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**Anna**

Date: 7/23/2013  
(Accession #A1307240319)

Next Test Due: 1/21/2014

***LabAssist™ Amino Acid & Organic Acid Report***  
***Practitioner***

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## Basic Status High/Low - Plasma Amino Acids on 7/23/2013

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

Client ID:555986644 (8322)

The % Status is the weighted deviation of the laboratory result.

### Low Results

-40	-30	-20	-10	0		% Status	Result	Low	High
					Aspartic Acid	-33.00 L	4.70	3.00	13.00
					Phosphoethanolamine	-31.43 L	1.30	0.00	7.00
					Carnosine	-30.00 L	1.20	0.00	6.00
					Serine	-29.46 L	83.00	60.00	172.00
					Isoleucine	-28.26 L	50.00	35.00	104.00
					Glutamine	-27.98 L	483.00	372.00	876.00
					Glycine	-27.96 L	235.00	155.00	518.00
					Phenylalanine	-27.36 L	54.00	42.00	95.00
					Proline	-26.14 L	162.00	99.00	363.00
					a-Aminoadipic Acid	-25.00 L	0.50	0.00	2.00

-25%

### High Results

-25	0	25	50	75		% Status	Result	Low	High
					Hydroxyproline	65.38 H	30.00	0.00	26.00
					Sarcosine	55.50 H	21.10	0.00	20.00
					Glycine/Serine Ratio	38.76 H	2.83	1.50	3.00
					1-Methylhistidine	36.00 H	8.60	0.00	10.00

-25%

25%

## Basic Status High/Low - Urine Organic Acids on 7/23/2013

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

The % Status is the weighted deviation of the laboratory result.

### Low Results

-40	-30	-20	-10	0		% Status	Result	Low	High
					Phenylpropionate	-36.25 L	0.05	0.00	0.40
					a-Ketoisocaproate	-29.41 L	0.07	0.00	0.34
					Fumarate	-27.97 L	0.13	0.00	0.59

-25%

### High Results

-50	0	50	100	150		% Status	Result	Low	High
					Benzoate	5583.33 H	33.80	0.00	0.60
					Hippurate	197.64 H	1471.00	0.00	594.00
					Succinate	116.38 H	19.30	0.00	11.60
					Suberate	114.71 H	2.80	0.00	1.70
					Tricarballylate	108.90 H	1.16	0.00	0.73
					Malate	71.43 H	1.70	0.00	1.40
					5-Hydroxyindoleacetate	58.57 H	5.90	2.10	5.60
					a-Hydroxybutyrate	50.00 H	0.30	0.00	0.30
					Glucarate	48.41 H	6.20	0.00	6.30
					Orotate	47.10 H	0.67	0.00	0.69
					Citrate	46.33 H	581.00	56.00	601.00
					Ethylmalonate	38.89 H	3.20	0.00	3.60
					Lactate	35.45 H	12.40	3.00	14.00
					Indican	35.00 H	34.00	0.00	40.00
					Pyroglutamate	31.36 H	48.00	0.00	59.00
					b-Hydroxyisovalerate	30.26 H	6.10	0.00	7.60
					a-Ketoglutarate	26.84 H	14.60	0.00	19.00
					Xanthurenate	26.60 H	0.36	0.00	0.47
					8-Hydroxy-2-deoxyguan	25.47 H	4.00	0.00	5.30
					Phenylacetate	25.00 H	0.03	0.00	0.04

-25%

25%

# Basic Status Alphabetic - Plasma Amino Acids on 7/23/2013

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

The % Status is the weighted deviation of the laboratory result relative to the range.

-100	-50	0	50	100	% Status	Result	Low	High
					<b>1-Methylhistidine</b>	<b>36.00 H</b>	<b>8.60</b>	0.00 10.00
					3-Methylhistidine	3.85	28.00	0.00 52.00
					<b>a-Aminoadipic Acid</b>	<b>-25.00 L</b>	<b>0.50</b>	0.00 2.00
					a-Amino-N-Butyric Acid	-14.10	14.00	0.00 39.00
					Alanine	11.42	507.00	230.00 681.00
					Anserine	-1.16	21.00	0.00 43.00
					Arginine	12.04	96.00	29.00 137.00
					Asparagine	-21.19	48.00	31.00 90.00
					<b>Aspartic Acid</b>	<b>-33.00 L</b>	<b>4.70</b>	3.00 13.00
					<b>Carnosine</b>	<b>-30.00 L</b>	<b>1.20</b>	0.00 6.00
					Citrulline	14.10	43.00	18.00 57.00
					Cystine	-14.07	10.70	1.00 28.00
					Ethanolamine	12.50	7.50	0.00 12.00
					Glutamic Acid	-14.74	91.00	24.00 214.00
					<b>Glutamine</b>	<b>-27.98 L</b>	<b>483.00</b>	372.00 876.00
					<b>Glycine</b>	<b>-27.96 L</b>	<b>235.00</b>	155.00 518.00
					<b>Glycine/Serine Ratio</b>	<b>38.76 H</b>	<b>2.83</b>	1.50 3.00
					Histidine	-13.16	78.00	57.00 114.00
					Homocystine	10.00	0.60	0.00 1.00
					Hydroxylysine	10.00	0.60	0.00 1.00
					<b>Hydroxyproline</b>	<b>65.38 H</b>	<b>30.00</b>	0.00 26.00
					<b>Isoleucine</b>	<b>-28.26 L</b>	<b>50.00</b>	35.00 104.00
					Leucine	-18.85	112.00	74.00 196.00
					Lysine	-2.02	215.00	120.00 318.00
					Methionine	-17.65	25.00	14.00 48.00
					Ornithine	-21.91	53.00	28.00 117.00
					<b>Phenylalanine</b>	<b>-27.36 L</b>	<b>54.00</b>	42.00 95.00
					<b>Phosphoethanolamine</b>	<b>-31.43 L</b>	<b>1.30</b>	0.00 7.00
					Phosphoserine	0.00	0.50	0.00 1.00
					<b>Proline</b>	<b>-26.14 L</b>	<b>162.00</b>	99.00 363.00
					<b>Sarcosine</b>	<b>55.50 H</b>	<b>21.10</b>	0.00 20.00
					<b>Serine</b>	<b>-29.46 L</b>	<b>83.00</b>	60.00 172.00
					Taurine	-7.94	74.00	29.00 136.00
					Threonine	-22.03	113.00	73.00 216.00
					Tryptophan	19.23	67.00	31.00 83.00
					Tyrosine	-16.67	62.00	38.00 110.00
					Valine	-13.84	227.00	146.00 370.00
					<b>Total Status Deviation</b>	<b>20.94</b>		
					<b>Total Status Skew</b>	<b>-5.33</b>		



## Client Summary Review

Amino Acid & Organic Acid Date: 7/23/2013

**Anna**

Female / Age: 61

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### Nutritional Support

The following supplements may help to balance your biochemistry. Consult your practitioner.

- |  |  |
|--|--|
| <input type="checkbox"/> 1-5-HTP<br>3x daily 100 mg                          | <input type="checkbox"/> 1-Antioxidant Complex<br>See Nutrition Detail             |
| <input type="checkbox"/> 1-CAC Entry Protocol<br>See Nutrition Detail        | <input type="checkbox"/> 1-Carbohydrate Metabolism Profile<br>See Nutrition Detail |
| <input type="checkbox"/> 1-CoEnzyme Q10<br>2x daily 100 mg                   | <input type="checkbox"/> 1-Oral Electrolytes<br>2x daily                           |
| <input type="checkbox"/> 1-Probiotics<br>3x daily                            | <input type="checkbox"/> 2-Magnesium, B6 & Manganese<br>2x daily see details       |
| <input type="checkbox"/> 2-Vitamin E & Beta-carotene<br>1x daily see details |  |

Anna

Female / Age: 61

**Out-Of-Balance Panel Values**

The following panels have a PSD of greater than 25% indicating need for further review. PSD is the Panel Status Deviation, or the average imbalance of that subset of results. The PSS is the Panel Status Skew, or the direction, negative (deficiency) or positive (excess), of that subset of results.

