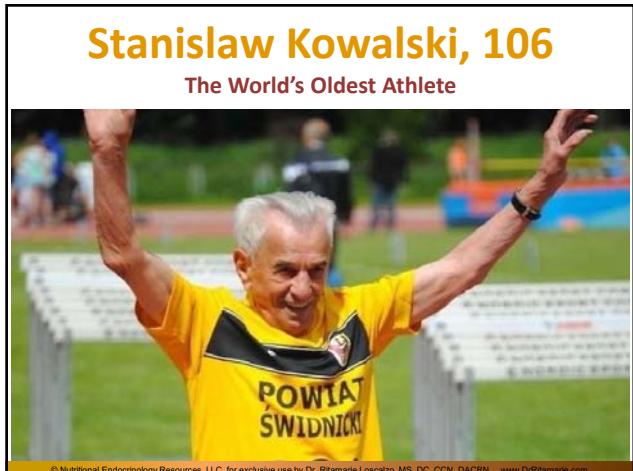


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Stanislaw Kowalski, 106

The World's Oldest Athlete

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My Big WHY



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My Big WHY

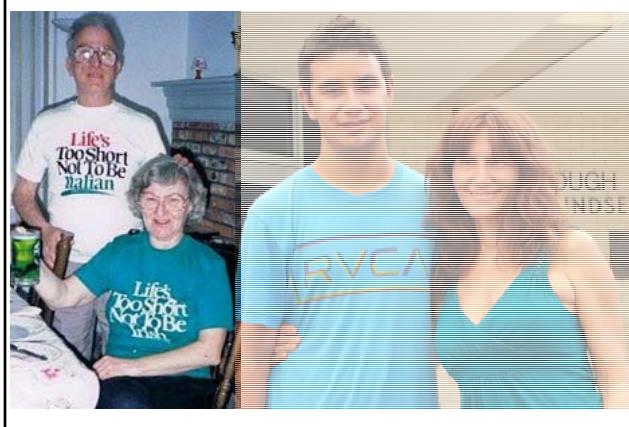


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From Health Crisis to Health Coach



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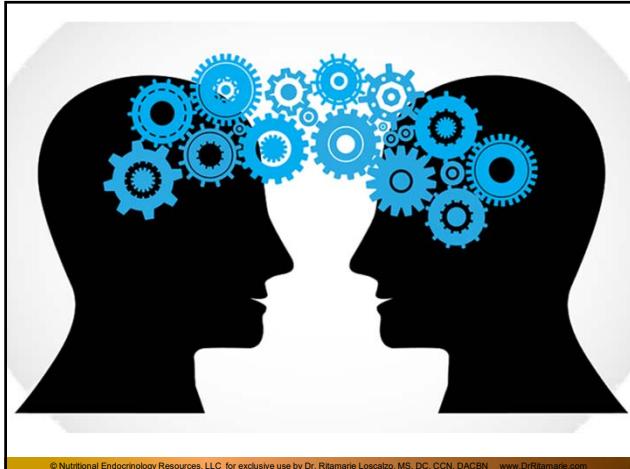


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What Does It Take to Succeed?

It Starts with Passion!

The
Power
of
WHY?



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What Else Does It Take to Succeed?

- ✓ Superior interview skills and excellent listening skills
- ✓ Knowledge about how the body works
- ✓ Functional assessment tools aka “Detective skills”
- ✓ A system and a complete holistic toolbox
- ✓ A support network



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How to Be Unstoppable in Your Health Care Practice



Impeccable Self-Care



Clinical Mastery

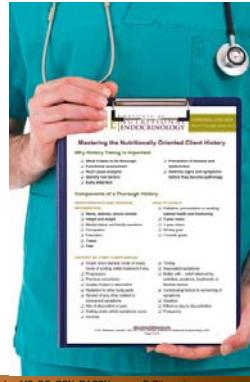


Effective Business and Marketing

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The Next 3 Days...

- ✓ Functional testing in YOUR practice
- ✓ History taking – the right way
- ✓ When, what, and how to order tests
- ✓ Physical evaluation



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The Next 3 Days...

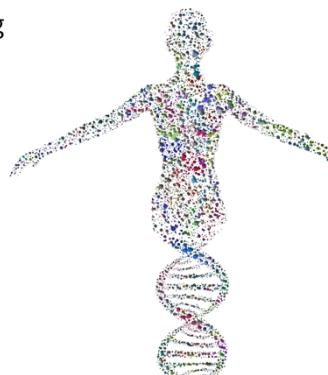
- ✓ What you can and cannot say
- ✓ Blood chemistry – gems often overlooked
- ✓ Immune testing
- ✓ Assessments from the east and ancient healing modalities



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The Next 3 Days...

- ✓ Reproductive testing
- ✓ Digestive testing
- ✓ Genetics testing
- ✓ A variety of functional tests



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The Next 3 Days...

- ✓ Home and in-office testing
- ✓ Creating action plans from test results
- ✓ Getting your message out



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Results Vary From Client To Client And Practitioner To Practitioner



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4 Pillars of a Functional Assessment



