



Lab Interpretation, LLC  
18124 Wedge Pkwy, Ste 432  
Reno, NV 89511

(775) 851-3337  
(775) 851-3363 Fax  
www.labinterpretation.com

**Franklin Cook**

Date: 4/11/2012  
(Accession #A1204120038)

Next Test Due: 10/10/2012

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

---

If there is a problem with this report, please contact us as soon as possible at: (775) 851-3337 or Fax (775) 851-3363

The information contained in this report is for the exclusive use of addressee and contains confidential, privileged and non-disclosable information. If the recipient of this report is not the addressee or the person responsible for delivering the message to the addressee, such recipient is prohibited from reading or using this message in any way and such recipient is further notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify us immediately by telephone collect and return the original report to us at the address below via the U.S. Postal Service. We will reimburse you for postage. Thank you.

**Basic Status High/Low - Plasma Amino Acids on 4/11/2012**

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

Client ID:548664859 (9732)

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

**Low Results**

-80	-60	-40	-20	0		<b>% Status</b>	<b>Result</b>	<i>Low</i>	<i>High</i>
					Aspartic Acid	-60.00 L	<b>2.00</b>	3.00	13.00
					Proline	-42.80 L	<b>118.00</b>	99.00	363.00
					Threonine	-38.81 L	<b>89.00</b>	73.00	216.00
					Serine	-38.39 L	<b>73.00</b>	60.00	172.00
					Glycine	-37.05 L	<b>202.00</b>	155.00	518.00
					Cystine	-37.04 L	<b>4.50</b>	1.00	28.00
					Histidine	-35.96 L	<b>65.00</b>	57.00	114.00
					a-Aminoadipic Acid	-25.00 L	<b>0.50</b>	0.00	2.00

-25%

**High Results**

-40	-20	0	20	40		<b>% Status</b>	<b>Result</b>	<i>Low</i>	<i>High</i>
					Hydroxyproline	34.62 H	<b>22.00</b>	0.00	26.00
					Glycine/Serine Ratio	34.47 H	<b>2.77</b>	1.50	3.00
					Sarcosine	34.00 H	<b>16.80</b>	0.00	20.00
					Glutamine	27.98 H	<b>765.00</b>	372.00	876.00

-25%

25%

## Basic Status High/Low - Urine Organic Acids on 4/11/2012

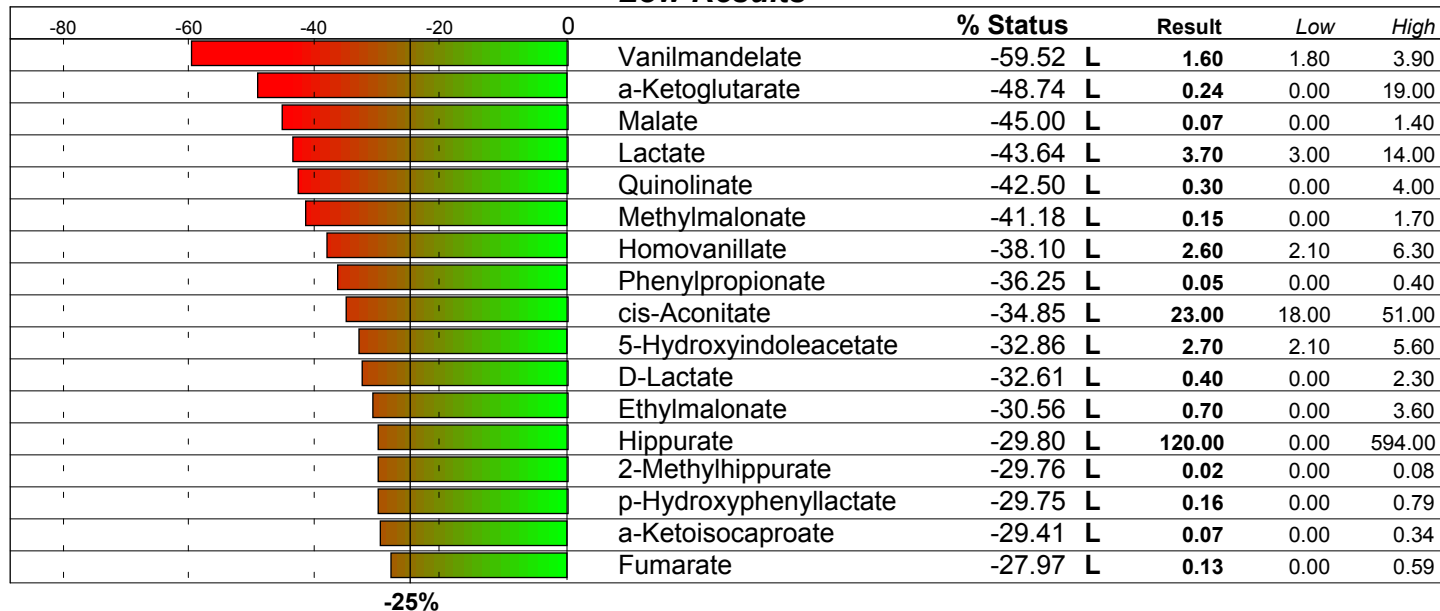
**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

