

Special Handling Instructions

Account Number: 286925

Claudia Kreft , RD, LD
155 B Ave
Suite 120
Portland, OR 97034
United States

Name: **Lila Ojeda**

Gender: Female

DOB: 10/31/1975

Accession Number: R01908

Requisition Number: 1415253

Date of Collection: 04/12/2017

Date Received: 04/13/2017

Date Reported: 04/26/2017

Test Request Instructions

First Submission

Client Request Instructions

Claudia Kreft , RD, LD
155 B Ave
Suite 120
Portland, OR 97034
United States

R01908 - B7109

LABORATORY REPORT

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Summary of Deficient Test Results

Testing determined the following functional deficiencies:

Vitamin D3

Vitamin K2

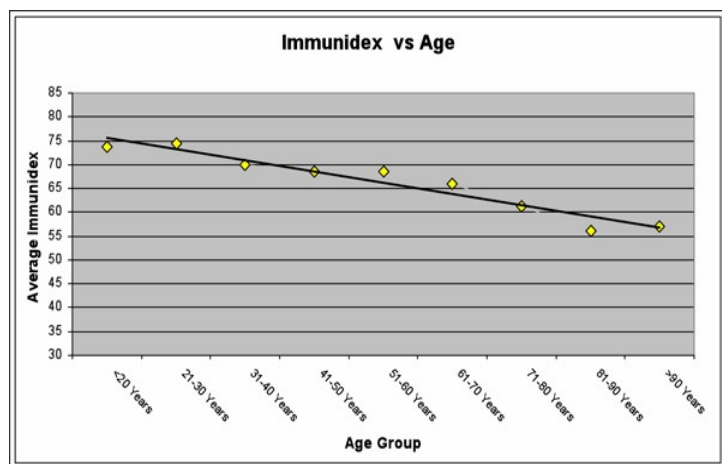
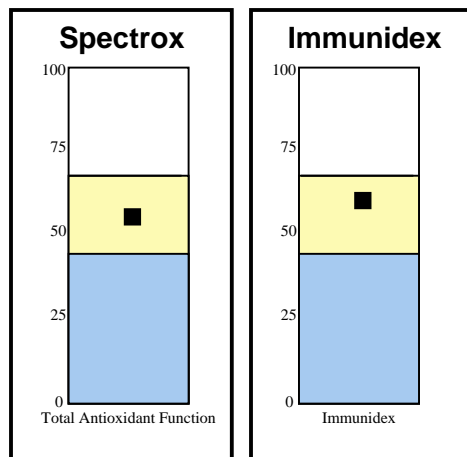
Borderline deficiencies include:

Asparagine
Spectrox

Manganese
Immunindex

Vitamin A

Copper



James W. Jacobson, Ph.D.
Laboratory Director

CLIA# 45D0710715

OVERVIEW OF TEST PROCEDURE

1. A mixture of lymphocytes is isolated from the blood.
2. These cells are grown in a defined culture medium containing optimal levels of all essential nutrients necessary to sustain their growth in cell culture.
3. The T-lymphocytes are stimulated to grow with a mitogen (phytohemagglutinin) and growth is measured by the incorporation of tritiated (radioactive) thymidine into the DNA of the cells.

The growth response under optimal conditions is defined as 100%, and all other growth rates are compared to this 100% level of growth.

For example – we remove vitamin B6 from the medium and stimulate the cells to grow by mitogen stimulation. Growth is measured by DNA synthesis and the rate of growth is dependent only upon the functional level of vitamin B6 available within the cells to support growth. For Vitamin B6 a growth rate of at least 55% of the growth rate observed in the optimal (100%) media is considered normal. Results less than 55% are considered to indicate a functional deficiency for Vitamin B6. Each nutrient has a different reference range that was established by assaying thousands of apparently healthy individuals.

BREAKING DOWN THE REPORT

1. TEST RESULT (% CONTROL)

This column represents the patient's growth response in the test media measured by DNA synthesis as compared to the optimal growth observed in the 100% media.

2. FUNCTIONAL ABNORMALS

An interpretation is provided for those nutrients found to be deficient.

3. REFERENCE RANGE

This column represents how this patient's result compares to thousands of patients previously tested. A patient's result is considered deficient when it is less than the reference range.

4. GRAPHS

The abnormal range of results is noted in the blue area. Abnormal results are indicated in red. The gray cross hatch area is a representation of the range of test results found in a random selection of subjects.