Panel Name	PSD	PSS
CAC Cycle Ratios	205.09%	192.81%
Fatty Acid Metabolism	57.61%	44.79%
Energy Production	41.52%	34.15%
Liver Detox Indicators	34.61%	34.61%
Intestinal Dysbiosis	30.30%	14.58%
Carbohydrate Metabolism	28.22%	14.50%

**Lab Reported out-of-range Values**

The following results are out-of-range (as reported by the lab), and should be carefully reviewed.

**Benzoate (5583.33%)**

An elevated reading of this organic acid may mean an overgrowth of certain intestinal microbiota, ingestions of excessive benzoic acid in the diet (preserved foods, pickles, lunch meats, cranberries), or poor Phase II detoxification capabilities as the conjugation of benzoate with glycine is very efficient. The presence of this compound may be due to the action of the bacteria on phenylalanine. Assessment of amino acid competency may be helpful especially plasma glycine.

**CA Cycle Phase 6 ( 821.79%)**

The last phase of the citric acid cycle, this stage marks the conversion of Fumarate into Malate. When the ratio is low, this may signify that the body is not refilling its losses along the entire cycle. Supplementing with a broad spectrum amino acid along with niacin may help restore balance.

**CA Cycle Entry ( 374.71%)**

A high result for the marker representing the entry into the citric acid may indicate carbohydrate metabolism impairment especially if pyruvate and/or lactate are elevated. Possibilities causing this particular blockade include mercury, arsenic or petrochemical exposure.

**CA Cycle Phase 5 ( 246.92%)**

This phase of the citric acid cycle is the reaction caused by removing electrons from Succinate to form Fumarate. Co-Q10 deficiency may be responsible for an elevated ratio.

**Oxidative Damage ( 235.33%)**

A high reading of this ratio is indicative of excessive oxidative damage and the use of anti-oxidants is highly recommended.

**Hippurate ( 197.64%)**

A high reading of this organic acid may be indicative of an overgrowth of intestinal microbiota due to the action of bacteria on phenylalanine, elevated levels of environmental toxins (typically solvents) or elevated ingestion of benzoic acid.

**Drugs which may have an adverse affect:**

Aspirin

**CA Cycle Phase 1 ( 120.88%)**

This is the first phase of the citric acid cycle moving from Citrate to cis-Aconitate. A high reading may indicate a disruption in the efficiency of energy production. It can also be due to a problem clearing ammonia due to an arginase enzyme deficiency.

**Succinate ( 116.38%)**

A high reading of this organic acid may be indicative of poor amino acid metabolism and could indicate a need for additional magnesium, riboflavin and Coenzyme Q10. It is also suggestive of mitochondrial dysfunction leading to symptoms of fatigue and possibly myocardial and/or neurological degeneration.

**Drugs which may have an adverse affect:**

Lithium Carbonate

Anna

Female / Age: 61

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**Suberate ( 114.71%)**

Elevated levels have been correlated to deficiencies of carnitine due to the inability to properly bring long chain fatty acids into the mitochondria. A deficiency of B2 (riboflavin) may also be found with elevations of the urinary organic acid.

**Tricarballylate ( 108.90%)**

Elevated levels may be due to an overgrowth of intestinal bacteria. This organic acid binds very tightly to magnesium, possibly zinc and calcium and may induce a deficiency in these important minerals. The bacterium that produces this element is also very fast growing and may cause numerous vitamin and mineral deficiencies. As it may interfere with carbohydrate absorption, a diet low in carbohydrates is suggested.

**Malate ( 71.43%)**

A high level of this organic acid may be indicative of a need for certain nutrients such as niacin and Coenzyme Q10. If citrate, fumarate, and a-ketoglutarate are high as well, it may be due to a cytochrome C oxidase deficiency. Elevations of malate are also seen in individuals with Syndrome X. Tartaric acid has also been implicated, although theoretically, to block malate within the citric acid cycle.

**Drugs which may have an adverse affect:**

Lithium Carbonate

**Hydroxyproline ( 65.38%)**

May be indicative of bone resorption problems due to increased osteocalcin secretion. Hydroxyproline is a component of collagen. Vitamin C and iron are necessary cofactors.

**5-Hydroxyindoleacetate ( 58.57%)**

An elevation of this metabolite of the breakdown of serotonin may be due to the use of serotonin-specific re-uptake inhibitor (SSRI) drugs or the release of serotonin from the central nervous system, intestinal argentaffin cells or platelets.

**Drugs which may have an adverse affect:**

Acetaminophen, Prozac, Reserpine

**Sarcosine ( 55.50%)**

Elevated sarcosine may be indicative of a functional deficiency of riboflavin (B2) this in turn may impair vitamin B6 metabolism and the conversion of tryptophan to niacin. Elevated levels in men with prostate cancer should be monitored and glycine supplementation and possibly methionine should be avoided.

**a-Hydroxybutyrate ( 50.00%)**

Elevations of this organic acid are seen in poor carbohydrate metabolism as well as in elevated glutathione synthesis possibly due to toxicity, intestinal dysbiosis, drug interactions such as acetaminophen, and any disease that increases glutathione demands. Review pyroglutamate and sulfate levels to determine the stage of glutathione depletion.



Anna

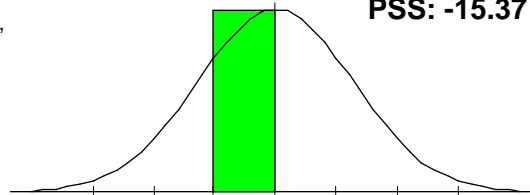
Female / Age: 61

**Ammonia/Energy**

Arginine, Threonine, Glycine[L], Serine[L], a-Aminoadipic Acid[L],  
Asparagine, Aspartic Acid[L], Citrulline, Glutamic Acid, Glutamine[L],  
Or.

Ammonia influences a cell's ability to create energy. This panel shows your body's ability to rid excess ammonia buildup and maintain a healthy energy cycle. This profile shows a percent imbalance below 25%, so no abnormalities were found.

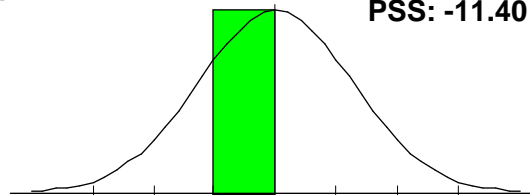
PSD: 21.15  
PSS: -15.37

**CNS Metabolism**

Arginine, Tryptophan, Glycine[L], Serine[L], Taurine, Aspartic Acid[L],  
Glutamine[L], Ethanolamine, Phosphoethanolamine[L],  
Phosphoserine.

Amino acids are the basic building blocks of all the cells in our body. Amino acid metabolism is important for proper functioning of the nervous system. This profile shows a percent imbalance below 25%, so no abnormalities were found.

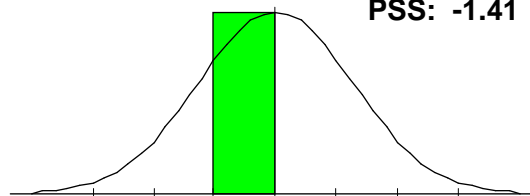
PSD: 20.15  
PSS: -11.40

**Connective Tissue**

Leucine, Methionine, Valine, Cystine, Hydroxylysine,  
Hydroxyproline[H], 3-Methylhistidine, Proline[L].

This panel shows whether there's an adequate supply and metabolism of amino acids necessary to produce healthy connective tissue and collagen. Necessary for healthy bone, joints, hair, skin, and cartilage. This profile shows a percent imbalance below 25%, so no abnormalities were found.

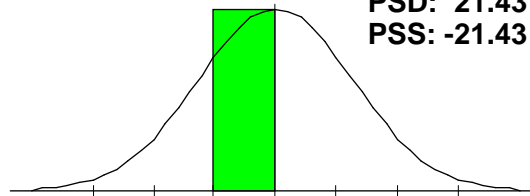
PSD: 21.22  
PSS: -1.41

**Detoxification Markers**

Methionine, Cystine, Taurine, Glutamine[L], Glycine[L], Aspartic  
Acid[L].

This panel reviews amino acids critical for proper detoxification. This includes detoxing medications, environmental toxins, and natural metabolic toxins. This profile shows a percent imbalance below 25%, so no abnormalities were found.

