



Ordering Physician:

Metametrix

3425 Corporate Way  
Duluth, GA 30096

Accession Number: **A0909030010**

Reference Number:

Patient: Sample Report

Age: 47 Sex: Female

Date of Birth: 02/05/1962

Date Collected: 9/2/09

Date Received: 9/3/09

Report Date: 9/3/09

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Reprinted: 9/29/09

Comment:

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### 4320 Designs for Health Metabolic Profile plus FA

Urine lipid peroxides have been replaced with 8-OH-2-deoxyguanosine in this report.

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## **Clinical Symptom - Test Result Correlation Summary**

### **B-Vitamin Insufficiency**

Your test results show indications of less than optimal B-vitamin status. B-vitamins are essential co-factors in a wide spectrum of chemical reactions within the body and are essential for the production of important hormones and neurotransmitters. B-vitamins are the most important vitamin modulators of human biochemistry. Having less than optimal levels for your individual needs may not cause any specific symptoms in some, but may manifest in many people in the following ways:

- Fatigue and lack of vitality
- Exercise intolerance
- Diminished capacity to deal with stress
- Mood imbalances and sleep disturbance
- Lack of concentration and memory
- Blood sugar regulation difficulties
- Dermatitis and skin disorders

### **Inefficient Fat Metabolism**

Your test results show a potential inability to efficiently metabolize and burn fats. This may result in:

- Inability to lose weight
- Low energy
- Cognitive decline

### **Inefficient Cellular Energy Production**

Your test results reveal inefficiency in your cellular energy production. This is a critical process that occurs within all cells and sub-optimal energy production may result in:

- Fatigue and lack of vitality
- Exercise intolerance
- Generalized muscle aches
- Lack of concentration and memory

### **Overactive Stress Response**

Your test results suggest a high level of stress and an overactive stress response, which can result in:

- Anxiety or panic attacks
- Palpatations (sense of rapid pounding heart beat)
- Insomnia and sleep disturbance
- Diminished capacity to deal with stress
- Mood imbalances
- Lack of concentration and memory

### **Oxidative Stress**

Your test results show an increase in oxidative stress. Increases in oxidative stress suggest the need for more dietary antioxidants (i.e., fresh vegetables and fruits) and antioxidant nutritional supplements. Oxidative stress is a biochemical process which may result in:

- Increased risk for many chronic diseases (i.e., heart disease, stroke, and cancer)
- Premature aging

### **Omega 3 Fats**

Your test results show low levels of the beneficial omega-3 fatty acids that are commonly found in the diet in fish/fish oil and flax seed/flax seed oil. Sub-optimal levels of omega-3 fatty acids may result in:

- Increased body inflammation
- Increased risk for many chronic diseases (i.e., heart disease, stroke, diabetes and other inflammatory disorders)
- Dry skin and other skin disorders

### **Omega 6 Fats**

Your test results reveal elevated levels of the pro-inflammatory fatty acid arachidonic acid (AA) [found in red meat, corn and corn oil] and/or an increase in the ratio of AA to the anti-inflammatory fatty acid eicosapentaenoic acid (EPA). Elevation in AA and/or the AA/EPA ratio may indicate:

- Increased body inflammation
- Increased risk for many chronic diseases (i.e., heart disease, stroke, diabetes and other inflammatory disorders)

### **Trans Fats**

Your test results show increased amount of trans-fats, which are commonly found in processed foods (pastries, baked goods, etc.), fast foods and most hydrogenated vegetable oil products. Elevated trans-fats have been associated with:

- Increased risk for heart disease, stroke and vascular diseases

## Summary of Abnormal Results

	<u>Findings</u>	<u>Intervention Options</u>	<u>Metabolic Association</u>
<b>B-Vitamin Insufficiency</b>			
Pyruvate	Very High	Lipoic Acid, B1, B2, B3, B5	Glucose oxidation
Xanthurenate	Very High	B6	Impaired Tryptophan metabolism
<b>Cellular Energy</b>			
Adipate	High	Carnitine, B2	Fatty acid oxidation
Suberate	High	Carnitine, B2	Fatty acid oxidation
Succinate	High	CoQ10, B-Complex, Calcium, Antioxidants	ATP production
Fumarate	High	CoQ10	ATP production
<b>Neural Function</b>			
Vanilmandelate	Very High	Evaluate stress issues	Epi- & norepinephrine turnover stimulation
Quinolate	High	Magnesium, Anti-inflammatories, Antioxidants	Receptor agonist
<b>Detoxification</b>			
No Abnormality Found			
<b>Dysbiosis</b>			
Benzoate	High	Probiotics or antibiotics	Bacterial product
<b>Oxidative Stress</b>			
8-Hydroxy-2-deoxyguanosine	High	Antioxidants	Free radical damage
<b>Polyunsaturated Omega 3</b>			
Docosahexaenoic (22:6n3)	Very Low	Fish oils or extracts	Impaired nerve function (esp. the eye)
<b>Polyunsaturated Omega 6</b>			
Linoleic (18:2n6)	Very Low	Sunflower or organic canola oil	Essential fatty acid; Low membrane fluidity
<b>Trans</b>			
Total C:18 Trans	High	Avoid hydrogenated oils	Hyperlipidemia and degenerative diseases
<b>Ratios</b>			
AA/EPA	High	Fish oils or extracts	Omega-3 insufficiency; Pro-inflammatory status
Index of Omega-3 Fatty Acids	Low	Fish oils or extracts	Omega-3 insufficiency