SPECTROX® – TOTAL ANTIOXIDANT FUNCTION

SPECTROX® is a measurement of overall antioxidant function. The patient's cells are grown in the optimal media, stimulated to grow, and then increasing amounts of a free radical generating system (H₂O₂) are added. The cell's ability to resist oxidative damage is determined. The increasing levels of peroxide will result in diminished growth rates in those patients with poor antioxidant function capacity.

INDIVIDUAL ANTIOXIDANT LEVELS

In the tests for individual antioxidants, it is determined which specific antioxidants may be deficient and thus affecting the SPECTROX® antioxidant function result. For these tests, the patient's cells are preincubated with one of the nutrient antioxidants, i.e. selenium, and then the Spectrox® test is repeated to determine if the addition of selenium improves the patient's antioxidant function. This process is repeated for each individual antioxidant.

Antioxidants tested with this process:

Glutathione, Cysteine, Coenzyme-Q10, Selenium, Vitamin E, Alpha Lipoic Acid, and Vitamin C.

Repletion Suggestions

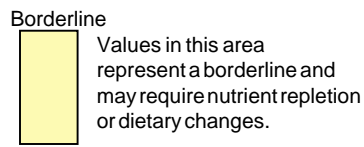
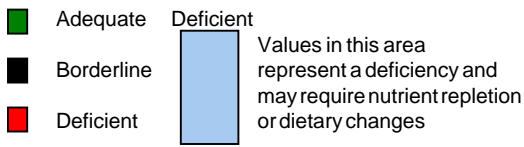
- | | |
|---------------------------------|--|
| 1. Vitamin D3 (Cholecalciferol) | 1000 IU daily of Cholecalciferol
(Vitamin D3-1-alpha 25-dihydroxyvitamin D) |
| 2. Vitamin K2 | 100 mcg vitamin K1 (K2 precursor) daily |

Please note: Supplementation is usually required for four to six months to effect the repletion of a functional deficiency in lymphocytes

Suggestions for supplementation with specific micronutrients must be evaluated and approved by the attending physician. This decision should be based upon the clinical condition of the patient and the evaluation of the effects of supplementation on current treatment and medication of the patient.

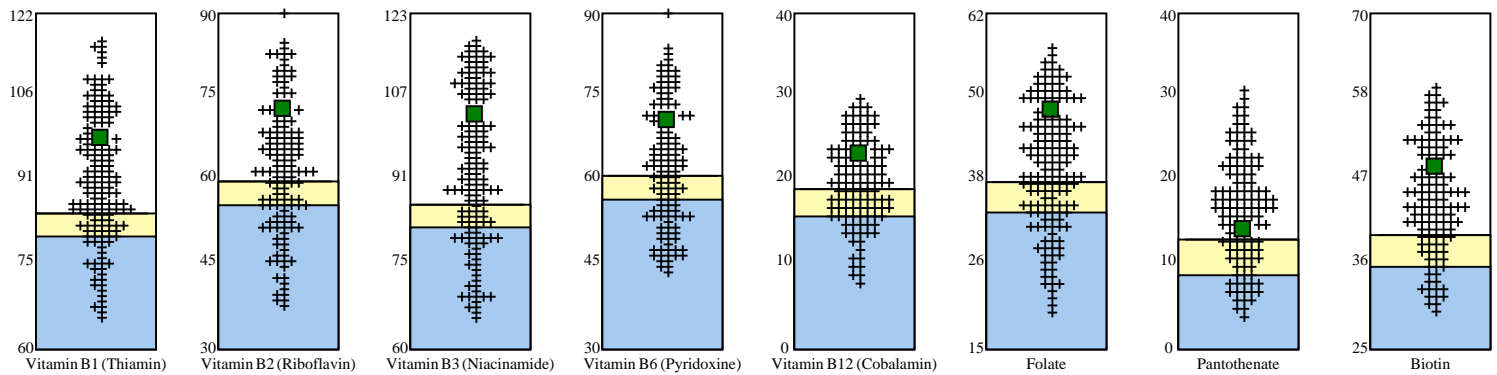
Micronutrients	Patient Results (% Control)	Functional Abnormals	Reference Range (greater than)
<u>B Complex Vitamins</u>			
Vitamin B1 (Thiamin)	97		>78%
Vitamin B2 (Riboflavin)	71		>53%
Vitamin B3 (Niacinamide)	102		>80%
Vitamin B6 (Pyridoxine)	69		>54%
Vitamin B12 (Cobalamin)	22		>14%
Folate	47		>32%
Pantothenate	13		>7%
Biotin	48		>34%
<u>Amino Acids</u>			
Serine	52		>30%
Glutamine	56		>37%
Asparagine	42	Borderline	>39%
<u>Metabolites</u>			
Choline	27		>20%
Inositol	74		>58%
Carnitine	64		>46%
<u>Fatty Acids</u>			
Oleic Acid	72		>65%
<u>Other Vitamins</u>			
Vitamin D3 (Cholecalciferol)	48	Deficient	>50%
Vitamin A (Retinol)	73	Borderline	>70%
Vitamin K2	28	Deficient	>30%
<u>Minerals</u>			
Calcium	52		>38%
Manganese	55	Borderline	>50%
Zinc	53		>37%
Copper	47	Borderline	>42%
Magnesium	48		>37%
<u>Carbohydrate Metabolism</u>			
Glucose-Insulin Interaction	47		>38%
Fructose Sensitivity	49		>34%
Chromium	50		>40%
<u>Antioxidants</u>			
Glutathione	54		>42%
Cysteine	52		>41%
Coenzyme Q-10	95		>86%
Selenium	84		>74%
Vitamin E (A-tocopherol)	93		>84%
Alpha Lipoic Acid	92		>81%
Vitamin C	51		>40%
<u>SPECTROX™</u>			
Total Antioxidant Function	55	Borderline	>40%
<u>Proliferation Index</u>			
Immunidex	57	Borderline	>40%