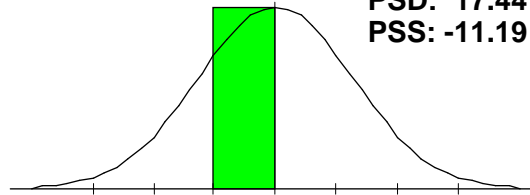
PSD: 21.43  
PSS: -21.43

**Essential Amino Acid**

Arginine, Histidine, Isoleucine[L], Leucine, Lysine, Methionine,  
Phenylalanine[L], Threonine, Tryptophan, Valine.

This panel reviews the essential amino acids the body can't produce and must get from the diet. These amino acids are necessary for all body functions. This profile shows a percent imbalance below 25%, so no abnormalities were found.

PSD: 17.44  
PSS: -11.19



Anna

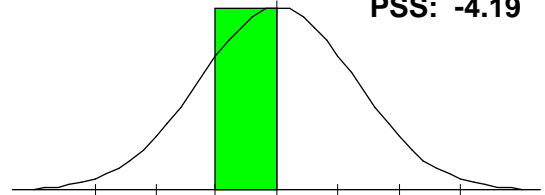
Female / Age: 61

**Fat Metabolism**

Arginine, Isoleucine[L], Leucine, Valine, Taurine, Glutamine[L],  
Sarcosine[H].

This panel shows your balance of amino acids critical to proper fat metabolism. Fat metabolism is important in many body functions. Improper metabolism can cause problems like hormonal issues and nerve disorders. This profile shows a percent imbalance below 25%, so no abnormalities were found.

PSD: 23.49  
PSS: -4.19

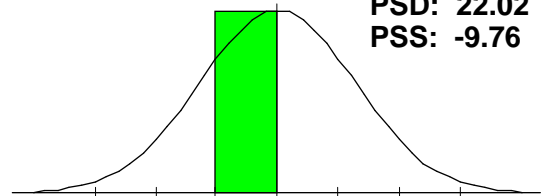


**Gluconeogen**

Threonine, Tryptophan, Glycine[L], Serine[L], Alanine.

This panel shows whether you have the proper amino acids in balance to control blood sugar levels. This profile shows a percent imbalance below 25%, so no abnormalities were found.

PSD: 22.02  
PSS: -9.76

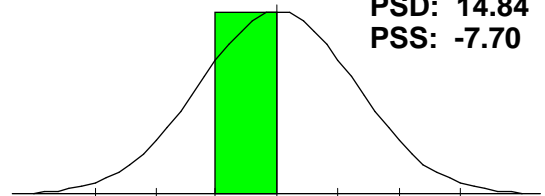


**Hepatic Metabolism**

Methionine, Taurine, Glutamine[L], Cystine, Homocystine, Alanine.

This panel shows whether you have adequate stores of the listed amino acids to optimize liver function. This is important because your liver is responsible for cleaning your blood of toxins. This profile shows a percent imbalance below 25%, so no abnormalities were found.

PSD: 14.84  
PSS: -7.70

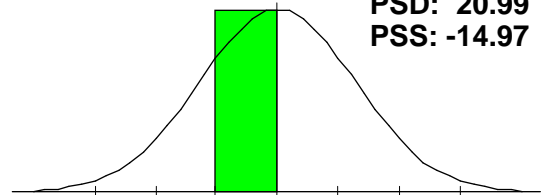


**Immune Metabolites**

Arginine, Threonine, Glutamine[L], Ornithine.

This panel shows whether you have adequate amounts of the listed amino acids to properly fight off viral or bacterial infections. This profile shows a percent imbalance below 25%, so no abnormalities were found.

PSD: 20.99  
PSS: -14.97

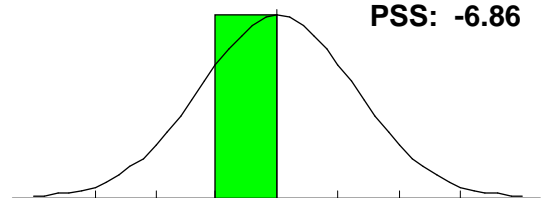


**Magnesium Dependents**

Citrulline, Ethanolamine, Phosphoethanolamine[L], Phosphoserine,  
Serine[L].

This panel shows whether you have adequate amounts of magnesium for proper amino acid function. Amino acids are extremely dependent on magnesium to function properly. This profile shows a percent imbalance below 25%, so no abnormalities were found.

PSD: 17.50  
PSS: -6.86



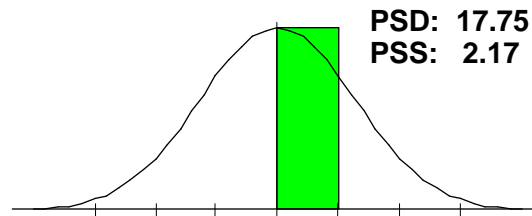
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Female / Age: 61

**Muscle Metabolites**

Anserine, Carnosine[L], 1-Methylhistidine[H], 3-Methylhistidine.

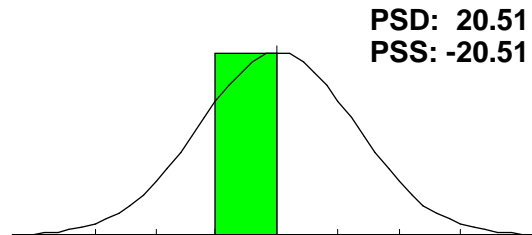
Amino acids are the basic building blocks critical in building muscle tissue. This profile shows a percent imbalance below 25%, so no abnormalities were found.



**Neuroendocrine Metab**

Glycine[L], Serine[L], Taurine, Tyrosine.

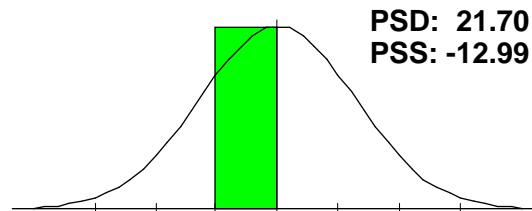
This panel shows whether you have enough of the listed amino acids necessary for the proper functioning of your endocrine system. The endocrine system comprises the control organs of the body such as: thymus, pancreas, and thyroid. This profile shows a percent imbalance below 25%, so no abnormalities were found.



**Urea Cycle Metabolites**

Arginine, Aspartic Acid[L], Citrulline, Ornithine, Glutamine[L], Asparagine.

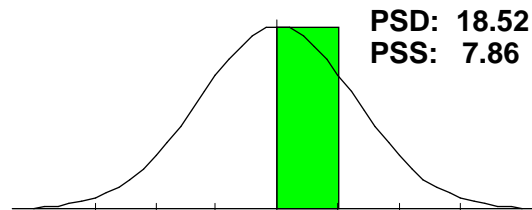
This panel shows your supply of the amino acids related to the urea cycle. This metabolic process helps you remove excess ammonia from your system. This profile shows a percent imbalance below 25%, so no abnormalities were found.



**B-Complex Markers**

b-Hydroxyisovalerate[H], a-Ketoisovalerate, a-Ketoisocaproate[L], a-Keto-b-methylvalerate, Methylmalonate, Formiminoglutamic Acid, Xanthuren.

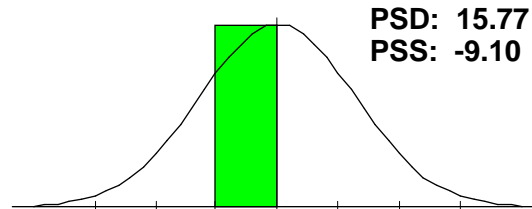
This panel assesses adequate intake of B-complex vitamins. This profile shows a percent imbalance below 25%, so no abnormalities were found.



**BCAA Catabolism**

a-Ketoisovalerate, a-Ketoisocaproate[L], a-Keto-b-methylvalerate.

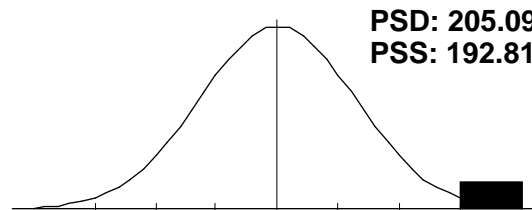
BCAA's are essential in building muscle and you can only get them from your diet or supplements. This panel assess your BCAA levels and how they're being used. This profile shows a percent imbalance below 25%, so no abnormalities were found.



