3545 Airway Drive, Suite 114
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www.carbonbased.com

Frank

September 2005

Next Test Due: 3/14/2006

CellMate™ Foundational Toxicity Assessment & Hair Report

Patient

Printed on Thursday, September 15, 2005 for:

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

Basic Status High/Low - Plasma Amino Acid on 8/31/2005

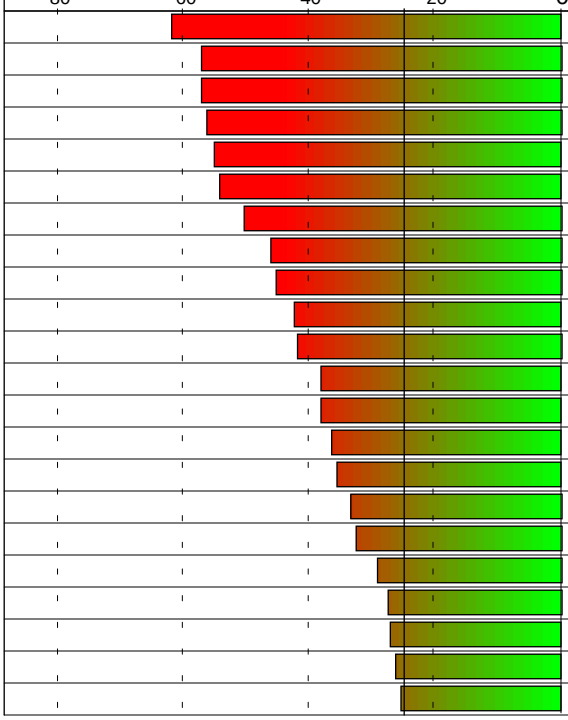
Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

Client ID:548664859 (9732)

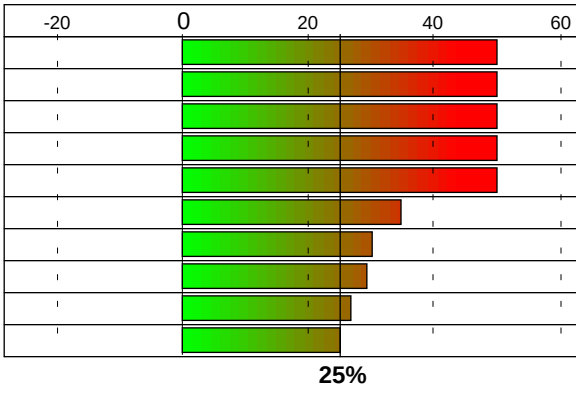
The % Status is the weighted deviation of the laboratory result.

Low Results



	% Status		Result	Low	High
Serine - P	-61.52	L	**76.18**	90.00	210.00
Histidine - P	-57.14	L	**65.00**	70.00	140.00
Arginine - P	-56.97	L	**42.33**	50.00	160.00
Glycine - P	-56.22	L	**211.00**	225.00	450.00
Aspartic Acid - P	-55.00	L	**4.80**	6.00	30.00
Lysine - P	-54.00	L	**144.00**	150.00	300.00
Proline - P	-50.37	L	**129.00**	130.00	400.00
Taurine - P	-46.00	L	**58.00**	50.00	250.00
Methionine - P	-45.00	L	**26.25**	25.00	50.00
Threonine - P	-42.00	L	**112.00**	100.00	250.00
Phenylalanine - P	-41.87	L	**52.73**	45.00	140.00
Citrulline - P	-38.00	L	**21.60**	15.00	70.00
Asparagine - P	-37.88	L	**55.30**	45.00	130.00
Isoleucine - P	-36.36	L	**65.00**	50.00	160.00
Ornithine - P	-35.33	L	**72.00**	50.00	200.00
a-Amino-N-Butyric Acid - P	-33.33	L	**15.00**	10.00	40.00
Cystine - P	-32.50	L	**24.00**	10.00	90.00
Leucine - P	-29.09	L	**113.00**	90.00	200.00
Glutamine - P	-27.37	L	**701.82**	600.00	1050.00
Valine - P	-26.80	L	**228.00**	170.00	420.00
Phenylalanine/Tyrosine	-26.29	L	**0.78**	0.50	1.70
Tyrosine - P	-25.41	L	**67.21**	50.00	120.00

High Results



	% Status		Result	Low	High
Anserine - P	50.00	H	**1.00**	0.00	1.00
Carnosine - P	50.00	H	**1.00**	0.00	1.00
Cystathionine - P	50.00	H	**4.00**	0.00	4.00
Homocystine - P	50.00	H	**1.00**	0.00	1.00
Hydroxylysine - P	50.00	H	**1.00**	0.00	1.00
Glycine/Serine Ratio	34.66	H	**2.77**	1.50	3.00
GABA - P	30.00	H	**4.00**	0.00	5.00
Collagen Related AA	29.33	H	**129.00**	10.00	160.00
Phosphoethanolamine - P	26.67	H	**23.00**	0.00	30.00
a-Aminoadipic Acid - P	25.00	H	**3.00**	0.00	4.00

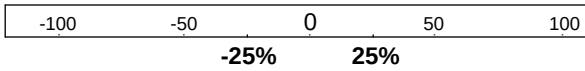
Basic Status High/Low - Blood Test on 9/12/2005

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

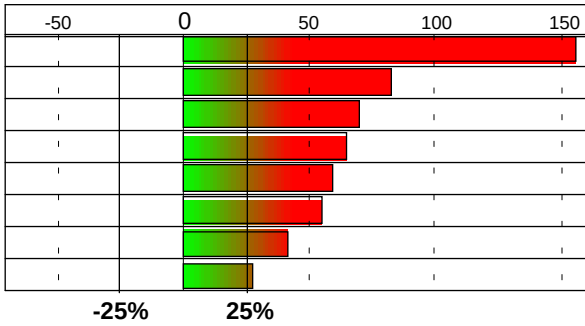
The % Status is the weighted deviation of the laboratory result.

Low Results



% Status	Result	*Low*	*High*

High Results



	% Status		Result	*Low*	*High*
Triglycerides	156.04	**H**	**307.00**	0.00	149.00
LDL	82.35	**H**	**152.00**	62.00	130.00
Cholesterol	70.00	**H**	**260.00**	140.00	240.00
Glucose	64.71	**H**	**104.00**	65.00	99.00
Ultra-Sensitive TSH	58.86	**H**	**2.62**	1.10	2.50
GGT	54.62	**H**	**68.00**	0.00	65.00
Albumin	41.67	**H**	**4.70**	3.60	4.80
Hemoglobin	27.78	**H**	**16.00**	12.50	17.00

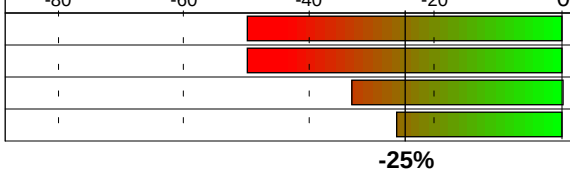
Basic Status High/Low - Environmental Pollutants Exposure on 9/3/2005

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

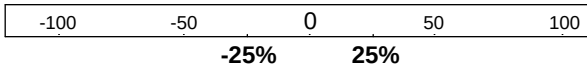
The % Status is the weighted deviation of the laboratory result.

Low Results



	% Status		Result	*Low*	*High*
2-Methylhippurate	-50.00	**L**	**0.00**	0.00	1.50
3,4-Dimethylhippurate	-50.00	**L**	**0.00**	0.00	3.00
Hippurate	-33.40	**L**	**83.00**	0.00	500.00
Phthalate	-26.11	**L**	**0.43**	0.00	1.80

High Results



	% Status	Result	*Low*	*High*

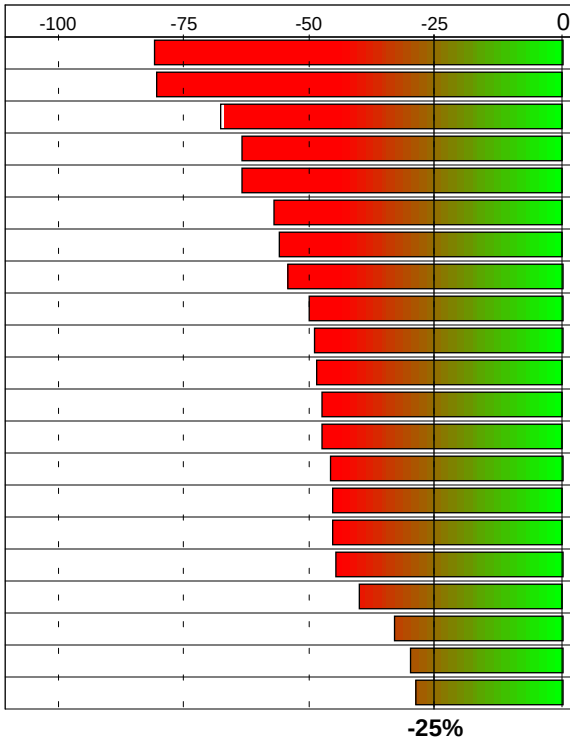
Basic Status High/Low - Hair Analysis on 8/21/2005

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

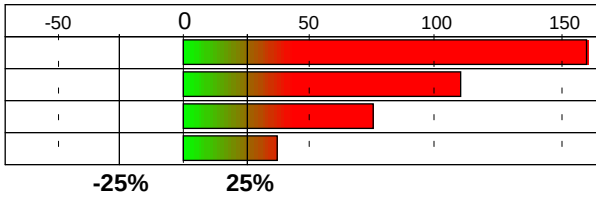
The % Status is the weighted deviation of the laboratory result.

Low Results



	% Status		Result	*Low*	*High*
Molybdenum - H	-80.61	**L**	**0.03**	0.04	0.09
Germanium - H	-80.00	**L**	**0.04**	0.05	0.06
Iron - H	-67.27	**L**	**4.10**	6.00	17.00
Potassium - H	-63.33	**L**	**6.00**	10.00	40.00
Vanadium - H	-63.33	**L**	**0.01**	0.03	0.10
Rubidium - H	-56.94	**L**	**0.00**	0.01	0.08
Barium - H	-55.67	**L**	**0.11**	0.19	1.60
Zirconium - H	-54.22	**L**	**0.03**	0.06	0.70
Lithium - H	-50.00	**L**	**0.01**	0.01	0.02
Lead - H	-49.00	**L**	**0.01**	0.00	1.00
Uranium - H	-48.33	**L**	**0.00**	0.00	0.06
Nickel - H	-47.50	**L**	**0.01**	0.00	0.40
Selenium - H	-47.33	**L**	**0.97**	0.95	1.70
Bismuth - H	-45.83	**L**	**0.00**	0.00	0.12
Cobalt - H	-45.45	**L**	**0.01**	0.01	0.04
Copper - H	-45.24	**L**	**10.00**	9.00	30.00
Sodium - H	-44.87	**L**	**16.00**	12.00	90.00
Thallium - H	-40.00	**L**	**0.00**	0.00	0.01
Tin - H	-33.33	**L**	**0.05**	0.00	0.30
Thorium - H	-30.00	**L**	**0.00**	0.00	0.00
Aluminum - H	-28.75	**L**	**1.70**	0.00	8.00

High Results



	% Status		Result	*Low*	*High*
Iodine - H	526.19	**H**	**6.30**	0.25	1.30
Mercury - H	110.00	**H**	**0.64**	0.00	0.40
Zinc - H	75.00	**H**	**210.00**	110.00	190.00
Magnesium - H	36.84	**H**	**45.00**	12.00	50.00

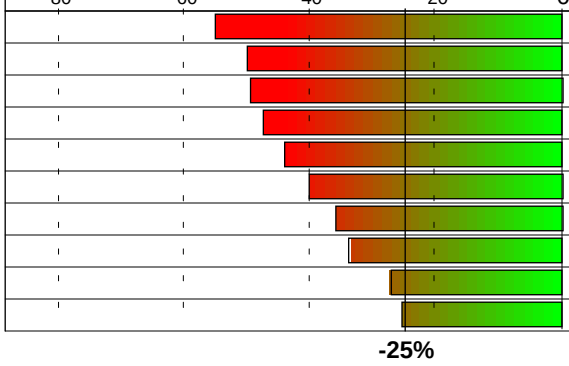
Basic Status High/Low - Urine Organic Acid on 9/3/2005

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

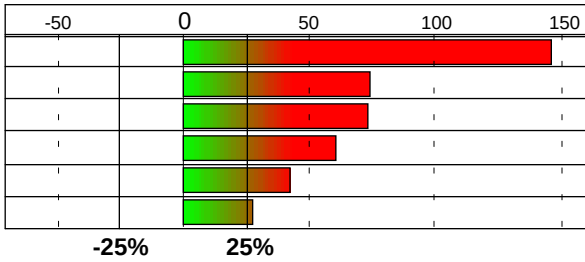
The % Status is the weighted deviation of the laboratory result.

Low Results



	% Status		Result	*Low*	*High*
Isocitrate	-55.00	**L**	**29.00**	30.00	50.00
Vanilmandelate	-50.00	**L**	**1.60**	1.60	2.40
Succinate	-49.29	**L**	**0.81**	0.80	2.20
Benzoate	-47.33	**L**	**0.12**	0.00	4.50
cis-Aconitate	-43.75	**L**	**22.00**	21.00	37.00
Hydroxymethylglutarate	-40.00	**L**	**2.22**	2.10	3.30
b-Hydroxyisovalerate	-36.00	**L**	**2.38**	0.00	17.00
Hippurate	-33.50	**L**	**83.00**	50.00	250.00
a-Hydroxybutyrate	-27.14	**L**	**0.16**	0.00	0.70
P-Hydroxyphenylacetate	-25.05	**L**	**4.74**	0.00	19.00

High Results



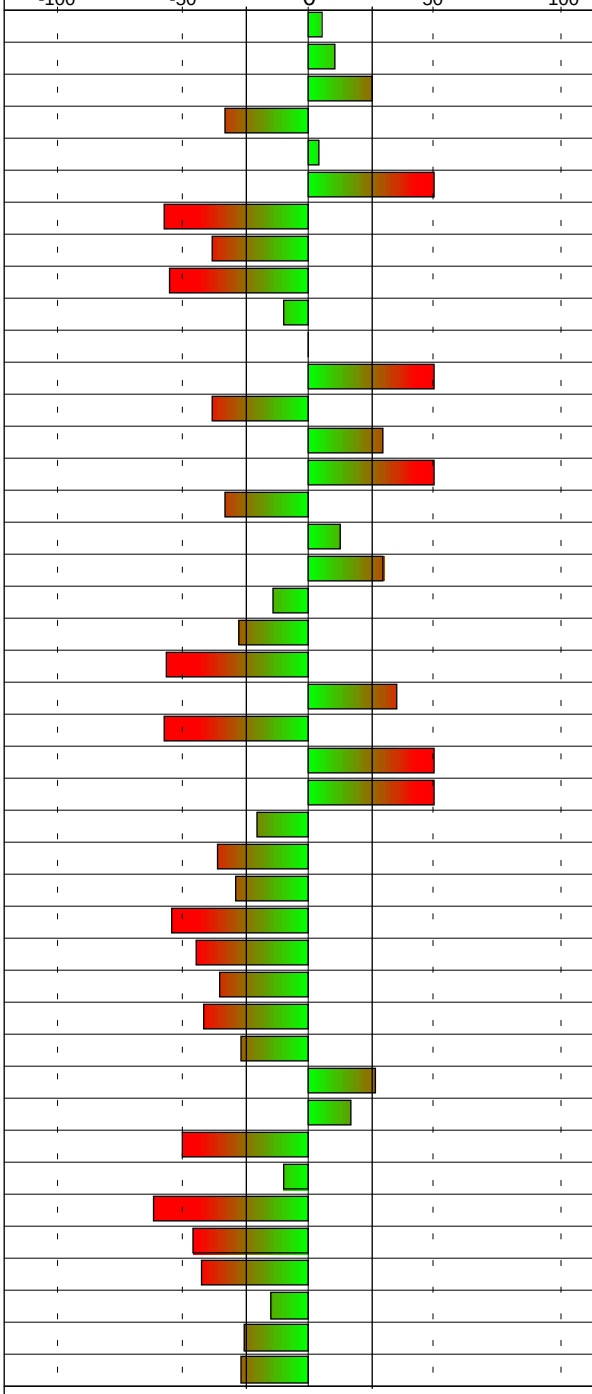
	% Status		Result	*Low*	*High*
Pyroglutamate	146.29	**H**	**29.74**	16.00	23.00
2-Hydroxyphenylacetate	73.85	**H**	**1.61**	0.00	1.30
Tartarate	73.00	**H**	**12.30**	0.00	10.00
a-Ketoglutarate	60.80	**H**	**10.04**	4.50	9.50
Orotate	42.50	**H**	**0.74**	0.00	0.80
Kynurenate	27.83	**H**	**1.79**	0.00	2.30

