CELLMATE™ WELLNESS SYSTEMS

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Incline Village, NV 89450

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(775) 832-8488 Fax
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ANNA

Test date: 10/16/2002
(accession: A0143313)
Entered: 10/17/2002

Next Test Due: 9/9/2003

CellMate™ Gold Standard Wellness Profile Report

Practitioner

If there is a problem with this report, please contact us as soon as possible at: (775) 832-8485 or Fax (775) 832-8488

Basic Status Report (High/Low)

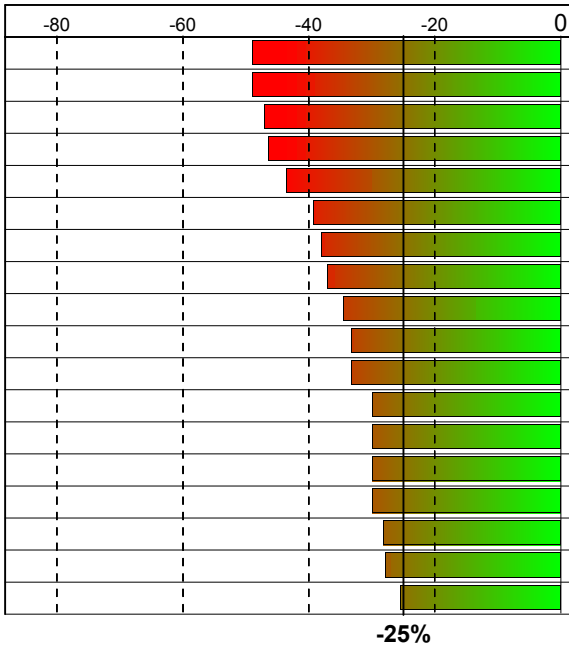
ANNA **Gold Standard Wellness Profile Date: 10/16/2002**

Female / Age: 50

Client ID:555986644 (8322)

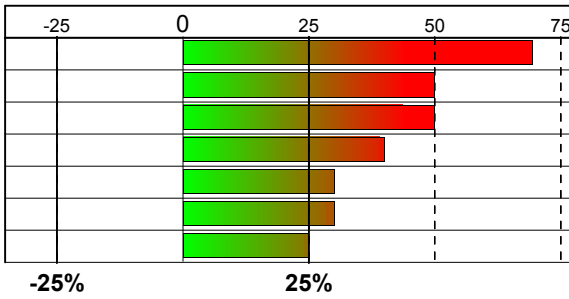
The % Status is the weighted deviation of the laboratory result.

Low Results



	% Status		Result	*Low*	*High*
Anserine - P	-49.00	**L**	**0.01**	0.00	1.00
Carnosine - P	-49.00	**L**	**0.01**	0.00	1.00
Glutamic Acid - P	-47.14	**L**	**48.00**	45.00	150.00
Isoleucine - P	-46.36	**L**	**54.00**	50.00	160.00
Leucine - P	-43.64	**L**	**97.00**	90.00	200.00
Lysine - P	-39.33	**L**	**166.00**	150.00	300.00
Methionine - P	-38.00	**L**	**28.00**	25.00	50.00
Glutamine - P	-37.11	**L**	**658.00**	600.00	1050.00
Taurine - P	-34.50	**L**	**81.00**	50.00	250.00
Aspartic Acid - P	-33.33	**L**	**10.00**	6.00	30.00
Valine - P	-33.20	**L**	**212.00**	170.00	420.00
Asparagine - P	-30.00	**L**	**62.00**	45.00	130.00
Gamma-aminobutyric Acid-P	-30.00	**L**	**1.00**	0.00	5.00
Histidine - P	-30.00	**L**	**84.00**	70.00	140.00
Sarcosine - P	-30.00	**L**	**1.00**	0.00	5.00
Proline - P	-28.15	**L**	**189.00**	130.00	400.00
Phenylalanine - P	-27.89	**L**	**66.00**	45.00	140.00
Arginine - P	-25.45	**L**	**77.00**	50.00	160.00

High Results



	% Status		Result	*Low*	*High*
Collagen Related AA	69.33	**H**	**189.00**	10.00	160.00
Cystathionine - P	50.00	**H**	**4.00**	0.00	4.00
Hydroxylysine - P	50.00	**H**	**1.00**	0.00	1.00
Hydroxyproline - P	40.00	**H**	**27.00**	0.00	30.00
3-Methylhistidine - P	30.00	**H**	**4.00**	0.00	5.00
b-Alanine - P	30.00	**H**	**4.00**	0.00	5.00
Ethanolamine - P	25.00	**H**	**6.00**	0.00	8.00

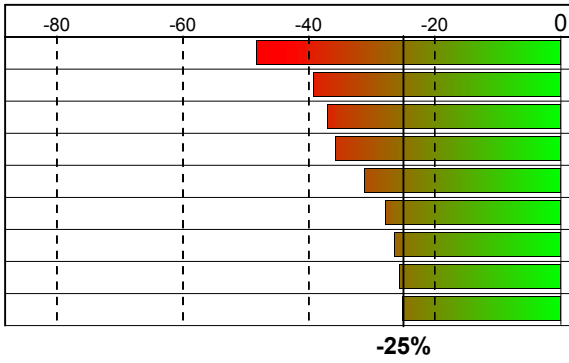
Basic Status Report (High/Low)

ANNA **Gold Standard Wellness Profile Date: 10/16/2002**

Female / Age: 50

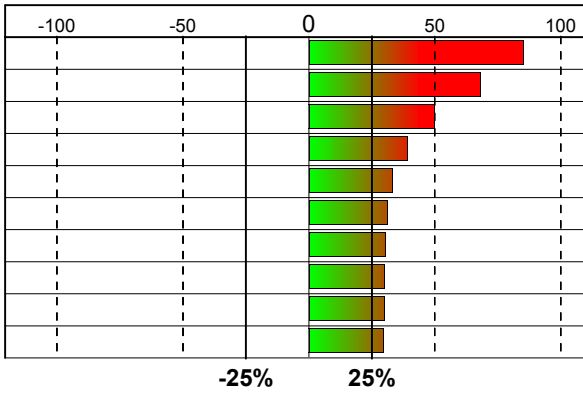
The % Status is the weighted deviation of the laboratory result.

Low Results



	% Status		Result	*Low*	*High*
Calcium/Phosphorus Ratio	-48.29	**L**	**2.32**	2.30	3.30
W.B.C.	-39.23	**L**	**4.70**	4.00	10.50
Lymphocyte Count	-37.10	**L**	**1316.00**	800.00	4800.00
Neutrophil Count	-35.82	**L**	**2679.00**	1800.00	8000.00
A/G Ratio	-31.25	**L**	**1.34**	1.10	2.40
Creatinine	-27.78	**L**	**0.80**	0.60	1.50
Basophil Count	-26.50	**L**	**47.00**	0.00	200.00
Protein/Globulin Ratio	-25.62	**L**	**2.34**	2.10	3.10
Monocyte Count	-25.22	**L**	**423.00**	200.00	1100.00

High Results



	% Status		Result	*Low*	*High*
LDL	85.29	**H**	**154.00**	62.00	130.00
Cholesterol	68.00	**H**	**258.00**	140.00	240.00
Chloride	50.00	**H**	**109.00**	96.00	109.00
HDL-Cholesterol	39.09	**H**	**86.00**	37.00	92.00
Eosinophils	33.33	**H**	**5.00**	0.00	6.00
Globulin	31.25	**H**	**3.20**	1.90	3.50
B.U.N./Creatinine Ratio	30.26	**H**	**21.25**	6.00	25.00
MCV	30.11	**H**	**95.82**	79.00	100.00
Phosphorus	30.00	**H**	**4.10**	2.50	4.50
MCH	29.78	**H**	**31.79**	27.00	33.00

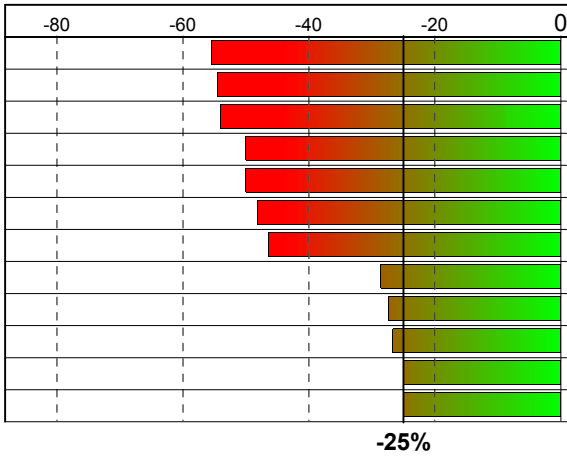
Basic Status Report (High/Low)

ANNA **Gold Standard Wellness Profile Date: 10/16/2002**

Female / Age: 50

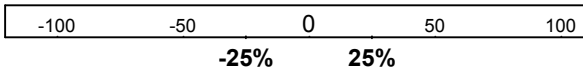
The % Status is the weighted deviation of the laboratory result.

