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Bio-Center Laboratory (BCL)

Introduction to Our Services
Bio-Center Laboratory (BCL) was established in 1975 and has dedicated itself to providing accurate clinical assays focusing on nutritional medicine. We specialize in a wide variety of nutritional tests including many vitamins, minerals, RBC fatty acids and amino acids. We also test for urine pyrroles, whole blood histamine, cytotoxic food sensitivities and many others.

Client service representatives are available Monday through Thursday from 8 AM to 5 PM and Friday 9 AM to 4 PM CST. Our toll free telephone number is 800-494-7785. For local calls, please call 316-684-7784. Our fax number is 316-682-2062.

Licensure / Certification
CLIA 17D0648333 Medicare 008052 Federal ID 48-0840415

Proficiency Testing
American Association of BioAnalysts: Chemistry, Parasitology, Hematology, Urinalysis, Special Chemistries and Tumor Markers surveys.
Centre de Toxicologie du Quebec: Mineral surveys.

Policies
• Test Cancellation: A test may be cancelled at any time prior to reporting the result and you will be charged a $40 cancellation fee. The request to cancel must be in writing, signed and faxed to us at 316-682-2062.
• Repeat Testing: In most cases, unusual test results are automatically repeated by the laboratory and noted as such on the final report. If you question a result, please call the laboratory and we will further evaluate the result and repeat the test if necessary, at no charge, provided that we have sufficient quantity of specimen. For the most part, specimens are retained for at least one month.
• Unacceptable Specimens: If we determine that a specimen is unacceptable, we will call you with our concerns. Please review, “Causes for Rejection,” accompanying each assay.
• Turn Around Time (TAT): Vitamin C assays are performed daily. The usual TAT for all other assays is ten days or less. Repeat testing due to unusual results may also affect the TAT. The days that tests are performed may vary. If you have unusual circumstances or needs, please call us and we will make every effort to accommodate your concerns.
• All test requirements and availability are subject to change without notice.

Client Billing
• Fees are subject to change without prior notification. However, we will make every effort possible to notify you when the change occurs.
• Personal checks, business checks, or credit cards are acceptable payment options. If paying by credit card: include the credit card number, date of expiration and card security code (CSC), the name of the credit card holder (as printed on the credit card), the card holder's signature, and the amount of payment to be charged to the account.
• BCL does not file claims to private insurance carriers or Medicaid. If a patient sends personal payment (along with the specimen) to the lab, a receipt will be issued for submission by the patient to their insurance.
• While BCL is a participating member of Medicare, Medicare has advised us to not file known non-covered services. Medicare requires a Medicare waiver signed by the patient on the date of service for covered services only and should accompany the specimen and requisition. Payment must accompany non-covered services.
Client Billing Options

**Option 1 -- Payment Included with Specimen Submittal:** Payment from the patient or medical facility accompanies the specimen shipment. Patient's full name, address, date of birth, gender, and telephone number are required for processing the payment. Doctor's orders, if applicable, must be included with the payment and a properly filled out requisition. All test results will be sent to the ordering physician. Therefore, the physician's full name & degree (MD, ND, OD, etc...), address, telephone number (and fax number, if faxed reports are also desired) must be submitted with all specimens. Bio-Center Laboratory will send a receipt to the patient for insurance reimbursement.

**Option 2 -- Physician/Clinic/Reference Lab Billing:** All new accounts must send a check or valid credit card information with shipment of the first specimen. For future shipments, BCL will invoice the referring facility each month (as needed) for each assay ordered. Payment is due within 30 days of invoice. The referring facility or physician’s full name & degree (MD, ND, OD, etc...), the physician/facility’s address and telephone number (include fax number, if faxed reports are also desired) must be submitted with all specimens. Bio-Center Laboratory will send a receipt to the referring facility/physician. **Note:** If neither box is checked, the ordering physician will be billed and will be responsible for payment.