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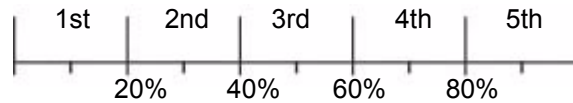
This report is not intended for the diagnosis of neonatal inborn errors of metabolism.

**Organix™ Profile**

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Results are expressed as mcg/mg creatinine.  
 Ranges are for ages 13 and over

**Percentile Ranking by Quintile**



95%  
Reference  
Interval

**B-Vitamin Insufficiency**

Results

Rank	Metabolite	Value	Unit	Percentile	Reference Interval
1	Pyruvate	6.8	H	3.9	<= 6.4
2	a-Ketoglutarate	7.7		19.0	<= 35.0
3	a-Ketoisovalerate	0.19		0.25	<= 0.49
4	a-Ketoisocaproate	0.11		0.34	<= 0.52
5	a-Keto-β-Methylvalerate	0.26		0.38	<= 1.10
6	Xanthurenate	0.80	H	0.47	<= 0.74
7	β-Hydroxyisovalerate	6.4		7.6	<= 11.5
8	Methylmalonate	1.6		1.7	<= 2.3
9	Formiminoglutamate	0.1		1.2	<= 2.2

**Cellular Energy**

10	Adipate	5.3	H	5.2	<= 8.3
11	Suberate	2.0	H	1.7	<= 3.2
12	Ethylmalonate	2.2		3.6	<= 6.3
13	L-Lactate	5		14	3 - 46
14	β-Hydroxybutyrate	<DL*		2.1	<= 9.9
15	Succinate	18.4	H	11.6	<= 20.9
16	Fumarate	0.66	H	0.59	<= 1.35
17	Malate	1.3		1.4	<= 3.1
18	Hydroxymethylglutarate	2.7		3.6	<= 5.1

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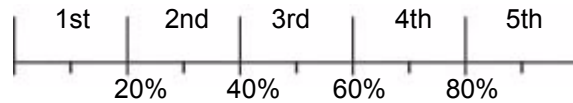
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95%  
Reference  
Interval

**Neural Function**

Item	Value	Percentile	Reference Interval
19 Vanilmandelate	8.0 <b>H</b>	1.8 - 3.9	1.3 - 4.9
20 Homovanillate	6.3	2.1 - 6.3	1.6 - 10.9
21 5-Hydroxyindoleacetate	2.1	2.1 - 5.6	1.6 - 9.8
22 Kynurenate	0.8	1.9	<= 2.7
23 Quinolinate	4.3 <b>H</b>	4.0	<= 5.8
24 Picolinate	2.8	8.0	2.8 - 13.5

**Detoxification**

Item	Value	Percentile	Reference Interval
25 Citrate	370	601	56 - 987
26 Cis-Aconitate	40	51	18 - 78
27 Isocitrate	73	98	39 - 143
28 2-Methylhippurate	0.081	0.084	<= 0.192
29 Orotate	0.48	0.69	<= 1.01
30 Glucarate	1.6	6.3	<= 10.7
31 a-Hydroxybutyrate	0.2	0.3	<= 0.9
32 Pyroglutamate	36	59	28 - 88
33 Sulfate	1,683	958 - 2,347	690 - 2,988

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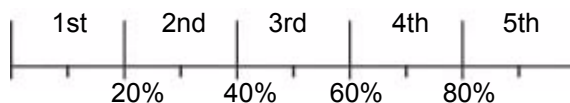
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95%  
Reference  
Interval

**Compounds of Bacterial Origin**

Compound ID	Compound Name	Result	Percentile	Reference Interval
34	Benzoate	7.9 <b>H</b>	0.6	<= 9.3
35	Phenylacetate	<DL*	0.04	<= 0.15
36	Phenylpropionate	<DL*	0.4	<= 0.4
37	p-Hydroxybenzoate	0.07	0.99	<= 2.08
38	p-Hydroxyphenylacetate	8	19	<= 34
39	Indican	33	40	<= 74
40	Tricarballoylate	0.31	0.73	<= 1.41
41	3,4-Dihydroxyphenylpropionate	<DL*	0.12	<= 0.12
42	D-Lactate	0.6	2.3	<= 7.0