**CAC Cycle Ratios**

CA Cycle Entry[H], CA Cycle Phase 1[H], CA Cycle Phase 2, CA Cycle Phase 3, CA Cycle Phase 4, CA Cycle Phase 5[H], CA Cycle Phase 6[H], CA C.

This panel reviews cellular energy producing cycles to maintain health and weight. This profile may indicate a heavy toxin load. Consider running additional environmental toxicity tests.



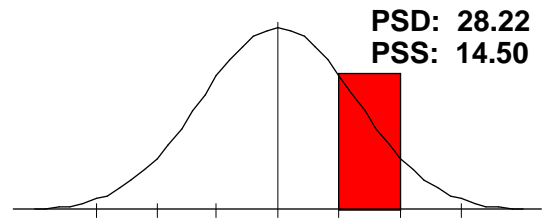
Anna

Female / Age: 61

**Carbohydrate Metabolism**

Lactate[H], Pyruvate, a-Hydroxybutyrate[H], b-Hydroxybutyrate.

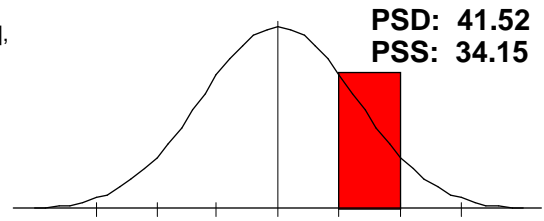
This panel assesses your body's ability to metabolize dietary carbohydrates. This profile suggests impaired carbohydrate metabolism. Symptoms include: brain function disorders, fatigue, weight gain, and chronic diseases. Review your Supplement List Explanation.



**Energy Production**

Citrate[H], cis-Aconitate, Isocitrate, a-Ketoglutarate[H], Succinate[H], Fumarate[L], Malate[H], Hydroxymethylglutarate.

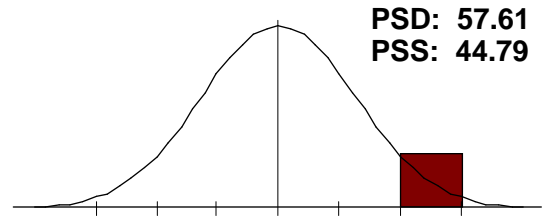
This panel reviews cellular energy producing cycles to maintain health and weight. This profile may indicate a breakdown in the Citric Acid Cycle. Review your Supplement List Explanation.



**Fatty Acid Metabolism**

Adipate, Suberate[H], Ethylmalonate[H].

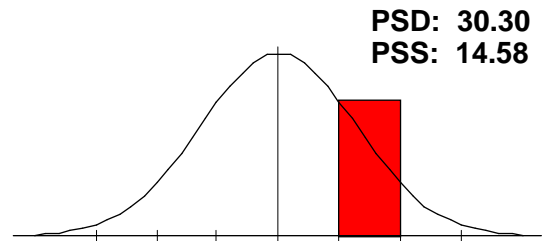
This panel assesses how fats are being broken down and utilized by the body. This profile may indicate a need for additional carnitine and riboflavin (B2) supplementation. Review your Supplement List Explanation.



**Intestinal Dysbiosis**

p-Hydroxyphenyllactate, Phenylacetate[H], Phenylpropionate[L], Tricarballoylate[H], Indican[H], p-Hydroxybenzoate, D-Lactate, D-Arabinitol.

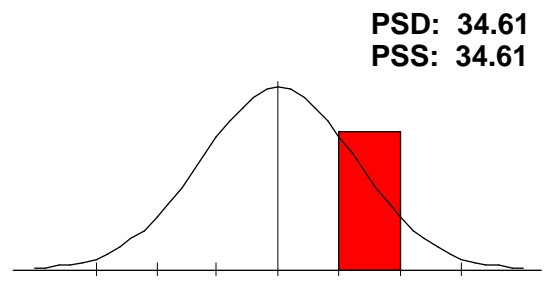
Disbyosis is an overgrowth of bad bacteria in the gut. It is indicative of gut health. This profile suggest you may have overgrowths of bad bacteria in the gut. Review Clostridium panel. Consider running a stool analysis to confirm.



**Liver Detox Indicators**

2-Methylhippurate, Glucarate[H], Orotate[H], Pyroglutamate[H], Sulfate, a-Hydroxybutyrate[H].

This panel assesses how well your liver removes toxins from your system. This profile may indicate: high environmental toxins, improper regulation of cell growth, hereditary deficiencies, and a depressed ability of the liver to detoxify itself. Consider a detoxification protocol. Review your Supplement List Explanation..



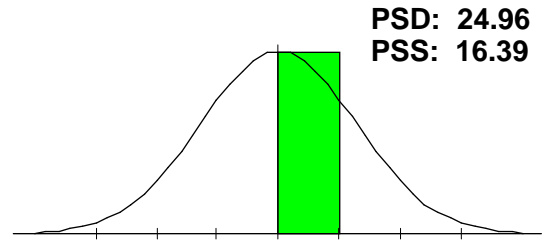
Anna

Female / Age: 61

**Neurotransmitters**

Vanilmandelate, Homovanillate, 5-Hydroxyindoleacetate[H],  
Kynurenate, Quinolate.

Neurotransmitters are chemicals the brain uses to make the entire neurological system function - including all body functions. This panel assesses neurotransmitter production. This profile shows a percent imbalance below 25%, so no abnormalities were found.



## Drug Interactions

Amino Acid & Organic Acid Date: 7/23/2013

**Anna**

Female / Age: 61

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Drugs listed below tend to further aggravate elements of blood chemistry that are out of range (H or L). The (#) after each drug denotes the number of times that drug is flagged as being potentially harmful.

Acetaminophen(2)  
Reserpine

Aspirin

Lithium Carbonate(2)

Prozac

## Nutrition - Detail

Amino Acid & Organic Acid Date: 7/23/2013

Anna

Female / Age: 61

Nutritional and herbal information contained in this report is based upon research related to imbalances in your chemistry. The recommendations are based upon the information provided, without interpretation. This must be done with the help of your qualified health care professional.

### 1-5-HTP 3x daily 100 mg

5-Hydroxytryptophan is indicated due to the high level of 5-HIAA in urine which suggests serotonin catabolism and a possible loss of tryptophan reserves.

Decreased

### Rationale

Normal

Increased

5-Hydroxyindoleacetate

### 1-Antioxidant Complex See Nutrition Detail

When certain oxidative test markers appear, the following protocol can be followed: a Broad Spectrum Antioxidant which should include CoEnzyme Q10 (2 times daily, Vitamins A and E as well as Selenium (2 times daily) and Vitamin C (1000 mg 2 times daily).

Vitamin E should only be consumed with the advice of a physician if currently taking Coumadin or other blood thinning medications.

#### COENZYME Q10

An important antioxidant and essential component of mitochondria, CoQ10 can be depleted if on cholesterol lowering drugs.

#### VITAMIN A/MIXED-CAROTENES

Vitamin A is involved in the growth and repair of tissue and helps maintain healthy skin. It is essential in the maintenance of eyesight, building of bones, teeth and blood. It also enhances production of RNA.

#### VITAMIN E

Vitamin E is a major antioxidant, enhances lymphocyte production, maintains cellular integrity, and aids in the biosynthesis of heme proteins

#### SELENIUM (Se)

Cofactor in glutathione peroxidase, in detoxification of peroxides, free radicals and thyroid hormone deionases.

#### VITAMIN C

Water-soluble vitamin essential for the synthesis and maintenance of collagen as well as body tissue cells, cartilage, bones, teeth, skin and tendons. Helps protect the immune system. Also improves iron and calcium absorption as well as trace mineral utilization.

Decreased

Normal

Increased

Oxidative Damage

### 1-CAC Entry Protocol See Nutrition Detail

When the entry point to the citric acid cycle is blocked, the ability to utilize carbohydrates to produce energy is impaired. The following protocol may be helpful in bringing down this ratio.