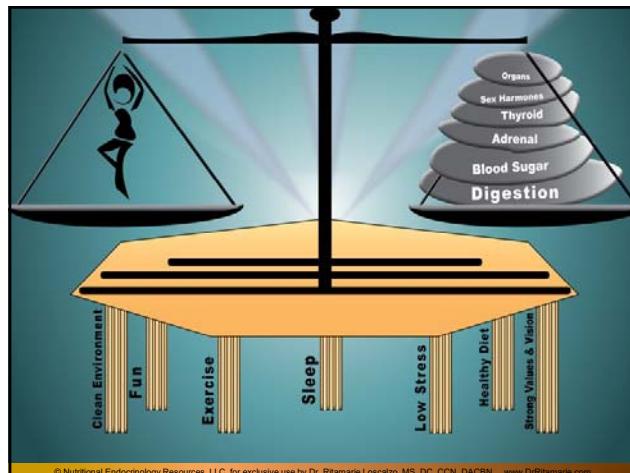
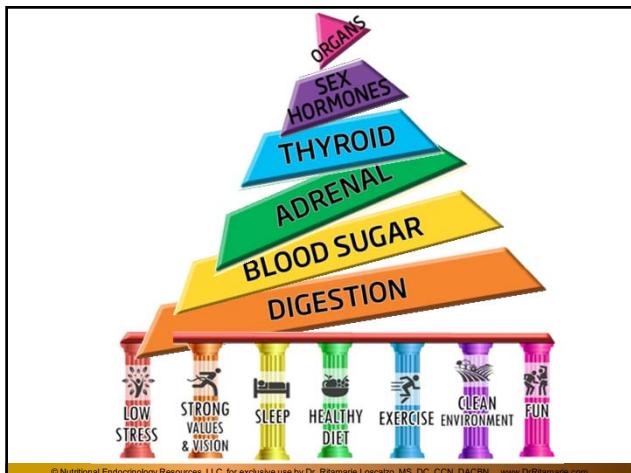
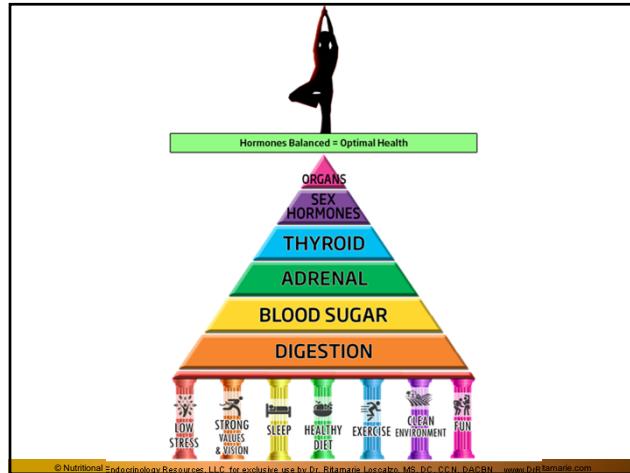
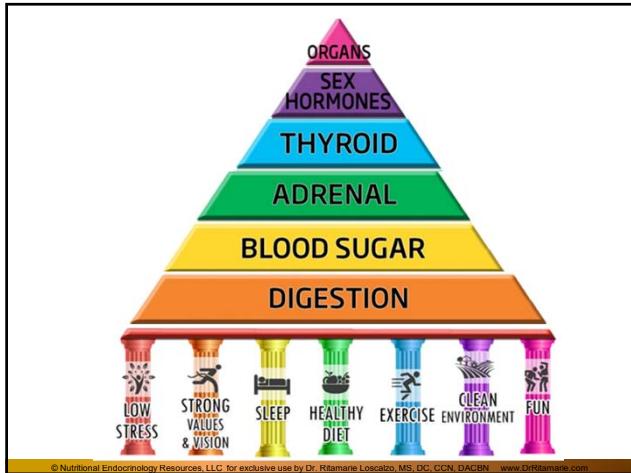
- ✓ “Detective” history taking and interview skills
- ✓ Functional physical evaluation
- ✓ Functional lab tests – blood, saliva, urine, hair, stool
- ✓ In-office/at-home testing

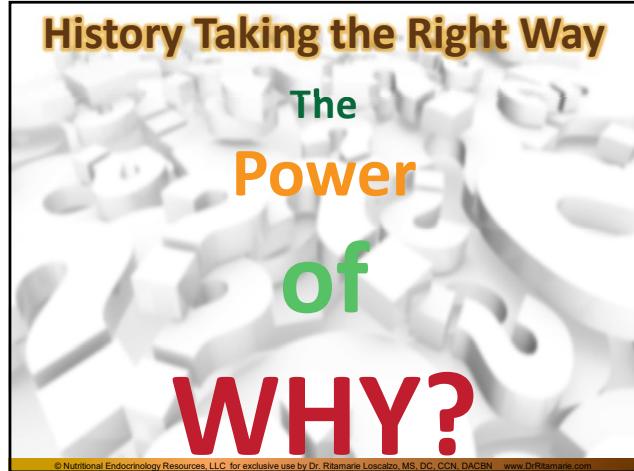
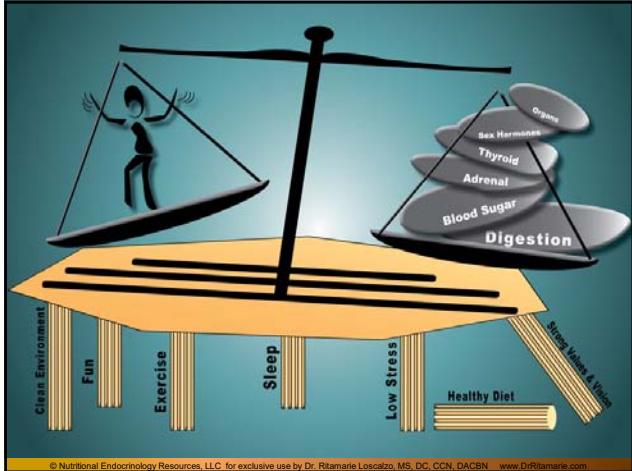
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The right way to take a history to get 75-90% of what you need right away



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Components of a Thorough History

- ✓ Demographics
- ✓ Health goals
- ✓ History of chief complaint(s)
- ✓ Current health and exposures
- ✓ Past health and family health
- ✓ Nutrient evaluation
- ✓ Journals and tracking forms
- ✓ “Ready and willing” assessment



Components of a Thorough History

Demographics and General Information

- ✓ Name, address, phone number
- ✓ Height and weight
- ✓ Marital status and family members
- ✓ Occupation
- ✓ Education
- ✓ Travel
- ✓ Pets



Components of a Thorough History Health Goals

- ✓ Palliative, preventative, or seeking optimal health and functioning
- ✓ 5-year vision
- ✓ 1-year vision
- ✓ 90-day goal
- ✓ 1-month goal



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Components of a Thorough History Chief Complaint(s)

- ✓ **Onset:** when began, mode of onset, mode of ending, initial management
- ✓ **Progression** and previous occurrence
- ✓ **Quality** of pain or discomfort
- ✓ **Related symptoms**
- ✓ **Setting** when symptoms occur
- ✓ **Timing**



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Components of a Thorough History Current Health and Exposures

- ✓ Review of body systems
- ✓ Stress and attitude evaluation
- ✓ Sleep habits and history
- ✓ Nutrition and lifestyle habits
- ✓ Exercise habits and history
- ✓ Environmental influences
- ✓ Medications and nutritional supplements
- ✓ Dental evaluation
- ✓ Current health care procedures