Low Results



	% Status		Result	*Low*	*High*
Vanadium - RBC	-55.56	L	**0.09**	0.10	0.28
Molybdenum - RBC	-54.55	L	**0.01**	0.01	0.03
Copper - RBC	-54.05	L	**0.46**	0.52	2.00
Magnesium - RBC	-50.00	L	**40.00**	40.00	80.00
Zinc - RBC	-50.00	L	**6.00**	6.00	11.00
Manganese - RBC	-48.18	L	**0.26**	0.25	0.80
Chromium - RBC	-46.36	L	**0.27**	0.25	0.80
Selenium - RBC	-28.57	L	**0.18**	0.12	0.40
Potassium - RBC	-27.40	L	**1452.00**	1000.00	3000.00
Aluminum - RBC	-26.67	L	**0.70**	0.00	3.00
Cadmium - RBC	-25.00	L	**0.01**	0.00	0.04
Calcium - RBC	-25.00	L	**4.50**	0.00	18.00

High Results



	% Status	Result	*Low*	*High*

Basic Status Report (High/Low)

ANNA **Gold Standard Wellness Profile Date: 10/16/2002**

Female / Age: 50

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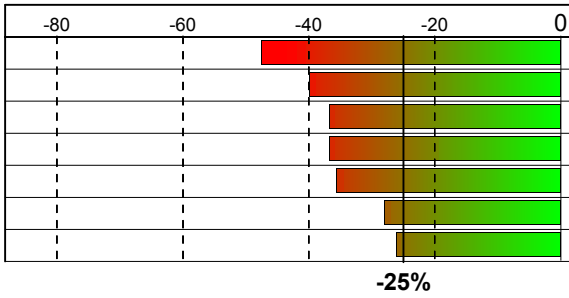
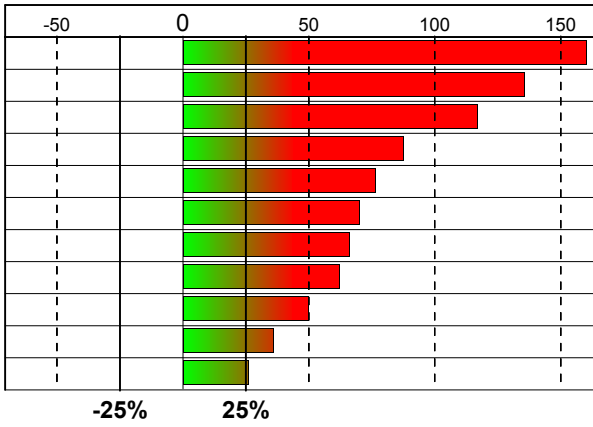
Low Results



	% Status		Result	Low	High
Homovanillate	-47.50	L	**1.10**	1.00	5.00
a-Ketoisocaproate	-40.00	L	**0.20**	0.00	2.00
Adipate	-36.67	L	**0.40**	0.00	3.00
a-Ketoisovalerate	-36.67	L	**0.20**	0.00	1.50
a-Hydroxybutyrate	-35.60	L	**7.20**	0.00	50.00
Succinate	-28.00	L	**11.60**	5.00	35.00
5-Hydroxyindoleacetate	-26.19	L	**1.80**	0.80	5.00

High Results



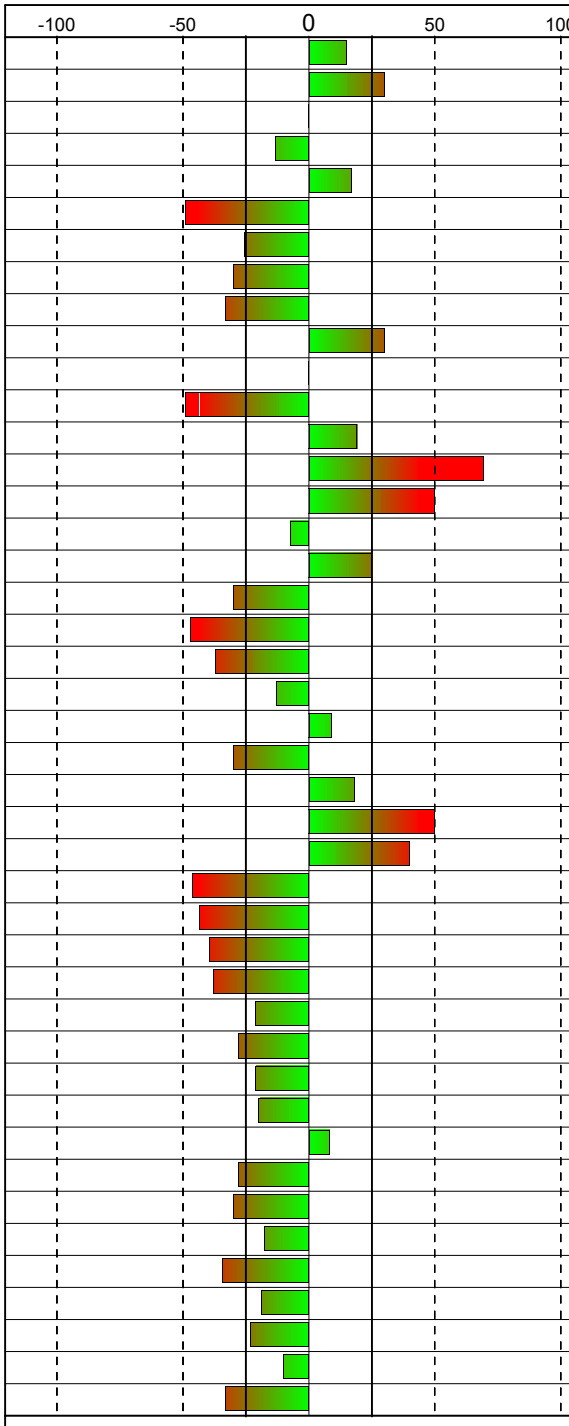
	% Status		Result	Low	High
Yeast Markers	316.67	H	**110.00**	0.00	30.00
Pyruvate	135.71	H	**1.30**	0.00	0.70
2-Methylhippurate	117.00	H	**1.67**	0.00	1.00
Tartarate	87.50	H	**110.00**	0.00	80.00
Isocitrate	76.53	H	**999.00**	50.00	800.00
Fumarate	70.00	H	**1.40**	0.20	1.20
Pyroglutamate	66.25	H	**93.00**	0.00	80.00
Lactate	62.31	H	**33.20**	4.00	30.00
p-Hydroxyphenyllactate	50.00	H	**0.50**	0.00	0.50
p-Hydroxybenzoate	36.00	H	**4.30**	0.00	5.00
b-Ketoglutarate	26.00	H	**0.76**	0.00	1.00

Basic Status Report (Alphabetic)

ANNA **Gold Standard Wellness Profile Date: 10/16/2002**

Female / Age: 50

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



	% Status		Result	Low	High
1-Methylhistidine - P	15.00		13.00	0.00	20.00
3-Methylhistidine - P	**30.00**	**H**	**4.00**	0.00	5.00
a-Aminoadipic Acid - P	0.00		2.00	0.00	4.00
a-Amino-N-Butyric Acid - P	-13.33		21.00	10.00	40.00
Alanine - P	16.86		484.00	250.00	600.00
Anserine - P	**-49.00**	**L**	**0.01**	0.00	1.00
Arginine - P	**-25.45**	**L**	**77.00**	50.00	160.00
Asparagine - P	**-30.00**	**L**	**62.00**	45.00	130.00
Aspartic Acid - P	**-33.33**	**L**	**10.00**	6.00	30.00
b-Alanine - P	**30.00**	**H**	**4.00**	0.00	5.00
b-Aminoisobutyric Acid - P	0.00		1.00	0.00	2.00
Carnosine - P	**-49.00**	**L**	**0.01**	0.00	1.00
Citrulline - P	19.09		53.00	15.00	70.00
Collagen Related AA	**69.33**	**H**	**189.00**	10.00	160.00
Cystathionine - P	**50.00**	**H**	**4.00**	0.00	4.00
Cystine - P	-7.50		44.00	10.00	90.00
Ethanolamine - P	**25.00**	**H**	**6.00**	0.00	8.00
Gamma-aminobutyric Acid-P	**-30.00**	**L**	**1.00**	0.00	5.00
Glutamic Acid - P	**-47.14**	**L**	**48.00**	45.00	150.00
Glutamine - P	**-37.11**	**L**	**658.00**	600.00	1050.00
Glycine - P	-13.11		308.00	225.00	450.00
Glycine/Serine Ratio	9.17		2.39	1.50	3.00
Histidine - P	**-30.00**	**L**	**84.00**	70.00	140.00
Homocystine - P	18.00		0.68	0.00	1.00
Hydroxylysine - P	**50.00**	**H**	**1.00**	0.00	1.00
Hydroxyproline - P	**40.00**	**H**	**27.00**	0.00	30.00
Isoleucine - P	**-46.36**	**L**	**54.00**	50.00	160.00
Leucine - P	**-43.64**	**L**	**97.00**	90.00	200.00
Lysine - P	**-39.33**	**L**	**166.00**	150.00	300.00
Methionine - P	**-38.00**	**L**	**28.00**	25.00	50.00
Ornithine - P	-21.33		93.00	50.00	200.00
Phenylalanine - P	**-27.89**	**L**	**66.00**	45.00	140.00
Phenylalanine/Tyrosine	-21.15		0.85	0.50	1.70
Phosphoethanolamine - P	-20.00		9.00	0.00	30.00
Phosphoserine - P	8.33		7.00	0.00	12.00
Proline - P	**-28.15**	**L**	**189.00**	130.00	400.00
Sarcosine - P	**-30.00**	**L**	**1.00**	0.00	5.00
Serine - P	-17.50		129.00	90.00	210.00
Taurine - P	**-34.50**	**L**	**81.00**	50.00	250.00
Threonine - P	-18.67		147.00	100.00	250.00
Tryptophan - P	-23.33		43.00	35.00	65.00
Tyrosine - P	-10.00		78.00	50.00	120.00
Valine - P	**-33.20**	**L**	**212.00**	170.00	420.00
Total Status Deviation	**28.69**				
Total Status Skew	**-12.13**				