Drawing and Processing Specimens

- General fasting specimens require a 12 – 14 hours fast. Drinking water is allowed during a general fast.
- If fasting for a cytotoxic food sensitivity test, the fast prohibits the use of tobacco products. Bottled water is the only beverage allowed during the fast. The patient’s teeth should not be brushed with toothpaste brushing with bottled water is acceptable) the morning of the collection. BCL must be notified 1 – 2 days prior to collection of cytotoxic food sensitivity specimens for approval of specimen arrival dates. Specimen must be shipped same day as collection, Monday - Wednesday only.
- Serum specimens require that whole blood in the amount of 2 ½ times the required amount of serum be drawn. For example, if 2 mL serum is required, then at least 5 mL whole blood needs to be drawn. Individual patient hematocrits may affect the amount to be drawn. Unless noted, all serum specimens should be separated from cells by centrifugation within 45 minutes of venipuncture.
- Specimens drawn in ACD, EDTA, or heparin tubes contain anticoagulant. To prevent the specimen from clotting, the contents of these tubes should be mixed thoroughly immediately after being drawn by inverting the tube gently at least six times.
- All volumes listed are pipettable volumes (i.e., extra volume must be included to allow for pipetting of specimen).
- Minimum volume specimens allow the sample to be tested once with no option for repeat analysis.
- Preferred volumes allow specimens to be tested several times. These volumes should always be sent unless difficulty in obtaining specimen is incurred, and use of minimum volume is the only option available.
- Specimens that need to be protected from freezing should never be placed directly next to an ice pack, or cells will burst (hemolysis will result), and the specimen will be unusable. To protect these specimens from freezing, separate the specimen from the ice pack with 1/2 inch of padding (such as bubble wrap or paper towels). Shipping containers with unfrozen whole blood specimen should be tightly packed to prevent jostling during shipping. Add newspaper or other padding as needed.
- When storage instructions state specimen is to be frozen, the specimen should be frozen and then later shipped with the (frozen) ice pack included in our kits. Specimens shipped in this manner will arrive in a cold or semi-frozen condition. No additional ice packs are needed. If dry ice is required for shipment of any specimen, instructions will state this requirement.
- Light-protected specimens should be placed in an amber plastic transport tube. If using a clear or opaque plastic transport tube, wrap foil around the tube.
- Centrifuge time is 10 minutes at approximately 3000 rpm.
<table>
<thead>
<tr>
<th>Specimen</th>
<th>Serum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draw tube</td>
<td>SST or red top tube</td>
</tr>
<tr>
<td>Processing</td>
<td>Allow blood to clot 15 – 40 minutes prior to centrifuging. Centrifuge specimen. Transfer serum to plastic transport tube. Discard cells.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Plasma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draw tube</td>
<td>Heparin or EDTA tube</td>
</tr>
<tr>
<td>Processing</td>
<td>Centrifuge specimen. Transfer plasma to plastic transport tube. Discard cells, unless RBC’s are to be used for other testing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Whole blood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draw tube</td>
<td>Heparin or EDTA tube</td>
</tr>
<tr>
<td>Processing</td>
<td>Specimens can be shipped in the tube they were drawn in.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Urine for Indican, Pyrroles, UA and Vitamin C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection container</td>
<td>Use a clean disposable container for collection. It is advisable to urinate a small amount of urine into the toilet immediately prior to the collection of the urine specimen for the UA.</td>
</tr>
<tr>
<td>Processing</td>
<td>Pour appropriate amount of urine into a clean plastic screw capped transport tube.</td>
</tr>
<tr>
<td>Note</td>
<td>Pyrrole transport tubes are amber and must contain ascorbic acid crystals for stability. Wrap tube in foil for light protection if amber tube is not available.</td>
</tr>
</tbody>
</table>

**Specimen Submittal and Shipping**

- **REQUIRED:** All specimen tubes and slides must be labeled with the patient’s name & name of test being requested, and must be accompanied by a completed requisition for testing. Required information on the requisition consists of the following: patient’s name; patient’s date of birth and gender; date & time of specimen collection. If the test is ordered by a physician, the physician’s name, physician’s address and phone number (& fax number, if applicable) are also required. Use an “X” to mark the square in front of the test being requested. Failure to meet these minimum requirements may be cause for rejection of specimen.