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Identifying Obstacles

7 Pillars Scorecard Assessment																																																													
Pillar 1: Stress																																																													
Use the descriptions to choose the appropriate score. Calculate your results at the bottom of the page.																																																													
Stress Part 1																																																													
<p>How often do you feel stressed about your job, family, health or personal life? (1 = 1-2 times per day, 2 = 3-4 times per day, 3 = 5-6 times per day, 4 = 7-8 times per day, 5 = 9-10 times per day, 6 = 11-12 times per day, 7 = 13-14 times per day)</p> <p>How often are you experiencing stress in your life? (1 = 1-2 times per day, 2 = 3-4 times per day, 3 = 5-6 times per day, 4 = 7-8 times per day, 5 = 9-10 times per day, 6 = 11-12 times per day, 7 = 13-14 times per day)</p> <p>How often are you having "trouble sleeping" (1 = 1-2 times per week, 2 = 3-4 times per week, 3 = 5-6 times per week, 4 = 7-8 times per week, 5 = 9-10 times per week, 6 = 11-12 times per week, 7 = 13-14 times per week)</p>																																																													
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Total for Each Column (number of checkmarks x value)																																																													
Subtotal Part 1 (Max 35)																																																													
Stress Part 2																																																													
<p>Do you feel stressed about your goals in life? (1 = 1-2 times per week, 2 = 3-4 times per week, 3 = 5-6 times per week, 4 = 7-8 times per week, 5 = 9-10 times per week, 6 = 11-12 times per week, 7 = 13-14 times per week)</p> <p>Are you happy most of the time? (1 = 1-2 times per week, 2 = 3-4 times per week, 3 = 5-6 times per week, 4 = 7-8 times per week, 5 = 9-10 times per week, 6 = 11-12 times per week, 7 = 13-14 times per week)</p> <p>Do you feel your life has meaning and purpose? (1 = 1-2 times per week, 2 = 3-4 times per week, 3 = 5-6 times per week, 4 = 7-8 times per week, 5 = 9-10 times per week, 6 = 11-12 times per week, 7 = 13-14 times per week)</p> <p>Do you feel you have control over your life? (1 = 1-2 times per week, 2 = 3-4 times per week, 3 = 5-6 times per week, 4 = 7-8 times per week, 5 = 9-10 times per week, 6 = 11-12 times per week, 7 = 13-14 times per week)</p>																																																													
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Stress Part 3																																																													
<p>Do you feel significantly less healthy than you did a year ago? (1 = 1-2 times per week, 2 = 3-4 times per week, 3 = 5-6 times per week, 4 = 7-8 times per week, 5 = 9-10 times per week, 6 = 11-12 times per week, 7 = 13-14 times per week)</p> <p>Do you believe a stress is negatively impacting the quality of your life? (1 = 1-2 times per week, 2 = 3-4 times per week, 3 = 5-6 times per week, 4 = 7-8 times per week, 5 = 9-10 times per week, 6 = 11-12 times per week, 7 = 13-14 times per week)</p> <p>Do you spend the majority of your time and money to fulfill responsibilities and obligations? (1 = 1-2 times per week, 2 = 3-4 times per week, 3 = 5-6 times per week, 4 = 7-8 times per week, 5 = 9-10 times per week, 6 = 11-12 times per week, 7 = 13-14 times per week)</p> <p>Has your diet been modified or abandoned in response to your stress? (1 = 1-2 times per week, 2 = 3-4 times per week, 3 = 5-6 times per week, 4 = 7-8 times per week, 5 = 9-10 times per week, 6 = 11-12 times per week, 7 = 13-14 times per week)</p>																																																													
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7 Pillars Scorecard

Pillar	Max Score	Your Score	Priority:
Pillar 1: Stress	1556		1 = low (green) 2 = medium (blue) 3 = high (yellow) 4 = very high (red)
Pillar 2: Attitude and Beliefs	66		
Pillar 3: Sleep	51		
Pillar 4: Nutrition Part 1 - Negative Habits	126		
Pillar 4: Nutrition Part 2 - Positive Habits	66		
Pillar 5: Fitness	21		
Pillar 6: Environment	249		
Pillar 7: Fun	48		

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Health Tracker

Habits and Obstacles			
Client Name	Coach Name	Positive Habits	Negative Habits
Habits and Obstacles			Challenges
Diet			
Movement			
Stress			
Sleep			
Schedule			
Environment			
Fun and Recreation			
Relationships			

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Components of a Thorough History

Past Health and Family History

- ✓ Illnesses and injuries
- ✓ Hospitalizations and surgeries
- ✓ Medication history
- ✓ Trauma
- ✓ Prenatal care
- ✓ Childhood health and diet
- ✓ Family history: past and present



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Components of a Thorough History

Nutrient Evaluation

- ✓ Vitamins
- ✓ Minerals
- ✓ Amino acids
- ✓ Fatty acids



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Nutrient Status

Name:				
Point Scale: 0 = Never/Barely or almost never 1 = Mild/Sometimes experiences/effects 2 = Moderate/Frequent experiences/effects 3 = Yes, Severe/Daily experiences/effects				
Section I: Essential Fatty Acids				
Do you experience pain relief with aspirin?	0	1	2	3
Do you crave fatty or greasy foods?	0	1	2	3
Do you have a history of following a low or reduced-fat diet?	0	1	2	3
0 = never, 1 = years ago, 2 = within last year, 3 = within past 3 months				
Do you experience tension headaches at the base of your skull?	0	1	2	3
Do you get headaches when out in the hot sun?	0	1	2	3
Do you sunburn easily or suffer sun poisoning?	0	1	2	3
Do you have dry, itchy skin?	0	1	2	3
Do you ever experience "gooseflesh/goosebumps"?	0	1	2	3
Do you have ridged, cracked, and/or peeling nails?	0	1	2	3
Do you have magnesium or vitamin B6 deficiencies that don't respond to supplements?	0	1	2	3
Do you have dandruff?	0	1	2	3
Do you have areas of inflamed soft tissue?	0	1	2	3
Do you have inflamed joints?	0	1	2	3
Do you have cracks in your heels?	0	1	2	3
Do you have skin rashes?	0	1	2	3
Do you have eczema?	0	1	2	3
Do you have breast cysts?	0	1	2	3
Do you suffer from diarrhea?	0	1	2	3
Do you have dry hair?	0	1	2	3
Do you have Eczema?	0	1	2	3
Do you have excess earwax?	0	1	2	3
Do you have gall stones?	0	1	2	3
Have you experienced hair loss?	0	1	2	3
Do you suffer from any immune impairment?	0	1	2	3
Do you have any other symptoms?	0	1	2	3

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Nutrient Scorecard

Percent score is calculated by dividing your score by the max score and multiplying by 100. Look up the % score in the chart below to determine priority.