Basic Status Report (Alphabetic)

ANNA **Gold Standard Wellness Profile Date: 10/16/2002**

Female / Age: 50

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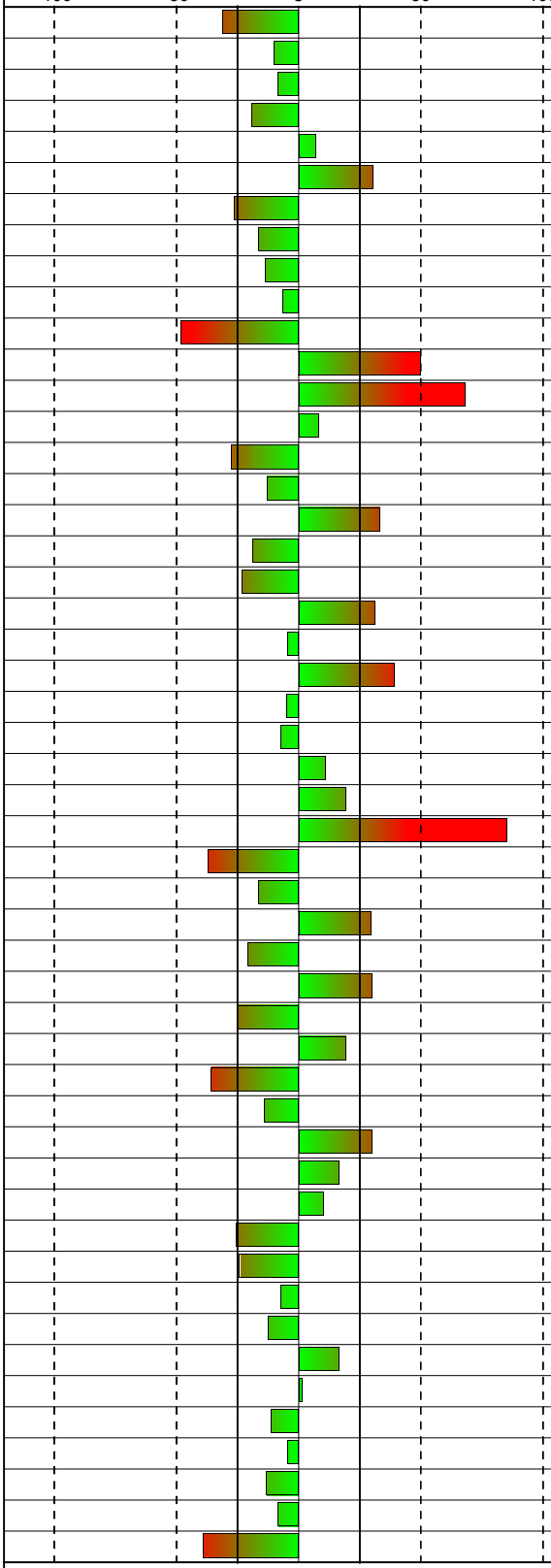

	% Status		Result	Low	High
A/G Ratio	**-31.25**	**L**	**1.34**	1.10	2.40
Albumin	-10.00		4.30	3.50	5.50
Alkaline Phosphatase	-8.40		77.00	25.00	150.00
Anion Gap	-19.17		11.70	8.00	20.00
B.U.N.	7.14		17.00	5.00	26.00
B.U.N./Creatinine Ratio	**30.26**	**H**	**21.25**	6.00	25.00
Basophil Count	**-26.50**	**L**	**47.00**	0.00	200.00
Basophils	-16.67		1.00	0.00	3.00
Bilirubin, Total	-13.64		0.50	0.10	1.20
Calcium	-6.52		9.50	8.50	10.80
Calcium/Phosphorus Ratio	**-48.29**	**L**	**2.32**	2.30	3.30
Chloride	**50.00**	**H**	**109.00**	96.00	109.00
Cholesterol	**68.00**	**H**	**258.00**	140.00	240.00
CO2	8.33		27.00	20.00	32.00
Creatinine	**-27.78**	**L**	**0.80**	0.60	1.50
Eosinophil Count	-13.00		235.00	50.00	550.00
Eosinophils	**33.33**	**H**	**5.00**	0.00	6.00
Free T4 Index (T7)	-18.75		6.50	4.00	12.00
GGT	-23.33		16.00	0.00	60.00
Globulin	**31.25**	**H**	**3.20**	1.90	3.50
Glucose	-4.55		85.00	65.00	109.00
HDL-Cholesterol	**39.09**	**H**	**86.00**	37.00	92.00
Hematocrit	-5.00		41.30	35.00	49.00
Hemoglobin	-7.50		13.70	12.00	16.00
Iron, Total	10.83		108.00	35.00	155.00
LDH	19.17		166.00	0.00	240.00
LDL	**85.29**	**H**	**154.00**	62.00	130.00
Lymphocyte Count	**-37.10**	**L**	**1316.00**	800.00	4800.00
Lymphocytes	-16.67		28.00	18.00	48.00
MCH	**29.78**	**H**	**31.79**	27.00	33.00
MCHC	-20.70		33.17	32.00	36.00
MCV	**30.11**	**H**	**95.82**	79.00	100.00
Monocyte Count	**-25.22**	**L**	**423.00**	200.00	1100.00
Monocytes	19.23		9.00	0.00	13.00
Neutrophil Count	**-35.82**	**L**	**2679.00**	1800.00	8000.00
Neutrophils	-14.00		57.00	48.00	73.00
Phosphorus	**30.00**	**H**	**4.10**	2.50	4.50
Potassium	16.67		4.70	3.50	5.30
Protein, Total	10.00		7.50	6.00	8.50
Protein/Globulin Ratio	**-25.62**	**L**	**2.34**	2.10	3.10
R.B.C.	-24.37		4.31	3.90	5.50
sGOT	-7.50		17.00	0.00	40.00
sGPT	-12.50		15.00	0.00	40.00
Sodium	16.67		143.00	135.00	147.00
T-3 Uptake	1.33		31.70	24.00	39.00
Thyroxine (T4)	-11.25		7.10	4.00	12.00
Triglycerides	-4.77		90.00	0.00	199.00
Ultra-Sensitive TSH	-13.15		2.25	0.35	5.50
Uric Acid	-8.62		4.80	2.40	8.20
W.B.C.	**-39.23**	**L**	**4.70**	4.00	10.50
Total Status Deviation	**22.09**				
Total Status Skew	**-1.05**				

Basic Status Report (Alphabetic)

ANNA **Gold Standard Wellness Profile Date: 10/16/2002**

Female / Age: 50

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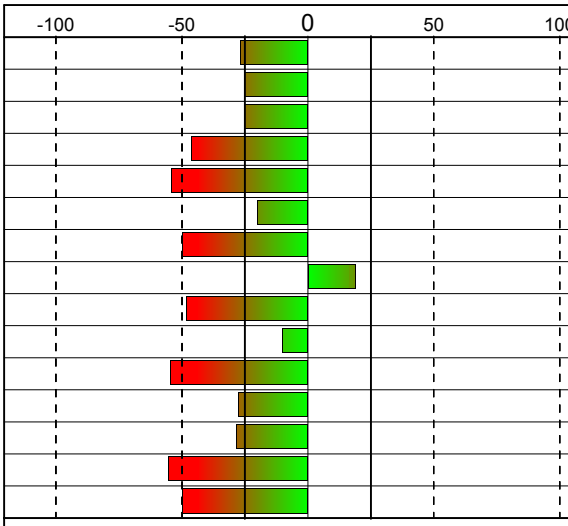

	% Status		Result	Low	High
Aluminum - RBC	**-26.67**	**L**	**0.70**	0.00	3.00
Cadmium - RBC	**-25.00**	**L**	**0.01**	0.00	0.04
Calcium - RBC	**-25.00**	**L**	**4.50**	0.00	18.00
Chromium - RBC	**-46.36**	**L**	**0.27**	0.25	0.80
Copper - RBC	**-54.05**	**L**	**0.46**	0.52	2.00
Lead - RBC	-20.00		0.03	0.00	0.10
Magnesium - RBC	**-50.00**	**L**	**40.00**	40.00	80.00
Magnesium/Calcium	18.89		8.89	2.00	12.00
Manganese - RBC	**-48.18**	**L**	**0.26**	0.25	0.80
Mercury - RBC	-10.00		0.00	0.00	0.00
Molybdenum - RBC	**-54.55**	**L**	**0.01**	0.01	0.03
Potassium - RBC	**-27.40**	**L**	**1452.00**	1000.00	3000.00
Selenium - RBC	**-28.57**	**L**	**0.18**	0.12	0.40
Vanadium - RBC	**-55.56**	**L**	**0.09**	0.10	0.28
Zinc - RBC	**-50.00**	**L**	**6.00**	6.00	11.00
Total Status Deviation	**36.02**				
Total Status Skew	**-33.50**				