Basic Status Alphabetic - Plasma Amino Acid on 8/31/2005

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

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



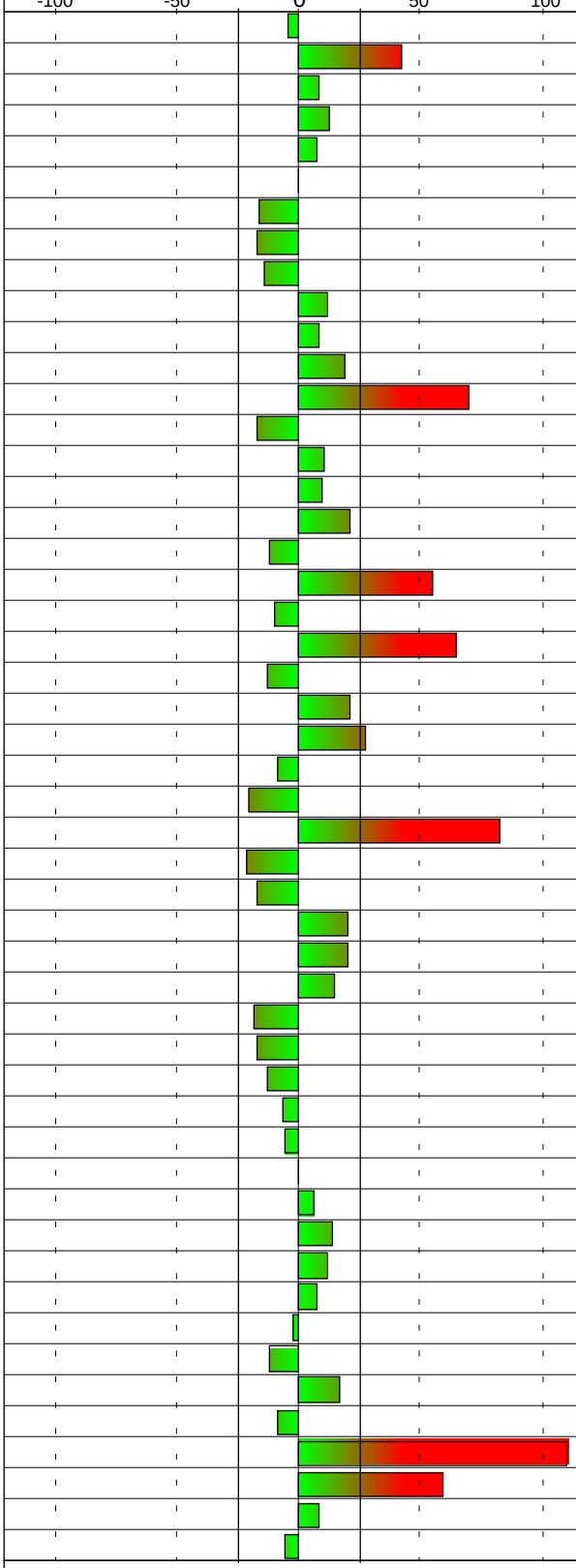
	% Status		Result	Low	High
1-Methylhistidine - P	5.00		11.00	0.00	20.00
3-Methylhistidine - P	10.00		3.00	0.00	5.00
a-Aminoadipic Acid - P	**25.00**	**H**	**3.00**	0.00	4.00
a-Amino-N-Butyric Acid - P	**-33.33**	**L**	**15.00**	10.00	40.00
Alanine - P	4.29		440.00	250.00	600.00
Anserine - P	**50.00**	**H**	**1.00**	0.00	1.00
Arginine - P	**-56.97**	**L**	**42.33**	50.00	160.00
Asparagine - P	**-37.88**	**L**	**55.30**	45.00	130.00
Aspartic Acid - P	**-55.00**	**L**	**4.80**	6.00	30.00
b-Alanine - P	-10.00		2.00	0.00	5.00
b-Aminoisobutyric Acid - P	0.00		1.00	0.00	2.00
Carnosine - P	**50.00**	**H**	**1.00**	0.00	1.00
Citrulline - P	**-38.00**	**L**	**21.60**	15.00	70.00
Collagen Related AA	**29.33**	**H**	**129.00**	10.00	160.00
Cystathionine - P	**50.00**	**H**	**4.00**	0.00	4.00
Cystine - P	**-32.50**	**L**	**24.00**	10.00	90.00
Ethanolamine - P	12.50		5.00	0.00	8.00
GABA - P	**30.00**	**H**	**4.00**	0.00	5.00
Glutamic Acid - P	-14.08		82.72	45.00	150.00
Glutamine - P	**-27.37**	**L**	**701.82**	600.00	1050.00
Glycine - P	**-56.22**	**L**	**211.00**	225.00	450.00
Glycine/Serine Ratio	**34.66**	**H**	**2.77**	1.50	3.00
Histidine - P	**-57.14**	**L**	**65.00**	70.00	140.00
Homocystine - P	**50.00**	**H**	**1.00**	0.00	1.00
Hydroxylysine - P	**50.00**	**H**	**1.00**	0.00	1.00
Hydroxyproline - P	-20.00		9.00	0.00	30.00
Isoleucine - P	**-36.36**	**L**	**65.00**	50.00	160.00
Leucine - P	**-29.09**	**L**	**113.00**	90.00	200.00
Lysine - P	**-54.00**	**L**	**144.00**	150.00	300.00
Methionine - P	**-45.00**	**L**	**26.25**	25.00	50.00
Ornithine - P	**-35.33**	**L**	**72.00**	50.00	200.00
Phenylalanine - P	**-41.87**	**L**	**52.73**	45.00	140.00
Phenylalanine/Tyrosine	**-26.29**	**L**	**0.78**	0.50	1.70
Phosphoethanolamine - P	**26.67**	**H**	**23.00**	0.00	30.00
Phosphoserine - P	16.67		8.00	0.00	12.00
Proline - P	**-50.37**	**L**	**129.00**	130.00	400.00
Sarcosine - P	-10.00		2.00	0.00	5.00
Serine - P	**-61.52**	**L**	**76.18**	90.00	210.00
Taurine - P	**-46.00**	**L**	**58.00**	50.00	250.00
Threonine - P	**-42.00**	**L**	**112.00**	100.00	250.00
Tryptophan - P	-15.00		45.50	35.00	65.00
Tyrosine - P	**-25.41**	**L**	**67.21**	50.00	120.00
Valine - P	**-26.80**	**L**	**228.00**	170.00	420.00
Total Status Deviation	**33.83**				
Total Status Skew	**-14.52**				

Basic Status Alphabetic - Blood Test on 9/12/2005

Frank — **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

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



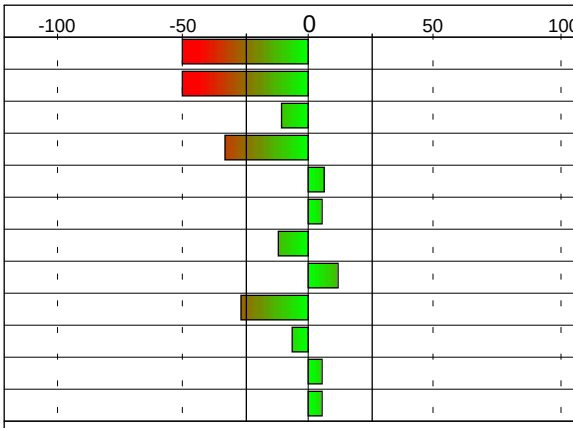
	% Status		Result	Low	High
A/G Ratio	-4.23		1.74	1.10	2.50
Albumin	**41.67**	**H**	**4.70**	3.60	4.80
Alkaline Phosphatase	8.40		98.00	25.00	150.00
Anion Gap	12.50		15.50	8.00	20.00
B.U.N.	7.14		17.00	5.00	26.00
B.U.N./Creatinine Ratio	-0.24		15.45	6.00	25.00
Basophil Count	-15.50		69.00	0.00	200.00
Basophils	-16.67		1.00	0.00	3.00
Bilirubin, Total	-13.64		0.50	0.10	1.20
Calcium	11.90		9.80	8.50	10.60
Calcium/Phosphorus Ratio	8.24		2.88	2.30	3.30
Chloride	19.23		105.00	96.00	109.00
Cholesterol	**70.00**	**H**	**260.00**	140.00	240.00
CO2	-16.67		24.00	20.00	32.00
Creatinine	10.00		1.10	0.50	1.50
Eosinophil Count	9.00		345.00	50.00	550.00
Eosinophils	21.43		5.00	0.00	7.00
Free T4 Index (T7)	-12.16		2.60	1.20	4.90
GGT	**54.62**	**H**	**68.00**	0.00	65.00
Globulin	-10.00		2.70	1.50	4.50
Glucose	**64.71**	**H**	**104.00**	65.00	99.00
HDL-Cholesterol	-12.79		47.00	31.00	74.00
Hematocrit	21.43		46.00	36.00	50.00
Hemoglobin	**27.78**	**H**	**16.00**	12.50	17.00
Iron, Total	-9.13		87.00	40.00	155.00
LDH	-20.67		144.00	100.00	250.00
LDL	**82.35**	**H**	**152.00**	62.00	130.00
Lymphocyte Count	-21.70		1932.00	800.00	4800.00
Lymphocytes	-16.67		28.00	18.00	48.00
MCH	19.61		31.87	27.00	34.00
MCHC	19.57		34.78	32.00	36.00
MCV	14.63		91.63	80.00	98.00
Monocyte Count	-18.56		483.00	200.00	1100.00
Monocytes	-16.67		7.00	4.00	13.00
Neutrophil Count	-13.37		4071.00	1800.00	8000.00
Neutrophils	-6.00		59.00	48.00	73.00
Phosphorus	-5.00		3.40	2.50	4.50
Potassium	0.00		4.50	3.50	5.50
Protein, Total	6.00		7.40	6.00	8.50
Protein/Globulin Ratio	14.07		2.74	2.10	3.10
R.B.C.	11.33		5.02	4.10	5.60
sGOT	7.50		23.00	0.00	40.00
sGPT	-2.73		26.00	0.00	55.00
Sodium	-11.54		140.00	135.00	148.00
T-3 Uptake	16.67		34.00	24.00	39.00
Thyroxine (T4)	-8.67		7.60	4.50	12.00
Triglycerides	**156.04**	**H**	**307.00**	0.00	149.00
Ultra-Sensitive TSH	**58.86**	**H**	**2.62**	1.10	2.50
Uric Acid	8.62		5.80	2.40	8.20
W.B.C.	-5.38		6.90	4.00	10.50
Total Status Deviation	**20.95**				
Total Status Skew	**10.55**				

Basic Status Alphabetic - Environmental Pollutants Exposure on 9/3/2005

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

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



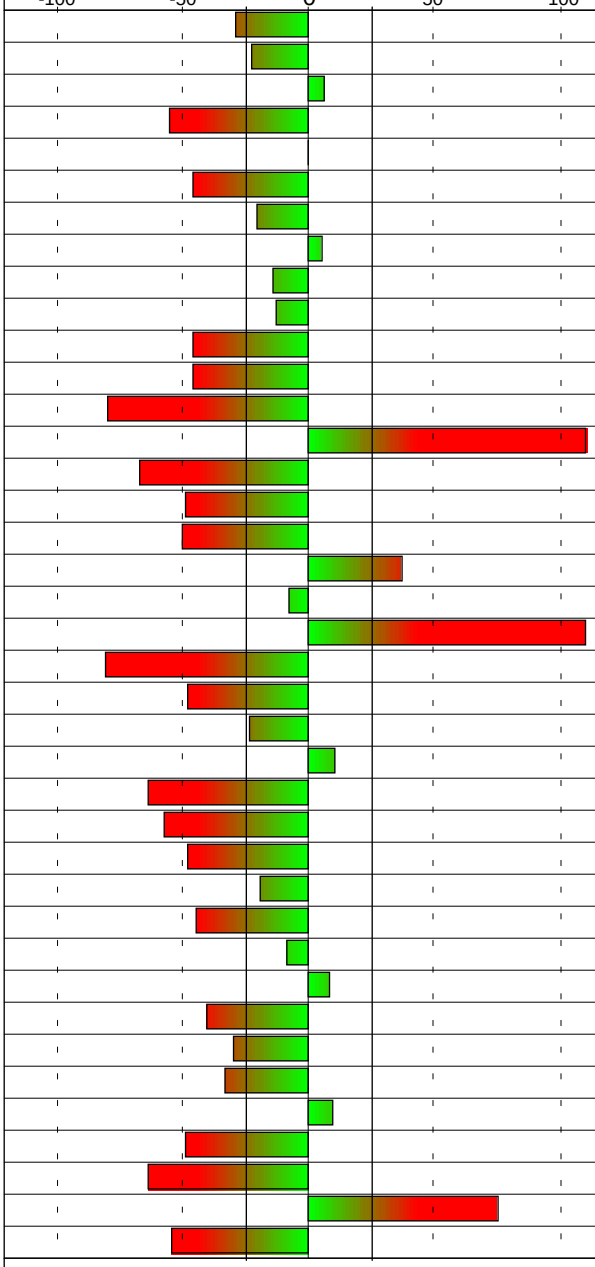
	% Status		Result	*Low*	*High*
2-Methylhippurate	**-50.00**	**L**	**0.00**	0.00	1.50
3,4-Dimethylhippurate	**-50.00**	**L**	**0.00**	0.00	3.00
3-Methylhippurate	-11.11		0.70	0.00	1.80
Hippurate	**-33.40**	**L**	**83.00**	0.00	500.00
M + P	6.62		3.85	0.00	6.80
Mandelate	5.59		1.89	0.00	3.40
Monoethyl Phthalate	-11.43		0.27	0.00	0.70
Phenylglyoxylate	11.25		1.96	0.00	3.20
Phthalate	**-26.11**	**L**	**0.43**	0.00	1.80
p-Hydroxybenzoate	-6.50		0.87	0.00	2.00
Quinolinate	5.33		6.64	0.00	12.00
t,t-Muconic Acid	5.00		1.65	0.00	3.00
Total Status Deviation	**18.53**				
Total Status Skew	**-12.90**				