Nutrient	Max Score	Your Score	Your % Score	Priority:
Essential Fatty Acids	99			1=low (green)
Amino Acids	24			2=medium (blue)
Vitamin A	30			3=high (yellow)
B Vitamins	45			4=very high (red)
Minerals	45			

Score Interpretation:

- 0-10%: Overall good balance. Sound nutrition and healthy habits will maintain good balance.
- 11-25%: In need of a tune up to restore balance before serious illness sets in. Diet and lifestyle improvements should shift to normal.
- 26-50%: Your nutrient balance is compromised and likely to significantly affect your state of health, well-being, and energy level.
- 51-100%: Your nutrient balance is severely compromised and requires immediate attention. Take steps now to restore balance to your health, well-being, and energy level.

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Nutrient Balance: General Assessment

Date of Assessment			
Essential Fatty Acid Needs			
Amino Acid Needs			
Nutrient Balance: Vitamin Assessment			

Date of Assessment			
Vitamin A			
B Vitamins			
Vitamin B1 - Thiamin			
Vitamin B2 - Riboflavin			
Vitamin B3 - Niacin			
Vitamin B5 - Pantothenic acid			
Vitamin B6 - Pyridoxine			
Vitamin B7 - Biotin			
Vitamin B9 - Folic Acid			
Vitamin B12 - Cobalamin			
Vitamin C			
Vitamin D			
Vitamin E			
Vitamin K			
Nutrient Balance: Mineral Assessment			

Date of Assessment			
Calcium			
Chromium			
Copper			
Iodine			
Iron			
Magnesium			
Manganese			
Phosphorus			
Potassium			
Sulfur			

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Body System and Organ Assessment

Date of Assessment: mm/dd/yy			
Digestion - Low Stomach Acid			
Digestion - Excess Stomach Acid			
Digestion - Liver and Gallbladder			
Digestion - Small Intestine and Pancreas			
Digestion - Large Intestine			
Cardiovascular System			
Kidney and Bladder			
Immune System			

Hormone and Gland Assessment

Date of Assessment			
Adrenal - General			
Adrenal Hypofunction			
Adrenal Hyperfunction (cortisol high)			
Blood Sugar Dysregulation			
Blood Sugar Handling - Insulin Resistance			
Blood Sugar Handling - Glucose Fluctuation			
Thyroid Low (Hypothyroid)			
Thyroid Excess (Hyperthyroid)			
Pituitary			
Male - Prostate			
Male - Hormones			
Female - Hormones			
Female - Menopausal			

Brain and Neurotransmitter Assessment

Date of Assessment			
General Brain Function			
Serotonin			
Dopamine			
GABA			

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Mineral Test Kit



The test kits allow you to test for the following minerals:

1. Potassium	5. Chromium
2. Zinc	6. Manganese
3. Magnesium	7. Molybdenum
4. Copper	8. Selenium

<http://www.drritamarie.com/go/EmersonEcologics>

Use code **fresh1** to access

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Interpretation of Mineral Tests

Taste Test Score	Clinical implication
1 Sweet	Definitely need the mineral
2 Pleasant	Need the mineral
3 No Taste	Need the mineral
4 Hmmmm...taste something	Sufficient
5 So-So, there is some taste	Do not need mineral
6 Don't like	Do not need mineral
7 Gross taste	Do not need mineral

- Write down the appropriate response on the score card
- Repeat this process for each of the remaining minerals

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Components of a Thorough History

Journals and Tracking

- ✓ Food and mood
- ✓ Activity and symptom tracker
- ✓ Medications and supplements
- ✓ Bowel habits
- ✓ Blood sugar
- ✓ pH



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Components of a Thorough History

“Ready and Willing” Assessment

- ✓ Change diet
- ✓ Take supplements
- ✓ Keep records
- ✓ Modify lifestyle
- ✓ Practice relaxation techniques
- ✓ Exercise
- ✓ Have periodic lab tests to assess progress



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BEFORE First Appointment

- ✓ Basic health questionnaire
- ✓ Ask for health records and prior labs
- ✓ “Ready and Willing” evaluation
- ✓ Diet diary



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Initial Consultation Flow

- ✓ Create rapport
- ✓ Review pre-consultation forms
- ✓ Discuss goals
- ✓ Discuss daily activities and diet
- ✓ Review old labs
- ✓ Suggest a few actions



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My UNSTOPPABLE HEALTH Roadmap

My Current Health Concerns		Obstacles: Keeping Me From My Goals					My Core Values									
		Stress, Schedule, Limiting Beliefs	Sleep	Diet	Movement/Physical Limitations	Environment	Fun/Relationships									
Top Stressed Body Systems																
Top Nutrient Deficiencies																
Present/Past Health (Surgery, Trauma, etc.)																
My Positive Habits																
My Plan to Take Me to My Goals							My BIG Vision									
<table border="1"> <tr> <td>Week 1</td> <td>Month 1</td> <td>90 Days</td> <td>1 Year</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>							Week 1	Month 1	90 Days	1 Year						
Week 1	Month 1	90 Days	1 Year													

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Functional Exam Components

- ✓ Blood pressure
- ✓ Measurements
- ✓ Eyes
- ✓ Lips and mouth
- ✓ Face
- ✓ Tongue
- ✓ Head
- ✓ Hands
- ✓ Skin



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Nutritionally Oriented Physical Exam Interpretation Guide

Adrenal (Calculate score based on the column headings)

Highlight or circle your positive finding	0	1	2	3
• Blood pressure upon standing	Incr. 10	Same	Decr <= 10	Decr >10
• Pupil constriction with bright light	20 sec	10-20 sec	<10 Sec	<5 sec
• Rib margin tenderness	Absent	Mild	Moderate	Severe
• Brown discoloration below eyelids	Absent	Mild	Moderate	Severe
• Black discoloration below eyelids	Absent	Mild	Moderate	Severe
• Dark gray or reddish back of tongue	Absent	Mild	Moderate	Severe
• Ulcerations or canker sores	Absent	Mild	Moderate	Severe
• Bad breath	Absent	Mild	Moderate	Severe
• Rough, red, flaky cuticles	Absent	Mild	Moderate	Severe
• Tongue signs: <i>Distinguishing Marks</i> diagram - deep seated fear/anxiety	Absent	Present		
• Tongue signs: <i>Distinguishing Marks</i> diagram signs - emotions along spinal column	Absent	Present		
Total Adrenal				

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Nutritionally Oriented Physical Exam Interpretation Guide

Digestion – Liver and Gallbladder

- Yellow discoloration below bottom eyelids
- Yellow/brown sclera
- Red sclera
- Green sclera
- Facial color: yellow
- Creases between eyes
- Bulbous nose
- Tongue irritation/redness
- Splitting cuticles
- Excessive vertical ridges on nails
- Clubbing (nails grow downward, end of finger noticeably enlarges, nails break in odd ways)
- *Grey ring around the cornea*