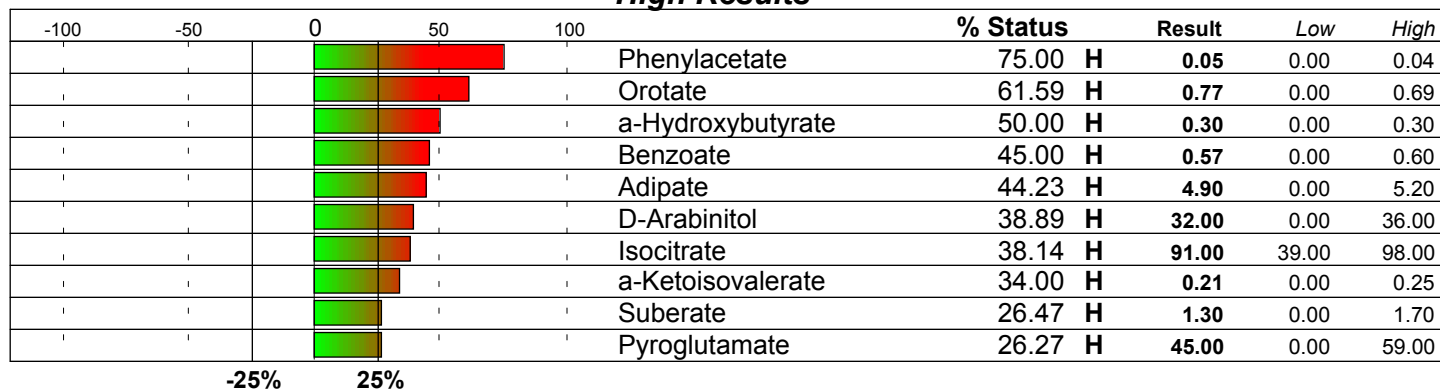
Male / Age: 68

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

### Low Results



### High Results



## Basic Status Alphabetic - Plasma Amino Acids on 4/11/2012

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

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

-100	-50	0	50	100	% Status	Result	Low	High	
		█			1-Methylhistidine	13.46	33.00	0.00	52.00
		█			3-Methylhistidine	9.00	5.90	0.00	10.00
		█			<b>a-Aminoadipic Acid</b>	<b>-25.00</b>	<b>L 0.50</b>	0.00	2.00
		█			a-Amino-N-Butyric Acid	-3.85	18.00	0.00	39.00
		█			Alanine	-8.76	416.00	230.00	681.00
		█			Anserine	12.79	27.00	0.00	43.00
		█			Arginine	-10.19	72.00	29.00	137.00
		█			Asparagine	-9.32	55.00	31.00	90.00
	█	█			<b>Aspartic Acid</b>	<b>-60.00</b>	<b>L 2.00</b>	3.00	13.00
		█			Carnosine	15.00	3.90	0.00	6.00
		█			Citrulline	-3.85	36.00	18.00	57.00
	█	█			<b>Cystine</b>	<b>-37.04</b>	<b>L 4.50</b>	1.00	28.00
		█			Ethanolamine	3.33	6.40	0.00	12.00
		█			Glutamic Acid	-13.16	94.00	24.00	214.00
		█	█		<b>Glutamine</b>	<b>27.98</b>	<b>H 765.00</b>	372.00	876.00
	█	█			<b>Glycine</b>	<b>-37.05</b>	<b>L 202.00</b>	155.00	518.00
		█	█		<b>Glycine/Serine Ratio</b>	<b>34.47</b>	<b>H 2.77</b>	1.50	3.00
	█	█			<b>Histidine</b>	<b>-35.96</b>	<b>L 65.00</b>	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>34.62</b>	<b>H 22.00</b>	0.00	26.00
		█			Isoleucine	-3.62	67.00	35.00	104.00
		█			Leucine	8.20	145.00	74.00	196.00
		█			Lysine	-12.63	194.00	120.00	318.00
		█			Methionine	-17.65	25.00	14.00	48.00
		█			Ornithine	-18.54	56.00	28.00	117.00
		█			Phenylalanine	-19.81	58.00	42.00	95.00
		█			Phosphoethanolamine	-17.14	2.30	0.00	7.00
		█			Phosphoserine	0.00	0.50	0.00	1.00
	█	█			<b>Proline</b>	<b>-42.80</b>	<b>L 118.00</b>	99.00	363.00
		█	█		<b>Sarcosine</b>	<b>34.00</b>	<b>H 16.80</b>	0.00	20.00
	█	█			<b>Serine</b>	<b>-38.39</b>	<b>L 73.00</b>	60.00	172.00
		█			Taurine	1.40	84.00	29.00	136.00
	█	█			<b>Threonine</b>	<b>-38.81</b>	<b>L 89.00</b>	73.00	216.00
		█			Tryptophan	15.38	65.00	31.00	83.00
		█			Tyrosine	-12.50	65.00	38.00	110.00
		█			Valine	-16.07	222.00	146.00	370.00
	-25%	25%			<b>Total Status Deviation</b>	<b>19.24</b>			
					<b>Total Status Skew</b>	<b>-6.82</b>			

## Basic Status Alphabetic - Urine Organic Acids on 4/11/2012

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

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

-100	-50	0	50	100	% Status	Result	Low	High	
					<b>-29.76</b>	L	<b>0.02</b>	0.00	0.08
					<b>-32.86</b>	L	<b>2.70</b>	2.10	5.60
					21.70		3.80	0.00	5.30
					<b>44.23</b>	H	<b>4.90</b>	0.00	5.20
					<b>50.00</b>	H	<b>0.30</b>	0.00	0.30
					-7.89		0.16	0.00	0.38
					<b>-48.74</b>	L	<b>0.24</b>	0.00	19.00
					<b>-29.41</b>	L	<b>0.07</b>	0.00	0.34
					<b>34.00</b>	H	<b>0.21</b>	0.00	0.25
					<b>45.00</b>	H	<b>0.57</b>	0.00	0.60
					-6.67		0.91	0.00	2.10
					-15.79		2.60	0.00	7.60
					<b>-34.85</b>	L	<b>23.00</b>	18.00	51.00
					-9.08		279.00	56.00	601.00
					<b>38.89</b>	H	<b>32.00</b>	0.00	36.00
					<b>-32.61</b>	L	<b>0.40</b>	0.00	2.30
					<b>-30.56</b>	L	<b>0.70</b>	0.00	3.60
					-8.33		0.50	0.00	1.20
					<b>-27.97</b>	L	<b>0.13</b>	0.00	0.59
					-16.67		2.10	0.00	6.30
					<b>-29.80</b>	L	<b>120.00</b>	0.00	594.00
					<b>-38.10</b>	L	<b>2.60</b>	2.10	6.30
					13.89		2.30	0.00	3.60
					0.00		20.00	0.00	40.00
					<b>38.14</b>	H	<b>91.00</b>	39.00	98.00
					-18.42		0.60	0.00	1.90
					<b>-43.64</b>	L	<b>3.70</b>	3.00	14.00
					<b>-45.00</b>	L	<b>0.07</b>	0.00	1.40
					<b>-41.18</b>	L	<b>0.15</b>	0.00	1.70
					<b>61.59</b>	H	<b>0.77</b>	0.00	0.69
					<b>75.00</b>	H	<b>0.05</b>	0.00	0.04
					<b>-36.25</b>	L	<b>0.05</b>	0.00	0.40
					0.51		0.50	0.00	0.99
					13.16		12.00	0.00	19.00
					<b>-29.75</b>	L	<b>0.16</b>	0.00	0.79
					<b>26.27</b>	H	<b>45.00</b>	0.00	59.00
					-20.77		1.14	0.00	3.90
					<b>-42.50</b>	L	<b>0.30</b>	0.00	4.00
					<b>26.47</b>	H	<b>1.30</b>	0.00	1.70
					-23.28		3.10	0.00	11.60
					7.88		1762.00	958.00	2347.00
					-17.12		0.24	0.00	0.73
					<b>-59.52</b>	L	<b>1.60</b>	1.80	3.90
					-24.47		0.12	0.00	0.47
		-25%	25%		<b>Total Status Deviation</b>		<b>129.35</b>		
					<b>Total Status Skew</b>		<b>96.65</b>		

## Client Summary Review

Amino Acid & Organic Acid Date: 4/11/2012

Frank

Male / Age: 68

---

### Nutritional Support

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

- |  |   |
|--|---|
| <input type="checkbox"/> <b>1-Amino Acid Complex</b><br>5-10 grams daily           | <input type="checkbox"/> <b>1-Antioxidant Complex</b><br>See Nutrition Detail |
| <input type="checkbox"/> <b>1-CAC Entry Protocol</b><br>See Nutrition Detail       | <input type="checkbox"/> <b>1-Tyrosine</b><br>2x daily 500 mg                 |
| <input type="checkbox"/> <b>1-Yeast Reduction Protocol</b><br>See Nutrition Detail | <input type="checkbox"/> <b>2-5-Hydroxytryptophan</b><br>2x daily 100 mg      |
| <input type="checkbox"/> <b>2-Glycine</b><br>2x daily 1000 mg                      |   |

## Practitioner Summary Review

Frank

Amino Acid & Organic Acid Date: 4/11/2012

Male / Age: 68

---

### 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	690.10%	686.00%
Neurotransmitters	38.28%	-38.28%
Fatty Acid Metabolism	33.75%	13.38%
Liver Detox Indicators	32.03%	16.55%
Carbohydrate Metabolism	30.27%	-5.27%
Detoxification Markers	30.19%	-20.39%
Energy Production	30.12%	-17.11%
Intestinal Dysbiosis	28.77%	-0.17%
Gluconeogen	27.68%	-21.53%

### Lab Reported out-of-range Values

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

#### CA Cycle Phase 3 (4689.58%)

A high result may be indicative of the lack B-complex nutrients and/or an array of amino acids especially aspartic acid. Supplementing a balanced amino acid blend with a B-complex may help bring a surge of energy. This phase of the citric acid cycle is the movement from Isocitrate to a-ketoglutarate.