Basic Status Alphabetic - Hair Analysis on 8/21/2005

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

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



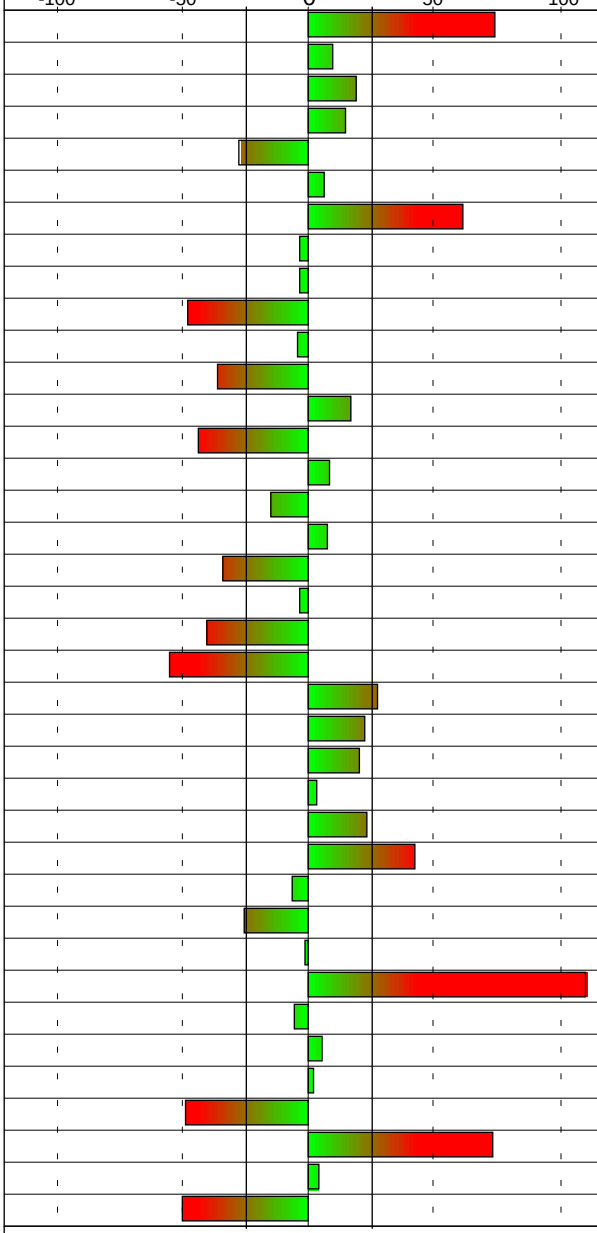
	% Status		Result	Low	High
Aluminum - H	**-28.75**	**L**	**1.70**	0.00	8.00
Antimony - H	-22.73		0.02	0.00	0.07
Arsenic - H	6.25		0.05	0.00	0.08
Barium - H	**-55.67**	**L**	**0.11**	0.19	1.60
Beryllium - H	0.00		0.01	0.00	0.02
Bismuth - H	**-45.83**	**L**	**0.00**	0.00	0.12
Boron - H	-20.00		1.40	0.50	3.50
Cadmium - H	5.33		0.08	0.00	0.15
Calcium - H	-14.12		282.00	160.00	500.00
Chromium - H	-12.96		0.33	0.23	0.50
Cobalt - H	**-45.45**	**L**	**0.01**	0.01	0.04
Copper - H	**-45.24**	**L**	**10.00**	9.00	30.00
Germanium - H	**-80.00**	**L**	**0.04**	0.05	0.06
Iodine - H	**526.19**	**H**	**6.30**	0.25	1.30
Iron - H	**-67.27**	**L**	**4.10**	6.00	17.00
Lead - H	**-49.00**	**L**	**0.01**	0.00	1.00
Lithium - H	**-50.00**	**L**	**0.01**	0.01	0.02
Magnesium - H	**36.84**	**H**	**45.00**	12.00	50.00
Manganese - H	-7.14		0.36	0.18	0.60
Mercury - H	**110.00**	**H**	**0.64**	0.00	0.40
Molybdenum - H	**-80.61**	**L**	**0.03**	0.04	0.09
Nickel - H	**-47.50**	**L**	**0.01**	0.00	0.40
Phosphorus - H	-23.33		184.00	160.00	250.00
Platinum - H	10.00		0.00	0.00	0.00
Potassium - H	**-63.33**	**L**	**6.00**	10.00	40.00
Rubidium - H	**-56.94**	**L**	**0.00**	0.01	0.08
Selenium - H	**-47.33**	**L**	**0.97**	0.95	1.70
Silver - H	-19.23		0.04	0.00	0.13
Sodium - H	**-44.87**	**L**	**16.00**	12.00	90.00
Strontium - H	-8.20		1.00	0.21	2.10
Sulfur - H	8.67		49900.00	45500.00	53000.00
Thallium - H	**-40.00**	**L**	**0.00**	0.00	0.01
Thorium - H	**-30.00**	**L**	**0.00**	0.00	0.00
Tin - H	**-33.33**	**L**	**0.05**	0.00	0.30
Titanium - H	9.00		0.59	0.00	1.00
Uranium - H	**-48.33**	**L**	**0.00**	0.00	0.06
Vanadium - H	**-63.33**	**L**	**0.01**	0.03	0.10
Zinc - H	**75.00**	**H**	**210.00**	110.00	190.00
Zirconium - H	**-54.22**	**L**	**0.03**	0.06	0.70
Total Status Deviation	**51.08**				
Total Status Skew	**-10.70**				

Basic Status Alphabetic - Urine Organic Acid on 9/3/2005

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

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



	% Status		Result	Low	High
2-Hydroxyphenylacetate	**73.85**	**H**	**1.61**	0.00	1.30
3-Indoleacetate	9.83		3.59	0.00	6.00
5-Hydroxyindoleacetate	18.57		3.56	2.60	4.00
Adipate	15.00		1.17	0.00	1.80
a-Hydroxybutyrate	**-27.14**	**L**	**0.16**	0.00	0.70
a-Keto-b-methylvalerate	6.00		0.28	0.00	0.50
a-Ketoglutarate	**60.80**	**H**	**10.04**	4.50	9.50
a-Ketoisocaproate	-3.33		0.14	0.00	0.30
a-Ketoisovalerate	-3.33		0.14	0.00	0.30
Benzoate	**-47.33**	**L**	**0.12**	0.00	4.50
b-Hydroxybutyrate	-4.00		0.92	0.00	2.00
b-Hydroxyisovalerate	**-36.00**	**L**	**2.38**	0.00	17.00
CA Cycle Return	17.15		284.30	150.00	350.00
cis-Aconitate	**-43.75**	**L**	**22.00**	21.00	37.00
Citrate	8.54		240.00	120.00	325.00
Ethylmalonate	-15.36		0.97	0.00	2.80
Fumarate	7.50		0.43	0.20	0.60
Hippurate	**-33.50**	**L**	**83.00**	50.00	250.00
Homovanillate	-3.12		2.95	2.20	3.80
Hydroxymethylglutarate	**-40.00**	**L**	**2.22**	2.10	3.30
Isocitrate	**-55.00**	**L**	**29.00**	30.00	50.00
Kynurenate	**27.83**	**H**	**1.79**	0.00	2.30
Lactate	21.94		11.51	0.00	16.00
Malate	20.35		0.84	0.00	1.20
Methylmalonate	3.00		0.53	0.00	1.00
Methylsuccinate	22.80		1.82	0.00	2.50
Orotate	**42.50**	**H**	**0.74**	0.00	0.80
p-Hydroxybenzoate	-6.50		0.87	0.00	2.00
P-Hydroxyphenylacetate	**-25.05**	**L**	**4.74**	0.00	19.00
p-Hydroxyphenyllactate	-1.43		0.34	0.00	0.70
Pyroglutamate	**146.29**	**H**	**29.74**	16.00	23.00
Pyruvate	-5.40		2.23	0.00	5.00
Quinolinate	5.33		6.64	0.00	12.00
Suberate	1.82		0.57	0.00	1.10
Succinate	**-49.29**	**L**	**0.81**	0.80	2.20
Tartarate	**73.00**	**H**	**12.30**	0.00	10.00
Tricarballylate	4.00		0.27	0.00	0.50
Vanilmandelate	**-50.00**	**L**	**1.60**	1.60	2.40
Total Status Deviation	**29.09**				
Total Status Skew	**0.23**				

Nutritional Support

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

- ☐ **1-BCAA's**
  2x daily 500 mg
- ☐ **1-Chelation Therapy - Mercury**
  See Nutrition Detail
- ☐ **1-Oral Electrolyte - Standard Formula**
  2x daily
- ☐ **1-Pyridoxine (B6)**
  1x daily 100 mg
- ☐ **1-Taurine**
  2x daily 500 mg
- ☐ **2-Glutathione (reduced)**
  2x daily 250 mg
- ☐ **3-Magnesium Taurate**
  2x daily 125 mg
- ☐ **H - Garlic**
  1 - 3 times daily
- ☐ **1-Carbohydrate Metabolism Profile**
  See Nutrition Detail
- ☐ **1-Digestive Enzymes**
  With meals
- ☐ **1-Pyridoxal-5-Phosphate**
  2x daily 20 mg
- ☐ **1-Selenium**
  1 x daily 200 mcg
- ☐ **1-Tyrosine**
  2x daily 500 mg
- ☐ **2-Zinc Citrate**
  2x daily 50 mg
- ☐ **H - Billberry**
  1 - 3 times daily
- ☐ **H - Ginseng (Panax)**
  1 - 3 times daily

Nutritional Supplements to AVOID

The following supplements may aggravate already out-of-balance biochemistry.

MCT Oil

Food Recommendations

The following foods may help to balance or strengthen your biochemistry.

Artichoke	Banana	Black Pepper	Butter Beans
Cantaloupe	Cherries	Chicken	Cucumber
Eggplant	Flounder	Goose	Green Beans
Gruyere Cheese	Guava	Haddock	Halibut
Lamb	Lentils	Loganberries	Millet
Mozarella Cheese	Mushrooms	Onions	Pumpkin
Red Peppers	Sturgeon	Sweet Potato	Swiss Chard
Yams			

Foods to AVOID

The following foods may aggravate already out-of-balance biochemistry.

Bacon	Cholesterol Rich Foods	Chuck Roast	Coconut Cream
Coconut Milk	Dairy Cream	Egg Yolk	Hydrogenated Fats
Liver Pate	Mackerel	Margarine	Shark
Sweetbreads	Swordfish	Tuna	

Results Missing From Test

A more comprehensive report would have been generated if the following results were provided.

Ca/Mg	CA/P	Mg/K	Na/K
Zn/Cu	Zn/Cd		

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
Lipid	80.30%	73.90%
Liver Detox Indicators	71.28%	54.58%
Nutrient Elements	66.30%	9.78%
Other Elements	52.65%	-50.08%
Cardiac Marker	46.86%	37.39%
Neuroendocrine Met.	43.83%	-31.83%
Gastrointest. Function	42.78%	32.81%
Correlated Nutrients	42.63%	-21.20%
Essential Amino Acid	40.42%	-40.42%
Immune Metabolites	40.42%	-40.42%
Common Toxins	38.51%	-3.77%
CAC Cycle Ratios	37.37%	-15.59%
CNS Metabolism	36.72%	-21.11%
Hepatic Metabolism	36.45%	-6.66%
Gluconeogen	35.81%	-34.09%
Citric Acid Cycle	35.65%	-11.36%
Ammonia/Energy	35.50%	-31.32%
Fat Metabolism	33.23%	-33.23%
Toxic Elements	33.09%	-15.54%
Connective Tissue	32.97%	-17.97%
Anti Oxidant Status	31.53%	23.94%
Inflammatory Process	31.53%	23.65%
Muscle Metabolites	28.75%	28.75%
Liver Function	25.57%	21.48%

Lab Reported out-of-range Values

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

Iodine - H (526.19%)

High levels of hair iodine should be cross-correlated to thyroid testing. Review dietary habits (excessive iodized salt intake) to assess possible reasons for excessive hair levels.

Triglycerides (156.04%)

Triglycerides is where most of the stored fat in the body resides. While high triglycerides are clearly associated with coronary heart disease, it is also been shown to be responsive to dietary changes.

Drugs which may have an adverse affect:
Itraconazole, Levothyroxine, Methyldopa, Miconazole, Polythiazide, Propranolol, Tamoxifen

Nutrients which may have an adverse affect:
MCT Oil

Foods which may have an adverse affect:
Bacon, Cholesterol Rich Foods, Chuck Roast, Coconut Cream, Coconut Milk, Dairy Cream, Egg Yolk, Margarine, Sweetbreads

Pyroglutamate (146.29%)

A high level may be due to glutathione depletion as this organic acid is formed in the kidney from the amino acid glutathione.

Mercury - H (110.00%)

Mercury toxicity has been implicated in conditions ranging from childhood autism to adult dementia and other neurological disorders. Since mercury binds easily to various amino acid side chains, it is difficult to remove from the body. Potential sources include dental amalgams, broken thermometers, cosmetics, and a number of different fish including tuna.

Drugs which may have an adverse affect:
Dimercaprol, Mercury Compounds, Penicillamine, Penicillin

Foods which may have an adverse affect:
Mackerel, Shark, Swordfish, Tuna

LDL (82.35%)

LDL is the cholesterol rich remnants of the lipid transport vehicle VLDL (very-low density lipoproteins). There have been many studies showing correlations between high levels of LDL and arterial artherosclerosis. Due to the expense of direct LDL measurement, a calculation known as the Friedewald formula is used (Total Cholesterol - HDL Cholesterol - Triglycerides/5). When Triglyceride levels are greater than 400, this method is not accurate. Increased levels are seen in high cholesterol diets, nephrotic syndromes, multiple myeloma, hepatic obstruction or disease, anorexia nervosa, diabetes, chronic renal failure, and premature coronary heart disease.

Foods which may have an adverse affect:
Coconut Milk

Molybdenum - H (-80.61%)

Found in very small quantities, molybdenum is important in the pathway that converts purines into uric acid, alcohol detoxification, and sulfur detoxification. It is found primarily in whole grains and legumes. Low hair molybdenum is usually correlated to body levels. One sign of Mo deficiency is low uric acid in the blood. Copper and tungsten have been implicated in low molybdenum levels.

Germanium - H (-80.00%)

There is no correlation between low germanium in the hair and tissue levels. Hair germanium is only measured for research purposes.

Zinc - H (75.00%)

Excessive levels of zinc can impair copper and iron absorption as well as potentially inducing some forms of anemia. High hair zinc surprisingly may be indicative of low body levels due to heavy metal exposure. Red blood cell mineral analysis reading would confirm this level.

2-Hydroxyphenylacetate (73.85%)

Elevations of 2-Hydroxyphenylacetate may be indicative of uremia, gastrointestinal pathology, liver dysfunction, digestive problems or compromised energy production.

Tartarate (73.00%)

Elevated levels have often been associated with elevated yeast infestation but the data does not support that assumption. It is more likely that elevated levels of tartaric acid is found because of dietary sources such as grapes and grape by-products such as wine and juice. Research has also suggested that tartarate may be and antagonist to yeast.

Cholesterol (70.00%)

Cholesterol is a fat, found in the blood which has been reported to be linked, when elevated, to an increased risk of cardiovascular disease. It is not a good independent risk factor but can be helpful in conjunction with HDL (good cholesterol), LDL (bad cholesterol) and the Cholesterol/HDL Ratio in assessing risk for heart disease. High levels may be caused by familial (hereditary) hypercholesterolemia, biliary obstruction, nephrotic syndrome, hypothyroidism, and pregnancy.

Drugs which may have an adverse affect:
Aspirin, Carbamazepine, Chlorpromazine, Clofibrate, Cortisone, Epinephrine, Furosemide, Ibuprofen, Imipramine, Lithium, Methimazole, Miconazole, Paramethadione, Penicillamine, Phenobarbital, Phenylbutazone, Phenytoin, Prednisone, Propranolol, Tamoxifen, Trimethadione, Viomycin

Foods which may have an adverse affect:
Bacon, Cholesterol Rich Foods, Chuck Roast, Coconut Cream, Coconut Milk, Dairy Cream, Egg Yolk, Hydrogenated Fats, Liver Pate, Margarine, Sweetbreads

Iron - H (-67.27%)

Iron is necessary for the formation of some proteins, hemoglobin, myoglobin, and cytochrome. Also, it is necessary for oxygen transport, cellular respiration and peroxide deactivation. Low levels are seen in many anemias, copper deficiencies, low vitamin C intake, liver disease, chronic infections, high calcium intake, and women with heavy menstrual flows. Low hair has no correlation to tissue levels of this essential mineral.

Glucose (64.71%)

Glucose, formed by the digestion of carbohydrates and the conversion of glycogen by the liver, is the primary source of energy for most cells. Insulin, glucagon, thyroid hormone, liver enzymes, and adrenal hormones regulate it. It is elevated in diabetes, liver disease, obesity, pancreatitis, steroids, stress, or diet.

Drugs which may have an adverse affect:
Acetaminophen, Acetazolamide, ACTH, Albuterol, Amitriptyline, Aspirin, Chlorpromazine, Cortisone, Dextrothyroxine, Epinephrine, Estrogens, Furosemide, Gemfibrozil, Haloperidol, Hydralazine, Imipramine, Indomethacin, Levodopa, Lithium, Mercaptopurine, Methyldopa, Morphine, Nifedipine, Nitrofurantoin, Phenelzine, Phenylbutazone, Phenytoin, Polythiazide, Pravastatin, Prednisone, Protriptyline, Reserpine

Potassium - H (-63.33%)

Potassium deficiencies may impair nerve and muscle function as well as lead to heart arythmiaas, hypertension, and depression. Deficiencies are commonly found in people with poor dietary habits especially those with high refined carbohydrate levels.

Vanadium - H (-63.33%)

An essential trace mineral, vanadium has been shown to lower cholesterol synthesis and may even lower plasma triglycerides. Other research indicates that vanadium may help build healthy bones and teeth as well as prevent cavaties. Clinical significance of low vanadium is unknown.

Serine - P (-61.52%)

Serine is a key amino acid can be converted to glycine and vice versus. It is crucial in the production of many neurotransmitters. It is also important in DNA synthesis, gluconeogenesis and in the creation of many hormones and enzymes. A low result may be indicative of a deficit in acetylcholine synthesis, or methionine metabolism.

a-Ketoglutarate (60.80%)

High levels of this amino acid may be indicative of poor amino acid metabolism or a need for both B-complex and lipoic acid.