B-Complex - 2x daily

Amino Acid Complex - 5 grams 2x daily

CoEnzyme Q10 - 50 mg 2x daily

Alpha Lipoic Acid - 200 mg 2x daily

Vitamin C - 1000 mg 2x daily

For children between 6-18

B-Complex - 1x daily

CoEnzyme Q10 - 25 mg daily

Vitamin C - 500 mg daily

Amino Acid Complex - 5 grams daily

For children under the age of 6:

Amino Acid Complex with co-factors - 1/8 tsp 2x daily

Vitamin C - 125 mg 2x daily

CoEnzyme Q10 - 12.5 mg daily

For children between the ages of 6 and 18 use 1/2 the adult dose.

Decreased

Normal

Increased

CA Cycle Entry

## Nutrition - Detail

Amino Acid & Organic Acid Date: 7/23/2013

Anna

Female / Age: 61

Nutritional and herbal information contained in this report is based upon research related to imbalances in your chemistry. The recommendations are based upon the information provided, without interpretation. This must be done with the help of your qualified health care professional.

### 1-Carbohydrate Metabolism Profile See Nutrition Detail

When Lactate and a-Hydroxybutyrate are elevated to this degree it indicates a potential for impaired carbohydrate metabolism. This pattern indicates suboptimal operation of carbohydrate metabolism, interfering with efficient cellular energy production. Various pathways being over- or under- utilized can be nutritionally supported with digestive enzymes, B-Complex, Lipoic acid, and CoEnzyme Q10 supplementation. Recommended nutrients include:  
B-Complex (2x daily)  
Lipoic Acid (2x daily)  
CoEnzyme Q10 (2x 50 mg daily)  
Digestive Enzymes (1-2 with each meal)

Decreased

### Rationale

Normal

Increased

a-Hydroxybutyrate  
Lactate

### 1-CoEnzyme Q10 2x daily 100 mg

CoEnzyme Q10 is an essential component of the mitochondria of the energy producing unit of the cell. Its beneficial effects include increased energy, as well as prevention of cardiovascular disease and cancer. Clinical responses may take up to 8 weeks according to some research so patience is necessary during supplementation.

Decreased

Normal

Increased

Hydroxymethylglutarate

Succinate  
Malate

### 1-Oral Electrolytes 2x daily

The main electrolytes in the human body are sodium, potassium, phosphorus, calcium, chloride, magnesium and bicarbonate. During illness, the equilibrium present in healthy individuals, is disturbed. A well balanced formula is helpful in restoring a state of equilibrium. In many cases of intestinal dysbiosis, alkalizing the system with electrolytes may aid in dislodging the microbiota from the gut wall.

Decreased

Normal

Increased

Tricarballylate

### 1-Probiotics 3x daily

A comprehensive probiotic protocol has shown promise in relieving intestinal bacteria and parasitic infections. It is important to use a broad spectrum of probiotic organisms with a high concentration, preferably 20-25 billion of live organisms per capsule.

Decreased

Normal

Increased

Tricarballylate

### 2-Magnesium, B6 & Manganese 2x daily see details

Magnesium (Mg) 240 mg, Pyridoxal-5-Phosphate 50 mg, Manganese (Mn) 20 mg

Second most abundant cation (positively charged mineral) in intracellular fluid. Magnesium helps facilitate Na - K transport and influences Ca levels. It is involved in vasodilation, contraction, as well as cardiac and skeletal muscle cells. Required in over 300 enzymes, temperature control, neuronal homeostasis and has a profound effect on cardiac physiology.

B6 function involves many complex interrelated functions around amino acid metabolism. Cell processes involve PLP in immune modulation, fatty acids, steroid hormone, receptors, neurotransmitters, gluconeogenesis, and heme synthesis.

Concentrated in mitochondria, manganese stimulates the synthesis of cholesterol and fatty acids. Associated with a large number of enzymes in numerous areas of metabolism. Improves glucose tolerance, neurotransmission, vestibular and neuromuscular function.

Decreased

Serine

Normal

Threonine  
Phosphoserine

Increased



## Nutrition - Detail

Amino Acid & Organic Acid Date: 7/23/2013

**Anna**

Female / Age: 61

Nutritional and herbal information contained in this report is based upon research related to imbalances in your chemistry. The recommendations are based upon the information provided, without interpretation. This must be done with the help of your qualified health care professional.

### **2-Vitamin E & Beta-carotene** 1x daily see details

Vitamin E 800 IU - Adult, 400 IU - Children

Vitamin E is a major antioxidant, scavenging free radicals - enhancing lymphocyte production, increasing nitrogen retention, maintaining cellular integrity, and aiding in the biosynthesis of heme proteins.

Beta-carotene 25,000 IU - Adult, 12,500 - Children

Beta-carotene is involved in the growth and repair of tissue and helps maintain healthy skin. It is essential in the maintenance of eyesight, building of bones, teeth and blood. Do not take if pregnant.

Decreased

### ***Rationale***

Normal

Increased

1-Methylhistidine

## Clinical Correlation

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

This report "MATCHES" clinical observations with the lab test. Elements shown, normal and abnormal, tend to characterize the observation. Highlighted elements are those reported to "MATCH" the characteristics of the clinical observation. Others are NOT matches but are elements in the observation.

### Collagen Production Imbalance (270.1)

**66.67% (2 of 3)**

**Decreased**

**Normal**

**Increased**

-26.14 Proline

**65.38 Hydroxyproline**

10.00 Hydroxylysine

### Potential CoEnzyme Q10 Deficiency ()

**66.67% (4 of 6)**

**Decreased**

**Normal**

**Increased**

**35.45 Lactate**

-19.23 Adipate

**38.89 Ethylmalonate**

**114.71 Suberate**

**116.38 Succinate**

22.22 Hydroxymethylglutarate

This pattern is consistent with a CoEnzyme Q10 deficiency or the use of statin drugs.

## Comparison Progress Report

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

A "+" change is toward optimal % Status of zero. A "-" change is away from optimal % Status of zero.

	Status % on:	12/26/2012	7/23/2013	+/- change
Histidine		<b>-62.28 L</b>	-13.16	+ 49.12
Lysine		<b>-32.83 L</b>	-2.02	+ 30.81
Threonine		<b>-50.70 L</b>	-22.03	+ 28.67
Arginine		<b>-39.81 L</b>	12.04	+ 27.78
Methionine		<b>-44.12 L</b>	-17.65	+ 26.47
Hydroxyproline		-11.54	<b>65.38 H</b>	- 53.85
Sarcosine		-23.50	<b>55.50 H</b>	- 32.00
Glycine/Serine Ratio		-6.86	<b>38.76 H</b>	- 31.89
1-Methylhistidine		5.77	<b>36.00 H</b>	- 30.23
Carnosine		5.00	<b>-30.00 L</b>	- 25.00

## Comparison Report

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

The arrow's length is proportional to change. Left to right is increase. Right to left is decrease.  
Green is improvement. Red is decline.