#### CA Cycle Phase 4 ( 272.92%)

This phase of the citric acid cycle goes from a-ketoglutarate to succinate through Succinyl-CoA. A high result may be indicative of a deficiency of Coenzyme Q10 and/or riboflavin.

#### CA Cycle Return ( 267.75%)

As the citric acid returns to the beginning through the conversion of Malate to Citrate through Oxalacetate, a high result may be due to low amino acid reserves especially aspartic acid.

#### Oxidative Damage ( 214.00%)

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

#### CA Cycle Entry ( 153.95%)

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.

#### Phenylacetate ( 75.00%)

A high reading of this organic acid may be indicative of an overgrowth of intestinal microbiota or protozoa. The presence of this acid may be due to the action of bacteria on phenylalanine and should not appear in anything more than background amounts.

#### CA Cycle Phase 1 ( 71.30%)

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.

#### Orotate ( 61.59%)

An elevated reading of this organic acid may be due to an arginine deficiency, ammonia intoxication, and by excessive lysine intake as well as an intracellular magnesium deficiency. Arginine, aspartic acid, alpha ketoglutarate, and magnesium may be helpful.

Frank

Male / Age: 68

---

**Aspartic Acid ( -60.00%)**

Aspartic acid is a non-essential amino acid made from glutamate utilizing vitamin B6 in this conversion. It is involved in the urea and Krebs cycle (ammonia metabolism and carbohydrate metabolism). An excitatory amino acid, aspartic acid has been studied for the treatment of unipolar depression. This reading may be indicative of the inability to detoxify, especially ammonia. Fatigue may result from low levels.

**Vanilmandelate ( -59.52%)**

Low levels of this organic acid may be related to low CNS levels of epinephrine and norepinephrine. Clinical signs include depression, sleep disturbances, and the inability to handle stress and fatigue.

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

Clonidine, Imipramine, MAO Inhibitors, Methyldopa, Reserpine

**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.



## Panel/Subset Report

Amino Acid & Organic Acid Date: 4/11/2012

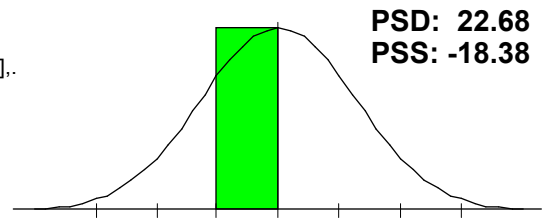
Frank

Male / Age: 68

### Ammonia/Energy

Arginine, Threonine[L], Glycine[L], Serine[L], a-Amino adipic Acid[L], Asparagine, Aspartic Acid[L], Citrulline, Glutamic Acid, Glutamine[H],.

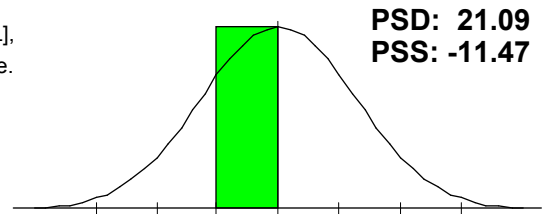
Ammonia influences a cell's ability to create energy. This panel shows your body's ability to rid excess ammonia buildup and maintain a healthy energy cycle. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### CNS Metabolism

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

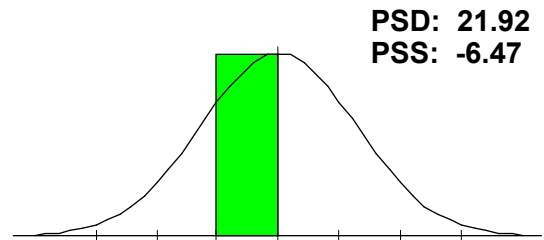
Amino acids are the basic building blocks of all the cells in our body. Amino acid metabolism is important for proper functioning of the nervous system. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### Connective Tissue

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

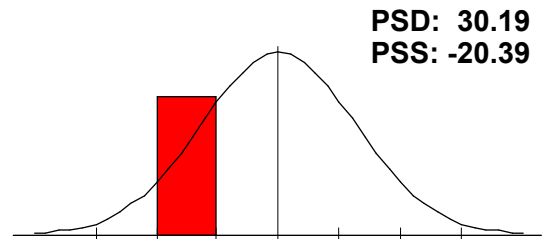
This panel shows whether there's an adequate supply and metabolism of amino acids necessary to produce healthy connective tissue and collagen. Necessary for healthy bone, joints, hair, skin, and cartilage. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### Detoxification Markers

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

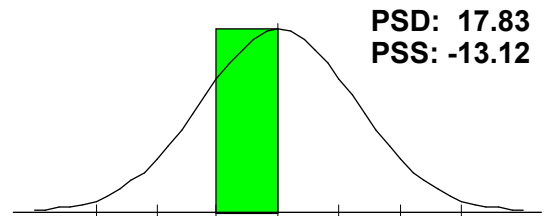
This panel reviews amino acids critical for proper detoxification. This includes detoxing medications, environmental toxins, and natural metabolic toxins. This profile may be indicative of an inability to properly detoxify. Personalized supplementation is suggested.



### Essential Amino Acid

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



## Panel/Subset Report

Amino Acid & Organic Acid Date: 4/11/2012

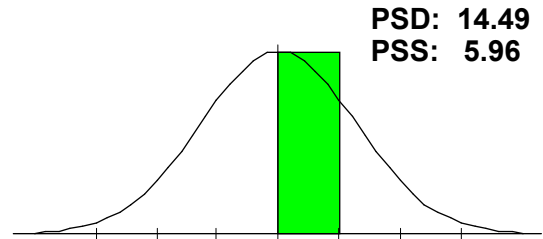
Frank

Male / Age: 68

### Fat Metabolism

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

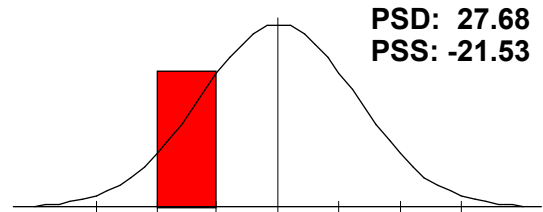
This panel shows your balance of amino acids critical to proper fat metabolism. Fat metabolism is important in many body functions. Improper metabolism can cause problems like hormonal issues and nerve disorders. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### Gluconeogen

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

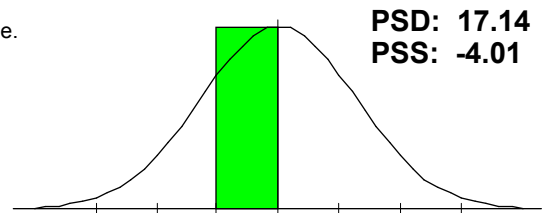
This panel shows whether you have the proper amino acids in balance to control blood sugar levels. This profile may indicate blood sugar control issues such as hypoglycemia or diabetes.



### Hepatic Metabolism

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

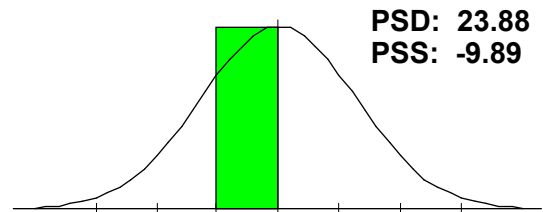
This panel shows whether you have adequate stores of the listed amino acids to optimize liver function. This is important because your liver is responsible for cleaning your blood of toxins. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### Immune Metabolites

Arginine, Threonine[L], Glutamine[H], Ornithine.