CA Cycle Phase 6 (-60.22%)

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 Phase 1 (59.09%)

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.

Ultra-Sensitive TSH (58.86%)

TSH, produced by the anterior pituitary gland, causes the release and distribution of stored thyroid hormones. When T4 and T3 are too high, TSH secretion decreases. When T4 and T3 are low, TSH secretion increases. Increased TSH levels are seen in primary hypothyroidism, thyrotropin producing tumors, and thyrotoxicosis.

Drugs which may have an adverse affect:
Rifampin, Valproic Acid

Histidine - P (-57.14%)

Histidine is an essential amino acid in infants (not adults) important as a mild anti-inflammatory, especially in cases of rheumatoid arthritis. A low result may be indicative of poor protein absorption or low dietary intake.

Drugs which may have an adverse affect:
Salicylates, Steroids

Arginine - P (-56.97%)

Arginine, an essential amino acid in childhood (it can be synthesized by adults) has been used to improve cardiovascular health, immune function (not herpes virus), and protein metabolism throughout the body. A low result may be due to poor diet, especially poor quality protein sources. A deficiency in arginine may also lead to a higher risk of cardiovascular disease.

Rubidium - H (-56.94%)

Low hair rubidium has not been correlated to tissue levels.

Glycine - P (-56.22%)

Glycine plays an important role in the body's ability to detoxify itself as well as in wound healing. It is also important in the creation of nucleic acids and bile acids. This amino acid is non-essential as it can be synthesized from serine and threonine. A low result may be indicative of poor nitrogen retention or a low intake of quality proteins.

Barium - H (-55.67%)

Low barium in the hair is of little or no clinical significance.

Aspartic Acid - P (-55.00%)

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.

Isocitrate (-55.00%)

No information is available to indicate why this organic acid may be low.

GGT (54.62%)

GGT is believed to be involved in the transport of amino acids and peptides into cells as well as glutathione metabolism. GGT is mainly found in liver cells and as such is extremely sensitive to alcohol use. Elevated levels may be found in liver disease, alcoholism, bile-duct obstruction, cholangitis, drug abuse, and in some cases excessive magnesium ingestion.

Drugs which may have an adverse affect:
Carbamazepine, Haloperidol, Ibuprofen, Methotrexate, Methyldopa, Phenobarbital, Phenytoin, Rifampin, Valproic Acid

Zirconium - H (-54.22%)

There is no clinical significance to low hair zirconium.

Lysine - P (-54.00%)

Lysine, an essential amino acid, is crucial in carbohydrate metabolism and the creation of the amino acids citrulline and carnitine, as well as in the development of collagen. A low plasma level of lysine may be due to poor dietary intake and/or excessive intake of arginine and/or ornithine. May inhibit collagen production.

Proline - P (-50.37%)

May be indicative of a defect in connective tissue synthesis.

Lithium - H (-50.00%)

While no clinical significance to low hair lithium has been found, some small amount of supplementation may be beneficial. Blood lithium should be used as a confirmation.

2-Methylhippurate (-50.00%)

Low levels of 2-Methylhippurate are desirable as high levels would be an indication of exposure to toluene and/or xylene. Xylene may cause problems with the central nervous system. This effect will impair performance and affect cerebral function. Other symptoms are erythema, defatting dermatitis, conjunctivitis, renal damage, and paresthesias of the extremities. Xylene has also been suggested as causing mild hematopoietic system toxicity in experimental animals. Research suggests that this petrochemical is metabolized at a half-life rate of approximately 25 hours. The balance of the exposure is metabolized by the oxidation of a methyl group to toluic acid. The toluic acid is converted to methylhippuric acid through conjugation with glycine and excreted in the urine.

3,4-Dimethylhippurate (-50.00%)

3,4-Dimethylhippurate is a marker for exposure to trimethylbenzene a common solvent found in paint thinners, dry cleaning, pesticides, inks, asphalt, lacquers, varnishes, dyes and many other petrochemical based products. A low reading such as this is desirable. Some health effects include dizziness, headache, anxiety, nausea, blurred vision, abdominal pains along with difficulty concentrating and irritability. Irritation of mucous membranes, dermatitis, nervousness and fatigue are other potential effects of trimethylbenzene exposure. This toxin is also known to be carcinogenic and hepatotoxic.

In order to help the body excrete trimethylbenzene it is suggested to increase intake of glycine and sulfur bearing amino acids such as N-acetyl-cysteine and taurine. This, along with an increased fluid intake is necessary to help the body excrete this toxin. The use of saunas as well as exercise may also be beneficial in some people to excrete solvents from adipose tissue.

Anserine - P (50.00%)

May be due to high dietary intake of poultry or zinc deficiency.

Carnosine - P (50.00%)

May be indicative of zinc deficiency. Genetic deficiency may lead to neurological development problems and sensory polyneuropathy.

Cystathionine - P (50.00%)

May be due to a functional B6 deficiency. May also be indicative of an increased need for antioxidants.

Bleie O., et al., Changes in basal and postmethionine load concentrations of total homocysteine and cystathionine after B vitamin intervention. Am J Clin Nutr, 80(3), 641-8, 2004. Zhang J., et al., Effect of cystathionine ketimine on the stimulus coupled responses of neutrophils and their modulation by various protein kinase inhibitors. Buichem Biophys Res Commun, 218(1), 371-6, 1996

Homocystine - P (50.00%)

This may be indicative of a higher risk of coronary heart disease (atherosclerosis), neurological, ocular, or musclo-skeletal disorders.

Drugs which may have an adverse affect:

Methotrexate

Hydroxylysine - P (50.00%)

A high plasma level of hydroxylysine may be indicative of connective and bone tissue breakdown or the use of a blood thinner such as Coumadin. A high level may also be found in a number of degenerative diseases.

Additional Tests

The following additional lab tests may help in diagnosis.

Consider ordering glucose tolerance test.

Rationale: % Status of Glucose is > 50%

Consider ordering TRH stimulation test if clinically indicated

Rationale: % Status of Ultra-Sensitive TSH is > 50%

Consider ordering homocystine

Rationale: % Status of Triglycerides is > 50%
% Status of Cholesterol is > 50%

Consider ordering glycohemoglobin

Rationale: % Status of Glucose is > 50%

Consider ordering prostate specific antigen (PSA)

Rationale: Age is >= 40
Sex is Male

Consider ordering serum magnesium

Rationale: % Status of GGT is > 50%

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-BCAA's 2x daily 500 mg

Rationale

	Decreased	Normal	Increased
BRANCHED CHAIN AMINO ACIDS			
Depressed succinate levels is suggestive of a deficiency of branched chain amino acids.	Succinate		

An addition of 500 mg of a combination of Leucine, Isoleucine and Valine, twice a day is recommended.

1-Carbohydrate Metabolism Profile See Nutrition Detail

	Decreased	Normal	Increased
CARBOHYDRATE METABOLISM PROFILE			
When Triglycerides 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:			Triglycerides

B-Complex (2x daily)
Lipoic Acid (2x daily)
CoEnzyme Q10 (2x 50 mg daily)
Digestive Enzymes (1-2 with each meal)

Wallace, DC, Mitochondrial genetics: a paradigm for aging and degenerative diseases?, Science, 256:628-632 (1992).
Corral-Debrinski, Shffner JM, Lott MY, Wallace DC, Association of mitochondrial DNA damage with aging and coronary artherosclerotic heart disease. Mutat Res, 275:169-180 (1992).

1-Chelation Therapy - Mercury See Nutrition Detail

	Decreased	Normal	Increased
CHELATION THERAPY - MERCURY			
Elevated hair mercury is indicative of on going mercury exposure and the bodies attempt to excrete it through the hair. The effects of mercury toxicity varies from person to person but prudence would suggest using either DMSA or DMPS as chelating agents with a trained professional.			Mercury - H

Oral DMSA seems to be effective at increasing fecal excretion (preferable) of this heavy metal while DMPS may increase urinary excretion. MERCURY CHELATION THERAPY SHOULD NOT BE DONE IF YOU STILL HAVE MERCURY AMALGAM FILLINGS!!!
Increased use of a balanced electrolyte formula (KTS Products Standard formula) 3 times daily and a broad spectrum amino acid supplement will also help improve the bodies ability to excrete mercury and other heavy metals. It is also recommended to use probiotics when undergoing mercury detox along with Alpha Lipoic Acid.
DMSA or DMPS with Alpha Lipoic Acid - Per a qualified health care practitioner
Doing a schedule of 3 days chelating 11 days off and dosing every 4 hours optimally during chelation days is most effective and safe. A minimum of six cycles (12 weeks) should be done before retesting.
Supplement Recomendations in addition to chelation therapy
Balanced Electrolyte Solution - Three times daily
Broad Spectrum Amino Acid - One to two times daily
Probiotics - One to two times daily
Selenium - 200 mcg daily
Vitamin C - 500 mg twice daily
Alpha Lipoic Acid - 100 mg three times daily

1-Digestive Enzymes With meals

	Decreased	Normal	Increased
DIGESTIVE ENZYMES			
Digestive enzymes are helpful in situations where there are signs of allergy, nutrient depletion, improper fat, protein or carbohydrate metabolism.			Glucose Triglycerides

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-Oral Electrolyte - Standard Formula 2x daily

ORAL ELECTROLYTE

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. A sports formula will have greater levels of bicarbonate yet still keeping the proportion of the other salts in line.

Rationale

Decreased	Normal	Increased
	Potassium CO2 Sodium	

1-Pyridoxal-5-Phosphate 2x daily 20 mg

PYRIDOXINE (B6)

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.

Decreased	Normal	Increased
		Cystathionine - P

1-Pyridoxine (B6) 1x daily 100 mg

PYRIDOXINE (B6)

a-Aminoadipic acid is an excellent marker for the risk of cardiovasular disease being specific to vitamin B6 unlike homocysteine which is non-specific. 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.

Decreased	Normal	Increased
a-Amino-N-Butyric Acid - P		a-Aminoadipic Acid - P

1-Selenium 1 x daily 200 mcg

SELENIUM

A potent antioxidant, selenium has shown great promise as a cofactor in glutathione peroxidase. Brazil nuts, whole grains and seafood are good food sources of this important mineral. It is also helpful in protecting the body from mercury poisoning.

Decreased	Normal	Increased
Selenium - H		

1-Taurine 2x daily 500 mg

TAURINE

An amino-sulfonic acid and modulator of cation flux, especially for Ca. A neuromodulator indirectly depressing neuroexcitation through control over glutamate. It also mediates contractility in the cardiac muscle.

Decreased	Normal	Increased
Taurine - P		a-Aminoadipic Acid - P

1-Tyrosine 2x daily 500 mg

TYROSINE

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
		Ultra-Sensitive TSH

2-Glutathione (reduced) 2x daily 250 mg

GLUTATHIONE

Glutathione is a tripeptide made in the body from cysteine, glutamic acid and glycine. An accumulation of Pyroglutamate is indicative of glutathione depletion.

Decreased	Normal	Increased
		Pyroglutamate

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2-Zinc Citrate 2x daily 50 mg

ZINC (Zn)
Active in the structure and function of biomembranes. Involved in more than 200 key enzymes including carbohydrate metabolism, connective tissue metabolism, T-cell function and prostaglandin secretion.

Rationale

Decreased	Normal	Increased
	b-Alanine - P	Anserine - P
	1-Methylhistidine - P	

3-Magnesium Taurate 2x daily 125 mg

MAGNESIUM (Mg)
Second most abundant cation in intracellular fluid. It 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

Decreased	Normal	Increased
	CO2	Cholesterol
	B.U.N.	GGT
	Uric Acid	

H - Billberry 1 - 3 times daily

BILBERRY
Billberry (Vaccinium myrtillus) is an herb often used for the control of insulin levels and may help halt or prevent macular degeneration. It has also been reported to be effective in lowering triglyceride levels. As with any herb, caution should be taken with its use. Bilberry also may interfere with iron absorption.

Decreased	Normal	Increased
	Iron, Total	Glucose
		Triglycerides

H - Garlic 1 - 3 times daily

GARLIC
Garlic's use has been reported to be beneficial in lowering blood lipid (fat) levels. May cause unwanted bodily odors. As with any herb, caution should be taken with its use.

Decreased	Normal	Increased
		LDL
		Cholesterol

H - Ginseng (Panax) 1 - 3 times daily

GINSENG
Also known as Korean Ginseng (Panax ginseng), this herb has shown benefits to those suffering from fatigue, stress, compromised immune systems and diabetes. As with any herb, caution should be taken with its use. Women who experience breast tenderness should discontinue its use.

Decreased	Normal	Increased
		Glucose

AVOID THE FOLLOWING SUPPLEMENTS

AVOID MCT Oil Prescription only

MCT OILS (MEDIUM CHAIN TRIGLYCERIDES)
Saturated fatty acids that are 6 to 12 carbons long. They are absorbed easily because of the greater solubility due to their smaller molecular size.

Decreased	Normal	Increased
		Triglycerides

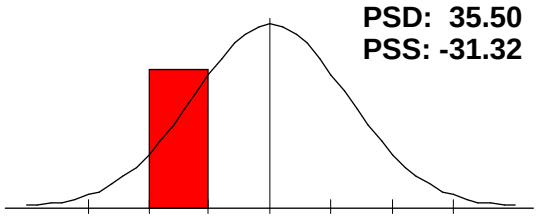
Drugs listed below tend to further aggravate elements of blood chemistry that are out of range (H or L). The (#) after each drug denotes the number of times that drug is flagged as being potentially harmful.

ACTH	Acetaminophen(2)	Acetazolamide	Albuterol
Amitriptyline	Aspirin(2)	Carbamazepine(3)	Chlorpromazine(2)
Clofibrate	Cortisone(2)	Dextrothyroxine	Dimercaprol
Epinephrine(2)	Estrogens	Furosemide(3)	Gemfibrozil
Haloperidol(2)	Hydralazine	Hydroxyurea	Ibuprofen(2)
Imipramine(3)	Indomethacin	Itraconazole	Levodopa
Levothyroxine	Lithium(2)	MAO Inhibitors	Mercaptopurine
Mercury Compounds	Methimazole	Methotrexate(2)	Methyldopa(4)
Miconazole(2)	Morphine	Nifedipine	Nitrofurantoin
Paramethadione	Penicillamine(2)	Penicillin	Phenelzine
Phenobarbital(3)	Phenylbutazone(2)	Phenytoin(3)	Polythiazide(2)
Pravastatin	Prednisone(2)	Progesterone	Progestins
Propranolol(2)	Protriptyline	Reserpine(2)	Rifampin(2)
Salicylates	Steroids	Sulfamethoxazole	Tamoxifen(2)
Trimethadione	Valproic Acid(3)	Viomycin	

Ammonia/Energy

Arginine - P[L], Threonine - P[L], Glycine - P[L], Serine - P[L], a-Aminoadipic Acid - P[H], Asparagine - P[L], Aspartic Acid - P[L], Citrul.

A panel profile such as this may be indicative of inadequate protein intake, poor absorption or poor quality protein intake.

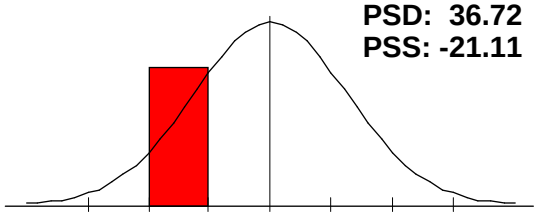


PSD: 35.50
PSS: -31.32

CNS Metabolism

Arginine - P[L], Tryptophan - P, GABA - P[H], Glycine - P[L], Serine - P[L], Taurine - P[L], Aspartic Acid - P[L], Glutamine - P[L], Ethanol.

The panel profile seen here may be indicative of poor central nervous system functioning including memory loss, fatigue, poor concentration.

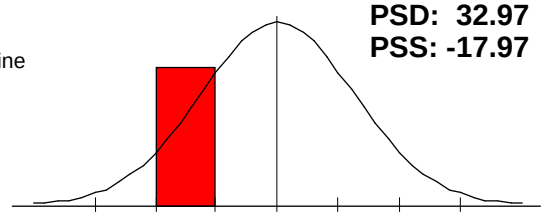


PSD: 36.72
PSS: -21.11

Connective Tissue

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

A profile such as this may be indicative of poor collagen and other tissue formation.