		+/-	Status % on:	12/26/2012	7/23/2013
5.77		-		5.77	<b>36.00 H</b>
3.85		+		22.00	3.85
				<b>-25.00 L</b>	<b>-25.00 L</b>
-14.10		-		1.28	-14.10
<b>-25.61</b>		+		<b>-25.61 L</b>	11.42
				3.49	-1.16
<b>-39.81</b>		+		<b>-39.81 L</b>	12.04
<b>-44.92</b>		+		<b>-44.92 L</b>	-21.19
<b>-52.00</b>		+		<b>-52.00 L</b>	<b>-33.00 L</b>
<b>-30.00</b>		-		5.00	<b>-30.00 L</b>
<b>-26.92</b>		+		<b>-26.92 L</b>	14.10
<b>-27.04</b>		+		<b>-27.04 L</b>	-14.07
				11.67	12.50
-23.16		+		-23.16	-14.74
<b>-44.64</b>		+		<b>-44.64 L</b>	<b>-27.98 L</b>
<b>-52.48</b>		+		<b>-52.48 L</b>	<b>-27.96 L</b>
-6.86		-		-6.86	<b>38.76 H</b>
<b>-62.28</b>		+		<b>-62.28 L</b>	-13.16
				10.00	10.00
				10.00	10.00
-11.54		-		-11.54	<b>65.38 H</b>
				<b>-34.06 L</b>	<b>-28.26 L</b>
<b>-34.43</b>		+		<b>-34.43 L</b>	-18.85
<b>-32.83</b>		+		<b>-32.83 L</b>	-2.02
<b>-44.12</b>		+		<b>-44.12 L</b>	-17.65
-21.91		-		-11.80	-21.91
<b>-42.45</b>		+		<b>-42.45 L</b>	<b>-27.36 L</b>
				<b>-30.00 L</b>	<b>-31.43 L</b>
				0.00	0.00
<b>-41.29</b>		+		<b>-41.29 L</b>	<b>-26.14 L</b>
<b>-23.50</b>		-		-23.50	<b>55.50 H</b>
<b>-42.86</b>		+		<b>-42.86 L</b>	<b>-29.46 L</b>
				-9.81	-7.94
<b>-50.70</b>		+		<b>-50.70 L</b>	-22.03
-5.77		-		-5.77	19.23
<b>-36.11</b>		+		<b>-36.11 L</b>	-16.67
<b>-27.23</b>		+		<b>-27.23 L</b>	-13.84
<b>Total Status Deviation</b>				<b>26.44</b>	<b>20.94</b>
<b>Total Status Skew</b>				<b>-23.33</b>	<b>-5.33</b>

## Comparison Progress Report

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

A "+" change is toward optimal % Status of zero. A "-" change is away from optimal % Status of zero.

	Status % on: 12/26/2012		7/23/2013		+/- change
CA Cycle Phase 3	<b>4325.00</b>	H	18.49		+4306.51
CA Cycle Phase 4	<b>2731.25</b>	H	-16.95		+2714.30
5-Hydroxyindoleacetate	<b>401.43</b>	H	<b>58.57</b>	H	<b>+ 342.86</b>
D-Arabinitol	<b>288.89</b>	H	-5.56		+ 283.33
Orotate	<b>296.38</b>	H	<b>47.10</b>	H	<b>+ 249.28</b>
Phenylacetate	<b>250.00</b>	H	<b>25.00</b>	H	<b>+ 225.00</b>
Formiminoglutamic Acid	<b>125.00</b>	H	16.67		+ 108.33
Succinate	<b>180.17</b>	H	<b>116.38</b>	H	<b>+ 63.79</b>
Indican	<b>85.00</b>	H	<b>35.00</b>	H	<b>+ 50.00</b>
Sulfate	<b>58.64</b>	H	16.52		+ 42.12
Quinolate	<b>42.50</b>	H	15.00		+ 27.50
D-Lactate	<b>-32.61</b>	L	-6.52		+ 26.09
Benzoate	<b>45.00</b>	H	<b>5583.33</b>	H	<b>-5538.33</b>
CA Cycle Phase 6	<b>196.38</b>	H	<b>821.79</b>	H	<b>- 625.42</b>
CA Cycle Phase 5	<b>66.09</b>	H	<b>246.92</b>	H	<b>- 180.84</b>
Tricarballoylate	2.05		<b>108.90</b>	H	<b>- 106.85</b>
Suberate	<b>26.47</b>	H	<b>114.71</b>	H	<b>- 88.24</b>
Hippurate	<b>142.59</b>	H	<b>197.64</b>	H	<b>- 55.05</b>
Lactate	0.00		<b>35.45</b>	H	<b>- 35.45</b>

# Comparison Report

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

The arrow's length is proportional to change. Left to right is increase. Right to left is decrease.  
Green is improvement. Red is decline.

		+/-	Status	% on:	12/26/2012	7/23/2013
					2-Methylhippurate	9.52 14.29
58.57		401.43	+		5-Hydroxyindoleacetate	<b>401.43 H</b> <b>58.57 H</b>
					8-Hydroxy-2-deoxyguan	<b>27.36 H</b> <b>25.47 H</b>
		-5.77	-		Adipate	-5.77 -19.23
					a-Hydroxybutyrate	<b>50.00 H</b> <b>50.00 H</b>
					a-Keto-b-methylvalerate	-7.89 -7.89
		26.84	+		a-Ketoglutarate	<b>-48.74 L</b> <b>26.84 H</b>
		-5.88	-		a-Ketoisocaproate	-5.88 <b>-29.41 L</b>
					a-Ketoisovalerate	10.00 10.00
45.00		5583.33	-		Benzoate	<b>45.00 H</b> <b>5583.33 H</b>
					b-Hydroxybutyrate	-6.67 -6.67
		30.26	-		b-Hydroxyisovalerate	9.21 <b>30.26 H</b>
		10.61	+		cis-Aconitate	10.61 -1.52
					Citrate	<b>46.70 H</b> <b>46.33 H</b>
-5.56		288.89	+		D-Arabinitol	<b>288.89 H</b> -5.56
		-6.52	+		D-Lactate	<b>-32.61 L</b> -6.52
		38.89	-		Ethylmalonate	22.22 <b>38.89 H</b>
16.67		125.00	+		Formiminoglutamic Acid	<b>125.00 H</b> 16.67
					Fumarate	<b>27.97 H</b> <b>-27.97 L</b>
		48.41	-		Glucarate	<b>26.19 H</b> <b>48.41 H</b>
		197.64	-		Hippurate	<b>142.59 H</b> <b>197.64 H</b>
					Homovanillate	-23.81 16.67
		41.67	+		Hydroxymethylglutarate	<b>41.67 H</b> 22.22
35.00		85.00	+		Indican	<b>85.00 H</b> <b>35.00 H</b>
					Isocitrate	<b>26.27 H</b> 19.49
		13.16	-		Kynurenate	-2.63 13.16
		35.45	-		Lactate	0.00 <b>35.45 H</b>
					Malate	<b>71.43 H</b> <b>71.43 H</b>
		26.47	+		Methylmalonate	<b>26.47 H</b> 8.82
47.10		296.38	+		Orotate	<b>296.38 H</b> <b>47.10 H</b>
25.00		250.00	+		Phenylacetate	<b>250.00 H</b> <b>25.00 H</b>
					Phenylpropionate	<b>-36.25 L</b> <b>-36.25 L</b>
		10.61	-		p-Hydroxybenzoate	0.51 10.61
		18.42	-		p-Hydroxyphenylacetate	-7.89 18.42
					p-Hydroxyphenyllactate	-19.62 -14.56
		44.92	+		Pyroglutamate	<b>44.92 H</b> <b>31.36 H</b>
					Pyruvate	-20.77 -20.77
		42.50	+		Quinolate	<b>42.50 H</b> 15.00
26.47		114.71	-		Suberate	<b>26.47 H</b> <b>114.71 H</b>
116.38		180.17	+		Succinate	<b>180.17 H</b> <b>116.38 H</b>
		58.64	+		Sulfate	<b>58.64 H</b> 16.52
2.05		108.90	-		Tricarallylate	2.05 <b>108.90 H</b>
		-21.43	+		Vanilmandelate	<b>-40.48 L</b> -21.43
		26.60	-		Xanthurenate	-5.32 <b>26.60 H</b>
					<b>Total Status Deviation</b>	<b>196.69</b> <b>164.61</b>
					<b>Total Status Skew</b>	<b>182.88</b> <b>152.71</b>

## Panel/Subset Comparison Report

Amino Acid & Organic Acid Date: 7/23/2013

Anna

Female / Age: 61

Ammonia/Energy	12/26/2012	7/23/2013	+/-	
Arginine	-39.81 L	12.04	+	-39.81  12.04
Threonine	-50.70 L	-22.03	+	-50.70  -22.03
Glycine	-52.48 L	-27.96 L	+	-52.48  -27.96
Serine	-42.86 L	-29.46 L	+	-42.86  -29.46
a-Aminoadipic Acid	-25.00 L	-25.00 L		
Asparagine	-44.92 L	-21.19	+	-44.92  -21.19
Aspartic Acid	-52.00 L	-33.00 L	+	-52.00  -33.00
Citrulline	-26.92 L	14.10	+	-26.92  14.10
Glutamic Acid	-23.16	-14.74	+	-23.16  -14.74
Glutamine	-44.64 L	-27.98 L	+	-44.64  -27.98
Ornithine	-11.80	-21.91	-	-21.91  -11.80
a-Amino-N-Butyric Acid	1.28	-14.10	-	-14.10  1.28
Alanine	-25.61 L	11.42	+	-25.61  11.42
<b>PSS / PSD</b>	-33.74 / 33.94	-15.37 / 21.15		