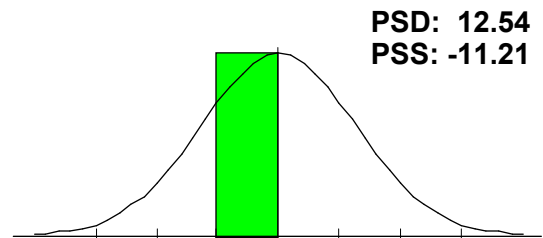
This panel shows whether you have adequate amounts of the listed amino acids to properly fight off viral or bacterial infections. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### Magnesium Dependents

Citrulline, Ethanolamine, Phosphoethanolamine, 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.



## Panel/Subset Report

Amino Acid & Organic Acid Date: 4/11/2012

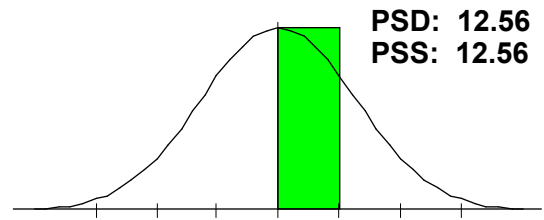
Frank

Male / Age: 68

### Muscle Metabolites

Anserine, Carnosine, 1-Methylhistidine, 3-Methylhistidine.

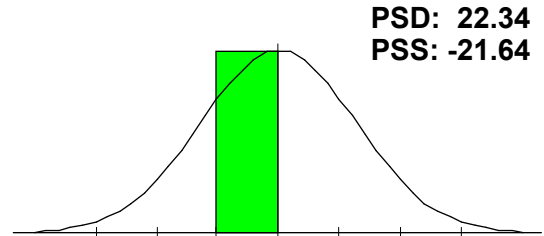
Amino acids are the basic building blocks critical in building muscle tissue. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### Neuroendocrine Metab

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

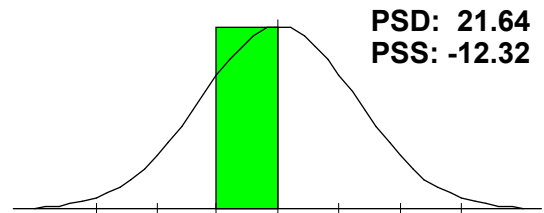
This panel shows whether you have enough of the listed amino acids necessary for the proper functioning of your endocrine system. The endocrine system comprises the control organs of the body such as: thymus, pancreas, and thyroid. This profile shows a percent imbalance below 25%, so no abnormalities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



### Urea Cycle Metabolites

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

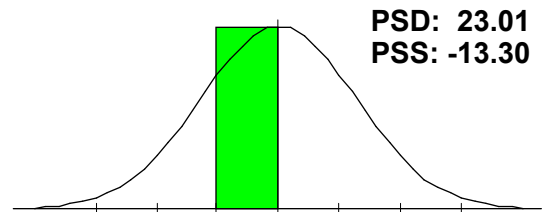
This panel shows your supply of the amino acids related to the urea cycle. This metabolic process helps you remove excess ammonia from your system. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### B-Complex Markers

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

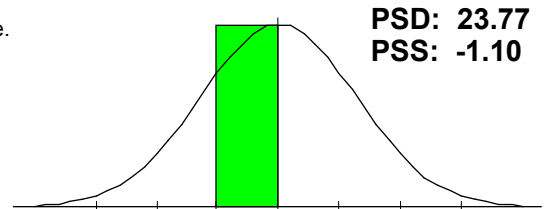
This panel assesses adequate intake of B-complex vitamins. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### BCAA Catabolism

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

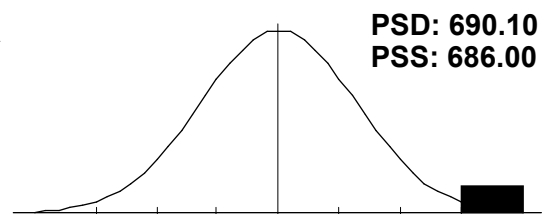
BCAA's are essential in building muscle and you can only get them from your diet or supplements. This panel assess your BCAA levels and how they're being used. This profile shows a percent imbalance below 25%, so no abnormalities were found.



### CAC Cycle Ratios

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



## Panel/Subset Report

Amino Acid & Organic Acid Date: 4/11/2012

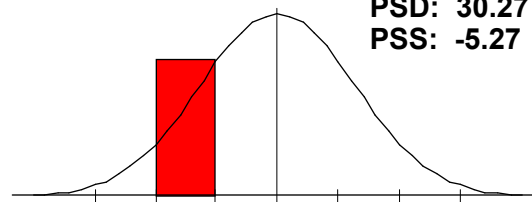
Frank

Male / Age: 68

### Carbohydrate Metabolism

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

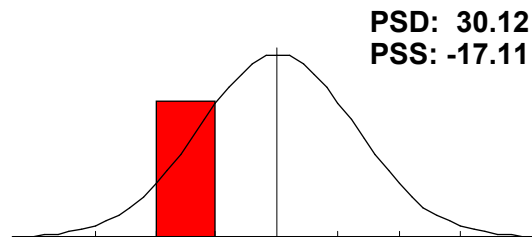
This panel assesses your body's ability to metabolize dietary carbohydrates. This profile could indicate a low carbohydrate intake. Symptoms include low energy and poor blood sugar control.



### Energy Production

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

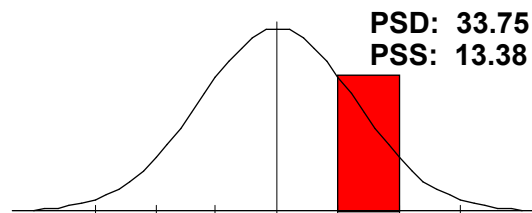
This panel reviews cellular energy producing cycles to maintain health and weight. This profile may indicate an amino acid deficiency. Low readings are typically desirable, but if the CAC Cycle Ratios are abnormal, consider adding a broad spectrum amino acid supplement.



### Fatty Acid Metabolism

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

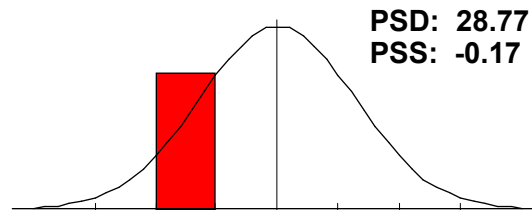
This panel assesses how fats are being broken down and utilized by the body. This profile may indicate a need for additional carnitine and riboflavin (B2) supplementation. Review your Supplement List Explanation.



### Intestinal Dysbiosis

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

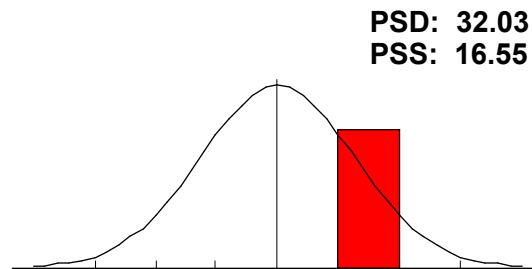
Disbiosis is an overgrowth of bad bacteria in the gut. It is indicative of gut health. This profile suggests you have good gut health



### Liver Detox Indicators

2-Methylhippurate[L], Glucarate, 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..