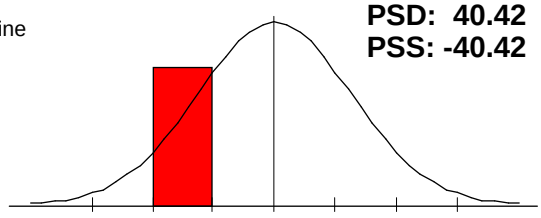


PSD: 32.97
PSS: -17.97

Essential Amino Acid

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

The panel profile seen here indicates a low density of essential amino acids. Since they cannot be synthesized in the human body, these building blocks must be taken in via diet or supplements.

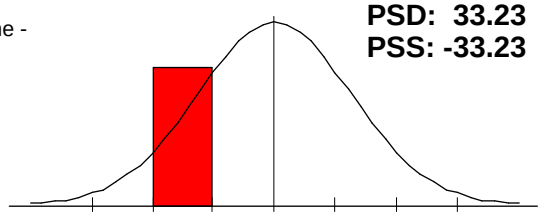


PSD: 40.42
PSS: -40.42

Fat Metabolism

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

A panel profile such as this may indicate an inability of the body to properly metabolize dietary fats. Check for dysbiosis, or try supplementation with lipase digestive enzymes as well as broad spectrum amino acids.

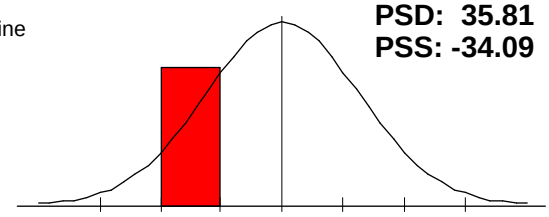


PSD: 33.23
PSS: -33.23

Gluconeogen

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

This panel profile may be indicative of hypoglycemia or poor dietary protein intake.

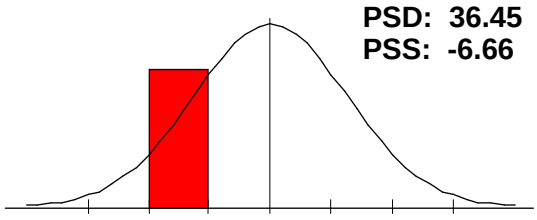


PSD: 35.81
PSS: -34.09

Hepatic Metabolism

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

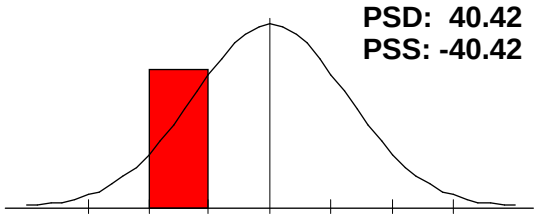
A panel profile such as this may be indicative of an underfunctioning liver or poor dietary protein intake.



Immune Metabolites

Arginine - P[L], Threonine - P[L], Glutamine - P[L], Ornithine - P[L].

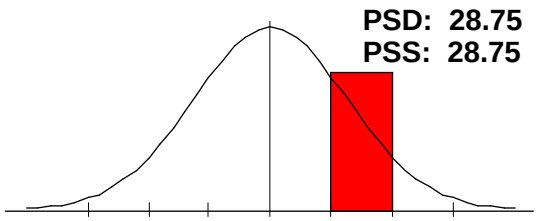
A panel profile such as this may be indicative of a poor functioning immune system or low dietary intake of protein.



Muscle Metabolites

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

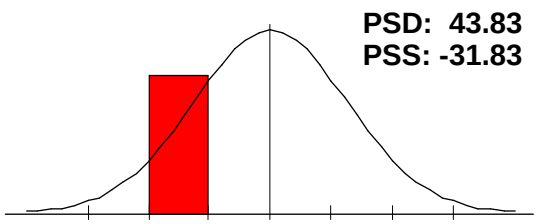
This panel profile may be indicative of abnormal protein metabolism especially if 1-methylhistidine is elevated.



Neuroendocrine Met.

GABA - P[H], Glycine - P[L], Serine - P[L], Taurine - P[L], Tyrosine - P[L].

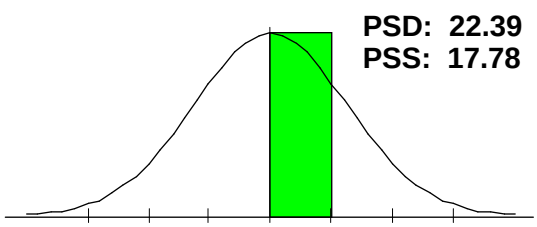
This panel profile may be indicative of an underfunctioning endocrine system or poor dietary intake of protein.



Adrenal Function

Cholesterol[H], Eosinophils, Eosinophil Count, Potassium, Sodium.

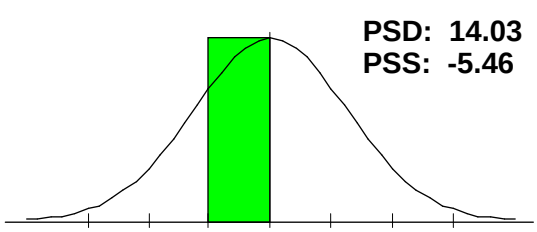
This panel is meant to assess adrenal function. A deficiency in this panel may indicate adrenal stress. The deviation was below 25% so no abnormalities were found.



Allergy

Eosinophils, Globulin, Lymphocytes, Monocytes, W.B.C..

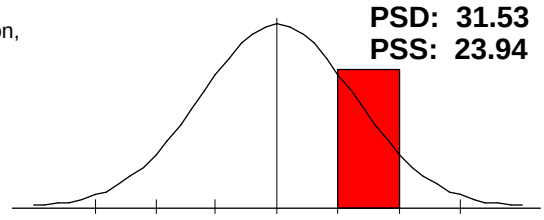
This panel is used to assess the individual's response to potential allergens. Abnormalities in this panel may indicate the need for additional allergy testing. The deviation was below 25% so no abnormalities were found.



Anti Oxidant Status

Anion Gap, Bilirubin, Total, Chloride, Cholesterol[H], Glucose[H], Iron, Total.

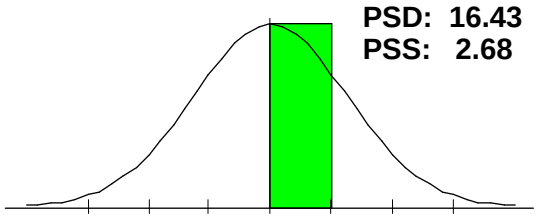
This panel profile may indicate that the patient needs to increase their intake of antioxidants and make appropriate lifestyle changes (smoking, alcohol, reduce stress, etc.). A varied, broad spectrum of antioxidants is preferable to one or two alone.



Athletic Potential

B.U.N./Creatinine Ratio, Cholesterol[H], CO2, Creatinine, LDH, Potassium, Protein, Total, Sodium, HDL-Cholesterol.

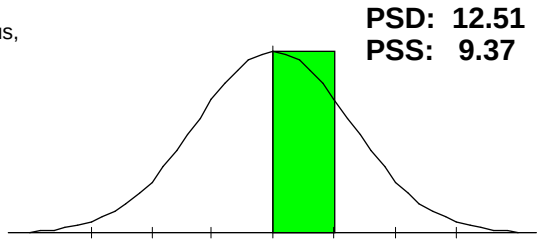
This panel is used to help assess athletic potential. Keeping this panel in a normal range may be helpful in improving athletic performance and reducing the risk of injury. The deviation was below 25% so no abnormalities were found.



Bone/Joint

Albumin[H], Alkaline Phosphatase, Calcium, Neutrophils, Phosphorus, Protein, Total, Uric Acid.

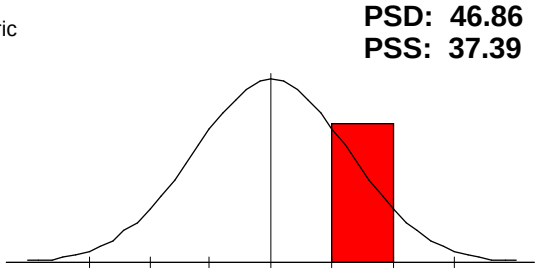
This panel may be helpful in assessing bone and joint health. Keeping the elements of this panel in a normal range may be helpful in reducing the risk of osteoporosis and other bone and joint disorders. The deviation was below 25% so no abnormalities were found.



Cardiac Marker

Cholesterol[H], GGT[H], Iron, Total, LDH, sGOT, Triglycerides[H], Uric Acid, HDL-Cholesterol, LDL[H].

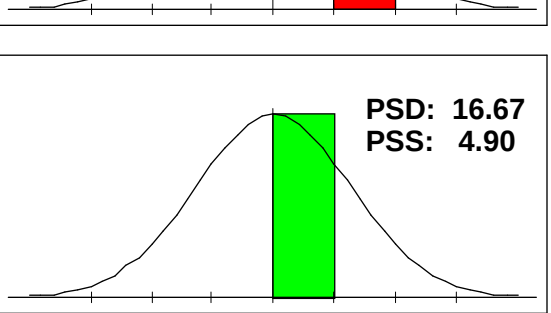
The profile shown here indicates that this individual may be at a greater risk for coronary heart disease than the general population. A review of dietary, environmental and personal habits should be done and appropriate lifestyle changes made. If both triglycerides and cholesterol are elevated, a regime of exercise and dietary changes are more likely to exhibit benefits.



Cellular Distortions

Alkaline Phosphatase, Anion Gap, GGT[H], Iron, Total, LDH, Neutrophils, W.B.C..

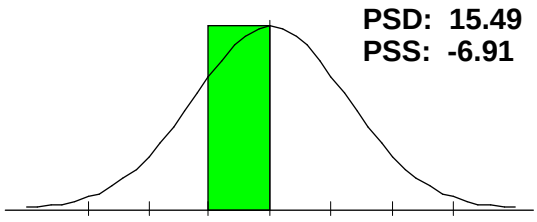
This panel may be helpful in determining the ability of the body to properly produce healthy cells. The deviation was below 25% so no abnormalities were found.



Differential

Basophils, Eosinophils, Lymphocytes, Monocytes, Neutrophils.

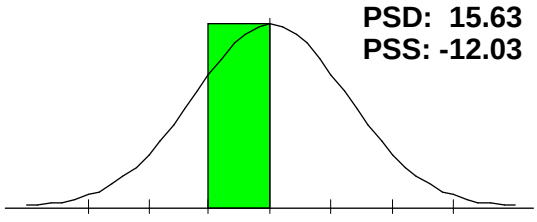
This panel may be helpful in assessing immune system health. Excesses or deficiencies in this panel may indicate a compromised immune system. The deviation was below 25% so no abnormalities were found.



Differential Count

Basophil Count, Eosinophil Count, Lymphocyte Count, Monocyte Count, Neutrophil Count.

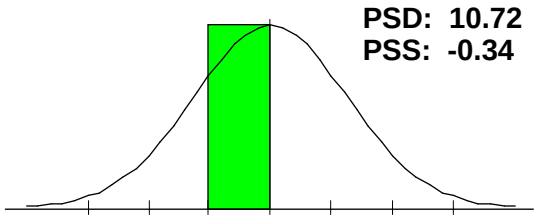
This panel may be helpful in assessing immune system health. Excesses or deficiencies in this panel may indicate a compromised immune system. The deviation was below 25% so no abnormalities were found.



Electrolyte

Calcium, Chloride, CO2, Phosphorus, Potassium, Sodium.

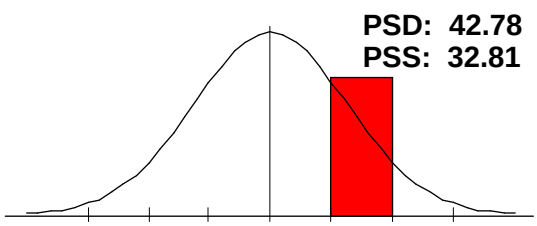
This panel is a representation of electrolyte balance in blood. Balance is critical in maintaining and achieving optimal health. The deviation was below 25% so no abnormalities were found.



Gastrointest. Function

Anion Gap, Chloride, Cholesterol[H], CO2, Monocytes, Potassium, Sodium, Triglycerides[H], LDL[H].

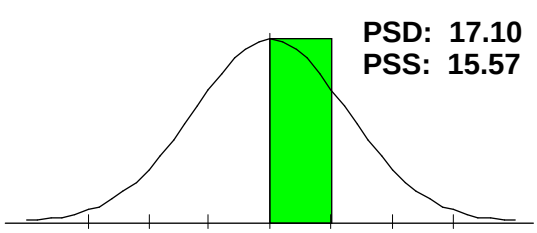
This panel profile indicates the need for further evaluation of gastrointestinal integrity, digestion and absorption. Check for dysbiosis, food allergies or "leaky gut" syndrome.



Hematology

Hematocrit, Hemoglobin[H], MCH, MCHC, MCV, R.B.C., W.B.C..

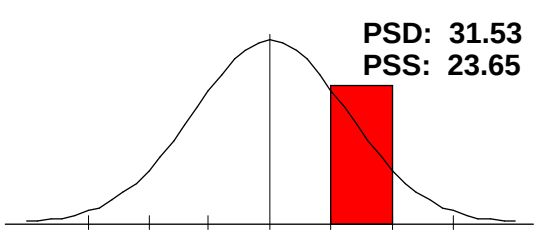
The hematology panel assesses the production of red blood cells and their function. The deviation was below 25% so no abnormalities were found.



Inflammatory Process

Eosinophils, Globulin, LDH, Neutrophils, Potassium, sGOT, sGPT, Triglycerides[H], Uric Acid, LDL[H].

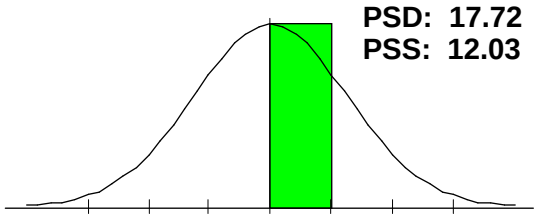
This panel profile may indicate the presence of an ongoing inflammatory process. Consider increasing B-complex vitamins and having the patient avoid saturated and trans fats as well.



Kidney Function

Albumin[H], B.U.N., B.U.N./Creatinine Ratio, Chloride, CO2, Creatinine, Glucose[H], Potassium, Protein, Total, Sodium.

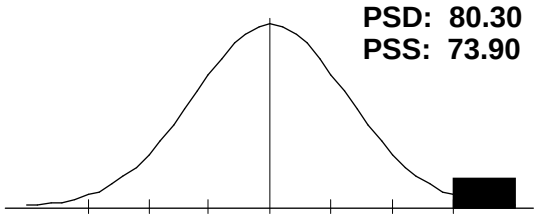
This panel may be helpful in assessing kidney function. It is important to keep the elements of this subset in balance to help the body eliminate waste material. The deviation was below 25% so no abnormalities were found.



Lipid

Cholesterol[H], Triglycerides[H], HDL-Cholesterol, LDL[H].

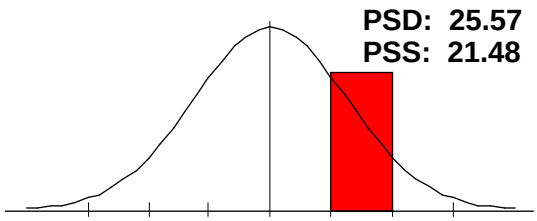
The panel profile seen here suggests that the patient may be at a greater risk for coronary heart disease than the general population. A dietary evaluation should be undertaken as well to educate the patient about saturated and trans fats.



Liver Function

Albumin[H], Alkaline Phosphatase, Bilirubin, Total, Cholesterol[H], GGT[H], Protein, Total, sGOT, sGPT.

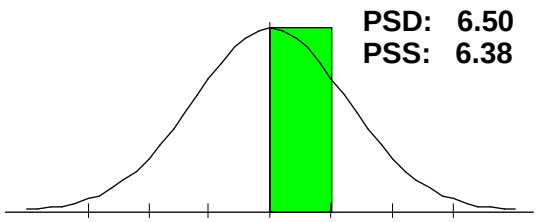
The panel profile seen here indicates that a review of medication intake with a careful assessment of toxic exposure, alcohol ingestion, cardiac involvement and liver disease (this list is not all-inclusive) may be helpful.



Nitrogen

B.U.N., B.U.N./Creatinine Ratio, Creatinine, Uric Acid.