Basic Status Report (Alphabetic)

ANNA **Gold Standard Wellness Profile Date: 10/16/2002**

Female / Age: 50

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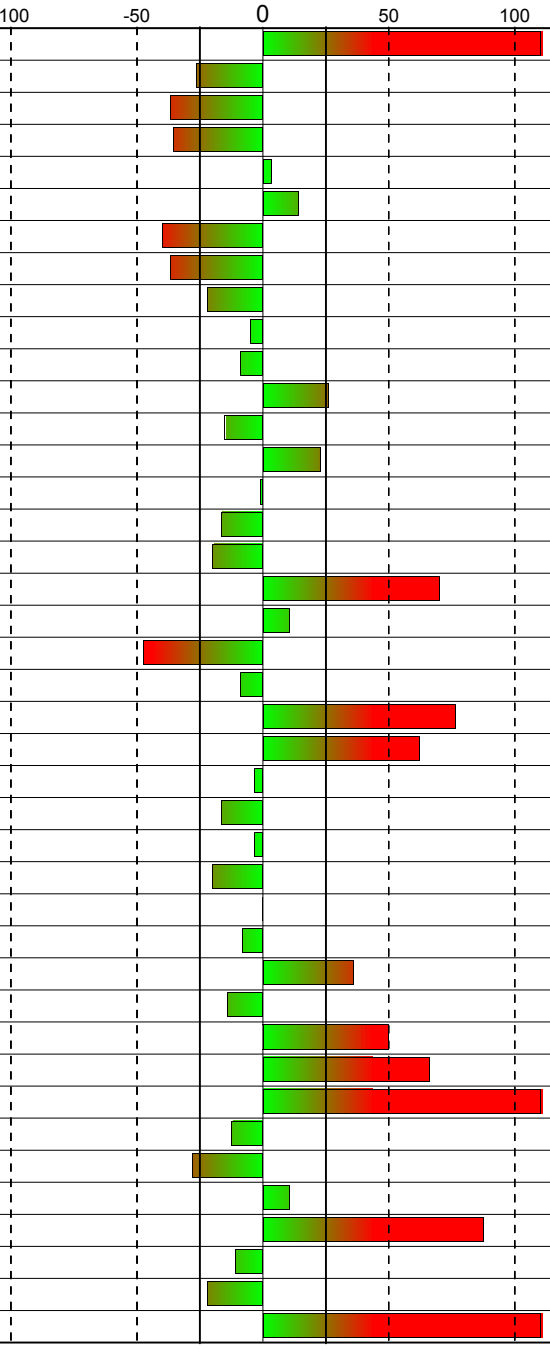

	% Status		Result	Low	High
2-Methylhippurate	**117.00**	**H**	**1.67**	0.00	1.00
5-Hydroxyindoleacetate	**-26.19**	**L**	**1.80**	0.80	5.00
Adipate	**-36.67**	**L**	**0.40**	0.00	3.00
a-Hydroxybutyrate	**-35.60**	**L**	**7.20**	0.00	50.00
a-Keto-b-methylvalerate	3.33		0.64	0.00	1.20
a-Ketoglutarate	14.09		17.10	3.00	25.00
a-Ketoisocaproate	**-40.00**	**L**	**0.20**	0.00	2.00
a-Ketoisovalerate	**-36.67**	**L**	**0.20**	0.00	1.50
Benzoate	-22.00		1.40	0.00	5.00
b-Hydroxybutyrate	-5.00		18.00	0.00	40.00
b-Hydroxyisovalerate	-9.00		8.20	0.00	20.00
b-Ketoglutarate	**26.00**	**H**	**0.76**	0.00	1.00
cis-Aconitate	-15.31		90.00	5.00	250.00
Citramalate	23.00		7.30	0.00	10.00
Citrate	-0.94		1383.00	500.00	2300.00
DHPP	-16.67		0.30	0.00	0.90
Ethylmalonate	-20.00		1.20	0.00	4.00
Fumarate	**70.00**	**H**	**1.40**	0.20	1.20
Hippurate	10.63		485.00	0.00	800.00
Homovanillate	**-47.50**	**L**	**1.10**	1.00	5.00
Hydroxymethylglutarate	-8.75		0.53	0.20	1.00
Isocitrate	**76.53**	**H**	**999.00**	50.00	800.00
Lactate	**62.31**	**H**	**33.20**	4.00	30.00
Malate	-3.33		2.80	0.00	6.00
Methylmalonate	-16.67		1.00	0.00	3.00
Orotate	-3.33		84.00	0.00	180.00
p-Cresol	-20.00		45.00	0.00	150.00
Phenylacetate	0.00		0.60	0.00	1.20
Phenylpropionate	-8.33		0.50	0.00	1.20
p-Hydroxybenzoate	**36.00**	**H**	**4.30**	0.00	5.00
P-Hydroxyphenylacetate	-14.00		18.00	0.00	50.00
p-Hydroxyphenyllactate	**50.00**	**H**	**0.50**	0.00	0.50
Pyroglutamate	**66.25**	**H**	**93.00**	0.00	80.00
Pyruvate	**135.71**	**H**	**1.30**	0.00	0.70
Suberate	-12.50		1.50	0.00	4.00
Succinate	**-28.00**	**L**	**11.60**	5.00	35.00
Sulfate	10.56		289.00	180.00	360.00
Tartarate	**87.50**	**H**	**110.00**	0.00	80.00
Tricarballylate	-11.11		0.70	0.00	1.80
Vanillylmandelate	-22.22		0.70	0.20	2.00
Yeast Markers	**316.67**	**H**	**110.00**	0.00	30.00
Total Status Deviation	**55.84**				
Total Status Skew	**28.96**				

Nutritional Support

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

- ☐ **1-CAC Phase 2 Protocol**
  See Nutrition Detail
- ☐ **1-Copper**
  1x daily 2 mg
- ☐ **1-Digestive Enzymes**
  With meals
- ☐ **1-Molybdenum**
  2x daily 25 mcg
- ☐ **1-Pyridoxal-5-Phosphate**
  2x daily 50 mg
- ☐ **1-Selenium**
  1x daily 200 mcg
- ☐ **1-Zinc Sulfate or Citrate**
  2x daily 25 mg
- ☐ **2-Magnesium Citrate or Glycinate**
  2x daily 150 mg
- ☐ **H - Black Cohosh**
  1 - 3 times daily (Females only)
- ☐ **1-Carbohydrate Metabolism Profile**
  See Nutrition Detail
- ☐ **1-Detoxification Protocol**
  See Nutrition Detail
- ☐ **1-Magnesium**
  2x daily 200 mg
- ☐ **1-Oral Electrolyte - Standard Formula**
  2x daily
- ☐ **1-Riboflavin (B2)**
  1x daily 50 mg
- ☐ **1-Yeast Reduction Protocol**
  See Nutrition Detail
- ☐ **2-Glutathione (reduced)**
  2x daily 250 mg
- ☐ **2-Vitamin C**
  1x daily 1000 mg
- ☐ **H - Garlic**
  1 - 3 times daily

Nutritional Supplements to AVOID

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

Phosphorus

Food Recommendations

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

Apricots, Dried	Artichoke	Black Pepper	Blackberries
Blueberries	Bok Choy Cabbage	Boysenberries	Broccoli
Butter Beans	Cantaloupe	Cucumber	Fava Beans
Flounder	Grapefruit	Green Beans	Guava
Haddock	Halibut	Honeydew Melon	Kale
Kidney Beans	Loganberries	Onions	Orange
Oysters	Papaya	Peanuts	Plaintains
Potatoes	Pumpkin	Rabbit	Red Peppers
Snapper	Strawberries	Sturgeon	Trout
Wild Rice	Yams		

Foods to AVOID

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

Coffee	Hydrogenated Fats	Liver	Liver Pate
Milk, Nonfat Dry	Poultry Giblets	Pumpkin Seeds	Rice Bran
Sunflower Seeds			

Results Missing From Test

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

Formiminoglutamic Acid Quinolinate Indican D-Lactate

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
Carbohydrate Metabolism	59.66%	39.36%
Essential Minerals	43.97%	-43.97%
Fat Metabolism	35.75%	-35.75%
Muscle Metabolites	35.75%	-13.25%
Liver Detox Indicators	35.19%	29.41%
Connective Tissue	33.81%	-3.81%
Lipid	32.86%	31.27%
Essential Amino Acid	32.59%	-32.59%
Gastrointest. Function	32.01%	26.69%
Adrenal Function	29.53%	24.33%
Hepatic Metabolism	28.85%	-4.61%
Allergy	27.94%	5.58%
Differential Count	27.53%	-27.53%
Citric Acid Cycle	27.12%	13.04%
Amino Acid Catabolism	26.67%	-24.44%
Athletic Potential	26.22%	20.05%
Immune Metabolites	25.64%	-25.64%

Lab Reported out-of-range Values

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

CAC Entry (589.90%)

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

Yeast Markers (316.67%)

A high reading of this important ratio indicates a high probability of a yeast and/or a fungal infection.

CAC Phase 2 (233.18%)

This is the second phase of the citric acid cycle moving from cis-Aconitate to Isocitrate. A high reading may be due to a deficiency of cysteine and iron which may create a disruption in the efficiency of energy production.