Digestion – Low Stomach Acid

- Painful dentures
- Acne
- Dandruff
- Splitting, breaking nails

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Nutritionally Oriented Physical Exam

Name:	Date:
Height:	Weight:
Frame size (check one):	<input type="checkbox"/> Small <input type="checkbox"/> Medium <input type="checkbox"/> Large
Respiration – breaths per minute:	
Pulse – beats per minute:	Temperature:
Blood Pressure	
Seated, legs uncrossed	
Left Arm:	If difference between left and right is > 10, top or bottom, there may be a blockage.
Right Arm:	
Lying Face Up	
Standing	
Immediately upon arising:	Systolic blood pressure (top number) should increase by 10 when you stand up. If it does not or if it decreases, it's suggestive of adrenal stress.
1m:	The more time it takes to restore the blood pressure to what it should be is suggestive of the degree of adrenal distress. Measure once a minute for up to 5 minutes. Stop when pressure increases by 10 points.
2m:	
3m:	
4m:	
5m:	

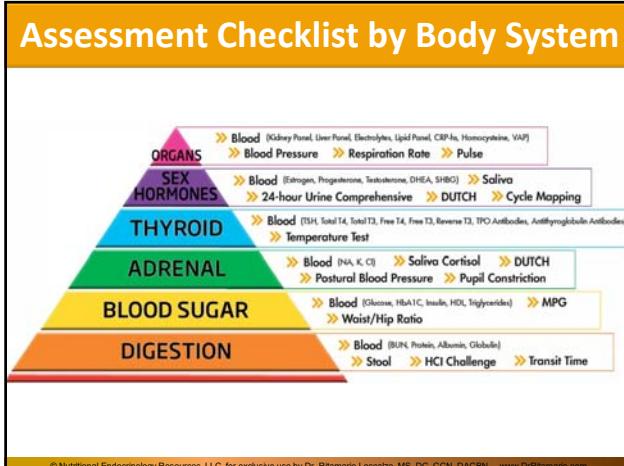
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Functional Lab Test Guidelines

- ✓ When to use
- ✓ Which tests to recommend
- ✓ The ideal order



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Blood Chemistry Testing Resources

- ✓ **Direct Labs:**
www.directlabs.com

- ✓ **Personal Labs:**
www.personalabs.com

- ✓ **Life Extensions:**
www.lef.org/Vitamins-Supplements/Blood-Tests/index.htm



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Conventional Medical Interpretation Books

- ✓ **A Manual of Laboratory and Diagnostic Tests**

Frances Fischbach and Marshall B.

Dunning

<http://www.drritamarie.com/go/ManualOfLabDiagnosticTests>



- ✓ **Clinical Laboratory Medicine: Clinical Applications of Laboratory Data**

Richard Ravel MD

<http://www.drritamarie.com/go/CLMLabData>

- ✓ **Lab Tests Online**

<http://www.drritamarie.com/go/LabTestsOnline>

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Functional Interpretation Books

- ✓ **Blood Chemistry and CBC Analysis**

Dicken Weatherby, ND, Scott Ferguson
<http://www.drritamarie.com/go/BloodChemCBCWeatherby>



- ✓ **Encyclopedia of Nutritional Interpretation of Blood Tests**

Michael Wald, MD, DC
<http://www.drritamarie.com/go/EncycNutrInterpBloodTestsMichaelWald>

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“Routine” Blood Chemistry Screen: What’s Usually Included

- ✓ CBC
- ✓ Thyroid w/TSH
- ✓ Lipid profile
- ✓ Liver profile
- ✓ Kidney panel
- ✓ Glucose
- ✓ Fluids, electrolytes, and minerals



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Non-Optional Extras

- ✓ Vitamin D3: Vitamin D, 25-Hydroxy
- ✓ Thyroid Antibodies
- ✓ Iron
- ✓ Ferritin
- ✓ Hemoglobin A1c
- ✓ Free T3



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Specialty Blood Tests

- ✓ C-reactive Protein
- ✓ Homocysteine
- ✓ Sedimentation Rate (ESR)
- ✓ Fasting Insulin
- ✓ DHEA
- ✓ Testosterone
- ✓ Estrogen
- ✓ PSA



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A Cutting-Edge Analysis Tool: Lab Results Tracking Spreadsheet

CATEGORIES	Units	LAB RANGE		RANGE		DATE	DATE	DATE	Results	Results	Results	Possible Interpretation
		Min	Max	Min	Max							
Lab Markers												
Glucose, serum	mg/dL	65.0	100.0	76.0	99.0							
Uric Acid, serum (Female)	mg/dL	18	70	32	55							
Uric Acid, serum (Male)	mg/dL	18	70	37	45							
BUN	mg/dL	8.0	28.0	10.0	40.0							
Creatinine, serum	mg/dL	0.6	1.2	0.7	1.1							
eGFR (Female)	ml/min/1.73m ²	90.0	100.0	95.0	105.0							
eGFR (African American)	ml/min/1.73m ²	55.0	95.0	-	-							
BUN/Creatinine Ratio	-	8.0	27.0	8.0	27.0							
Sodium, serum	mmol/L	135.0	145.0	135.0	145.0							
Potassium, serum	mmol/L	3.5	5.0	4.0	4.5							
Chloride, serum	mmol/L	95.0	105.0	95.0	105.0							