Creatinine = 200 mg/dl

\* <DL = less than detection limit

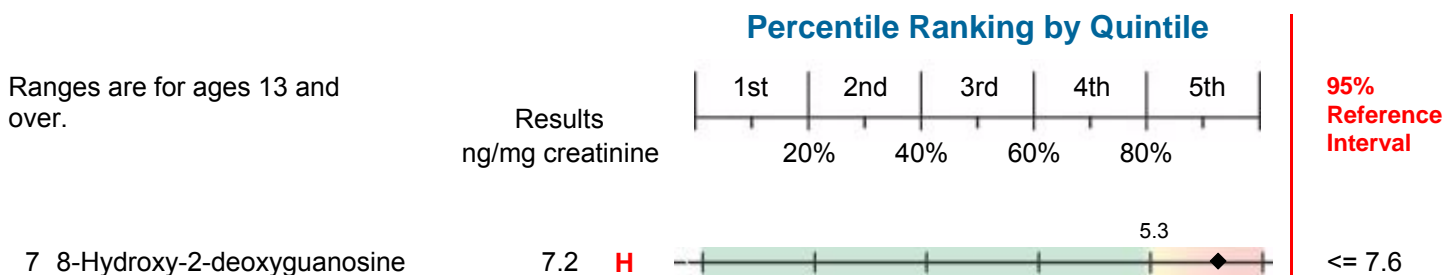
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## 8-Hydroxy-2 deoxyguanosine - Urine

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

### What is 8-Hydroxy-2'-deoxyguanosine (8-OHdG)?

In its efforts to produce the chemical energy to power your cells and fight infection, your body makes harmful chemicals called free radicals. Sustained inflammatory responses cause increased production of these free radicals. When local antioxidant protection fails to keep free radicals in check, there is threat of damage to cell membranes, enzymes, proteins and DNA. 8-OHdG is a product of oxidative damage by free radicals to DNA, and the 8-OHdG test tells you if you have enough antioxidants in your system. High levels of 8-OHdG are sometimes associated with toxic exposure, cancer, heart disease, diabetes, aging, liver disease, Parkinson's disease, and smoking.



### What does my 8-Hydroxy-2'-deoxyguanosine (8-OHdG) result mean?

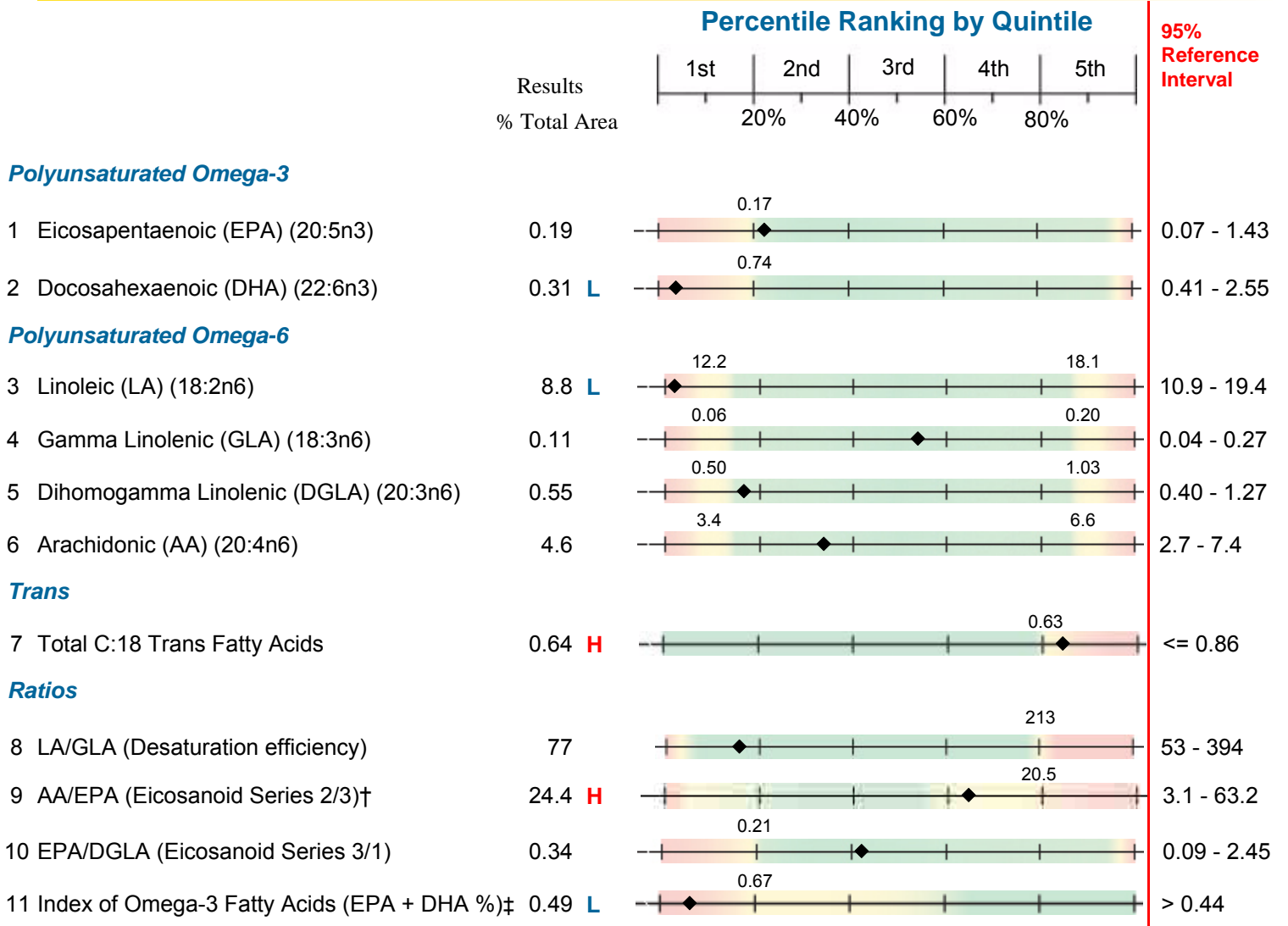
If your 8-OHdG is high, your body is failing to control the rate of formation of free radicals. You can increase your protection by taking vitamins E and C, selenium, beta-carotene, and bioflavonoids. Many products are available that offer combinations of these and other antioxidants that may be beneficial.