Bacteria/Giardia1 (175.00%)

A high reading is suggestive of a yeast and/or a fungal infection. These markers are due to the breakdown of tyrosine by the bacteria in question.

Pyruvate (135.71%)

Pyruvate is the end product of glucose metabolism. An elevated level may be indicative of a fundamental deficiency of B-complex vitamins and lipoic acid.

2-Methylhippurate (117.00%)

This organic acid is an indication of exposure to or xylene. A comprehensive detoxification program should be undertaken to help the body excrete these petrochemicals. The use of antioxidants and glycine are recommended.

CAC Phase 3 (94.74%)

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

Tartarate (87.50%)
Elevated levels have been seen in children with autistic traits and/or in cases of an overgrowth of yeast or fungi especially after repeated use of antibiotics.

LDL (85.29%)
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.

Isocitrate (76.53%)
This organic acid may be high due to a breakdown in the citric acid cycle. Adding arginine, a B-complex, manganese, and magnesium.

Drugs which may have an adverse affect:
Methotrexate

Fumarate (70.00%)
Elevated fumarate is indicative of a Coenzyme Q10 deficiency.

Collagen Related AA (69.33%)
A high reading of this combination of Proline, Hydroxyproline and Hydroxylysine may be indicative of connective tissue breakdown. Use of vitamin C and iron may be helpful in balancing this ratio.

Cholesterol (68.00%)
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:
Hydrogenated Fats, Liver Pate

Pyroglutamate (66.25%)
A high level may be due to glutathione depletion as this organic acid is formed in the kidney from the amino acid glutathione.

Lactate (62.31%)
A high level of this organic acid may be indicative of poor metabolism and/or a problem in the citric acid cycle.

CAC Phase 5 (-55.71%)
This phase of the citric acid cycle is the reaction caused by removing electrons from Succinate to form Fumarate. Additions of phenylalanine and tyrosine may help balance this ratio when low by resupplying fumarate.

Vanadium - RBC (-55.56%)
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.

Molybdenum - RBC (-54.55%)
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.

Copper - RBC (-54.05%)
An important trace mineral, copper deficiencies can lead to anemia, neural degeneration, lung and bone disturbances and CVD. Numerous enzyme reactions are also copper dependent.

CAC Phase 6 (-50.00%)
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.

Chloride (50.00%)
Chlorides significance relates to its maintenance of cellular integrity through its influence on osmotic pressure. It also helps monitor acid-base balance and water balance. Elevated levels are related to acidosis as well as excessive water crossing the cell membrane which is often found in dehydration states.

Drugs which may have an adverse affect:
Acetazolamide, Aspirin, Guanethidine, Hydrocortisone, Lithium, Methyldopa, Nifedipine, Phenylbutazone

Cystathionine - P (50.00%)
May be due to a functional B6 deficiency.

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.

Magnesium - RBC (-50.00%)
Involved in over 300 enzyme systems, magnesium is a very important trace mineral. Deficiencies can lead to hypertension, diabetes, PMS, CVD, neuromuscular disease, and many others. The major dietary sources of magnesium are nuts, beans, and dark green vegetables.

p-Hydroxyphenyllactate (50.00%)
Elevated levels are indicative of the need for antioxidants as this reading suggests an ongoing pro-oxidant process.

Zinc - RBC (-50.00%)
Low levels of zinc can lead to poor wound healing, skin disorders, and impaired immune function. Best sources of dietary zinc include shellfish, whole grains, nuts, and seeds.

Additional Tests

The following additional lab tests may help in diagnosis.

Consider running Urine Organic Acid Test
Rationale: % Status of b-Alanine - P is > 25%

Consider testing for food sensitivities after supplementation regime (3 months)
Rationale: % Status of b-Alanine - P is > 25%
% Status of Taurine - P is < -25%
% Status of 3-Methylhistidine - P is > 25%

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1-CAC Phase 2 Protocol See Nutrition Detail

Rationale

CAC PHASE 2 PROTOCOL
An elevated reading of this ratio may be due to a need for Lipoic Acid, Magnesium and Manganese.
Lipoic Acid
Children: 100 mg daily
Adults: 100 mg 3 times daily
Magnesium
Children: 200 mg daily
Adults: 400 mg daily
Manganese
Children: 10 mg daily
Adults: 20 mg daily

Decreased	Normal	Increased
		CAC Phase 2

1-Carbohydrate Metabolism Profile See Nutrition Detail

CARBOHYDRATE METABOLISM PROFILE
When Lactate and Pyruvate are elevated it indicates a potential for impaired carbohydrate metabolism. This pattern indicates suboptimal operation of carbohydrate metabolism, interfering with efficient cellualr energy production. Various pathways being over- or under- utilized can be nutritionally supported with digestive enzymes, B-Complex, Lipoic acid, and CoEnzyme Q10 supplementation. Recommended nutrients include:
B-Complex (2x daily)
Lipoic Acid (2x daily)
CoEnzyme Q10 (1x 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).

Decreased	Normal	Increased
		Lactate
		Pyruvate

1-Copper 1x daily 2 mg

COPPER (Cu)
2 mg
A component of various proteins and enzymes. Regulates cholesterol metabolism, heme, immune function, myelin, catecholamine, temperature, bone mineralization and cross linking of collagen and elastin.

Decreased	Normal	Increased
Copper - RBC		

1-Detoxification Protocol See Nutrition Detail

DETOXIFICATION PROTOCOL
Due to the elevated level of 2-Methylhippurate, is is important that you avoid xylene, a compound found in fossil fuels and as a solvent as well as toluene and styrene. A comprehensive detoxification protocol should include at least 250 mg of glycine daily along with a balanced amino acid complex and a broad spectrum antioxidant formula with Vitamin C and CoEnzyme Q10.
Adults:
Glycine - 500 mg 2x daily
Amino Acid Complex - 5 grams 2x daily
Broad Spectrum Antioxidant - 2x daily

Decreased	Normal	Increased
	Hippurate	2-Methylhippurate

1-Digestive Enzymes With meals

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

Decreased	Normal	Increased
	Triglycerides	Cholesterol
		LDL

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1-Magnesium 2x daily 200 mg

MAGNESIUM (Mg)
Second most abundant mineral 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

Rationale

Decreased	Normal	Increased
Magnesium - RBC		

1-Molybdenum 2x daily 25 mcg

MOLYBDENUM (Mo)
Vital constituent of xanthine oxidase (uric acid production), aldahyde and sulfate oxidase. Functions in transfer of electrons for redox process and completion of sulfur amino acid catabolism. It is also involved in hemoglobin synthesis.

Decreased	Normal	Increased
Molybdenum - RBC		

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.

Decreased	Normal	Increased
	Potassium CO2 Sodium	

1-Pyridoxal-5-Phosphate 2x daily 50 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-Riboflavin (B2) 1x daily 50 mg

RIBOFLAVIN (B2)
It is a constituent of certain plavoproteins that function as coenzymes in cellular oxidation. It is crucial to the metabolism of carbohydrates, amino acids and lipids.

Decreased	Normal	Increased
Taurine - P		b-Alanine - P

1-Selenium 1x 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 - RBC		

1-Yeast Reduction Protocol See Nutrition Detail

YEAST REDUCTION PROTOCOL
Because of the relative increase in the markers for yeast and fungi (Tartarate and Citramalate) it may be helpful to begin a yeast reduction protocol. Avoiding refined carbohydrates such as sugar, alcohol and other yeast-containing products is recommended. The introduction of probiotics such as Lactobacilli should also be started.
Probiotics - 3 times daily if D-Lactate is normal or low
Olive leaf extract - 2 times daily
Grapefruit seed extract - 2 times daily

Decreased	Normal	Increased
		Yeast Markers

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1-Zinc Sulfate or Citrate 2x daily 25 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
Zinc - RBC		

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

2-Magnesium Citrate or Glycinate 2x daily 150 mg

MAGNESIUM (Mg)
Second most abundant mineral 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
		Ethanolamine - P

2-Vitamin C 1x daily 1000 mg

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

Decreased	Normal	Increased
W.B.C.	Triglycerides Alkaline Phosphatase LDH	LDL

H - Black Cohosh 1 - 3 times daily Females only

BLACK COHOSH
The herb black cohosh (Cimicifuga racemosa) has been used primarily in the treatment of menstrual cramps and menopause. It must be absolutely avoided during pregnancy. As with any herb, caution should be taken with its use. Do not use if you are allergic to aspirin.

Decreased	Normal	Increased
		LDL Cholesterol

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
		Cholesterol LDL

AVOID THE FOLLOWING SUPPLEMENTS

AVOID Phosphorus

PHOSPHORUS (P)

Decreased	Normal	Increased
		Phosphorus

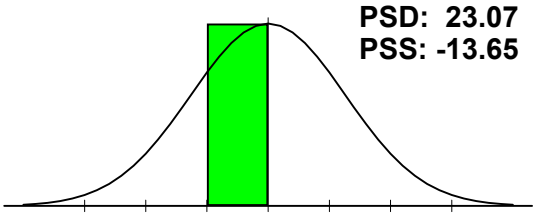
Drugs listed below tend to further aggravate elements of blood chemistry that are out of range (H or L). The (#) after each drug denotes the number of times that drug is flagged as being potentially harmful.