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Coach Name/Dr. Ritamarie	Lab Results - U.S.				DATE	Lab Results - U.S.				Follow-up
	Units	LAB RANGE	IDEAL RANGE	RESULTS		Results	Results	High	Low	
CATEGORIES										
Lab Markers										
Glucose, serum	mg/dL	65.0	100.0	76.0	99.0	20	20	High	Low	Test fasting insulin, hemoglobin A1c
Uric Acid, serum (female)	mg/dL	18	70	32	55	23	23	High	Low	Deficiency of uric acid, B12/vitamin B6, folate, oxidative stress, hematuria, hematuria, kidney, joint pain, test aukukoma
Uric Acid, serum (male)	mg/dL	18	70	37	60	60	60	High	Low	Deficiency of uric acid, B12/vitamin B6, folate, oxidative stress, hematuria, hematuria, kidney, joint pain, test aukukoma
Blood urea nitrogen (BUN), serum	mg/dL	8.0	28.0	10.0	40.0	20	20	High	Low	Metabolization, kidney, liver, protein, diet, HCl challenge, enzymes, optimize digestion
Creatinine, serum	mg/dL	0.5	1.2	0.7	1.1	1.0	1.0	High	Low	HCl challenge, enzymes, optimize digestion
Estimated glomerular filtration rate (eGFR), serum	ml/min/1.73m ²	90.0	100.0	-	-	90.0	90.0	High	Low	Metabolization, kidney, liver, protein, diet, HCl challenge, enzymes, optimize digestion
BUN/Creatinine Ratio	-	8.0	27.0	8.0	27.0	20	20	High	Low	Metabolization, kidney, liver, protein, diet, HCl challenge, enzymes, optimize digestion
See BUN & Creatinine										
Sodium, serum	mmol/L	135.0	145.0	135.0	145.0	140.0	140.0	High	Low	Hypocreatinine, edema, isotonic, diet, Test, heartburn and other stress
Potassium, serum	mmol/L	3.5	5.5	4.0	4.5	4.0	4.0	High	Low	Hypocreatinine, hypertension, diet, Test, heartburn and other stress
Chloride, serum	mmol/L	95.0	105.0	95.0	105.0	95.0	95.0	High	Low	Hypocreatinine, alkalosis, diet, Test, heartburn and other stress
Carbon dioxide, total, serum	mg/dL	19.0	21.0	20.0	20.0	20.0	20.0	High	Low	Hypocreatinine, alkalosis, diet, Test, heartburn and other stress

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		Lab Results - U.S.				Lab Results - U.S.	
Calcium, serum	mg/dL	9.7	9.5	9.2	9.1	9.1	9.1
Phosphorus, serum	mg/dL	2.3	4.8	3.5	4.0	2.9	
Protein, total, serum	g/dL	6.2	6.3	6.9	7.4	5.9	
Albumin, serum	g/dL	3.8	5.8	4.0	5.0	4.1	
Globulin, total, serum	g/dL	2.0	3.8	2.4	2.8	1.8	2.8
ALB/GLOB	ratio	1.1	1.1	2.3	2.0	2.3	
Bilirubin, serum, total	mg/dL	0.1	1.8	0.2	1.2	0.4	
Alkaline phosphatase, serum	U/L	21.0	142.0	70.0	160.0	45	
Lactate dehydrogenase (LDH), serum	U/L	89.0	216.0	140.0	160.0	144	
Aspartate aminotransferase (AST) (SGOT), serum	U/L	15	45.0	10.0	26.0		

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CBC: Complete Blood Count

Anemia Markers:

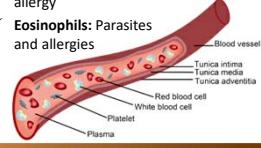
- ✓ **RBC:** Red blood cells - carry oxygen
- ✓ **Hemoglobin:** Transports oxygen and gives the red color to blood
- ✓ **Hematocrit:** Percentage of blood made up of red blood cells
- ✓ **MCV:** Mean Corpuscular Volume - Red blood cell size, as volume
- ✓ **MCH:** Mean Corpuscular Hemoglobin - the average amount of hemoglobin in red blood cells
- ✓ **MCHC:** Mean Corpuscular Hemoglobin Concentration - the average hemoglobin concentration in red blood cells
- ✓ **RDW:** Variation in the size of the RBC's

Platelets:

Blood cell particles involved with the forming of blood clots

Immune System Markers:

- ✓ **WBC:** White blood cells - primary defense against disease
- ✓ **Neutrophils:** Often elevated in bacterial infection
- ✓ **Lymphocytes:** Often elevated in viral infection
- ✓ **Monocytes:** Second line of defense - elevated in recovery stage and chronic infection
- ✓ **Basophils:** Related to histamines and allergy
- ✓ **Eosinophils:** Parasites and allergies



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CBC: Immune System Markers

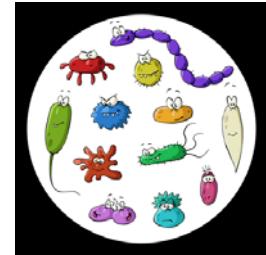
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- ✓ **Eosinophils:** Parasites and allergies



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Immune System Bacterial Infection

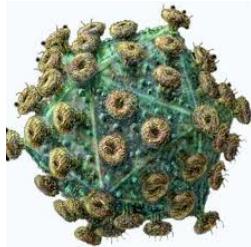
- ✓ **WBC (high or low)**
- ✓ **Neutrophil (high)**
- ✓ **Lymphocytes (low)**



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Immune System Viral Infection

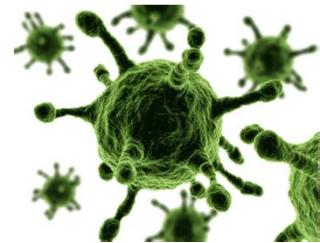
- ✓ **WBC** (high or low)
- ✓ **Neutrophil** (low)
- ✓ **Lymphocytes** (high)



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Immune System Parasite Infection

- ✓ **Hematocrit** (lo)
- ✓ **WBC** (hi)
- ✓ **Eosinophils** (hi)
- ✓ **Basophils** (hi)
- ✓ **Monocytes** (hi)
- ✓ **MCV** (hi)



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Other Immune System Markers

- ✓ **Uric Acid** (hi): RA, gout
- ✓ **Globulin** (lo): infections (low antibodies)
- ✓ **Globulin** (hi): autoimmune, allergy, chronic infection
- ✓ **Bilirubin** (hi): liver inflammation
- ✓ **Alkaline Phosphatase** (hi): shingles
- ✓ **LDH** (hi): inflammation, viral
- ✓ **AST** (hi): mono, EBV, CMV, hepatitis
- ✓ **Iron** (hi): viral
- ✓ **Cholesterol or LDL** (lo): autoimmune
- ✓ **HDL** (hi): autoimmune
- ✓ **Thyroid Antibodies** (hi): autoimmune
- ✓ **Other Autoimmune Antibodies**, i.e. ANA, RA, intrinsic factor, etc.