Frank

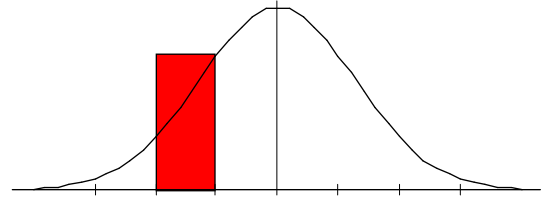
Male / Age: 68

**Neurotransmitters**

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

**PSD: 38.28**  
**PSS: -38.28**

Neurotransmitters are chemicals the brain uses to make the entire neurological system function - including all body functions. This panel assesses neurotransmitter production. This profile may indicate low levels of the neurotransmitters serotonin, epinephrine and norepinephrine. Supplementation may be helpful. Especially precursors like 5-HTP, tyrosine and phenylalanine. Review your Supplement List Explanation.



## Drug Interactions

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

---

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  
Lithium Carbonate(2)  
Methyldopa(2)  
Salicylates

Clonidine  
Lovastatin  
Phenobarbital

Haloperidol  
MAO Inhibitors(2)  
Phenytoin

Imipramine(2)  
Methotrexate  
Reserpine

## Nutrition - Detail

Amino Acid & Organic Acid Date: 4/11/2012

Frank

Male / Age: 68

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 a qualified health care professional.

### 1-Amino Acid Complex 5-10 grams daily

A pattern suggesting amino acid insufficiency may be due to inadequate protein intake, chronic illness or malabsorption. Review dietary intake, assess bacterial flora for adequate balance and the presence of pathogens, and evaluate digestive/pancreatic function. Intake of an individualized free-form amino acid supplement with appropriate nutrient cofactors is advised.

Decreased

### Rationale

Normal

Increased

CA Cycle Return

### 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

### 1-Tyrosine 2x daily 500 mg

Tyrosine is an amino acid which is essential to the synthesis of protein, catecholamines, melanin, and thyroid hormones. Vitamin C and folic acid are essential to its metabolism. The formation of thyroid hormone is dependent upon the absorption and sequestering of iodine which then attaches to tyrosine to form thyroxine.

Decreased

Normal

Increased

Vanilmandelate  
Homovanillate

## Nutrition - Detail

Amino Acid & Organic Acid Date: 4/11/2012

Frank

Male / Age: 68

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 a qualified health care professional.

### 1-Yeast Reduction Protocol See Nutrition Detail

Because of the relative increase in the marker for yeast and fungi D-Arabinitol, it may be helpful to begin a yeast reduction protocol.

Avoiding refined carbohydrates such as sugar, alcohol and other yeast-containing products is recommended. The introduction of probiotics such as Lactobacilli should also be started.

Probiotics - 3 times daily if D-Lactate is normal or low

Olive leaf extract - 2 times daily

Grapefruit seed extract - 2 times daily

Decreased

### ***Rationale***

Normal

Increased

D-Arabinitol

### 2-5-Hydroxytryptophan 2x daily 100 mg

Serotonin is an important neurotransmitter made from the amino acid Tryptophan. 5-Hydroxyindoleacetate is a metabolite of serotonin so a low result of this organic acid may indicate a tryptophan deficiency.

Decreased

Normal

Increased

5-Hydroxyindoleacetate

### 2-Glycine 2x daily 1000 mg

Glycine is an important amino acid and is necessary in phase II detoxification as it is a component of hippurate through its binding with benzoate.

Decreased

Normal

Increased

Hippurate

Benzoate



## Clinical Correlation

Frank

Amino Acid & Organic Acid Date: 4/11/2012

Male / Age: 68

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.

### Catecholamine Dysfunction ( )

100.00% (3 of 3)

Decreased  
-38.10 Homovanillate  
-59.52 Vanilmandelate  
-27.97 Fumarate

Normal

Increased

### Phase II Detoxification Dysfunction ( )

100.00% (2 of 2)

Decreased  
-29.80 Hippurate

Normal

Increased  
45.00 Benzoate

### Collagen Production Imbalance (270.1)

66.67% (2 of 3)

Decreased  
-42.80 Proline

Normal

Increased  
34.62 Hydroxyproline  
10.00 Hydroxylysine

## Comparison Progress Report

Frank

Amino Acid & Organic Acid Date: 4/11/2012

Male / Age: 68

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

	Status % on:	2/21/2008		4/11/2012		+/- change
Ethanolamine		<b>56.75</b>	<b>H</b>	3.33		+ 53.42
Cystine		<b>89.49</b>	<b>H</b>	<b>-37.04</b>	<b>L</b>	<b>+ 52.45</b>
Hydroxylysine		<b>54.50</b>	<b>H</b>	10.00		+ 44.50
3-Methylhistidine		<b>49.80</b>	<b>H</b>	9.00		+ 40.80
Homocystine		<b>50.00</b>	<b>H</b>	10.00		+ 40.00
Anserine		<b>50.00</b>	<b>H</b>	12.79		+ 37.21
Isoleucine		<b>-39.59</b>	<b>L</b>	-3.62		+ 35.97
Carnosine		<b>50.00</b>	<b>H</b>	15.00		+ 35.00
Ornithine		<b>-51.22</b>	<b>L</b>	-18.54		+ 32.68
Glutamic Acid		<b>-40.90</b>	<b>L</b>	-13.16		+ 27.74
Phosphoserine		<b>25.50</b>	<b>H</b>	0.00		+ 25.50
Hydroxyproline		-8.03		<b>34.62</b>	<b>H</b>	<b>- 26.58</b>

## Comparison Report

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

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:	2/21/2008	4/11/2012
13.46		+	1-Methylhistidine	27.70 H	13.46
9.00		+	3-Methylhistidine	49.80 H	9.00
-25.00		-	a-Aminoadipic Acid	-10.50	-25.00 L
-27.37		+	a-Amino-N-Butyric Acid	-27.37 L	-3.85
			Alanine	-6.68	-8.76
12.79		+	Anserine	50.00 H	12.79
-32.85		+	Arginine	-32.85 L	-10.19
-28.50		+	Asparagine	-28.50 L	-9.32
-60.00		-	Aspartic Acid	-40.79 L	-60.00 L
15.00		+	Carnosine	50.00 H	15.00
			Citrulline	3.82	-3.85
-37.04		+	Cystine	89.49 H	-37.04 L
3.33		+	Ethanolamine	56.75 H	3.33
-40.90		+	Glutamic Acid	-40.90 L	-13.16
-40.03		+	Glutamine	-40.03 L	27.98 H
-57.31		+	Glycine	-57.31 L	-37.05 L
19.07		-	Glycine/Serine Ratio	19.07	34.47 H
-35.96		-	Histidine	-19.16	-35.96 L
10.00		+	Homocystine	50.00 H	10.00
10.00		+	Hydroxylysine	54.50 H	10.00
-8.03		-	Hydroxyproline	-8.03	34.62 H
-39.59		+	Isoleucine	-39.59 L	-3.62
-23.81		+	Leucine	-23.81	8.20
-30.92		+	Lysine	-30.92 L	-12.63
			Methionine	-11.65	-17.65
-51.22		+	Ornithine	-51.22 L	-18.54
-35.05		+	Phenylalanine	-35.05 L	-19.81
-17.14		+	Phosphoethanolamine	25.10 H	-17.14
0.00		+	Phosphoserine	25.50 H	0.00
			Proline	-46.05 L	-42.80 L
-10.00		-	Sarcosine	-10.00	34.00 H
-56.47		+	Serine	-56.47 L	-38.39 L
-19.54		+	Taurine	-19.54	1.40
-38.81		-	Threonine	-26.73 L	-38.81 L
15.38		+	Tryptophan	28.21 H	15.38
-12.50		+	Tyrosine	26.29 H	-12.50
-40.05		+	Valine	-40.05 L	-16.07
			<b>Total Status Deviation</b>	<b>32.34</b>	<b>19.24</b>
			<b>Total Status Skew</b>	<b>-2.45</b>	<b>-6.82</b>