Acetaminophen	Acetazolamide	Acyclovir	Allopurinol(2)
Amantadine	Amitriptyline	Amoxicillin	Ampicillin(2)
Aspirin(3)	Busulfan	Carbamazepine(4)	Chlorpromazine(3)
Clindamycin(2)	Clofibrate(2)	Cortisol	Cortisone
Desipramine(2)	Diazepam	Dilantin	Epinephrine
Erythromycin(2)	Fluorides(2)	Fluphenazine(2)	Furosemide(2)
Griseofulvin	Guanethidine	Haloperidol(3)	Hydrocortisone
Hydroxyurea(2)	Ibuprofen(3)	Imipramine(4)	Indomethacin(2)
Kanamycin(2)	Levodopa	Lincomycin	Lithium(2)
MAO Inhibitors(2)	Mercaptopurine	Methimazole(2)	Methotrexate(3)
Methyldopa(4)	Miconazole(2)	Naproxen	Neomycin(2)
Nifedipine(2)	Nitrofurantoin(2)	Paramethadione(2)	Penicillamine(3)
Penicillin(2)	Phenelzine	Phenobarbital(3)	Phenylbutazone(4)
Phenytoin(4)	Piroxicam	Polythiazide	Prednisone(2)
Procainamide(2)	Procarbazine	Propranolol	Protriptyline(2)
Ramipril	Rifampin(2)	Salicylates	Steroids
Streptomycin(2)	Sulfamethizole	Sulfamethoxazole(2)	Sulfasalazine(2)
Sulfisoxazole(2)	Tamoxifen(2)	Tetracycline(3)	Triameterene(2)
Trimethadione(2)	Valproic Acid	Vancomycin	Viomycin(3)

Ammonia/Energy

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

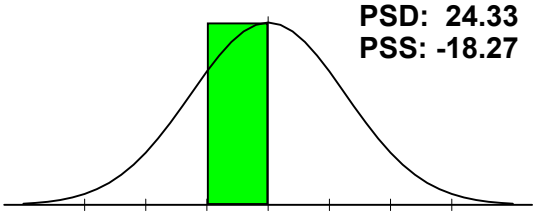
The panel profile seen here is indicative of the ability to detoxify excessive ammonia buildup and to keep the energy cycle going.



CNS Metabolism

Arginine - P[L], Tryptophan - P, Gamma-aminobutyric Acid-P[L], Glycine - P, Serine - P, Taurine - P[L], Aspartic Acid - P[L], Glutamine - P[.

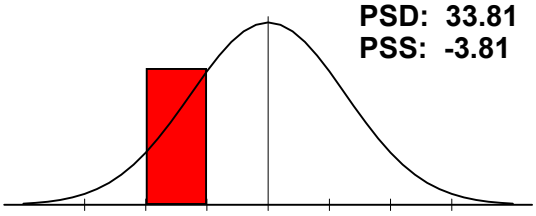
This panel is indicative of normal amino acid metabolism as it applies to central nervous system functioning.



Connective Tissue

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

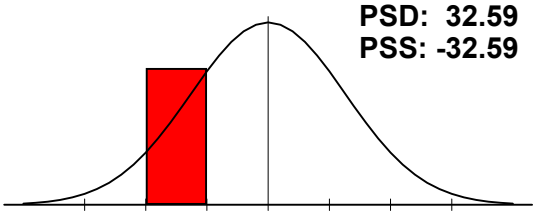
A profile such as this may be indicative of poor collagen and other tissue formation.



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,.

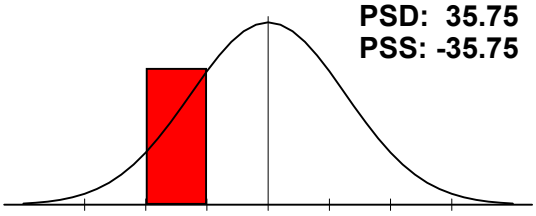
The panel profile seen here indicates a low density of essential amino acids. Since they cannot be synthesized in the human body, these building blocks must be taken in via diet or supplements.



Fat Metabolism

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

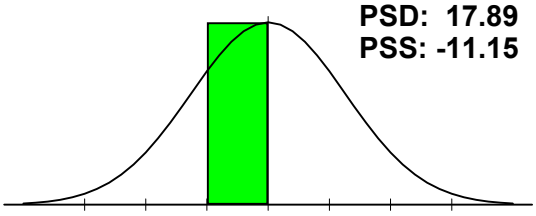
A panel profile such as this may indicate an inability of the body to properly metabolize dietary fats. Check for dysbiosis, or try supplementation with lipase digestive enzymes as well as broad spectrum amino acids.



Gluconeogen

Threonine - P, Tryptophan - P, Glycine - P, Serine - P, Alanine - P.

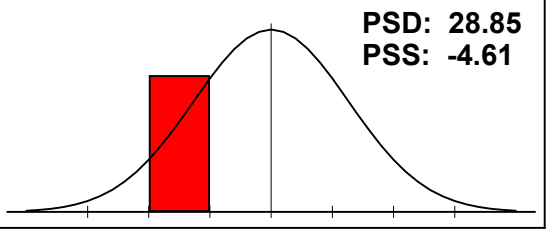
This panel profile is indicative of having the proper amino acids in balance to handle blood sugar issues.



Hepatic Metabolism

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

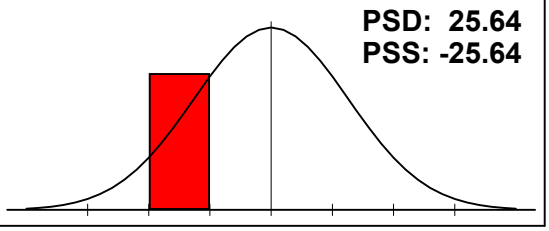
A panel profile such as this may be indicative of an underfunctioning liver or poor dietary protein intake.



Immune Metabolites

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

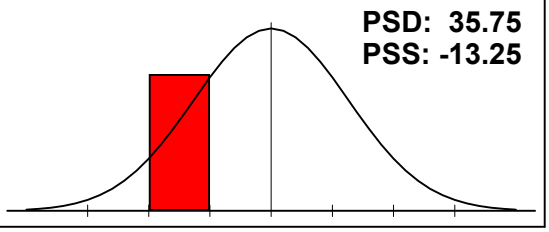
A panel profile such as this may be indicative of a poor functioning immune system or low dietary intake of protein.



Muscle Metabolites

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

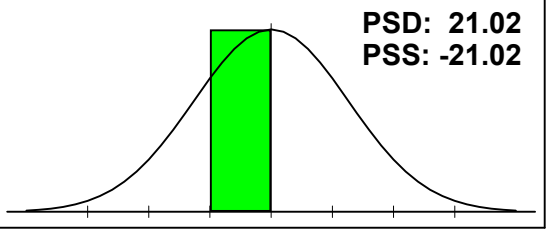
This panel profile may be indicative of the lack of ability in building muscle or a poor dietary intake of protein.



Neuroendocrine Met.

Gamma-aminobutyric Acid-P[L], Glycine - P, Serine - P, Taurine - P[L], Tyrosine - P.

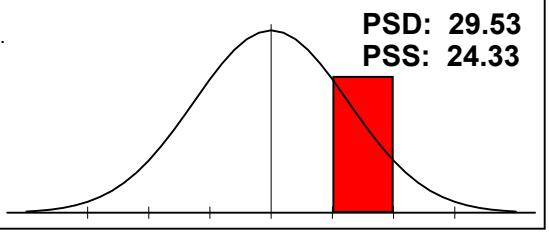
This panel profile is indicative of having adequate supplies of the listed amino acids which in turn aid the proper functioning of the endocrine system.



Adrenal Function

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

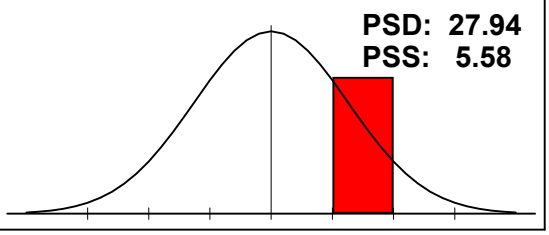
This profile may be in part due to poor nutritional habits, allergies and inadequate fluid intake. Clinical signs may include inability to handle stress, poor circulation, and fatigue.



Allergy

Eosinophils[H], Globulin[H], Lymphocytes, Monocytes, W.B.C.[L].

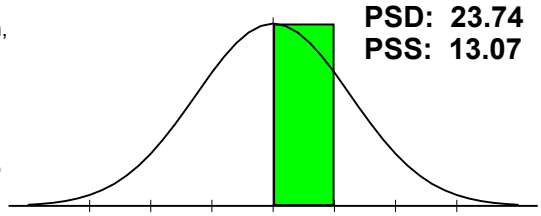
This panel profile may be due to allergies or a compromised immune system. Review the Differential and the Differential Count Panels for additional information. If Eosinophils are up and the CO2 is normal or depressed the likelihood of allergies is higher. If the Eosinophils and the CO2 are elevated than suspect parasites.



Anti Oxidant Status

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

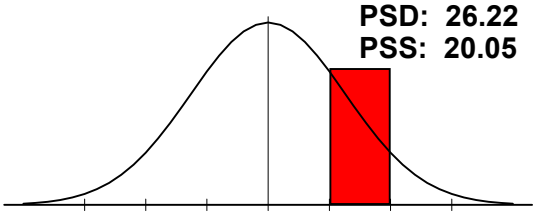
The elements in this panel help represent the antioxidant status of the individual. Excesses of deficiencies in this panel may indicate the need for additional antioxidants. The deviation was below 25% so no abnormalities were found.