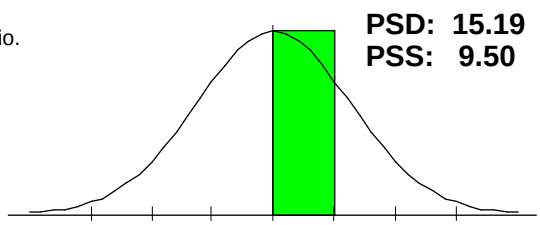
Nitrogen is an important element in achieving optimal wellness. The elements in this panel are important in determining nitrogen competency. The deviation was below 25% so no abnormalities were found.



Protein

A/G Ratio, Albumin[H], Globulin, Protein, Total, Protein/Globulin Ratio.

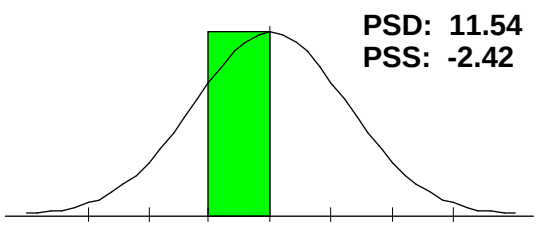
Proteins are the basic building blocks of hormones, muscle, neurotransmitters, immune systems responses and more. Assessing their competency is crucial in achieving optimal wellness. The deviation was below 25% so no abnormalities were found.



Pulmonary Function

Anion Gap, Calcium, CO2, LDH, Potassium, sGOT, Sodium.

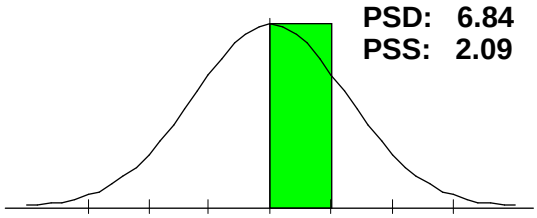
This panel may be helpful in assessing lung and respiratory function. The deviation was below 25% so no abnormalities were found.



Ratios

A/G Ratio, B.U.N./Creatinine Ratio, Calcium/Phosphorus Ratio, Sodium/Potassium Ratio, Protein/Globulin Ratio.

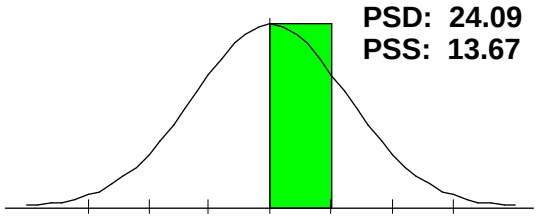
This panel may be helpful in determining the general balance of the overall chemistry of the individual. The deviation was below 25% so no abnormalities were found.



Thyroid

Thyroxine (T4), T-3 Uptake, Free T4 Index (T7), Ultra-Sensitive TSH[H].

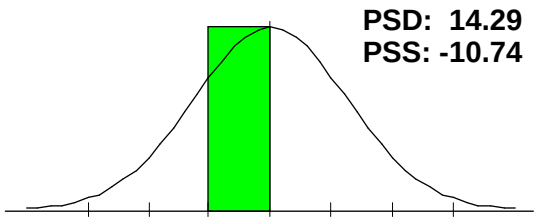
This panel may be helpful in determining the overal health of the thyroid gland. The deviation was below 25% so no abnormalities were found.



Phthalates

Phthalate[L], Monoethyl Phthalate, Quinolinate.

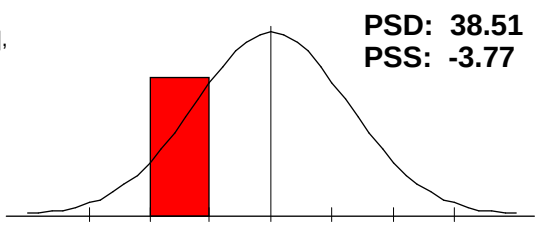
Phthalates are a ubiquitos plasticizer that can be found in many household items. Moderate levels of this endocrine disruptor may be indicative of ongoing exposure.



Common Toxins

Antimony - H, Arsenic - H, Cadmium - H, Lead - H[L], Mercury - H[H], Aluminum - H[L], Nickel - H[L].

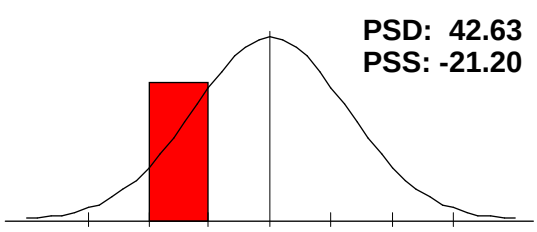
These toxins are closely correlated to body burden but a low reading may be indicative of impaired mineral transport if the Nutrient Elements panel is low.



Correlated Nutrients

Calcium - H, Copper - H[L], Zinc - H[H], Manganese - H, Chromium - H, Molybdenum - H[L], Vanadium - H[L].

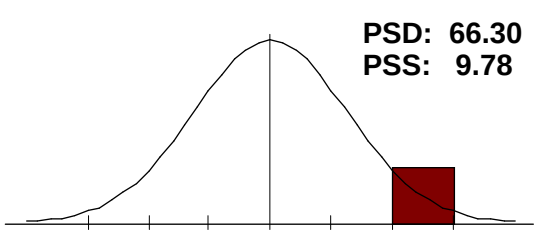
These elements are closely correlated to body levels of these essential minerals. An RBC mineral/toxin review may be needed to correlate these results.



Nutrient Elements

Sulfur - H, Strontium - H, Selenium - H[L], Phosphorus - H, Lithium - H[L], Iodine - H[H], Boron - H, Molybdenum - H[L], Vanadium - H[L], Ch.

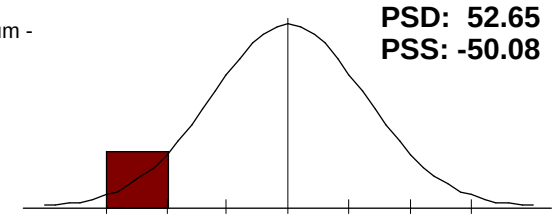
An elevated reading may indicate excessive supplementation or a disturbed mineral transport system. An RBC mineral toxin test may be necessary to confirm.



Other Elements

Barium - H[L], Cobalt - H[L], Iron - H[L], Germanium - H[L], Rubidium - H[L], Titanium - H, Zirconium - H[L].

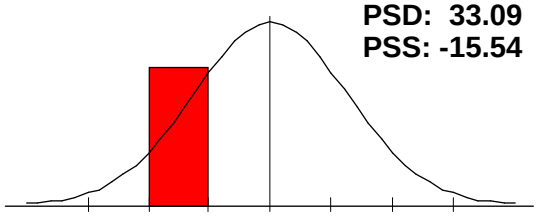
A low reading is not abnormal and does not have any diagnostic meaning.



Toxic Elements

Aluminum - H[L], Antimony - H, Arsenic - H, Beryllium - H, Bismuth - H[L], Cadmium - H, Lead - H[L], Mercury - H[H], Platinum - H, Thallium.

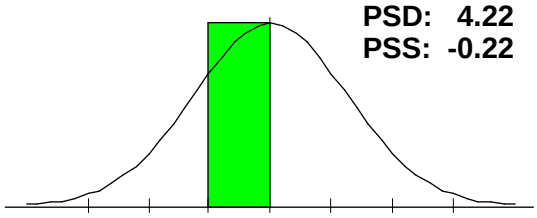
Low toxic elements is desired unless the nutrient elements panel is also low in which case one should suspect impaired mineral transport due to heavy metal toxicity.



Amino Acid Catabolism

a-Ketoisovalerate, a-Ketoisocaproate, a-Keto-b-methylvalerate.

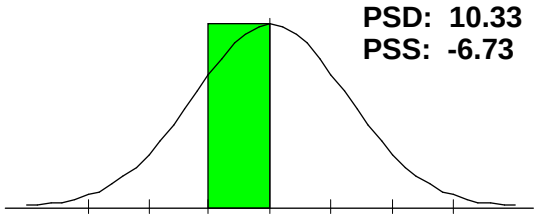
A normal reading in this panel suggest proper amino acid stores.



B-Complex Markers

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

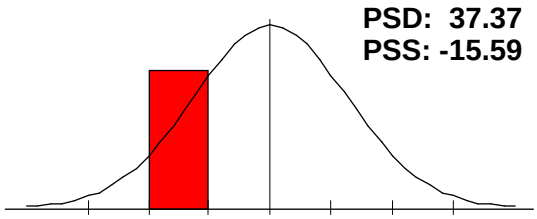
A normal panel profile such as this is an indicator of adequate intake of B-complex vitamins.



CAC Cycle Ratios

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

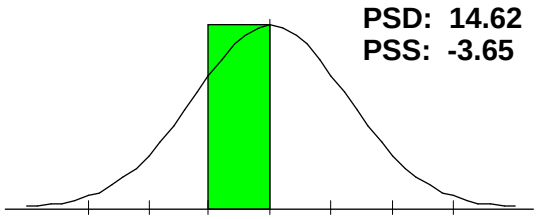
This panel reflects steps of the citric acid cycle. A low reading may be indicative of poor energy production and/or vitamin, mineral and amino acid deficiencies.



Carbohydrate Metabolism

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

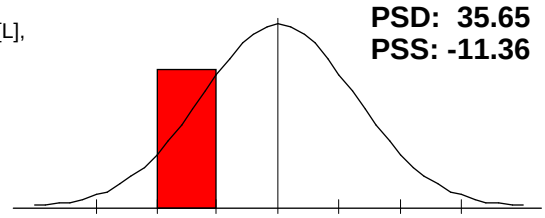
A normal reading is consistant with the proper metabolism of dietary carbohydrates.



Citric Acid Cycle

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

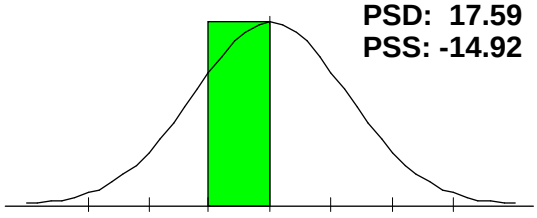
This panel profile may be due to poor amino acid metabolism or low dietary intake of quality proteins.



Intestinal Dysbiosis

Benzoate[L], p-Hydroxyphenyllactate, Tricarballylate.

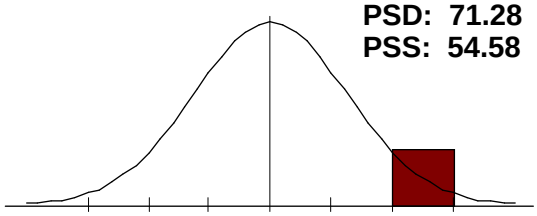
A normal panel profile such as this is consistant with good intestinal health but may suggest a need for probiotic supplementation.



Liver Detox Indicators

P-Hydroxyphenylacetate[L], Orotate[H], Pyroglutamate[H].

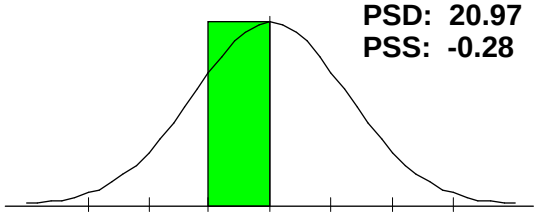
This panel profile may be due in part to environmental toxins, improper regulation of cell growth, hereditary deficiencies, and a depressed ability of the liver to detoxify itself. A program of detoxification may be helpful in this case. Review Nutritional Status for additional recommendations.



Neurotransmitters

Vanilmandelate[L], Homovanillate, 5-Hydroxyindoleacetate, Kynurenate[H], Quinolinate.

A normal panel profile indicated good neurotransmitter production.



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.

Cystathioninuria (270.4) — 100.00% (1 of 1)

Decreased	*Normal*	*Increased*
		50.00 Cystathionine - P

Fatigue/Low Cellular Energy Production () — 100.00% (1 of 1)

Decreased	*Normal*	*Increased*
-55.00 Aspartic Acid - P		

Increased CVD risk () — 100.00% (2 of 2)

Decreased	*Normal*	*Increased*
-56.97 Arginine - P		**50.00 Homocystine - P**

A blood chemistry profile that correlates to these readings can put an individual at an increased risk for cardiovascular disease. Careful evaluation by a specialist may be in order.

Potential Excessive Oxidative Damage () — 100.00% (1 of 1)

Decreased	*Normal*	*Increased*
-46.00 Taurine - P		

Potential Rheumatoid Arthritis () — 100.00% (1 of 1)

Decreased	*Normal*	*Increased*
-57.14 Histidine - P		

Review Cardiovascular Risk Factors () — 83.33% (5 of 6)

Decreased	*Normal*	*Increased*
	-12.79 HDL-Cholesterol	**70.00 Cholesterol**
		64.71 Glucose
		156.04 Triglycerides
		8.62 Uric Acid
		82.35 LDL

Review family history or personal history of cardiovascular risk factors such as smoking, excessive alcohol intake, high fat diet, and/or sedentary lifestyle.

Depression () — 75.00% (3 of 4)

Decreased	*Normal*	*Increased*
-45.00 Methionine - P		
-41.87 Phenylalanine - P		
-15.00 Tryptophan - P		
-25.41 Tyrosine - P		

Euthyroid Sick Syndrome () — 66.67% (2 of 3)

Decreased	*Normal*	*Increased*
n/a Triiodothyronine	**-8.67 Thyroxine (T4)**	**58.86 Ultra-Sensitive TSH**

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

Status % on:	12/6/2004		8/31/2005		+/- change
Ethanolamine - P	**62.50**	**H**	12.50		+ 50.00
1-Methylhistidine - P	**35.00**	**H**	5.00		+ 30.00
Arginine - P	-6.36		**-56.97**	**L**	**- 50.61**
Methionine - P	-10.00		**-45.00**	**L**	**- 35.00**
Lysine - P	-19.33		**-54.00**	**L**	**- 34.67**
Glycine/Serine Ratio	4.39		**34.66**	**H**	**- 30.27**
Histidine - P	**-31.43**	**L**	**-57.14**	**L**	**- 25.71**
AA Competency-1	-23.33		**-48.90**	**L**	**- 25.56**

Comparison Report

Frank — **Foundational Toxicity Assessment & Hair September 2005**

Male / 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:	12/6/2004		8/31/2005	
5.00 → **35.00**	+	1-Methylhistidine - P	**35.00**	**H**	5.00	
10.00 → **30.00**	+	3-Methylhistidine - P	**30.00**	**H**	10.00	
12.50 → **25.00**	-	a-Aminoadipic Acid - P	12.50		**25.00**	**H**
-33.33 → -10.00	-	a-Amino-N-Butyric Acid - P	-10.00		**-33.33**	**L**
4.29 → 12.00	+	Alanine - P	12.00		4.29	
		Anserine - P	**50.00**	**H**	**50.00**	**H**
-56.97 → -6.36	-	Arginine - P	-6.36		**-56.97**	**L**
		Asparagine - P	**-31.18**	**L**	**-37.88**	**L**
-55.00 → **-45.83**	-	Aspartic Acid - P	**-45.83**	**L**	**-55.00**	**L**
		b-Alanine - P	-10.00		-10.00	
		b-Aminoisobutyric Acid - P	0.00		0.00	
		Carnosine - P	**50.00**	**H**	**50.00**	**H**
		Citrulline - P	**-37.27**	**L**	**-38.00**	**L**
29.33 → **42.67**	+	Collagen Related AA	**42.67**	**H**	**29.33**	**H**
		Cystathionine - P	**50.00**	**H**	**50.00**	**H**
		Cystine - P	**-31.25**	**L**	**-32.50**	**L**
12.50 → **62.50**	+	Ethanolamine - P	**62.50**	**H**	12.50	
-10.00 → **30.00**	-	GABA - P	-10.00		**30.00**	**H**
		Glutamic Acid - P	-21.43		-14.08	
		Glutamine - P	**-31.56**	**L**	**-27.37**	**L**
		Glycine - P	**-52.22**	**L**	**-56.22**	**L**
4.39 → **34.66**	-	Glycine/Serine Ratio	4.39		**34.66**	**H**
-57.14 → **-31.43**	-	Histidine - P	**-31.43**	**L**	**-57.14**	**L**
		Homocystine - P	**50.00**	**H**	**50.00**	**H**
		Hydroxylysine - P	**50.00**	**H**	**50.00**	**H**
		Hydroxyproline - P	-16.67		-20.00	
		Isoleucine - P	**-30.91**	**L**	**-36.36**	**L**
-29.09 → -19.09	-	Leucine - P	-19.09		**-29.09**	**L**
-54.00 → -19.33	-	Lysine - P	-19.33		**-54.00**	**L**
-45.00 → -10.00	-	Methionine - P	-10.00		**-45.00**	**L**
-48.00 → **-35.33**	+	Ornithine - P	**-48.00**	**L**	**-35.33**	**L**
-41.87 → **-33.16**	-	Phenylalanine - P	**-33.16**	**L**	**-41.87**	**L**
-26.29 → -18.00	-	Phenylalanine/Tyrosine	-18.00		**-26.29**	**L**
-6.67 → **26.67**	-	Phosphoethanolamine - P	-6.67		**26.67**	**H**
8.33 → 16.67	-	Phosphoserine - P	8.33		16.67	
		Proline - P	**-42.96**	**L**	**-50.37**	**L**
		Sarcosine - P	-10.00		-10.00	
-61.52 → **-45.83**	-	Serine - P	**-45.83**	**L**	**-61.52**	**L**
		Taurine - P	**-44.00**	**L**	**-46.00**	**L**
-42.00 → **-29.33**	-	Threonine - P	**-29.33**	**L**	**-42.00**	**L**
		Tryptophan - P	13.33		-15.00	
		Tyrosine - P	-22.86		**-25.41**	**L**
-37.60 → **-26.80**	+	Valine - P	**-37.60**	**L**	**-26.80**	**L**
		Total Status Deviation	**28.67**		**33.83**	
		Total Status Skew	**-8.20**		**-14.52**	