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Inflammation Markers

- **C-reactive Protein: CRP, hs-CRP**
- **Erythrocyte Sedimentation Rate (Sed Rate) aka ESR**
- **Homocysteine**
- **Blood Spot Fatty Acid**
- **ANA: Antinuclear Antibodies**
- **Rheumatoid Factor (RF)**
- **Interleukins and Cytokines (Advanced Testing)**
- **Cardiovascular Advanced Testing: i.e. Apolipoprotein B, A1, ratio**



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Thyroid Lab Ranges



NAME of TEST	US Units	Lab Range	Ideal Range
TSH: Thyroid-stimulating hormone	μIU/mL	0.3-5.7	1.5-3.0
Total T4 or TT4 (total thyroxine)	μg/mL	4.5-12.5	6.0-12.0
Total T3 or TT3 (total triiodothyronine)	ng/dL	100.0-180.0	100.0-180.0
Free T4 or FT4 (thyroxine, free)	ng/dL	0.7-2.0	1.0-1.5
Free T3 or FT3 (triiodothyronine, free)	pg/dL	2.0-4.4	3.0-4.5
Thyroglobulin antibody screen (or antithyroglobulin)	IU/mL	0.0-1.0	0.0-1.0
Thyroid peroxidase (TPO) antibodies	IU/mL	0.0-34.0	0.0-2.0
Thyroxine-binding globulin (TBG)	μg/mL	18.0-27.0	18.0-27.0
Reverse T3 or RT3 (reverse triiodothyronine)	ng/dL	90.0-350.0	Ratio 1:20 to FT3
T3 uptake	%	27.0-37.0	28.0-38.0
Free Thyroxine Index (FTI)		1.2-4.9	1.2-4.9

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Thyroid Lab Analysis

Basic Screen

✓ Total T-4 (Thyroxine)

✓ T3 Uptake

✓ Free Thyroxine Index (FTI) aka T-7

✓ TSH



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Essential Extras

✓ Thyroid Peroxidase Antibodies (TPO)

✓ Antithyroglobulin Antibodies (TAA)

✓ Free T3 (FT3)

✓ Free T4 (FT4)

✓ Total T3 (TT3)

✓ Reverse T3 (rT3)

Complete Blood Sugar Testing

- ✓ Fasting glucose
- ✓ Fasting insulin
- ✓ Triglycerides
- ✓ HDL
- ✓ Hemoglobin A1c
- ✓ Postprandial glucose
- ✓ Postprandial insulin



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Lipid Profile and Cardiovascular Health

✓ Cholesterol, Total

✓ HDL

✓ LDL

✓ Cholesterol/HDL Ratio

✓ Triglycerides

✓ hs-CRP

✓ Homocysteine

✓ CPK



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Vitamin D Action Plan

Optimal Range: 60.0 - 100.0



Rough guidelines - if in doubt be sure to consult primary provider.

- ✓ **Vitamin D <20:** Take 20,000 IU every day for a week or up to a month, then 10,000 IU for 2 months, then retest
- ✓ **Vitamin D 20 - 30:** Take 10,000 IU for 3 months, then retest
- ✓ **Vitamin D 30 - 40:** Take 6,000 IU for 3 months, then retest
- ✓ **Vitamin D 40 - 60:** Take 2,000 – 4,000 IU per day for 3 months, then recheck
- ✓ **Vitamin D 60 or above:** If you live in a northern climate, take 1,000 – 2,000 until spring and on days that you don't get out in the sun for at least 30 minutes. Retest in 4 - 6 months. If you get regular sun exposure in a warm climate throughout the winter, continue what you're doing and retest in 3 months.

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Vitamin D Testing Protocol



- ✓ Baseline test
- ✓ Supplement if indicated
- ✓ Retest every 3 months until stable, for at least a year
- ✓ Be sure to test in winter and summer

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Liver Profile Part 1

- **Alanine Aminotransferase (ALT or SGPT):** Liver and heart
- **Aspartate Aminotransferase (AST or SGOT):** Skeletal, heart, liver, and other organs
- **Bilirubin, Total**
- **Alkaline Phosphatase:** Bone, liver, and leaky gut
- **Lactate Dehydrogenase (LDH or LD):** Heart, muscles, liver, kidney, brain, and red blood cells



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Liver Profile Part 2

- **Protein, Total**
- **Albumin, Serum**
- **Globulin, Total**
- **Albumin/Globulin Ratio**
- **GGT (Gamma-Glutamyl Transferase):** Liver and bile duct injury, alcoholism, toxic exposure



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Liver and Gallbladder Pattern

- ✓ Glucose (hi)
- ✓ BUN (lo)
- ✓ Protein (lo)
- ✓ Albumin (lo)
- ✓ Globulin (hi)
- ✓ Bilirubin (hi)
- ✓ Alkaline Phosphatase (hi)
- ✓ LDH (hi)
- ✓ AST (hi)
- ✓ ALT (hi)
- ✓ ALT (lo) early fatty liver
- ✓ GGT (hi)
- ✓ Iron (hi)
- ✓ Cholesterol or LDL (hi) - fatty liver, fat malabsorption, gallbladder stress
- ✓ Iron (hi) - hemochromatosis
- ✓ Triglycerides (lo or hi) - fat malabsorption
- ✓ HDL (lo)
- ✓ Monocytes (hi)



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Fluids and Electrolytes

- **Sodium:** fluid and electrolyte balance; electrical activity of nerves and muscles
- **Chloride, Serum:** fluid and electrolyte balance
- **Potassium:** Nerve and muscle balance
- **Carbon Dioxide (Bicarbonate):** indicator of acid/alkaline balance

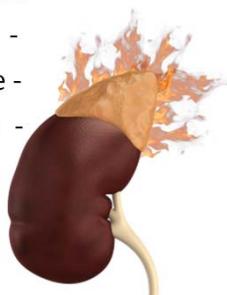


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Electrolytes and Adrenals

Adrenal Fatigue

- ✓ Potassium +
- ✓ Sodium -
- ✓ Chloride -
- ✓ Glucose -



Adrenal Hyperfunction

- ✓ Potassium -
- ✓ Sodium +
- ✓ Chloride +
- ✓ Glucose +
- ✓ Triglycerides +

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Minerals: Iron

High

- Hemochromatosis - iron overload disease (check ferritin)
- Excess iron supplementation
- Alcohol: increases iron absorption
- Fortified cereals

Low

- Iron deficiency anemia
- Blood loss
- Chronic disease
- Other disease



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Minerals: Calcium

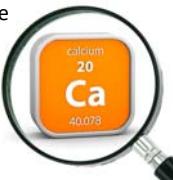
Blood levels remain fairly constant except in disease states

High

- Thyroid supplementation
- Alcoholism
- Hyperparathyroidism (most common cause)
- Cancer (rare – less than 0.01%)

Low

- Thyroid imbalance
- Vitamin D deficiency
- Magnesium deficiency
- Hypoparathyroidism
- Kidney disease
- Decreased calcium absorption
- Pancreatitis
- Medications