- **BCL does not require a physician’s order for laboratory testing, however a physician’s order is required in order to file services with Medicare and other health insurance providers. Patient-ordered test results will be sent to the patient. Results of testing ordered by a physician will be sent directly to the physician. Results will not be sent to a patient unless requested by the ordering physician. Diagnosis should be printed legibly. Also include the numerical ICD-9 code if the patient is sending payment and wishes to receive a receipt for insurance reimbursement, or if BCL is to file services with Medicare for covered services.**

- **In case of leakage during shipping, all specimens should be transported within a sturdy plastic bag with absorbent material placed next to the specimen. The specimen bag and frozen ice pack (if required) should then be sealed in the bubble bag provided (bubble bag not required for specimens shipped in styrofoam boxes) and then placed in a sturdy outer container or box for transport.**

- **Note: Specimen must be shipped Monday – Thursday by FedEx overnight delivery. The lab is closed on weekends and holidays. Avoid shipping specimens around these days.** Place the box containing the specimen inside the FedEx Clinical Pak provided. Write your name and address in the “From” section on the prepaid label. Keep the orange receipt copy for your records. You may drop off the package at any FedEx or FedEx Kinko’s location. For FedEx shipping questions, call 1-800-GOFED Ex If you are located outside of the Continental United States, you must make your own shipping arrangements.

**CAUSES FOR REJECTION:** Specimens not labeled with date and name of patient & test; requisition not completed properly; improper specimen drawn (example: plasma specimen sent when serum is specified); specimen maintained or received at improper temperature; inadequate or inappropriate volume. Additional causes for rejection may be listed under individual test information.
BIO-CENTER LABORATORY
3100 N Hillside, Wichita, KS 67219
(316)684-7784 or (800)494-7785;
FAX: (316) 682-2062
www.biocenterlab.org

BCL use only

<table>
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<tr>
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</tr>
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<td>_________________</td>
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Patient: ____________________________________________
DOB: ___________________ M/F: ______