## Comparison Progress Report

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

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

	Status % on:	2/21/2008	4/11/2012	+/- change
Hydroxymethylglutarate	<b>85.35 H</b>	13.89		+ 71.46
Sulfate	<b>-70.19 L</b>	7.88		+ 62.30
Formiminoglutamic Acid	<b>58.20 H</b>	-8.33		+ 49.86
p-Hydroxybenzoate	<b>-40.66 L</b>	0.51		+ 40.16
a-Keto-b-methylvalerate	<b>-43.30 L</b>	-7.89		+ 35.41
P-Hydroxyphenylacetate	<b>-47.00 L</b>	13.16		+ 33.84
b-Hydroxybutyrate	<b>-40.01 L</b>	-6.67		+ 33.34
Kynurenate	<b>-48.89 L</b>	-18.42		+ 30.47
CA Cycle Phase 1	<b>99.87 H</b>	<b>71.30 H</b>		+ 28.57
cis-Aconitate	<b>-63.26 L</b>	<b>-34.85 L</b>		+ 28.41
CA Cycle Phase 5	<b>-30.16 L</b>	-2.31		+ 27.85
CA Cycle Phase 3	-4.81	<b>4689.58 H</b>		<b>-4684.78</b>
CA Cycle Return	0.38	<b>267.75 H</b>		<b>- 267.38</b>
CA Cycle Phase 4	<b>-37.67 L</b>	<b>272.92 H</b>		<b>- 235.25</b>
Oxidative Damage	<b>123.34 H</b>	<b>214.00 H</b>		<b>- 90.66</b>
Orotate	-1.59	<b>61.59 H</b>		<b>- 60.00</b>
Vanilmandelate	-18.09	<b>-59.52 L</b>		<b>- 41.43</b>
CA Cycle Phase 2	-9.46	<b>48.91 H</b>		<b>- 39.45</b>
Methylmalonate	-12.02	<b>-41.18 L</b>		<b>- 29.16</b>
5-Hydroxyindoleacetate	-4.74	<b>-32.86 L</b>		<b>- 28.11</b>
Lactate	-16.28	<b>-43.64 L</b>		<b>- 27.36</b>
Quinolinate	-16.34	<b>-42.50 L</b>		<b>- 26.16</b>
Benzoate	19.76	<b>45.00 H</b>		<b>- 25.24</b>
Phenylacetate	<b>50.00 H</b>	<b>75.00 H</b>		<b>- 25.00</b>

## Comparison Report

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

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:	2/21/2008	4/11/2012
-29.76  40.71	+	2-Methylhippurate			40.71 H	-29.76 L
-32.86  -4.74	-	5-Hydroxyindoleacetate			-4.74	-32.86 L
-3.51  21.70	-	8-Hydroxy-2-deoxyguan			-3.51	21.70
23.03  44.23	-	Adipate			23.03	44.23 H
-29.53  50.00	-	a-Hydroxybutyrate			-29.53 L	50.00 H
-43.30  -7.89	+	a-Keto-b-methylvalerate			-43.30 L	-7.89
-48.74  -29.65	-	a-Ketoglutarate			-29.65 L	-48.74 L
-29.41  -21.84	-	a-Ketoisocaproate			-21.84	-29.41 L
23.78  34.00	-	a-Ketisovalerate			23.78	34.00 H
19.76  45.00	-	Benzoate			19.76	45.00 H
-40.01  -6.67	+	b-Hydroxybutyrate			-40.01 L	-6.67
		b-Hydroxyisovalerate			-18.71	-15.79
-63.26  -34.85	+	cis-Aconitate			-63.26 L	-34.85 L
-33.97  -9.08	+	Citrate			-33.97 L	-9.08
26.73  38.89	-	D-Arabinitol			26.73 H	38.89 H
		D-Lactate			-34.42 L	-32.61 L
		Ethylmalonate			-31.82 L	-30.56 L
-8.33  58.20	+	Formiminoglutamic Acid			58.20 H	-8.33
-27.97  19.65	-	Fumarate			19.65	-27.97 L
		Glucarate			14.51	-16.67
-40.61  -29.80	+	Hippurate			-40.61 L	-29.80 L
-38.10  -29.19	-	Homovanillate			-29.19 L	-38.10 L
13.89  85.35	+	Hyoxymethylglutarate			85.35 H	13.89
		Indican			-4.12	0.00
-50.06  38.14	+	Isocitrate			-50.06 L	38.14 H
-48.89  -18.42	+	Kynurenate			-48.89 L	-18.42
-43.64  -16.28	-	Lactate			-16.28	-43.64 L
-45.00  -30.39	-	Malate			-30.39 L	-45.00 L
-41.18  -12.02	-	Methylmalonate			-12.02	-41.18 L
-1.59  61.59	-	Orotate			-1.59	61.59 H
50.00  75.00	-	Phenylacetate			50.00 H	75.00 H
-36.25  50.00	+	Phenylpropionate			50.00 H	-36.25 L
-40.66  0.51	+	p-Hydroxybenzoate			-40.66 L	0.51
-47.00  13.16	+	p-Hydroxyphenylacetate			-47.00 L	13.16
		p-Hydroxyphenyllactate			-30.57 L	-29.75 L
11.20  26.27	-	Pyroglutamate			11.20	26.27 H
		Pyruvate			-20.01	-20.77
-42.50  -16.34	-	Quinolinate			-16.34	-42.50 L
-13.67  26.47	-	Suberate			-13.67	26.47 H
		Succinate			-27.87 L	-23.28
-70.19  7.88	+	Sulfate			-70.19 L	7.88
-31.81  -17.12	+	Tricarballylate			-31.81 L	-17.12
-59.52  -18.09	-	Vanilmandelate			-18.09	-59.52 L
-24.47  -8.37	-	Xanthurenate			-8.37	-24.47
		<b>Total Status Deviation</b>			<b>37.45</b>	<b>129.35</b>
		<b>Total Status Skew</b>			<b>-4.69</b>	<b>96.65</b>

## Panel/Subset Comparison Report

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

<b>Ammonia/Energy</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Arginine	-32.85	L	-10.19	+	-32.85	→ -10.19
Threonine	-26.73	L	-38.81	L -	-38.81	← -26.73
Glycine	-57.31	L	-37.05	L +	-57.31	→ -37.05
Serine	-56.47	L	-38.39	L +	-56.47	→ -38.39
a-Aminoadipic Acid	-10.50		-25.00	L -	-25.00	← -10.50
Asparagine	-28.50	L	-9.32	+	-28.50	→ -9.32
Aspartic Acid	-40.79	L	-60.00	L -	-60.00	← -40.79
Citrulline	3.82		-3.85			
Glutamic Acid	-40.90	L	-13.16	+	-40.90	→ -13.16
Glutamine	-40.03	L	27.98	H +	-40.03	→ 27.98
Ornithine	-51.22	L	-18.54	+	-51.22	→ -18.54
a-Amino-N-Butyric Acid	-27.37	L	-3.85	+	-27.37	→ -3.85
Alanine	-6.68		-8.76			
<b>PSS / PSD</b>	<b>-30.39 / 30.94</b>		<b>-18.38 / 22.68</b>			