CNS Metabolism	12/26/2012	7/23/2013	+/-	
Arginine	-39.81 L	12.04	+	-39.81  12.04
Tryptophan	-5.77	19.23	-	-5.77  19.23
Glycine	-52.48 L	-27.96 L	+	-52.48  -27.96
Serine	-42.86 L	-29.46 L	+	-42.86  -29.46
Taurine	-9.81	-7.94		
Aspartic Acid	-52.00 L	-33.00 L	+	-52.00  -33.00
Glutamine	-44.64 L	-27.98 L	+	-44.64  -27.98
Ethanolamine	-11.67	12.50		
Phosphoethanolamine	-30.00 L	-31.43 L		
Phosphoserine	0.00	0.00		
<b>PSS / PSD</b>	-28.90 / 28.90	-11.40 / 20.15		

Connective Tissue	12/26/2012	7/23/2013	+/-	
Leucine	-34.43 L	-18.85	+	-34.43  -18.85
Methionine	-44.12 L	-17.65	+	-44.12  -17.65
Valine	-27.23 L	-13.84	+	-27.23  -13.84
Cystine	-27.04 L	-14.07	+	-27.04  -14.07
Hydroxylysine	10.00	10.00		
Hydroxyproline	-11.54	65.38 H	-	-11.54  65.38
3-Methylhistidine	22.00	3.85	+	3.85  22.00
Proline	-41.29 L	-26.14 L	+	-41.29  -26.14
<b>PSS / PSD</b>	-19.20 / 27.20	-1.41 / 21.22		

Detoxification Markers	12/26/2012	7/23/2013	+/-	
Methionine	-44.12 L	-17.65	+	-44.12  -17.65
Cystine	-27.04 L	-14.07	+	-27.04  -14.07
Taurine	-9.81	-7.94		
Glutamine	-44.64 L	-27.98 L	+	-44.64  -27.98
Glycine	-52.48 L	-27.96 L	+	-52.48  -27.96
Aspartic Acid	-52.00 L	-33.00 L	+	-52.00  -33.00
<b>PSS / PSD</b>	-38.35 / 38.35	-21.43 / 21.43		

## Panel/Subset Comparison Report

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

<b>Essential Amino Acid</b>	<b>12/26/2012</b>	<b>7/23/2013</b>	<b>+/-</b>	
Arginine	-39.81 L	12.04	+	-39.81  12.04
Histidine	-62.28 L	-13.16	+	-62.28  -13.16
Isoleucine	-34.06 L	-28.26 L		
Leucine	-34.43 L	-18.85	+	-34.43  -18.85
Lysine	-32.83 L	-2.02	+	-32.83  -2.02
Methionine	-44.12 L	-17.65	+	-44.12  -17.65
Phenylalanine	-42.45 L	-27.36 L	+	-42.45  -27.36
Threonine	-50.70 L	-22.03	+	-50.70  -22.03
Tryptophan	-5.77	19.23	-	-5.77  19.23
Valine	-27.23 L	-13.84	+	-27.23  -13.84
<b>PSS / PSD</b>	<b>-37.37 / 37.37</b>	<b>-11.19 / 17.44</b>		

<b>Fat Metabolism</b>	<b>12/26/2012</b>	<b>7/23/2013</b>	<b>+/-</b>	
Arginine	-39.81 L	12.04	+	-39.81  12.04
Isoleucine	-34.06 L	-28.26 L		
Leucine	-34.43 L	-18.85	+	-34.43  -18.85
Valine	-27.23 L	-13.84	+	-27.23  -13.84
Taurine	-9.81	-7.94		
Glutamine	-44.64 L	-27.98 L	+	-44.64  -27.98
Sarcosine	-23.50	55.50 H	-	-23.50  55.50
<b>PSS / PSD</b>	<b>-30.50 / 30.50</b>	<b>-4.19 / 23.49</b>		

<b>Gluconeogen</b>	<b>12/26/2012</b>	<b>7/23/2013</b>	<b>+/-</b>	
Threonine	-50.70 L	-22.03	+	-50.70  -22.03
Tryptophan	-5.77	19.23	-	-5.77  19.23
Glycine	-52.48 L	-27.96 L	+	-52.48  -27.96
Serine	-42.86 L	-29.46 L	+	-42.86  -29.46
Alanine	-25.61 L	11.42	+	-25.61  11.42
<b>PSS / PSD</b>	<b>-35.48 / 35.48</b>	<b>-9.76 / 22.02</b>		

<b>Hepatic Metabolism</b>	<b>12/26/2012</b>	<b>7/23/2013</b>	<b>+/-</b>	
Methionine	-44.12 L	-17.65	+	-44.12  -17.65
Taurine	-9.81	-7.94		
Glutamine	-44.64 L	-27.98 L	+	-44.64  -27.98
Cystine	-27.04 L	-14.07	+	-27.04  -14.07
Homocystine	10.00	10.00		
Alanine	-25.61 L	11.42	+	-25.61  11.42
<b>PSS / PSD</b>	<b>-23.54 / 26.87</b>	<b>-7.70 / 14.84</b>		

<b>Immune Metabolites</b>	<b>12/26/2012</b>	<b>7/23/2013</b>	<b>+/-</b>	
Arginine	-39.81 L	12.04	+	-39.81  12.04
Threonine	-50.70 L	-22.03	+	-50.70  -22.03
Glutamine	-44.64 L	-27.98 L	+	-44.64  -27.98
Ornithine	-11.80	-21.91	-	-11.80  -21.91
<b>PSS / PSD</b>	<b>-36.74 / 36.74</b>	<b>-14.97 / 20.99</b>		



## Panel/Subset Comparison Report

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

<b>Magnesium Dependents</b>	<b>12/26/2012</b>		<b>7/23/2013</b>	<b>+/-</b>		
Citrulline	-26.92	L	14.10	+	-26.92	→ 14.10
Ethanolamine	-11.67		12.50			
Phosphoethanolamine	-30.00	L	-31.43	L		
Phosphoserine	0.00		0.00			
Serine	-42.86	L	-29.46	L +	-42.86	→ -29.46
<b>PSS / PSD</b>	<b>-22.29 / 22.29</b>		<b>-6.86 / 17.50</b>			

<b>Muscle Metabolites</b>	<b>12/26/2012</b>		<b>7/23/2013</b>	<b>+/-</b>		
Anserine	3.49		-1.16			
Carnosine	5.00		-30.00	L -	-30.00	← 5.00
1-Methylhistidine	5.77		36.00	H -	5.77	→ 36.00
3-Methylhistidine	22.00		3.85	+	3.85	← 22.00
<b>PSS / PSD</b>	<b>9.06 / 9.06</b>		<b>2.17 / 17.75</b>			

<b>Neuroendocrine Metab</b>	<b>12/26/2012</b>		<b>7/23/2013</b>	<b>+/-</b>		
Glycine	-52.48	L	-27.96	L +	-52.48	→ -27.96
Serine	-42.86	L	-29.46	L +	-42.86	→ -29.46
Taurine	-9.81		-7.94			
Tyrosine	-36.11	L	-16.67	+	-36.11	→ -16.67
<b>PSS / PSD</b>	<b>-35.32 / 35.32</b>		<b>-20.51 / 20.51</b>			

<b>Urea Cycle Metabolites</b>	<b>12/26/2012</b>		<b>7/23/2013</b>	<b>+/-</b>		
Arginine	-39.81	L	12.04	+	-39.81	→ 12.04
Aspartic Acid	-52.00	L	-33.00	L +	-52.00	→ -33.00
Citrulline	-26.92	L	14.10	+	-26.92	→ 14.10
Ornithine	-11.80		-21.91	-	-21.91	← -11.80
Glutamine	-44.64	L	-27.98	L +	-44.64	→ -27.98
Asparagine	-44.92	L	-21.19	+	-44.92	→ -21.19
<b>PSS / PSD</b>	<b>-36.68 / 36.68</b>		<b>-12.99 / 21.70</b>			