The reference ranges listed in the above table are valid for male and female patients 12 years of age or older.

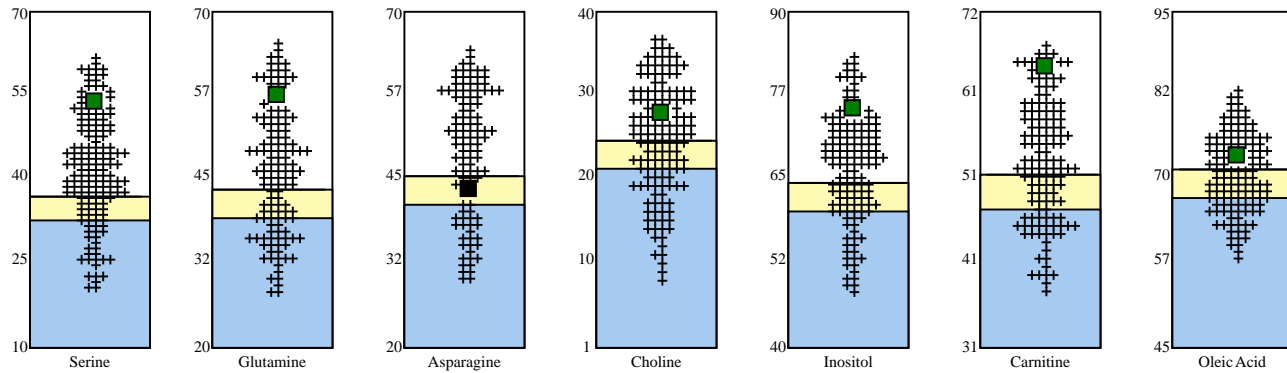


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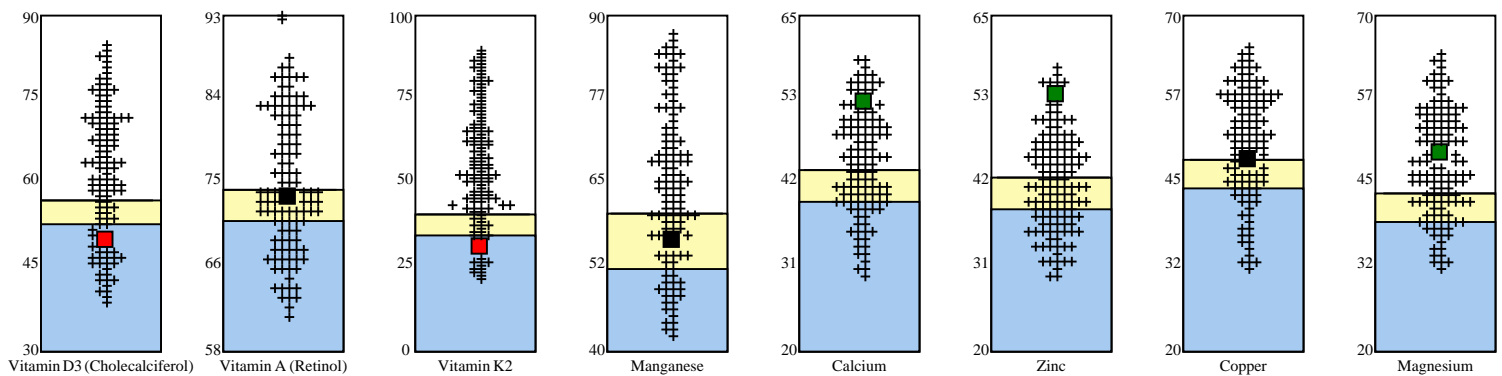
B Complex Vitamins