<b>CNS Metabolism</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Arginine	-32.85	L	-10.19	+	-32.85	→ -10.19
Tryptophan	28.21	H	15.38	+	15.38	← 28.21
Glycine	-57.31	L	-37.05	L +	-57.31	→ -37.05
Serine	-56.47	L	-38.39	L +	-56.47	→ -38.39
Taurine	-19.54		1.40	+	-19.54	→ 1.40
Aspartic Acid	-40.79	L	-60.00	L -	-60.00	← -40.79
Glutamine	-40.03	L	27.98	H +	-40.03	→ 27.98
Ethanolamine	56.75	H	3.33	+	3.33	← 56.75
Phosphoethanolamine	25.10	H	-17.14	+	-17.14	← 25.10
Phosphoserine	25.50	H	0.00	+	0.00	← 25.50
<b>PSS / PSD</b>	<b>-7.91 / 37.00</b>		<b>-11.47 / 21.09</b>			

<b>Connective Tissue</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Leucine	-23.81		8.20	+	-23.81	→ 8.20
Methionine	-11.65		-17.65			
Valine	-40.05	L	-16.07	+	-40.05	→ -16.07
Cystine	89.49	H	-37.04	L +	-37.04	← 89.49
Hydroxylysine	54.50	H	10.00	+	10.00	← 54.50
Hydroxyproline	-8.03		34.62	H -	-8.03	→ 34.62
3-Methylhistidine	49.80	H	9.00	+	9.00	← 49.80
Proline	-46.05	L	-42.80	L		
<b>PSS / PSD</b>	<b>8.02 / 40.42</b>		<b>-6.47 / 21.92</b>			

<b>Detoxification Markers</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Methionine	-11.65		-17.65			
Cystine	89.49	H	-37.04	L +	-37.04	← 89.49
Taurine	-19.54		1.40	+	-19.54	→ 1.40
Glutamine	-40.03	L	27.98	H +	-40.03	→ 27.98
Glycine	-57.31	L	-37.05	L +	-57.31	→ -37.05
Aspartic Acid	-40.79	L	-60.00	L -	-60.00	← -40.79
<b>PSS / PSD</b>	<b>-13.31 / 43.13</b>		<b>-20.39 / 30.19</b>			

## Panel/Subset Comparison Report

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

<b>Essential Amino Acid</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Arginine	-32.85	L	-10.19	+	-32.85	→ -10.19
Histidine	-19.16		-35.96	L -	-35.96	← -19.16
Isoleucine	-39.59	L	-3.62	+	-39.59	→ -3.62
Leucine	-23.81		8.20	+	-23.81	→ 8.20
Lysine	-30.92	L	-12.63	+	-30.92	→ -12.63
Methionine	-11.65		-17.65			
Phenylalanine	-35.05	L	-19.81	+	-35.05	→ -19.81
Threonine	-26.73	L	-38.81	L -	-38.81	← -26.73
Tryptophan	28.21	H	15.38	+	15.38	← 28.21
Valine	-40.05	L	-16.07	+	-40.05	→ -16.07
<b>PSS / PSD</b>	<b>-23.16 / 28.80</b>		<b>-13.12 / 17.83</b>			

<b>Fat Metabolism</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Arginine	-32.85	L	-10.19	+	-32.85	→ -10.19
Isoleucine	-39.59	L	-3.62	+	-39.59	→ -3.62
Leucine	-23.81		8.20	+	-23.81	→ 8.20
Valine	-40.05	L	-16.07	+	-40.05	→ -16.07
Taurine	-19.54		1.40	+	-19.54	→ 1.40
Glutamine	-40.03	L	27.98	H +	-40.03	→ 27.98
Sarcosine	-10.00		34.00	H -	-10.00	→ 34.00
<b>PSS / PSD</b>	<b>-29.41 / 29.41</b>		<b>5.96 / 14.49</b>			

<b>Gluconeogen</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Threonine	-26.73	L	-38.81	L -	-38.81	← -26.73
Tryptophan	28.21	H	15.38	+	15.38	← 28.21
Glycine	-57.31	L	-37.05	L +	-57.31	→ -37.05
Serine	-56.47	L	-38.39	L +	-56.47	→ -38.39
Alanine	-6.68		-8.76			
<b>PSS / PSD</b>	<b>-23.79 / 35.08</b>		<b>-21.53 / 27.68</b>			

<b>Hepatic Metabolism</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Methionine	-11.65		-17.65			
Taurine	-19.54		1.40	+	-19.54	→ 1.40
Glutamine	-40.03	L	27.98	H +	-40.03	→ 27.98
Cystine	89.49	H	-37.04	L +	-37.04	← 89.49
Homocystine	50.00	H	10.00	+	10.00	← 50.00
Alanine	-6.68		-8.76			
<b>PSS / PSD</b>	<b>13.41 / 35.66</b>		<b>-4.01 / 17.14</b>			

<b>Immune Metabolites</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Arginine	-32.85	L	-10.19	+	-32.85	→ -10.19
Threonine	-26.73	L	-38.81	L -	-38.81	← -26.73
Glutamine	-40.03	L	27.98	H +	-40.03	→ 27.98
Ornithine	-51.22	L	-18.54	+	-51.22	→ -18.54
<b>PSS / PSD</b>	<b>-37.71 / 37.71</b>		<b>-9.89 / 23.88</b>			

## Panel/Subset Comparison Report

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

<b>Magnesium Dependents</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Citrulline	3.82		-3.85			
Ethanolamine	<b>56.75</b> H		3.33	+	3.33	← 56.75
Phosphoethanolamine	<b>25.10</b> H		-17.14	+	-17.14	← 25.10
Phosphoserine	<b>25.50</b> H		0.00	+	0.00	← 25.50
Serine	<b>-56.47</b> L		<b>-38.39</b> L	+	-56.47	→ -38.39
<b>PSS / PSD</b>	10.94 / 33.53		-11.21 / 12.54			

<b>Muscle Metabolites</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Anserine	<b>50.00</b> H		12.79	+	12.79	← 50.00
Carnosine	<b>50.00</b> H		15.00	+	15.00	← 50.00
1-Methylhistidine	<b>27.70</b> H		13.46	+	13.46	← 27.70
3-Methylhistidine	<b>49.80</b> H		9.00	+	9.00	← 49.80
<b>PSS / PSD</b>	44.38 / 44.38		12.56 / 12.56			

<b>Neuroendocrine Metab</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Glycine	<b>-57.31</b> L		<b>-37.05</b> L	+	-57.31	→ -37.05
Serine	<b>-56.47</b> L		<b>-38.39</b> L	+	-56.47	→ -38.39
Taurine	-19.54		1.40	+	-19.54	→ 1.40
Tyrosine	<b>26.29</b> H		-12.50	+	-12.50	← 26.29
<b>PSS / PSD</b>	-16.53 / 36.80		-21.64 / 22.34			

<b>Urea Cycle Metabolites</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
Arginine	<b>-32.85</b> L		-10.19	+	-32.85	→ -10.19
Aspartic Acid	<b>-40.79</b> L		<b>-60.00</b> L	-	-60.00	← -40.79
Citrulline	3.82		-3.85			
Ornithine	<b>-51.22</b> L		-18.54	+	-51.22	→ -18.54
Glutamine	<b>-40.03</b> L		<b>27.98</b> H	+	-40.03	→ 27.98
Asparagine	<b>-28.50</b> L		-9.32	+	-28.50	→ -9.32
<b>PSS / PSD</b>	-31.59 / 32.87		-12.32 / 21.64			