<b>B-Complex Markers</b>	<b>12/26/2012</b>		<b>7/23/2013</b>	<b>+/-</b>		
b-Hydroxyisovalerate	9.21		30.26	H -	9.21	→ 30.26
a-Ketoisovalerate	10.00		10.00			
a-Ketoisocaproate	-5.88		-29.41	L -	-29.41	← -5.88
a-Keto-b-methylvalerate	-7.89		-7.89			
Methylmalonate	26.47	H	8.82	+	8.82	← 26.47
Formiminoglutamic Acid	125.00	H	16.67	+	16.67	← 125.00
Xanthurenate	-5.32		26.60	H -	-5.32	→ 26.60
<b>PSS / PSD</b>	<b>21.65 / 27.11</b>		<b>7.86 / 18.52</b>			

<b>BCAA Catabolism</b>	<b>12/26/2012</b>		<b>7/23/2013</b>	<b>+/-</b>		
a-Ketoisovalerate	10.00		10.00			
a-Ketoisocaproate	-5.88		-29.41	L -	-29.41	← -5.88
a-Keto-b-methylvalerate	-7.89		-7.89			
<b>PSS / PSD</b>	<b>-1.26 / 7.93</b>		<b>-9.10 / 15.77</b>			

## Panel/Subset Comparison Report

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

<b>CAC Cycle Ratios</b>	<b>12/26/2012</b>		<b>7/23/2013</b>		<b>+/-</b>	
CA Cycle Entry	376.17	H	374.71	H		
CA Cycle Phase 1	103.42	H	120.88	H	-	103.42  120.88
CA Cycle Phase 2	5.26		8.82			
CA Cycle Phase 3	4325.00	H	18.49	+	18.49	4325.00
CA Cycle Phase 4	2731.25	H	-16.95	+	-16.95	2731.25
CA Cycle Phase 5	66.09	H	246.92	H	-	66.09  246.92
CA Cycle Phase 6	196.38	H	821.79	H	-	196.38  821.79
CA Cycle Return	-32.06	L	-32.16	L		
<b>PSS / PSD</b>	971.44 / 979.45		192.81 / 205.09			

<b>Carbohydrate Metabolism</b>	<b>12/26/2012</b>		<b>7/23/2013</b>		<b>+/-</b>	
Lactate	0.00		35.45	H	-	0.00  35.45
Pyruvate	-20.77		-20.77			
a-Hydroxybutyrate	50.00	H	50.00	H		
b-Hydroxybutyrate	-6.67		-6.67			
<b>PSS / PSD</b>	5.64 / 19.36		14.50 / 28.22			

<b>Energy Production</b>	<b>12/26/2012</b>		<b>7/23/2013</b>		<b>+/-</b>	
Citrate	46.70	H	46.33	H		
cis-Aconitate	10.61		-1.52	+	-1.52	10.61
Isocitrate	26.27	H	19.49			
a-Ketoglutarate	-48.74	L	26.84	H	+	-48.74  26.84
Succinate	180.17	H	116.38	H	+	116.38  180.17
Fumarate	27.97	H	-27.97	L		
Malate	71.43	H	71.43	H		
Hydroxymethylglutarate	41.67	H	22.22	+	22.22	41.67
<b>PSS / PSD</b>	44.51 / 56.69		34.15 / 41.52			

<b>Fatty Acid Metabolism</b>	<b>12/26/2012</b>		<b>7/23/2013</b>		<b>+/-</b>	
Adipate	-5.77		-19.23	-	-19.23	-5.77
Suberate	26.47	H	114.71	H	-	26.47  114.71
Ethylmalonate	22.22		38.89	H	-	22.22  38.89
<b>PSS / PSD</b>	14.31 / 18.15		44.79 / 57.61			

<b>Intestinal Dysbiosis</b>	<b>12/26/2012</b>		<b>7/23/2013</b>		<b>+/-</b>	
p-Hydroxyphenyllactate	-19.62		-14.56			
Phenylacetate	250.00	H	25.00	H	+	25.00  250.00
Phenylpropionate	-36.25	L	-36.25	L		
Tricarballoylate	2.05		108.90	H	-	2.05  108.90
Indican	85.00	H	35.00	H	+	35.00  85.00
p-Hydroxybenzoate	0.51		10.61	-	10.61	0.51
D-Lactate	-32.61	L	-6.52	+	-6.52	-32.61  -6.52
D-Arabinitol	288.89	H	-5.56	+	-5.56	288.89
<b>PSS / PSD</b>	67.25 / 89.37		14.58 / 30.30			

## Panel/Subset Comparison Report

**Anna**

**Amino Acid & Organic Acid Date: 7/23/2013**

Female / Age: 61

Liver Detox Indicators	12/26/2012		7/23/2013		+/-	
2-Methylhippurate	9.52		14.29			
Glucarate	<b>26.19</b>	H	<b>48.41</b>	H	-	26.19  48.41
Orotate	<b>296.38</b>	H	<b>47.10</b>	H	+	47.10  296.38
Pyroglutamate	<b>44.92</b>	H	<b>31.36</b>	H	+	31.36  44.92
Sulfate	<b>58.64</b>	H	16.52		+	16.52  58.64
a-Hydroxybutyrate	<b>50.00</b>	H	<b>50.00</b>	H		
<b>PSS / PSD</b>	80.94 / 80.94		34.61 / 34.61			

Neurotransmitters	12/26/2012		7/23/2013		+/-	
Vanilmandelate	<b>-40.48</b>	L	-21.43		+	-40.48  -21.43
Homovanillate	-23.81		16.67			
5-Hydroxyindoleacetate	<b>401.43</b>	H	<b>58.57</b>	H	+	58.57  401.43
Kynurenate	-2.63		13.16		-	-2.63  13.16
Quinolate	<b>42.50</b>	H	15.00		+	15.00  42.50
<b>PSS / PSD</b>	75.40 / 102.17		16.39 / 24.96			

# Village Pharmacy

898 Tanager Street  
Incline Village, NV 89451  
Tel: (775) 831-1133  
Fax: (775) 831-2228

## Custom Amino Acid Profile

Biochemically Individualized for your patient

Client

**Anna**

Visit date  
**7/23/2013**

### Order Payment and Delivery Information

To order, complete and FAX to (775) 831-2228.

**Ship to:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**City, State, Zip:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

**Credit Card Number:** \_\_\_\_\_

**Expires:** \_\_\_\_\_

**Authorizing Signature:** \_\_\_\_\_

### Amino Acid Customization Details

	Container Base Grams	Test Result	% Status	Grams Added
L-Arginine	19.50	96	12.04	0
L-Histidine	13.50	78	-13.16	0
L-Isoleucine	13.50	50	-28.26	0
L-Leucine	12.00	112	-18.85	0
L-Lysine	12.00	215	-2.02	0
L-Methionine	15.00	25	-17.65	0
L-Phenylalanine	15.00	54	-27.36	0
L-Taurine	8.10	74	-7.94	0
L-Threonine	13.50	113	-22.03	0
L-Tryptophan (as 5-HTP)	0.90	67	19.23	0
L-Valine	15.00	227	-13.84	0
<b>Total Base Grams:</b>	<b>138.00</b>		<b>Total Grams Added:</b>	<b>0</b>

#### Other Ingredients \*

Grams per Container	Grams per Container
Alanine . . . . . 26.88	Tyrosine . . . . . 0.36
Alpha-Ketoglutarate . . . . . 12.00	Magnesium . . . . . 2.01
Aspartic Acid . . . . . 11.04	P5P (B6) . . . . . 1.005
Glycine . . . . . 67.92	Folic Acid . . . . . 0.67
Glutamic Acid . . . . . 16.98	Zinc . . . . . 0.67
Glutamine . . . . . 7.50	
Proline . . . . . 30.96	
Serine . . . . . 8.76	

\* Flavored product may include additional ingredients not shown.

Customization exclusively from Lab Interpretation's LabAssist™ interpretive report, and KTS Products Synerplex Amino Acids.