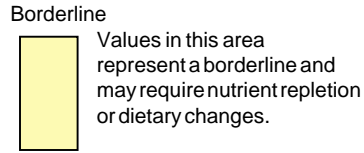
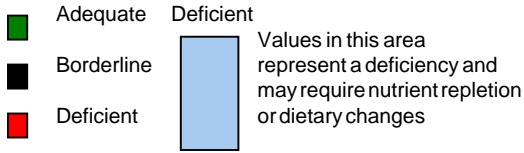


Amino Acids & Metabolites



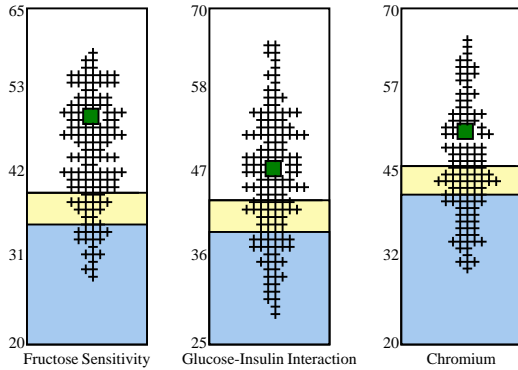
Other Vitamins & Minerals



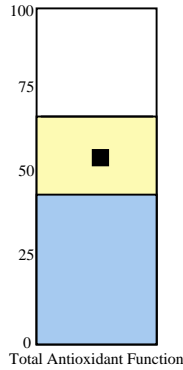


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Carbohydrate Metabolism



Spectrox

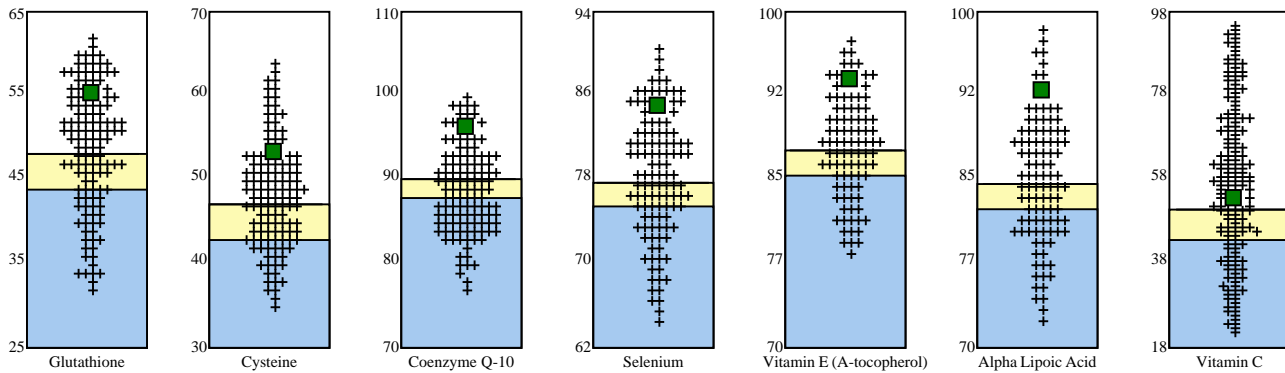


A Spectrox value above 65%-
indicates a desirable status for apparently healthy individuals. Since antioxidants are protective nutrients, the most desired status would be the greatest ability to resist oxidative stress.

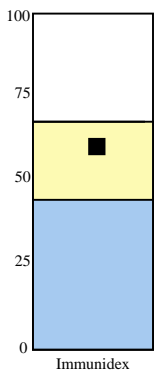
A Spectrox value between 40% and 65%-
indicates an average antioxidant function for apparently healthy individuals. An average status means the ability to resist oxidative stress similar to the majority of persons. However, average status is not ideal, nor is it clearly deficient.

A Spectrox value below 40%-
indicates a deficient antioxidant function resulting in a decreased ability to resist oxidative stress or an increased antioxidant load.

Individual Antioxidants



Immunidex



The Immunidex is an indication of the patient's T-Lymphoproliferative response to mitogen stimulation relative to the response of a control population. An average or weakened immune response may improve with correction of the nutritional deficiencies determined by the micronutrient testing.

An Immunidex above 65%- indicates a strong response, a measurement of cell-mediated immune function.

An Immunidex between 40% and 65% - indicates an average response.

An Immunidex below 40%- may indicate a weakened cell mediated immune response.