Last
First
Middle Initial

Physician: ____________________________________________

Collection Date/Time: ________________________

Date/Time of Last Food: ________________________

Comments/Diagnosis: ________________________

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<th>Fee</th>
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<td>Coenzyme Q10</td>
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<td>Creatinine</td>
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<td>CRP-hs</td>
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<td>DHEA-S</td>
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<td>Estradiol</td>
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<td>Glucose</td>
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<td>G6PD</td>
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<td>Glutathione - RBC</td>
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<td>Hemoccult – ICT</td>
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<td>Hemoglobin A1C</td>
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<td>Insulin</td>
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<td>PSA</td>
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<td>PSA, Free PSA, Ratio</td>
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<td>Testosterone</td>
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<td>Yeast Species (Oral)</td>
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<td>A, C, E</td>
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<td>A, C, E, B12, Folate</td>
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<td>A, E, Beta Carotene, Lutein, Lycopene</td>
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</tr>
<tr>
<td>B1, B2, B3, B5, B6 Assessment</td>
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</tr>
<tr>
<td>B12 &amp; Folate</td>
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<tr>
<td>Folic Acid (Folate)</td>
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<tr>
<td>Lutein</td>
<td>129</td>
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<tr>
<td>Lycopene</td>
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</tr>
<tr>
<td>Vit. A</td>
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</tr>
<tr>
<td>Vit. B1 – Thiamine</td>
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<tr>
<td>Vit. B2 – Riboflavin</td>
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<tr>
<td>Vit. B3 – Niacin</td>
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<tr>
<td>Vit. B5 – Pantothenic Acid</td>
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<tr>
<td>Vit. B6 – Pyridoxine</td>
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<tr>
<td>Vit. B12 – Cobalamin</td>
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<tr>
<td>Vit. C – Plasma</td>
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<td>Vit. C – Post IVC Plasma</td>
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<td>Vit. D</td>
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<td>Vit. E</td>
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<td>Manganese</td>
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<td>Selenium</td>
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<td>Mg, Zn, Cu</td>
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<td>Mg, Zn, Cu, Mn, Se</td>
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<td>Chromium</td>
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<td>Copper</td>
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<td>Magnesium</td>
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<td>Manganese</td>
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<td>Selenium</td>
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<td>Zinc</td>
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<tbody>
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<td>Amino Acid – Essential</td>
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<td>Amino Acid -Fractionated</td>
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<td>Candida Ab’s (IgG,A,M)</td>
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<tr>
<td>CBC</td>
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<td>Fatty Acids – EFA RBC</td>
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<tr>
<td>Hair Tissue Analysis</td>
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<td>Lipid Profile</td>
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<tbody>
<tr>
<td>Stool Exam</td>
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<tr>
<td>Stool Exam (3 Collection)</td>
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<tbody>
<tr>
<td>Basic Cytotoxic</td>
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<tr>
<td>Standard List #1</td>
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<tr>
<td>Standard List #2</td>
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<tr>
<td>Individual Cytotoxic</td>
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<tr>
<td>Special Prep Cytotoxic</td>
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<tbody>
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<td>Boron</td>
<td>104</td>
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<tr>
<td>Indican</td>
<td>62</td>
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<td>Strontium</td>
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<td>UA + Vit. C</td>
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### Physician Information

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<tr>
<th>First Name</th>
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<table>
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<table>
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<th>FAX</th>
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### Patient Information

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<tr>
<th>First Name</th>
<th>Middle Name/Initial</th>
<th>Last Name</th>
<th>Date of Birth</th>
<th>Month</th>
<th>Day</th>
<th>Year</th>
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<table>
<thead>
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<th>Zip</th>
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</thead>
<tbody>
<tr>
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</table>

### Payment

- [ ] Bill Physician/Clinic/Reference Lab at address above. Payment is due within 30 days of invoice.
- [ ] I ordered this test online at www.biocenterlab.org. You already have my payment information.
- [ ] Payment enclosed. A receipt will be issued to you for insurance submittal. Please complete Patient Information (and credit card information, if applicable). If patient is responsible for payment, it must be submitted with specimen.

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<tr>
<th>Amount of personal check</th>
<th>Amount of money order</th>
<th>Amount of credit card purchase</th>
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<tbody>
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<td>$_____________. _____</td>
<td>$_____________. _____</td>
<td>$_____________. _____</td>
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</table>

**Note:** If no payment option is selected, physician account will be billed; New clients are required to submit payment with first specimen. Billing option will apply on approved accounts.

<table>
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</tbody>
</table>

Please print cardholder name as printed on card

Signature of cardholder
REQUIRED BY MEDICARE - WAIVER OF LIABILITY

Medicare will only pay for services that it determines to be “reasonable and necessary” under section 1862(a)(1) of the Medicare law. If Medicare determines that a particular service, although it would otherwise be covered, is “not reasonable and necessary” under Medicare program standards, Medicare will deny payment for that service. Medicare does not cover some of the tests performed here, since some are considered “preventive”. Medicare pays only for tests it considers “medically necessary”. Medicare does not pay for routine testing or screening. I believe in your case, Medicare is likely to respond to the service(s) indicated below:

Medicare usually covers the following laboratory tests except if Medicare determines them not to be a medical necessity. Medicare will not pay for vitamin, mineral and nutrient testing on follow-up visits.