<b>B-Complex Markers</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
b-Hydroxyisovalerate	-18.71		-15.79			
a-Ketoisovalerate	23.78		<b>34.00</b> H	-	23.78	→ 34.00
a-Ketoisocaproate	-21.84		<b>-29.41</b> L	-	-29.41	← -21.84
a-Keto-b-methylvalerate	<b>-43.30</b> L		-7.89	+	-43.30	→ -7.89
Methylmalonate	-12.02		<b>-41.18</b> L	-	-41.18	← -12.02
Formiminoglutamic Acid	<b>58.20</b> H		-8.33	+	-8.33	← 58.20
Xanthurenate	-8.37		-24.47	-	-24.47	← -8.37
<b>PSS / PSD</b>	-3.18 / 26.60		-13.30 / 23.01			

<b>BCAA Catabolism</b>	<b>2/21/2008</b>		<b>4/11/2012</b>	<b>+/-</b>		
a-Ketoisovalerate	23.78		<b>34.00</b> H	-	23.78	→ 34.00
a-Ketoisocaproate	-21.84		<b>-29.41</b> L	-	-29.41	← -21.84
a-Keto-b-methylvalerate	<b>-43.30</b> L		-7.89	+	-43.30	→ -7.89
<b>PSS / PSD</b>	-13.79 / 29.64		-1.10 / 23.77			



## Panel/Subset Comparison Report

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

<b>CAC Cycle Ratios</b>	<b>2/21/2008</b>		<b>4/11/2012</b>		<b>+/-</b>	
CA Cycle Entry	175.29	H	153.95	H	+	153.95 ← 175.29
CA Cycle Phase 1	99.87	H	71.30	H	+	71.30 ← 99.87
CA Cycle Phase 2	-9.46		48.91	H	-	-9.46 → 48.91
CA Cycle Phase 3	-4.81		4689.58	H	-	-4.81 → 4689.58
CA Cycle Phase 4	-37.67	L	272.92	H	-	-37.67 → 272.92
CA Cycle Phase 5	-30.16	L	-2.31		+	-30.16 → -2.31
CA Cycle Phase 6	10.80		-14.10			
CA Cycle Return	0.38		267.75	H	-	0.38 → 267.75
<b>PSS / PSD</b>	25.53 / 46.05		686.00 / 690.10			

<b>Carbohydrate Metabolism</b>	<b>2/21/2008</b>		<b>4/11/2012</b>		<b>+/-</b>	
Lactate	-16.28		-43.64	L	-	-43.64 ← -16.28
Pyruvate	-20.01		-20.77			
a-Hydroxybutyrate	-29.53	L	50.00	H	-	-29.53 → 50.00
b-Hydroxybutyrate	-40.01	L	-6.67		+	-40.01 → -6.67
<b>PSS / PSD</b>	-26.46 / 26.46		-5.27 / 30.27			

<b>Energy Production</b>	<b>2/21/2008</b>		<b>4/11/2012</b>		<b>+/-</b>	
Citrate	-33.97	L	-9.08		+	-33.97 → -9.08
cis-Aconitate	-63.26	L	-34.85	L	+	-63.26 → -34.85
Isocitrate	-50.06	L	38.14	H	+	-50.06 → 38.14
a-Ketoglutarate	-29.65	L	-48.74	L	-	-48.74 ← -29.65
Succinate	-27.87	L	-23.28			
Fumarate	19.65		-27.97	L	-	-27.97 ← 19.65
Malate	-30.39	L	-45.00	L	-	-45.00 ← -30.39
Hydroxymethylglutarate	85.35	H	13.89		+	13.89 ← 85.35
<b>PSS / PSD</b>	-16.28 / 42.52		-17.11 / 30.12			

<b>Fatty Acid Metabolism</b>	<b>2/21/2008</b>		<b>4/11/2012</b>		<b>+/-</b>	
Adipate	23.03		44.23	H	-	23.03 → 44.23
Suberate	-13.67		26.47	H	-	-13.67 → 26.47
Ethylmalonate	-31.82	L	-30.56	L		
<b>PSS / PSD</b>	-7.49 / 22.84		13.38 / 33.75			

<b>Intestinal Dysbiosis</b>	<b>2/21/2008</b>		<b>4/11/2012</b>		<b>+/-</b>	
p-Hydroxyphenyllactate	-30.57	L	-29.75	L		
Phenylacetate	50.00	H	75.00	H	-	50.00 → 75.00
Phenylpropionate	50.00	H	-36.25	L	+	-36.25 ← 50.00
Tricarballoylate	-31.81	L	-17.12		+	-31.81 → -17.12
Indican	-4.12		0.00			
p-Hydroxybenzoate	-40.66	L	0.51		+	-40.66 → 0.51
D-Lactate	-34.42	L	-32.61	L		
D-Arabinitol	26.73	H	38.89	H	-	26.73 → 38.89
<b>PSS / PSD</b>	-1.86 / 33.54		-0.17 / 28.77			

## Panel/Subset Comparison Report

**Frank**

**Amino Acid & Organic Acid Date: 4/11/2012**

Male / Age: 68

Liver Detox Indicators	2/21/2008		4/11/2012	+/-	
2-Methylhippurate	40.71	H	-29.76	L	+ <span style="float: right;">-29.76 ← 40.71</span>
Glucarate	14.51		-16.67		
Orotate	-1.59		61.59	H	- <span style="float: right;">-1.59 → 61.59</span>
Pyroglutamate	11.20		26.27	H	- <span style="float: right;">11.20 → 26.27</span>
Sulfate	-70.19	L	7.88	+	+ <span style="float: right;">-70.19 → 7.88</span>
a-Hydroxybutyrate	-29.53	L	50.00	H	- <span style="float: right;">-29.53 → 50.00</span>
<b>PSS / PSD</b>	-5.81 / 27.95		16.55 / 32.03		

Neurotransmitters	2/21/2008		4/11/2012	+/-	
Vanilmandelate	-18.09		-59.52	L	- <span style="float: right;">-59.52 ← -18.09</span>
Homovanillate	-29.19	L	-38.10	L	- <span style="float: right;">-38.10 ← -29.19</span>
5-Hydroxyindoleacetate	-4.74		-32.86	L	- <span style="float: right;">-32.86 ← -4.74</span>
Kynurenate	-48.89	L	-18.42	+	+ <span style="float: right;">-48.89 → -18.42</span>
Quinolinat	-16.34		-42.50	L	- <span style="float: right;">-42.50 ← -16.34</span>
<b>PSS / PSD</b>	-23.45 / 23.45		-38.28 / 38.28		

# 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

**Frank**

Visit date  
**4/11/2012**

### 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	72	-10.19	0
L-Histidine	13.50	65	-35.96	0
L-Isoleucine	13.50	67	-3.62	0
L-Leucine	12.00	145	8.20	0
L-Lysine	12.00	194	-12.63	0
L-Methionine	15.00	25	-17.65	0
L-Phenylalanine	15.00	58	-19.81	0
L-Taurine	8.10	84	1.40	0
L-Threonine	13.50	89	-38.81	0
L-Tryptophan (as 5-HTP)	0.90	65	15.38	0
L-Valine	15.00	222	-16.07	0
<b>Total Base Grams:</b>	<b>138.00</b>			<b>Total Grams Added: 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.