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Minerals: Phosphorus

High

- Excess vitamin D intake
- Kidney disease, renal failure (check BUN to confirm)
- Laxative (Phospho-Soda) abuse
- Tumor lysis
- Rhabdomyolysis
- Hypoparathyroidism
- Healing fractures

Low

- Vitamin D deficiency
- Low stomach acid
- Vomiting
- Severe diarrhea



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Minerals

Indirect indicators in serum

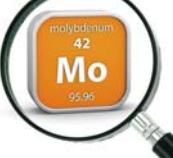
✓ Zinc

- Alkaline Phosphatase low
- Decreased WBC



✓ Molybdenum

- Increased Serum Iron
- Decreased Uric Acid



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Blood Sugar Markers

✓ **Glucose - fasting:** Ideal 75 - 85

✓ **Insulin:** Ideal 2 - 5

✓ **Hemoglobin A1c:** Ideal 4.5 - 5

✓ **Triglycerides:** Ideal 50 - 100

✓ Glucose meter



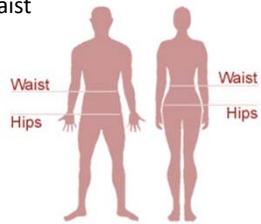
If fasting glucose is high and hemoglobin A1c is normal, it may be a vitamin B1 deficiency (which also has CO2 <25, LDH <140)

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Insulin Resistance

- ✓ High glucose (> 100, less than 120)
- ✓ Possible hemoglobin A1c > 5.7
- ✓ Fasting insulin > 5
- ✓ Increased weight around the waist

- Waist to hip ratio
> or equal to 1 in a male,
or waist > 40 inches
- Waist to hip ratio
> or equal to 0.8 in a female,
or waist > 35 inches



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Low Stomach Acid

- ✓ BUN (hi or lo)
- ✓ Chloride (lo)
- ✓ Carbon Dioxide (hi)
- ✓ Calcium (lo)
- ✓ Phosphorus (lo)
- ✓ Protein (lo)
- ✓ Albumin (lo)
- ✓ Globulin (hi)
- ✓ Iron (lo)
- ✓ Hemoglobin (lo)
- ✓ MCV (hi)
- ✓ MCH (hi)
- ✓ MCHC (hi)
- ✓ Uric Acid (lo)
- ✓ Ferritin (lo)



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Stomach

Hypochlorhydria

- Total Protein +/-
- Globulin +/-
- BUN +/-
- Phosphorus -
- Creatinine -
- Iron -
- Calcium -

PLUS



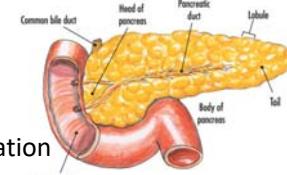
Helicobacter Pylori

- WBC +/-
- Neutrophil +
- Monocytes normal to +
- Lymphocytes -
- Urea Breath Test
- Special testing for H. pylori antigens

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Small Intestine and Pancreas

- ✓ Uric Acid (hi)
- ✓ BUN (lo)
- ✓ Creatinine (lo)
- ✓ Protein (lo)
- ✓ Globulin (lo): GI inflammation
- ✓ Alkaline phosphatase (lo)
- ✓ Alkaline Phosphatase (hi): leaky gut
- ✓ GGT (lo): malabsorption
- ✓ Hematocrit (lo): inflammation



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Large Intestine

- ✓ Eosinophils + parasites
- ✓ Sodium low
– possible laxative use



For in-depth look, need to do:

- ✓ Comprehensive stool and digestive analysis
- ✓ Parasitology
- ✓ Organic Acids Test (OAT) has markers for dysbiosis

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Kidney Panel

- **Blood Urea Nitrogen (BUN):** By-product of protein metabolism eliminated through the kidneys
- **Creatinine:** A muscle breakdown product used as an indicator of kidney function
- **Uric Acid:** Another by-product of protein metabolism eliminated through the kidneys
- **BUN/Creatinine:** Ratio calculated by dividing the BUN by the Creatinine
- **Glomerular Filtration (eGFR):** Provides an assessment of the filtering capacity of the kidney

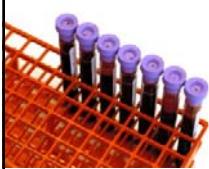


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Blood Urea Nitrogen (BUN)

High

- Low stomach acid
- Electrolyte depletion
- Dehydration
- Kidney disease
- Heart attack



Low

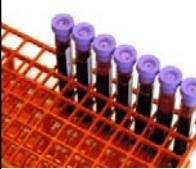
- Malabsorption
– i.e., celiac disease and gluten intolerance
- Low stomach acid
- Steroid use
- Malnutrition
- Liver or kidney disease

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Creatinine

High

- Dehydration
- Enlarged prostate
- Kidney disease
- Muscle



Low

- Low stomach acid or inadequate protein
- Pregnancy
- Severe liver disease
- Muscle wasting

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Uric Acid

High

- Gout
 - Deficiency of B6 and Magnesium
- Insulin resistance
- Diabetes
- Starvation



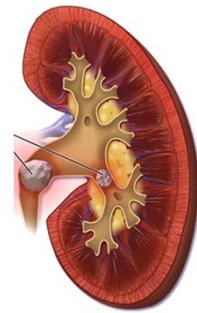
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Low

- B12 deficiency
- Folate deficiency
- Molybdenum deficiency

Kidney Marker Patterns: Renal Dysfunction

- ✓ BUN: +
- ✓ Creatinine: -
- ✓ BUN/Creatinine Ratio: +
- ✓ Phosphorus: +
- ✓ LDH: +
- ✓ SGOT: +
- ✓ Uric Acid: +



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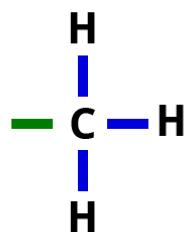
Kidney Marker Patterns: Muscle Wasting

- ✓ Creatinine: +
- ✓ SGOT: + or normal
- ✓ SGPT: + or normal
- ✓ LDH: + or normal
- ✓ CPK: + or normal
- ✓ LDH: Isoenzyme #4 and #5 +
- LDH-4: Kidney
- LDH-5: Skeletal muscle and liver
- ✓ CPK: Isoenzyme CK-MM +



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Methylation



Methyl Donors

- SAM-e
- Folate
- Vitamin B12
- TMG (Betaine)
- DMG
- DMAE

Methylation Lab Markers

1. Homocysteine
2. MCV
3. Methylmalonic acid (urine)
4. Folate and metabolites
5. Serum vitamin B12
(not the best)



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