AMINO ACID FRACTIONATION
- GIARDIA/CRYPTOSPORIDIUM
- TESTOSTERONE

BETA CAROTENE
- GLUTATHIONE (RBC)
- THYROID ANTIBODIES

BORON (URINE)
- HISTAMINE
- VITAMIN A

CALCIIUM
- HOMOCYSTEINE
- VITAMIN B1

CANDIDA IGG, IGA, IGM
- LUTEIN
- VITAMIN B12

CANDIDA (ORAL)
- LYCOPENE
- VITAMIN B2

CO ENZYME Q10
- MAGNESIUM
- VITAMIN B3

C-REACTIVE PROTEIN (CRP)
- PROGESTERONE
- VITAMIN B5

CREATININE
- STOOL EXAMINATION
- VITAMIN B6

DHEA
- STRONTIUM, URINE
- VITAMIN C

ESSENTIAL FATTY ACIDS
- T3 FREE (UNBOUND)
- VITAMIN E

ESTRADIOL
- T4 FREE (DIRECT)

FOLIC ACID (FOLATE)

G6PD

ABN (Advance Beneficiary Notice) is required for the following limited coverage tests. The patient’s diagnosis does not match any of the ICD-9 codes established as eligible for coverage by Medicare. Medicare may not allow for these many laboratory tests within this time frame.

CBC
- COPPER
- INSULIN
- PSA, FREE
- TSH
- ZINC

CEA
- FERRITIN
- LIPID PROFILE
- PSA
- URINALYSIS w/wo MICRO

CHOLESTEROL
- GLUCOSE
- MANGANESE
- SELENIUM

CHROMIUM
- HEMOGLOBIN A1c
- OCCULT (BLOOD)

have determined the following test as non-covered or not medically necessary by Medicare.

HAIR ANALYSIS

CYTOTOXIC FOOD SENSITIVITY

BENEFICIARY AGREEMENT

My physician has notified me that he or she believes that, in my case Medicare is likely to deny payment for the services identified above for the reasons stated. If Medicare denies payment or is not primary, I agree to be personally and fully responsible for payment within 30 days.

ONE TIME AUTHORIZATION

I request that payment of authorized Medicare benefits be made on my behalf to the Bio-Center Laboratory for any services furnished me by the laboratory. I authorize any holder of medical information about me to release to The Centers for Medicare & Medicaid Services (CMS) and its agents any information needed to determine these benefits or the benefits payable for related services.

Patient __________________________ Date __________________________

Note: Your health information will be kept confidential. Any information that we collect about you on this form will be kept confidential in our office. If a claim is submitted to Medicare, your health information on this form may be shared with Medicare. Your health information, which Medicare sees will be kept confidential by Medicare.
Amino Acid, Essential
CPT 82131 (x10)
Profile Includes Histidine; isoleucine; leucine; lysine; methionine; phenylalanine; threonine; tryptophan; valine; arginine
Patient Preparation Fasting
Special Instructions None
Specimen Volume 1.5 mL EDTA plasma
Minimum Volume 0.5 mL
Collection Container EDTA tube
Transport Container Plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis

Amino Acid, Fractionated
CPT 82131 (x25)
Profile Includes Aspartic acid; glutamic acid; hydroxyproline; serine; asparagine; glycine; glutamine; taurine; histidine; citrulline; threonine; alanine; arginine; proline; a-amino-N-butyric acid; tyrosine; valine; methionine; cysteine; isoleucine; leucine; phenylalanine; tryptophan; ornithine; lysine
Patient Preparation Fasting
Special Instructions None
Specimen Volume 1.5 mL EDTA plasma
Minimum Volume 0.5 mL
Collection Container EDTA tube
Transport Container Plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis

Beta Carotene
CPT 82380
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum; light protected
Minimum Volume 0.2 mL
Collection Container SST or red-stopper tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Cholesterol, Total
CPT 82465
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum
Minimum Volume 0.5 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Boron, Urine
CPT 82190
Synonyms Urine B
Patient Preparation None
Special Instructions None
Specimen Volume 20 mL urine
Minimum Volume 10 mL
Collection Container Clean container
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze

Candida Antibodies IgG, IgA, IgM
CPT 86628 (x3)
Patient Preparation None
Special Instructions None
Specimen Volume 0.5 mL serum
Minimum Volume 0.2 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Calcium, RBC
CPT 82310
Synonyms RBC Ca
Patient Preparation None
Special Instructions None
Specimen Volume 6 mL heparin whole blood
Minimum Volume 1 mL
Collection Container Heparin tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Frozen specimen

CEA
CPT 82378
Synonyms Carcinoembryonic Antigen
Patient Preparation None
Special Instructions Note whether patient is a smoker Specimen Volume 0.5 mL serum
Minimum Volume 0.2 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Candida Antibodies IgG, IgA, IgM
### Chromium, Serum

**CPT** 82495  
**Synonyms** Serum Cr  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 0.5 mL serum  
**Minimum Volume** 0.1 mL  
**Collection Container** Trace element non-additive tube  
**Transport Container** Metal-free plastic transport tube  
**Storage & Transport Instructions** Refrigerate or freeze  
**Causes for Rejection** Hemolysis

### Copper, RBC

**CPT** 82525  
**Synonyms** RBC Cu  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 6 mL Heparin whole blood  
**Minimum Volume** 1 mL  
**Collection Container** Heparin tube  
**Transport Container** Collection container  
**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!  
**Causes for Rejection** Frozen specimen

### Coenzyme Q10

**CPT** 82491  
**Synonyms** CoQ10  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 1 mL serum; light protected  
**Minimum Volume** 0.5 mL  
**Collection Container** SST or red-stopper tube  
**Transport Container** Amber plastic transport tube  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Gross hemolysis

### Complete Blood Count with Differential (CBC)

**CPT** 85027, 85007  
**Synonyms** CBC with Differential  
**Profile Includes**: Automated count (white blood cells; red blood cells; hemoglobin; hematocrit; MCV; MCH; MCHC; platelets); Manual Differential  
**Patient Preparation** None  
**Special Instructions** Collection tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen. Specimen must be shipped same day as collection. Specimens accepted Monday – Thursday only.  
**Specimen Volume** 6 mL EDTA whole blood  
**Minimum Volume** same  
**Collection Container** EDTA tube  
**Transport Container** Plastic transport tube. Stable 24 hours at room temperature. Refrigerated specimens are stable 48 hours.  
**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!  
**Causes for Rejection** Gross hemolysis; frozen specimen.

### C-Reactive Protein (CRP) – Ultra Sensitive

**CPT** 86141  
**Synonyms** Cardiac-Reactive Protein  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 1 mL serum  
**Minimum Volume** 0.5 mL  
**Collection Container** SST or red-stopper tube  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Refrigerate or freeze  
**Causes for Rejection** Hemolysis

### Creatinine

**CPT** 82565  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 1 mL serum  
**Minimum Volume** 0.5 mL  
**Collection Container** SST or red-stopper tube  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Refrigerate or freeze  
**Causes for Rejection** Gross hemolysis
Cytotoxic Food Sensitivity, Basic
CPT 86849

Synonyms Basic Cyto
Profile Includes 24 specific food allergens
Patient Preparation 12-14 hour fast, (no food, supplements, medications or tobacco products). Bottled water is the only beverage allowed during the fast. Patient should not brush teeth the morning of the collection.
Special Instructions Monday through Wednesday collections only. Specimen must be shipped same day as collection.
Specimen Volume 10 mL ACD whole blood. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.
Minimum Volume same
Collection Container Yellow stopper ACD Solution A tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE! Tube needs to be wrapped properly to prevent breakage during transportation.
Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection

Cytotoxic Food Sensitivity, Individual
CPT 86849

Synonyms Individual Cyto
Note A personalized profile may be created by requesting any combination of food antigens listed in the Standard List #1 and #2 (i.e. may be ordered individually from either list). See allergens lists at the end of this section.
Patient Preparation 12-14 hour fast, (no food, supplements, medications or tobacco products). Bottled water is the only beverage allowed during the fast. Patient should not brush teeth the morning of the collection.
Special Instructions Monday through Wednesday collections only. Specimen must be shipped same day as collection.
Specimen Volume 10 mL ACD whole blood, per 1-90 individual food antigens requested; a second 10 mL ACD tube is required if more food antigens are requested. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.
Minimum Volume same
Collection Container Yellow stopper ACD Solution A tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE! Tube needs to be wrapped properly to prevent breakage during transportation.
Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection

Cytotoxic Food Sensitivity, Special Preparation
CPT 86849

Synonyms Special Prep Cyto
Note -- any food allergen not listed in the Standard Lists #1 and #2. See allergens lists at the end of this section.
Requires a small sample of the allergen substance to be tested. This must arrive a minimum of two full working days (Monday – Friday) prior to arrival of the patient’s blood specimen. Contact BCL for approval of allergen substance that is to be tested against patient’s blood.
Patient Preparation 12-14 hour fast, (no food, supplements, medications or tobacco products). Bottled water is the only beverage allowed during the fast. Patient should not brush teeth the morning of the collection.
Special Instructions Monday through Wednesday blood collections only. Blood specimen must be shipped same day as collection.
Specimen Volume 10 mL ACD whole blood. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.
Minimum Volume same
Collection Container Yellow stopper ACD Solution A tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE! Tube needs to be wrapped properly to prevent breakage during transportation.
Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection

Cytotoxic Food Sensitivity, Standard List #1
CPT 86849

Synonyms Std Cyto
Profile Includes 90 specific food allergens. See allergens lists at the end of this section.
Patient Preparation 12-14 hour fast, (no food, supplements, medications or tobacco products). Bottled water is the only beverage allowed during the fast. Patient should not brush teeth the morning of the collection.
Special Instructions Monday through Wednesday blood collections only. Specimen must be shipped same day as collection.
Specimen Volume 10 mL ACD whole blood. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.
Minimum Volume same
Collection Container Yellow stopper ACD Solution A tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE! Tube needs to be wrapped properly to prevent breakage during transportation.
Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection
Cytotoxic Food Sensitivity, Standard List #2
CPT 86849
Synonyms Cyto List #2
Profile Includes 90 specific food allergens. See allergens lists at the end of this section.
Patient Preparation 12-14 hour fast, (no food, supplements, medications or tobacco products). Bottled water is the only beverage allowed during the fast. Patient should not brush teeth the morning of the collection.
Special Instructions Monday through Wednesday collections only. Specimen must be shipped same day as collection.
Specimen Volume 10 mL ACD whole blood. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.
Minimum Volume same
Collection Container Yellow stopper ACD Sol’n A tube.
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE! Tube needs to be wrapped properly to prevent breakage during transportation.
Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection

DHEA-S
CPT 82627
Synonyms Dehydroepiandrosterone Sulfate
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum
Minimum Volume 0.5 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Estradiol
CPT 82670
Synonyms E2, Estradiol- 17 beta
Patient Preparation None
Special Instructions None
Specimen Volume 0.8 mL
Minimum Volume 0.3 mL
Collection Container SST or red-stopper tube Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Cause for Rejection plasma specimen

Fatty Acids, RBC
CPT 82725 (x11)
Synonyms EFA, RBC
Profile Includes Omega-6 fatty acid family (linoleic, gamma linolenic, dihomogamma linolenic, arachidonic, total omega-6); Omega-3 fatty acid family (alpha linolenic, eicosapentaenoic, docosahexaenoic, total omega-3 omega-6 to omega-3 balance); Monounsaturated fatty acids (oleic, total monounsaturated); Saturated fatty acid family (palmitic, stearic, total saturated); Unsaturated to Saturated Ratio; Ela/tic
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL EDTA whole blood
Minimum Volume 0.4 mL
Collection Container EDTA tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Gross hemolysis, frozen specimen