These test results are not for the diagnosis of disease. They are intended to provide nutritional guidelines to qualified healthcare professionals with full knowledge of patient history and concerns to assist in their design of an appropriate healthcare program.

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## Bloodspot™ Fatty Acid Profile

Methodology: Capillary Gas Chromatography/Mass Spectrometry



†Sears, B. *Toxic Fat: When Good Fat Turns Bad*. 1st ed. Nashville, TN: Thomas Nelson; 2008.

‡Harris, WS. Omega - 3 fatty acids and cardiovascular disease: A case for omega-3 index as a new risk factor. *Pharmacological Research* 2007; 55:217-223.

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Georgia Lab Lic. Code #067-007  
 CLIA ID# 11D0255349

New York Clinical Lab PFI #4578  
 Florida Clinical Lab Lic. #800008124

Laboratory Directors: J. Alexander Bralley, PhD  
 Robert M. David, PhD

## Supplement Recommendation Summary

The Designs for Health Comprehensive Metabolic Profile results may be used, along with full knowledge of this patient's medical history and concerns, to help healthcare professionals create an individually optimized nutritional support program. The summary table below is based strictly on the results from this test. It shows estimates of nutrient doses that may help to normalize nutrient-dependent metabolic functions. All amounts are adult doses that should be adjusted for children according to body weight and indication of need.

These supplement suggestions are based solely on the objective test markers and may serve as a foundational program to optimize metabolic function and address any observed deficiencies. These suggestions may be used in place of supplements the patient was taking at the time the testing was initiated. However, it should not preclude this patient from taking additional supplements as recommended by his/her healthcare provider for other health conditions or requirements unique to the individual.

Recommendations may appear because of secondary associations that are not stated in the Summary section on the first page.

### Foundational Metabolic Support

DFH Complete Multivitamin 3 caps daily

### Vitamin and Mineral Recommendations

B-Supreme 1 twice daily  
 Magnesium Malate Chelate 2/day  
 Q-Avail 100 1 cap/day

### Amino Acid Recommendations

Either (1) Carnitine Tartarate Powder or (2) CarniClear If (1), then 1/2 tsp/day or if (2), then 1 tsp/day

### Fatty Acid Recommendations

Either (1) OmegaAvail TG 1000 Softgels or (2) OmegaAvail TG 1000 Liquid (avoid arachidonic acid rich foods) If (1) then 2 soft gels twice daily or if (2) then 2 tsp twice daily

### Combination Product Recommendations

CatecholeCalm (consider stress-reduction techniques and eliminate caffeine) 3 caps/day  
 Inflammatone 2 caps twice daily  
 Lipoic Acid Supreme 1 cap daily  
 Ultimate Antioxidant-Full Spectrum 3 soft gels/day

- If orotate is elevated, amino acid supplementation may be contraindicated, except for arginine.
- These guidelines are intended as a starting point for the clinician who requested the test and are based only on the laboratory results included in this report. Final recommendations should be implemented by the clinician with consideration of medical history and current clinical observations.
- These tests are not intended for the diagnosis or treatment of specific disorders.