Athletic Potential

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

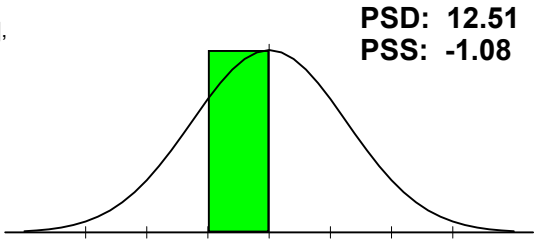
This profile indicates that the patient should have a complete physical before embarking on any exercise routine.



Bone/Joint

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

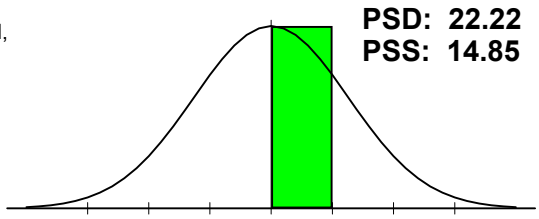
This panel may be helpful in assessing bone and joint health. Keeping the elements of this panel in a normal range may be helpful in reducing the risk of osteoporosis and other bone and joint disorders. The deviation was below 25% so no abnormalities were found.



Cardiac Marker

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

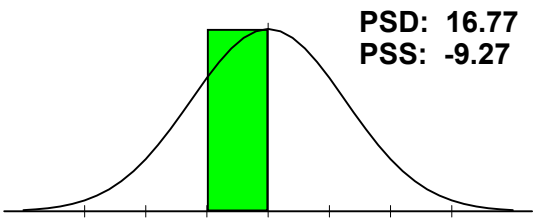
This panel may be helpful in assessing cardiovascular disease risk. Keeping the elements in this panel in a normal range is important in reducing the risk of CVD. The deviation was below 25% so no abnormalities were found.



Cellular Distortions

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

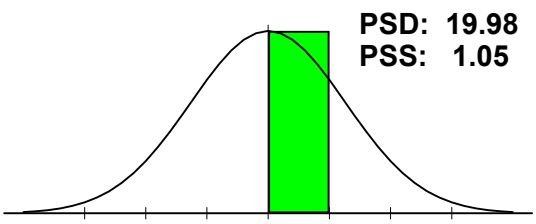
This panel may be helpful in determining the ability of the body to properly produce healthy cells. The deviation was below 25% so no abnormalities were found.



Differential

Basophils, Eosinophils[H], Lymphocytes, Monocytes, Neutrophils.

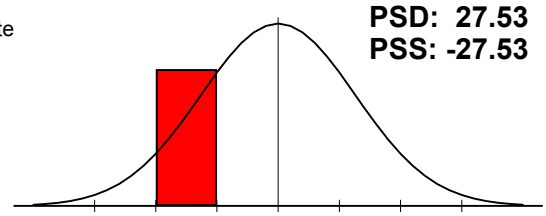
This panel may be helpful in assessing immune system health. Excesses or deficiencies in this panel may indicate a compromised immune system. The deviation was below 25% so no abnormalities were found.



Differential Count

Basophil Count[L], Eosinophil Count, Lymphocyte Count[L], Monocyte Count[L], Neutrophil Count[L].

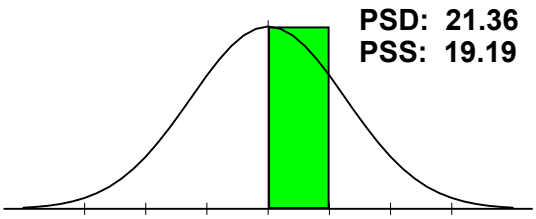
The negative Panel Status Skew may be due to the immune system being at rest if the Differential Panels Deviation is less than 25%, if it is higher than 25% than suspect a weakened or compromised immune system.



Electrolyte

Calcium, Chloride[H], CO2, Phosphorus[H], Potassium, Sodium.

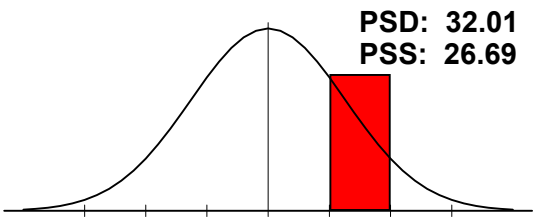
This panel is a representation of electrolyte balance in blood. Balance is critical in maintaining and achieving optimal health. The deviation was below 25% so no abnormalities were found.



Gastrointest. Function

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

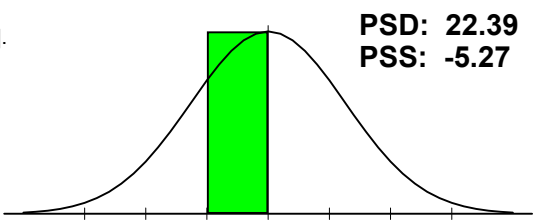
This panel profile indicates the need for further evaluation of gastrointestinal integrity, digestion and absorption. Check for dysbiosis, food allergies or "leaky gut" syndrome.



Hematology

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

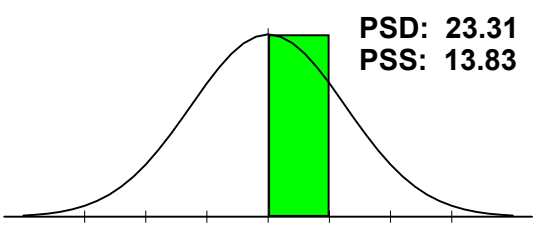
The hematology panel assesses the production of red blood cells and their function. The deviation was below 25% so no abnormalities were found.



Inflammatory Process

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

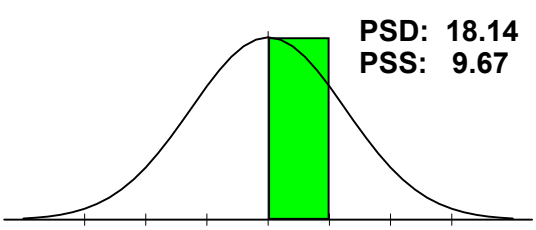
This panel may be helpful in assessing any inflammatory processes that may be occuring in the body. The deviation was below 25% so no abnormalities were found.



Kidney Function

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

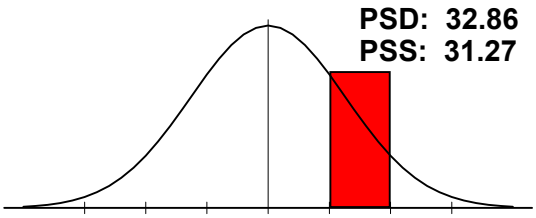
This panel may be helpful in assessing kidney function. It is important to keep the elements of this subset in balance to help the body eliminate waste material. The deviation was below 25% so no abnormalities were found.



Lipid

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

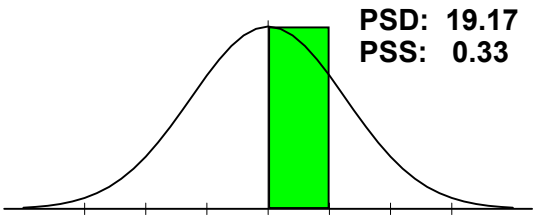
The panel profile seen here suggests that the patient may be at a greater risk for coronary heart disease than the general population. A dietary evaluation should be undertaken as well to educate the patient about saturated and trans fats.



Liver Function

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

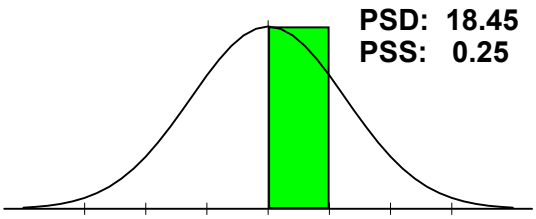
Assessing liver function is important in determining the individual's ability to detoxify itself as well as processing amino acids and other important biological processes. The deviation was below 25% so no abnormalities were found.



Nitrogen

B.U.N., B.U.N./Creatinine Ratio[H], Creatinine[L], Uric Acid.

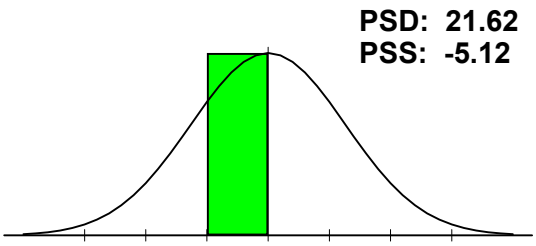
Nitrogen is an important element in achieving optimal wellness. The elements in this panel are important in determining nitrogen competency. The deviation was below 25% so no abnormalities were found.



Protein

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

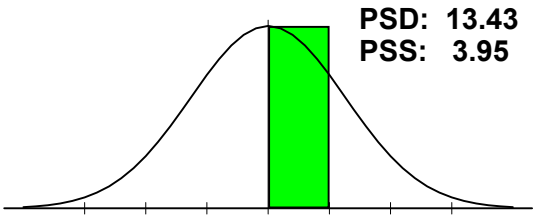
Proteins are the basic building blocks of hormones, muscle, neurotransmitters, immune systems responses and more. Assessing their competency is crucial in achieving optimal wellness. The deviation was below 25% so no abnormalities were found.