Comparison Progress Report

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

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

Status % on:	12/17/2004		9/12/2005		+/- change
Ultra-Sensitive TSH	**120.00**	**H**	**58.86**	**H**	**+ 61.14**
Iron, Total	**48.26**	**H**	-9.13		+ 39.13
sGPT	**-32.05**	**L**	-2.73		+ 29.32
sGOT	**-34.85**	**L**	7.50		+ 27.35
Triglycerides	**36.24**	**H**	**156.04**	**H**	**- 119.80**
GGT	1.52		**54.62**	**H**	**- 53.10**
Cholesterol	20.83		**70.00**	**H**	**- 49.17**
Glucose	22.73		**64.71**	**H**	**- 41.98**

Comparison Report

Frank

Foundational Toxicity Assessment & Hair September 2005

Male / Age: 61

The arrow's length is proportional to change. Left to right is increase. Right to left is decrease.
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	+/-	Status % on:	12/17/2004		9/12/2005	
		A/G Ratio	-2.20		-4.23	
		Albumin	**34.62**	**H**	**41.67**	**H**
-27.04 8.40	+	Alkaline Phosphatase	**-27.04**	**L**	8.40	
-29.00 12.50	+	Anion Gap	**-29.00**	**L**	12.50	
		B.U.N.	2.38		7.14	
		B.U.N./Creatinine Ratio	-5.02		-0.24	
		Basophil Count	-16.50		-15.50	
-16.67 0.00	-	Basophils	0.00		-16.67	
		Bilirubin, Total	13.64		-13.64	
-26.19 11.90	+	Calcium	**-26.19**	**L**	11.90	
		Calcium/Phosphorus Ratio	10.32		8.24	
3.85 19.23	-	Chloride	3.85		19.23	
20.83 **70.00**	-	Cholesterol	20.83		**70.00**	**H**
-16.67 **26.92**	+	CO2	**26.92**	**H**	-16.67	
		Creatinine	-7.14		10.00	
9.00 **33.75**	+	Eosinophil Count	**33.75**	**H**	9.00	
		Eosinophils	21.43		21.43	
		Free T4 Index (T7)	-17.57		-12.16	
1.52 **54.62**	-	GGT	1.52		**54.62**	**H**
		Globulin	-13.33		-10.00	
22.73 **64.71**	-	Glucose	22.73		**64.71**	**H**
-22.50 -12.79	+	HDL-Cholesterol	-22.50		-12.79	
		Hematocrit	15.00		21.43	
		Hemoglobin	21.11		**27.78**	**H**
-9.13 **48.26**	+	Iron, Total	**48.26**	**H**	-9.13	
-32.00 -20.67	+	LDH	**-32.00**	**L**	-20.67	
72.06 **82.35**	-	LDL	**72.06**	**H**	**82.35**	**H**
		Lymphocyte Count	-15.53		-21.70	
-16.67 0.00	-	Lymphocytes	0.00		-16.67	
		MCH	**26.73**	**H**	19.61	
		MCHC	20.29		19.57	
14.63 22.16	+	MCV	22.16		14.63	
-18.56 5.89	-	Monocyte Count	5.89		-18.56	
-16.67 5.56	-	Monocytes	5.56		-16.67	
		Neutrophil Count	-18.58		-13.37	
		Neutrophils	-5.88		-6.00	
-20.00 -5.00	+	Phosphorus	-20.00		-5.00	
-20.00 0.00	+	Potassium	-20.00		0.00	
		Protein, Total	-2.00		6.00	
0.00 11.33	-	R.B.C.	0.00		11.33	
-34.85 7.50	+	sGOT	**-34.85**	**L**	7.50	
-32.05 -2.73	+	sGPT	**-32.05**	**L**	-2.73	
-19.23 -11.54	+	Sodium	-19.23		-11.54	
16.67 **30.00**	+	T-3 Uptake	**30.00**	**H**	16.67	
-19.33 -8.67	+	Thyroxine (T4)	-19.33		-8.67	
36.24 **156.04**	-	Triglycerides	**36.24**	**H**	**156.04**	**H**
58.86 **120.00**	+	Ultra-Sensitive TSH	**120.00**	**H**	**58.86**	**H**
		Uric Acid	-3.45		8.62	
-13.33 -5.38	+	W.B.C.	-13.33		-5.38	
		Total Status Deviation	**20.68**		**20.95**	
		Total Status Skew	**4.57**		**10.55**	

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

Status % on:	12/6/2004		9/3/2005		+/- change
5-Hydroxyindoleacetate	**1202.46**	**H**	18.57		+1183.89
Quinolinate	**75.71**	**H**	5.33		+ 70.38
p-Hydroxybenzoate	**-40.91**	**L**	-6.50		+ 34.41
Methylmalonate	**-31.25**	**L**	3.00		+ 28.25
b-Hydroxybutyrate	**-32.22**	**L**	-4.00		+ 28.22
CA Cycle Phase 6	**87.93**	**H**	**-60.22**	**L**	**+ 27.71**
Adipate	**-40.48**	**L**	15.00		+ 25.48
Pyroglutamate	**56.25**	**H**	**146.29**	**H**	**- 90.04**
a-Ketoglutarate	-19.64		**60.80**	**H**	**- 41.16**
Benzoate	-10.78		**-47.33**	**L**	**- 36.55**
Hippurate	-1.79		**-33.50**	**L**	**- 31.71**
Orotate	13.64		**42.50**	**H**	**- 28.86**

Comparison Report

Frank **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

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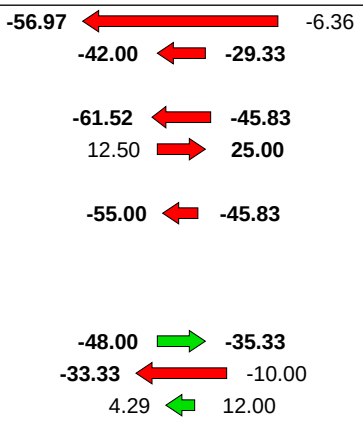
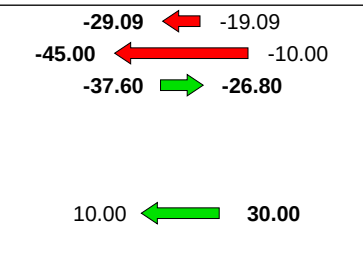
	+/-	Status % on:	12/6/2004		9/3/2005	
18.57 **1202.46**	+	5-Hydroxyindoleacetate	**1202.46**	**H**	18.57	
-40.48 15.00	+	Adipate	**-40.48**	**L**	15.00	
-48.18 **-27.14**	+	a-Hydroxybutyrate	**-48.18**	**L**	**-27.14**	**L**
-14.29 6.00	+	a-Keto-b-methylvalerate	-14.29		6.00	
-19.64 **60.80**	-	a-Ketoglutarate	-19.64		**60.80**	**H**
		a-Ketoisocaproate	6.00		-3.33	
		a-Ketoisovalerate	-7.50		-3.33	
-47.33 -10.78	-	Benzoate	-10.78		**-47.33**	**L**
-32.22 -4.00	+	b-Hydroxybutyrate	**-32.22**	**L**	-4.00	
-36.00 -20.00	-	b-Hydroxyisovalerate	-20.00		**-36.00**	**L**
-7.89 17.15	-	CA Cycle Return	-7.89		17.15	
-64.71 **-43.75**	+	cis-Aconitate	**-64.71**	**L**	**-43.75**	**L**
-16.88 8.54	+	Citrate	-16.88		8.54	
-35.83 -15.36	+	Ethylmalonate	**-35.83**	**L**	-15.36	
-21.00 7.50	+	Fumarate	-21.00		7.50	
-33.50 -1.79	-	Hippurate	-1.79		**-33.50**	**L**
-3.12 17.27	+	Homovanillate	17.27		-3.12	
-40.00 **-29.03**	-	Hydroxymethylglutarate	**-29.03**	**L**	**-40.00**	**L**
-55.00 **-43.33**	-	Isocitrate	**-43.33**	**L**	**-55.00**	**L**
		Kynurenate	**-32.50**	**L**	**27.83**	**H**
-45.56 21.94	+	Lactate	**-45.56**	**L**	21.94	
-7.14 20.35	-	Malate	-7.14		20.35	
-31.25 3.00	+	Methylmalonate	**-31.25**	**L**	3.00	
13.64 **42.50**	-	Orotate	13.64		**42.50**	**H**
-40.91 -6.50	+	p-Hydroxybenzoate	**-40.91**	**L**	-6.50	
-34.44 **-25.05**	+	P-Hydroxyphenylacetate	**-34.44**	**L**	**-25.05**	**L**
-1.43 18.49	+	p-Hydroxyphenyllactate	18.49		-1.43	
56.25 **146.29**	-	Pyroglutamate	**56.25**	**H**	**146.29**	**H**
-5.40 21.43	+	Pyruvate	21.43		-5.40	
5.33 **75.71**	+	Quinolinate	**75.71**	**H**	5.33	
-16.67 1.82	+	Suberate	-16.67		1.82	
-49.29 **-41.05**	-	Succinate	**-41.05**	**L**	**-49.29**	**L**
-19.23 4.00	+	Tricarballylate	-19.23		4.00	
-50.00 **-30.00**	-	Vanilmandelate	**-30.00**	**L**	**-50.00**	**L**
		Total Status Deviation	**117.91**		**29.09**	
		Total Status Skew	**71.90**		**0.23**	

Ammonia/Energy	12/6/2004		8/31/2005		+/-
Arginine - P	-6.36		**-56.97**	L	-
Threonine - P	**-29.33**	L	**-42.00**	L	-
Glycine - P	**-52.22**	L	**-56.22**	L	
Serine - P	**-45.83**	L	**-61.52**	L	-
a-Aminoadipic Acid - P	12.50		**25.00**	H	-
Asparagine - P	**-31.18**	L	**-37.88**	L	
Aspartic Acid - P	**-45.83**	L	**-55.00**	L	-
Citrulline - P	**-37.27**	L	**-38.00**	L	
Glutamic Acid - P	-21.43		-14.08		
Glutamine - P	**-31.56**	L	**-27.37**	L	
Ornithine - P	**-48.00**	L	**-35.33**	L	+
a-Amino-N-Butyric Acid - P	-10.00		**-33.33**	L	-
Alanine - P	12.00		4.29		+
b-Alanine - P	-10.00		-10.00		
PSS / PSD	-24.61 / 28.11		-31.32 / 35.50		

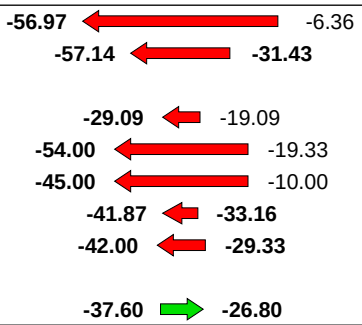


CNS Metabolism	12/6/2004		8/31/2005		+/-
Arginine - P	-6.36		**-56.97**	L	-
Tryptophan - P	13.33		-15.00		
GABA - P	-10.00		**30.00**	H	-
Glycine - P	**-52.22**	L	**-56.22**	L	
Serine - P	**-45.83**	L	**-61.52**	L	-
Taurine - P	**-44.00**	L	**-46.00**	L	
Aspartic Acid - P	**-45.83**	L	**-55.00**	L	-
Glutamine - P	**-31.56**	L	**-27.37**	L	
Ethanolamine - P	**62.50**	H	12.50		+
Phosphoethanolamine - P	-6.67		**26.67**	H	-
Phosphoserine - P	8.33		16.67		-
PSS / PSD	-14.39 / 29.69		-21.11 / 36.72		

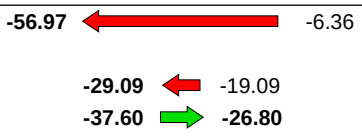
Connective Tissue	12/6/2004		8/31/2005		+/-
Leucine - P	-19.09		**-29.09**	L	-
Methionine - P	-10.00		**-45.00**	L	-
Valine - P	**-37.60**	L	**-26.80**	L	+
Cystine - P	**-31.25**	L	**-32.50**	L	
Hydroxylysine - P	**50.00**	H	**50.00**	H	
Hydroxyproline - P	-16.67		-20.00		
3-Methylhistidine - P	**30.00**	H	10.00		+
Proline - P	**-42.96**	L	**-50.37**	L	
PSS / PSD	-9.70 / 29.70		-17.97 / 32.97		



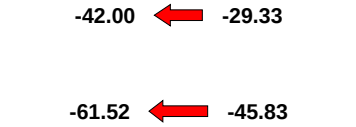
Essential Amino Acid	12/6/2004		8/31/2005		+/-
Arginine - P	-6.36		**-56.97**	**L**	**-**
Histidine - P	**-31.43**	**L**	**-57.14**	**L**	**-**
Isoleucine - P	**-30.91**	**L**	**-36.36**	**L**	
Leucine - P	-19.09		**-29.09**	**L**	**-**
Lysine - P	-19.33		**-54.00**	**L**	**-**
Methionine - P	-10.00		**-45.00**	**L**	**-**
Phenylalanine - P	**-33.16**	**L**	**-41.87**	**L**	**-**
Threonine - P	**-29.33**	**L**	**-42.00**	**L**	**-**
Tryptophan - P	13.33		-15.00		
Valine - P	**-37.60**	**L**	**-26.80**	**L**	**+**
PSS / PSD	-20.39 / 23.06		-40.42 / 40.42		



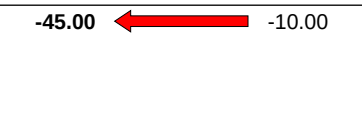
Fat Metabolism	12/6/2004		8/31/2005		+/-
Arginine - P	-6.36		**-56.97**	**L**	**-**
Isoleucine - P	**-30.91**	**L**	**-36.36**	**L**	
Leucine - P	-19.09		**-29.09**	**L**	**-**
Valine - P	**-37.60**	**L**	**-26.80**	**L**	**+**
Taurine - P	**-44.00**	**L**	**-46.00**	**L**	
Glutamine - P	**-31.56**	**L**	**-27.37**	**L**	
Sarcosine - P	-10.00		-10.00		
PSS / PSD	-25.65 / 25.65		-33.23 / 33.23		



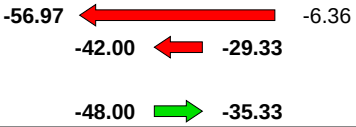
Gluconeogen	12/6/2004		8/31/2005		+/-
Threonine - P	**-29.33**	**L**	**-42.00**	**L**	**-**
Tryptophan - P	13.33		-15.00		
Glycine - P	**-52.22**	**L**	**-56.22**	**L**	
Serine - P	**-45.83**	**L**	**-61.52**	**L**	**-**
Alanine - P	12.00		4.29		**+**
PSS / PSD	-20.41 / 30.54		-34.09 / 35.81		



Hepatic Metabolism	12/6/2004		8/31/2005		+/-
Methionine - P	-10.00		**-45.00**	**L**	**-**
Taurine - P	**-44.00**	**L**	**-46.00**	**L**	
Glutamine - P	**-31.56**	**L**	**-27.37**	**L**	
Cystine - P	**-31.25**	**L**	**-32.50**	**L**	
Cystathionine - P	**50.00**	**H**	**50.00**	**H**	
Homocystine - P	**50.00**	**H**	**50.00**	**H**	
Alanine - P	12.00		4.29		**+**
PSS / PSD	-0.69 / 32.69		-6.66 / 36.45		



Immune Metabolites	12/6/2004		8/31/2005		+/-
Arginine - P	-6.36		**-56.97**	**L**	**-**
Threonine - P	**-29.33**	**L**	**-42.00**	**L**	**-**
Glutamine - P	**-31.56**	**L**	**-27.37**	**L**	
Ornithine - P	**-48.00**	**L**	**-35.33**	**L**	**+**
PSS / PSD	-28.81 / 28.81		-40.42 / 40.42		



Muscle Metabolites	12/6/2004		8/31/2005		+/-
Anserine - P	**50.00**	**H**	**50.00**	**H**	
Carnosine - P	**50.00**	**H**	**50.00**	**H**	
1-Methylhistidine - P	**35.00**	**H**	5.00		+
3-Methylhistidine - P	**30.00**	**H**	10.00		+
PSS / PSD	41.25 / 41.25		28.75 / 28.75		

Neuroendocrine Met.	12/6/2004		8/31/2005		+/-
GABA - P	-10.00		**30.00**	**H**	-
Glycine - P	**-52.22**	**L**	**-56.22**	**L**	
Serine - P	**-45.83**	**L**	**-61.52**	**L**	-
Taurine - P	**-44.00**	**L**	**-46.00**	**L**	
Tyrosine - P	-22.86		**-25.41**	**L**	
PSS / PSD	-34.98 / 34.98		-31.83 / 43.83		

Adrenal Function	12/17/2004		9/12/2005		+/-
Cholesterol	20.83		**70.00**	**H**	-
Eosinophils	21.43		21.43		
Eosinophil Count	**33.75**	**H**	9.00		+
Potassium	-20.00		0.00		+
Sodium	-19.23		-11.54		+
PSS / PSD	7.36 / 23.05		17.78 / 22.39		

Allergy	12/17/2004	9/12/2005	+/-
Eosinophils	21.43	21.43	
Globulin	-13.33	-10.00	
Lymphocytes	0.00	-16.67	-
Monocytes	5.56	-16.67	-
W.B.C.	-13.33	-5.38	+
PSS / PSD	0.06 / 10.73	-5.46 / 14.03	

Anti Oxidant Status	12/17/2004		9/12/2005		+/-
Anion Gap	**-29.00**	**L**	12.50		+
Bilirubin, Total	13.64		-13.64		
Chloride	3.85		19.23		-
Cholesterol	20.83		**70.00**	**H**	-
Glucose	22.73		**64.71**	**H**	-
Iron, Total	**48.26**	**H**	-9.13		+
PSS / PSD	13.38 / 23.05		23.94 / 31.53		

Athletic Potential	12/17/2004		9/12/2005		+/-
B.U.N./Creatinine Ratio	-5.02		-0.24		
Cholesterol	20.83		**70.00**	**H**	-
CO2	**26.92**	**H**	-16.67		+
Creatinine	-7.14		10.00		
LDH	**-32.00**	**L**	-20.67		+
Potassium	-20.00		0.00		+
Protein, Total	-2.00		6.00		
Sodium	-19.23		-11.54		+
HDL-Cholesterol	-22.50		-12.79		+
PSS / PSD	-6.68 / 17.29		2.68 / 16.43		

Bone/Joint	12/17/2004		9/12/2005		+/-
Albumin	**34.62**	**H**	**41.67**	**H**	
Alkaline Phosphatase	**-27.04**	**L**	8.40		+
Calcium	**-26.19**	**L**	11.90		+
Neutrophils	-5.88		-6.00		
Phosphorus	-20.00		-5.00		+
Protein, Total	-2.00		6.00		
Uric Acid	-3.45		8.62		
PSS / PSD	-7.13 / 17.02		9.37 / 12.51		

Cardiac Marker	12/17/2004		9/12/2005		+/-
Cholesterol	20.83		**70.00**	**H**	-
GGT	1.52		**54.62**	**H**	-
Iron, Total	**48.26**	**H**	-9.13		+
LDH	**-32.00**	**L**	-20.67		+
sGOT	**-34.85**	**L**	7.50		+
Triglycerides	**36.24**	**H**	**156.04**	**H**	-
Uric Acid	-3.45		8.62		
HDL-Cholesterol	-22.50		-12.79		+
LDL	**72.06**	**H**	**82.35**	**H**	-
PSS / PSD	9.57 / 30.19		37.39 / 46.86		

Cellular Distortions	12/17/2004		9/12/2005		+/-
Alkaline Phosphatase	**-27.04**	**L**	8.40		+
Anion Gap	**-29.00**	**L**	12.50		+
GGT	1.52		**54.62**	**H**	-
Iron, Total	**48.26**	**H**	-9.13		+
LDH	**-32.00**	**L**	-20.67		+
Neutrophils	-5.88		-6.00		
W.B.C.	-13.33		-5.38		+
PSS / PSD	-8.21 / 22.43		4.90 / 16.67		

Differential	12/17/2004	9/12/2005	+/-
Basophils	0.00	-16.67	-
Eosinophils	21.43	21.43	
Lymphocytes	0.00	-16.67	-
Monocytes	5.56	-16.67	-
Neutrophils	-5.88	-6.00	
PSS / PSD	4.22 / 6.57	-6.91 / 15.49	

Differential Count	12/17/2004		9/12/2005		+/-
Basophil Count	-16.50		-15.50		
Eosinophil Count	**33.75**	**H**	9.00		+
Lymphocyte Count	-15.53		-21.70		
Monocyte Count	5.89		-18.56		-
Neutrophil Count	-18.58		-13.37		
PSS / PSD	-2.19 / 18.05		-12.03 / 15.63		

Electrolyte	12/17/2004		9/12/2005		+/-
Calcium	**-26.19**	**L**	11.90		+
Chloride	3.85		19.23		-
CO2	**26.92**	**H**	-16.67		+
Phosphorus	-20.00		-5.00		+
Potassium	-20.00		0.00		+
Sodium	-19.23		-11.54		+
PSS / PSD	-9.11 / 19.37		-0.34 / 10.72		

Gastrointest. Function	12/17/2004		9/12/2005		+/-
Anion Gap	**-29.00**	**L**	12.50		+
Chloride	3.85		19.23		-
Cholesterol	20.83		**70.00**	**H**	-
CO2	**26.92**	**H**	-16.67		+
Monocytes	5.56		-16.67		-
Potassium	-20.00		0.00		+
Sodium	-19.23		-11.54		+
Triglycerides	**36.24**	**H**	**156.04**	**H**	-
LDL	**72.06**	**H**	**82.35**	**H**	-
PSS / PSD	10.80 / 25.97		32.81 / 42.78		

Hematology	12/17/2004		9/12/2005		+/-
Hematocrit	15.00		21.43		
Hemoglobin	21.11		**27.78**	**H**	
MCH	**26.73**	**H**	19.61		
MCHC	20.29		19.57		
MCV	22.16		14.63		+
R.B.C.	0.00		11.33		-
W.B.C.	-13.33		-5.38		+
PSS / PSD	13.14 / 16.95		15.57 / 17.10		

Inflammatory Process	12/17/2004		9/12/2005		+/-
Eosinophils	21.43		21.43		
Globulin	-13.33		-10.00		
LDH	**-32.00**	**L**	-20.67		+
Neutrophils	-5.88		-6.00		
Potassium	-20.00		0.00		+
sGOT	**-34.85**	**L**	7.50		+
sGPT	**-32.05**	**L**	-2.73		+
Triglycerides	**36.24**	**H**	**156.04**	**H**	-
Uric Acid	-3.45		8.62		
LDL	**72.06**	**H**	**82.35**	**H**	-
PSS / PSD	-1.18 / 27.13		23.65 / 31.53		

Kidney Function	12/17/2004		9/12/2005		+/-
Albumin	**34.62**	**H**	**41.67**	**H**	
B.U.N.	2.38		7.14		
B.U.N./Creatinine Ratio	-5.02		-0.24		
Chloride	3.85		19.23		-
CO2	**26.92**	**H**	-16.67		+
Creatinine	-7.14		10.00		
Glucose	22.73		**64.71**	**H**	-
Potassium	-20.00		0.00		+
Protein, Total	-2.00		6.00		
Sodium	-19.23		-11.54		+
PSS / PSD	3.71 / 14.39		12.03 / 17.72		

Lipid	12/17/2004		9/12/2005		+/-
Cholesterol	20.83		**70.00**	**H**	-
Triglycerides	**36.24**	**H**	**156.04**	**H**	-
HDL-Cholesterol	-22.50		-12.79		+
LDL	**72.06**	**H**	**82.35**	**H**	-
PSS / PSD	26.66 / 37.91		73.90 / 80.30		

Liver Function	12/17/2004		9/12/2005		+/-
Albumin	**34.62**	**H**	**41.67**	**H**	
Alkaline Phosphatase	**-27.04**	**L**	8.40		+
Bilirubin, Total	13.64		-13.64		
Cholesterol	20.83		**70.00**	**H**	-
GGT	1.52		**54.62**	**H**	-
Protein, Total	-2.00		6.00		
sGOT	**-34.85**	**L**	7.50		+
sGPT	**-32.05**	**L**	-2.73		+
PSS / PSD	-3.17 / 20.82		21.48 / 25.57		

Nitrogen	12/17/2004	9/12/2005	+/-
B.U.N.	2.38	7.14	
B.U.N./Creatinine Ratio	-5.02	-0.24	
Creatinine	-7.14	10.00	
Uric Acid	-3.45	8.62	
PSS / PSD	-3.31 / 4.50	6.38 / 6.50	

Protein	12/17/2004		9/12/2005		+/-
A/G Ratio	-2.20		-4.23		
Albumin	**34.62**	**H**	**41.67**	**H**	
Globulin	-13.33		-10.00		
Protein, Total	-2.00		6.00		
PSS / PSD	4.27 / 13.04		9.50 / 15.19		

Pulmonary Function	12/17/2004		9/12/2005		+/-
Anion Gap	**-29.00**	**L**	12.50		+
Calcium	**-26.19**	**L**	11.90		+
CO2	**26.92**	**H**	-16.67		+
LDH	**-32.00**	**L**	-20.67		+
Potassium	-20.00		0.00		+
sGOT	**-34.85**	**L**	7.50		+
Sodium	-19.23		-11.54		+
PSS / PSD	-19.19 / 26.88		-2.42 / 11.54		

Ratios	12/17/2004	9/12/2005	+/-
A/G Ratio	-2.20	-4.23	
B.U.N./Creatinine Ratio	-5.02	-0.24	
Calcium/Phosphorus Ratio	10.32	8.24	
Sodium/Potassium Ratio	15.85	-7.41	+
PSS / PSD	4.74 / 8.35	2.09 / 6.84	

Thyroid	12/17/2004		9/12/2005		+/-
Thyroxine (T4)	-19.33		-8.67		+
T-3 Uptake	**30.00**	**H**	16.67		+
Free T4 Index (T7)	-17.57		-12.16		
Ultra-Sensitive TSH	**120.00**	**H**	**58.86**	**H**	+
PSS / PSD	28.27 / 46.73		13.67 / 24.09		

Amino Acid Catabolism	12/6/2004	9/3/2005	+/-
a-Ketoisovalerate	-7.50	-3.33	
a-Ketoisocaproate	6.00	-3.33	
a-Keto-b-methylvalerate	-14.29	6.00	+
PSS / PSD	-5.26 / 9.26	-0.22 / 4.22	

B-Complex Markers	12/6/2004		9/3/2005		+/-
b-Hydroxyisovalerate	-20.00		**-36.00**	**L**	-
a-Ketoisovalerate	-7.50		-3.33		
a-Ketoisocaproate	6.00		-3.33		
a-Keto-b-methylvalerate	-14.29		6.00		+
Methylmalonate	**-31.25**	**L**	3.00		+
PSS / PSD	-13.41 / 15.81		-6.73 / 10.33		

CAC Cycle Ratios	12/6/2004		9/3/2005		+/-
CA Cycle Phase 1	**45.50**	**H**	**59.09**	**H**	-
CA Cycle Phase 2	-22.50		-17.05		
CA Cycle Phase 3	2.38		-13.89		-
CA Cycle Phase 4	**-41.19**	**L**	**-47.98**	**L**	
CA Cycle Phase 5	-24.48		**-46.23**	**L**	-
CA Cycle Phase 6	**87.93**	**H**	**-60.22**	**L**	+
CA Cycle Return	-7.89		17.15		-
PSS / PSD	18.61 / 42.63		-15.59 / 37.37		

Panel/Subset Comparison Report

Frank — **Foundational Toxicity Assessment & Hair September 2005**

Male / Age: 61

Carbohydrate Metabolism	12/6/2004		9/3/2005		+/-
Lactate	**-45.56**	**L**	21.94		+
Pyruvate	21.43		-5.40		+
a-Hydroxybutyrate	**-48.18**	**L**	**-27.14**	**L**	+
b-Hydroxybutyrate	**-32.22**	**L**	-4.00		+
PSS / PSD	-26.13 / 36.85		-3.65 / 14.62		

Citric Acid Cycle	12/6/2004		9/3/2005		+/-
Citrate	-16.88		8.54		+
cis-Aconitate	**-64.71**	**L**	**-43.75**	**L**	+
Isocitrate	**-43.33**	**L**	**-55.00**	**L**	-
a-Ketoglutarate	-19.64		**60.80**	**H**	-
Succinate	**-41.05**	**L**	**-49.29**	**L**	-
Fumarate	-21.00		7.50		+
Malate	-7.14		20.35		-
Hydroxymethylglutarate	**-29.03**	**L**	**-40.00**	**L**	-
PSS / PSD	-30.35 / 30.35		-11.36 / 35.65		

Intestinal Dysbiosis	12/6/2004		9/3/2005		+/-
Benzoate	-10.78		**-47.33**	**L**	-
p-Hydroxyphenyllactate	18.49		-1.43		+
Tricarballylate	-19.23		4.00		+
PSS / PSD	439.48 / 463.76		-14.92 / 17.59		

Liver Detox Indicators	12/6/2004		9/3/2005		+/-
P-Hydroxyphenylacetate	**-34.44**	**L**	**-25.05**	**L**	+
Orotate	13.64		**42.50**	**H**	-
Pyroglutamate	**56.25**	**H**	**146.29**	**H**	-
PSS / PSD	-1.71 / 53.39		54.58 / 71.28		

Neurotransmitters	12/6/2004		9/3/2005		+/-
Vanilmandelate	**-30.00**	**L**	**-50.00**	**L**	-
Homovanillate	17.27		-3.12		+
5-Hydroxyindoleacetate	**1202.46**	**H**	18.57		+
Kynurenate	**-32.50**	**L**	**27.83**	**H**	
Quinolinate	**75.71**	**H**	5.33		+
PSS / PSD	246.59 / 271.59		-0.28 / 20.97		

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Amino Acid Customization Details

	Container Base Grams	Test Result	% Status	Grams Added
L-Arginine	19.50	42.33000	-56.97	9
L-Histidine	13.50	65	-57.14	5
L-Isoleucine	13.50	65	-36.36	0
L-Leucine	12.00	113	-29.09	0
L-Lysine	12.00	144	-54.00	1
L-Methionine	15.00	26.25	-45.00	0
L-Phenylalanine	15.00	52.72600	-41.87	0
L-Taurine	8.10	58	-46.00	0
L-Threonine	13.50	112	-42.00	0
L-Tryptophan (as 5-HTP)	0.90	45.5	-15.00	0
L-Valine	15.00	228	-26.80	0

Total Base Grams: **138.00**

Total Grams Added: **15**

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	Citric Acid, Natural Orange Flavor, Silicon Dioxide, Sucralose	33.00
Proline	30.96		
Serine	8.76	**Other Ingredients Total Grams:**	**219.755**

Customization based exclusively on Carbon Based Corporation's CellMate™ interpretive report, and KTS Products.