Pulmonary Function

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

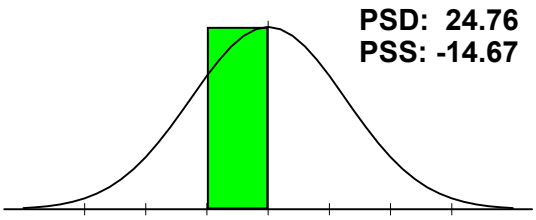
This panel may be helpful in assessing lung and respiratory function. The deviation was below 25% so no abnormalities were found.



Ratios

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

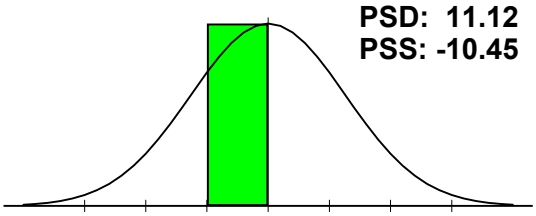
This panel may be helpful in determining the general balance of the overall chemistry of the individual. The deviation was below 25% so no abnormalities were found.



Thyroid

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

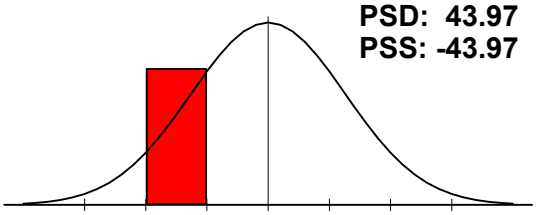
This panel may be helpful in determining the overal health of the thyroid gland. The deviation was below 25% so no abnormalities were found.



Essential Minerals

Calcium - RBC[L], Chromium - RBC[L], Copper - RBC[L], Magnesium - RBC[L], Manganese - RBC[L], Molybdenum - RBC[L], Potassium - RBC[L], Selen.

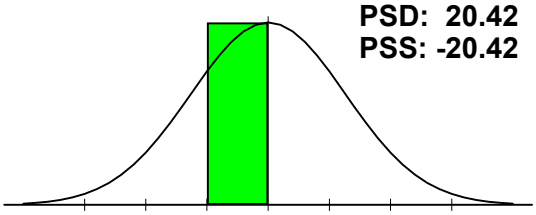
The low reading of this panel suggests the need for trace mineral supplementation. Check the Nutritional Detail section of the report for specific recommendations.



Toxic Minerals

Aluminum - RBC[L], Cadmium - RBC[L], Lead - RBC, Mercury - RBC.

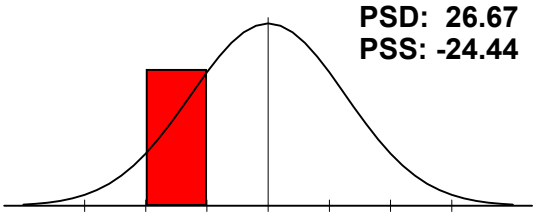
No level of toxic metals is healthy and this profile exhibits a level above what is optimal for good health.



Amino Acid Catabolism

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

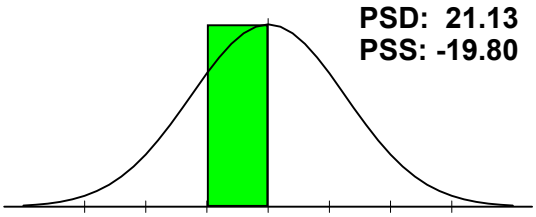
This panel abnormality may be due to poor amino acid metabolism or a lack of quality protein in the diet. Supplementation of high grade amino acids may be necessary.



B-Complex Markers

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

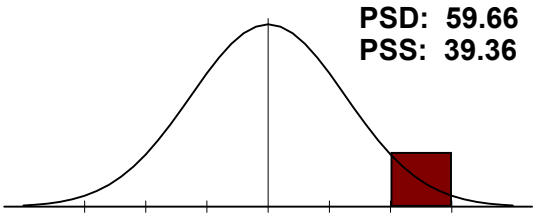
A normal panel profile such as this is an indicator of adequate intake of B-complex vitamins.



Carbohydrate Metabolism

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

The panel profile seen here may be due to impaired carbohydrate metabolism, inefficient utilization or poor mobilization of carbohydrates. Often, B-complex vitamins are helpful in balancing these results. See Nutritional Support for further details.

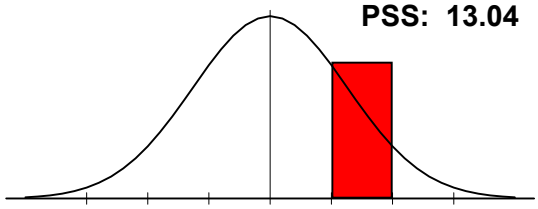


Citric Acid Cycle

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

This panel profile result may be due to a breakdown in the Citric Acid Cycle. Supplementation with specific amino acid combinations and precursor vitamins and minerals may help to reverse this imbalance. Review the Nutritional Support section for further details.

PSD: 27.12
PSS: 13.04

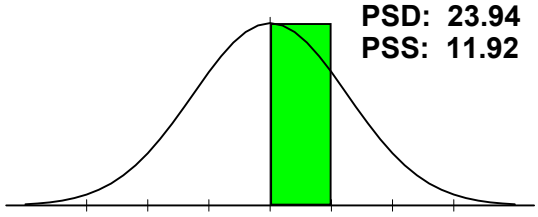


Intestinal Dysbiosis

Hippurate, Benzoate, p-Hydroxybenzoate[H], p-Hydroxyphenyllactate[H], Phenylacetate, Phenylpropionate, p-Cresol, Tricarballylate, DHPP, Citr.

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

PSD: 23.94
PSS: 11.92

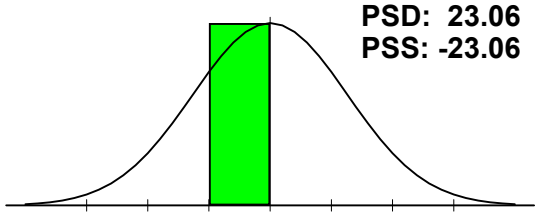


Lipid Metabolism

Adipate[L], Suberate, Ethylmalonate.

This panel profile is indicative of proper lipid metabolism.

PSD: 23.06
PSS: -23.06

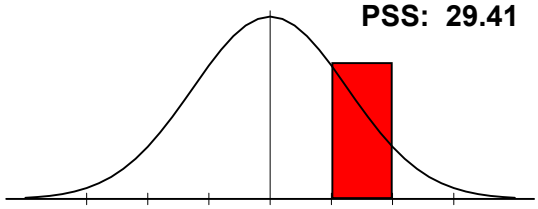


Liver Detox Indicators

2-Methylhippurate[H], P-Hydroxyphenylacetate, Orotate, Pyroglutamate[H], Sulfate.

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.

PSD: 35.19
PSS: 29.41

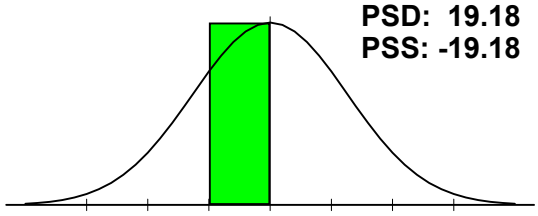


Neurotransmitters

Vanillylmandelate, Homovanillate[L], 5-Hydroxyindoleacetate[L].

A normal panel profile indicated good neurotransmitter production.

PSD: 19.18
PSS: -19.18



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
-33.33 Aspartic Acid - P		

Impaired Ca+ and Zn Transport () — 100.00% (2 of 2)

Decreased	Normal	Increased
-49.00 Anserine - P		
-49.00 Carnosine - P		

Mild Hyperammonemia () — 100.00% (1 of 1)

Decreased	Normal	Increased
-47.14 Glutamic Acid - P		

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

Decreased	Normal	Increased
-34.50 Taurine - P		

Potential Intestinal Bacteria () — 100.00% (1 of 1)

Decreased	Normal	Increased
		30.00 b-Alanine - P

Review history for potential exposure to intestinal bacteria including foreign travel, raw meat ingestion, untreated water intake, etc. Organic acid testing may be helpful.

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

Decreased	Normal	Increased
-30.00 Histidine - P		

Recuperative Capability Impaired () — 100.00% (1 of 1)

Decreased	Normal	Increased
-25.62 Protein/Globulin Ratio		

Muscle/Collagen Catabolism () — 80.00% (4 of 5)

Decreased	Normal	Increased
-43.64 Leucine - P		30.00 3-Methylhistidine - P
-33.20 Valine - P		
50.00 Hydroxylysine - P		
-28.15 Proline - P		

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.

Muscle/Collagen Catabolism (continued)

This profile may be indicative of an individual who is either catabolising their muscle tissue or is unable to build proper muscle tissue due to amino acid deficiencies. Further investigation into amino acid competency may be helpful.

Ammonia Toxicity/Buildup () 75.00% (3 of 4)

Decreased	*Normal*	*Increased*
-46.36 Isoleucine - P		-37.11 Glutamine - P
-33.33 Aspartic Acid - P		
-47.14 Glutamic Acid - P		