Ferritin
CPT 82728
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum
Minimum Volume 0.3 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Folate (Folic Acid)
CPT 82746
Synonyms Folic Acid
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum; light protected
Minimum Volume 0.2 mL
Collection Container SST or red-stopper tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Glucose
CPT 82947
Patient Preparation Fasting recommended
Special Instructions Separate serum from cells within 45 minutes of draw
Specimen Volume 1 mL serum
Minimum Volume 0.5 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis
Glucose 6-Phosphate Dehydrogenase (G6PD)

CPT 82955
Synonyms Glucose 6-Phosphate Dehydrogenase
Patient Preparation None
Special Instructions Monday thru. Thursday collections only. Specimen must be shipped same day as collection.
Specimen Volume 6 mL EDTA whole blood
Minimum Volume same
Collection Container EDTA tube. Collection tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.
Transport Container Collection container
Storage & Transport Instructions Refrigerated specimens are stable for 48 hours. DO NOT FREEZE! Specimen must be received by no later than noon the next day following collection.
Causes for Rejection Gross hemolysis; clotted specimen; frozen specimen

Glutathione RBC

CPT 82979
Patient Preparation None
Special Instructions Monday through Thursday collections only. Specimen must be shipped same day as collection.
Specimen Volume 10 mL ACD-solution A, whole blood and 6 mL EDTA, whole blood
Minimum Volume same
Collection Containers one Yellow stopper ACD-sol’n A tube and one EDTA tube. Each collection tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimens.
Transport Container Collection containers
Storage & Transport Instructions Refrigerate. DO NOT FREEZE! Tube needs to be wrapped properly to prevent breakage during transportation. Specimen must be received by no later than noon the next day following collection.
Causes for Rejection Moderate or excessive hemolysis; clotted specimen; frozen specimen

Glycemic Profile

CPT 82947, 83036
Profile Includes Glucose; Hemoglobin A1c; Estimated Average Glucose.
Patient Preparation Fasting recommended
Special Instructions Separate serum from cells within 45 minutes of draw.
Specimen Volume 1 mL serum, 6 mL whole blood
Minimum Volume 0.5 mL Serum, 1 mL whole blood
Collection Container SST tube, EDTA tube
Transport Container Plastic transport tube for serum, Collection container for whole blood
Storage & Transport Instructions Refrigerate whole blood, freeze serum
Causes for Rejection Gross hemolysis, clotted whole blood specimen

Hair Tissue Analysis

CPT P2031 (Medicare), 82310, 82495, 82525, 83540, 84311, 83735, 83785, 84311, 84255, 84630, 82108, 82175, 82300, 83655, 83825
Profile Includes 11 Hair Nutrient Minerals Ca; Chromium (Cr); Copper (Cu); Iron (Fe); Potassium (K); Magnesium (Mg); Manganese (Mn); Sodium (Na); Selenium (Se); Zinc (Zn); log (Na x Zn) / Cu is calculated; 5 Hair Toxic Minerals Al; Arsenic (As); Cadmium (Cd); Lead (Pb); Mercury (Hg)
Patient Preparation None
Special Instructions Obtain hair samples from several locations on the lower portion of the back of the patient’s head (from the area that includes the nape of neck and up to as high as the tops of the ears). Sample should include only hair cut from next to the scalp & which is two inches or less in length (measured from the scalp end of the hair sample). If hair length is greater than two inches, trim hair sample to two inches from scalp end & dispose of excess length of hair. The use of “thinning shears” is recommended for use on patients with hair lengths of two inches or less. For those patients with longer hair lengths, cut several strands of hairs at the scalp by using standard trimming scissors & then trim hair sample to proper length, discarding the excess. Collection kit is available upon request.
Specimen Volume 1 gram of hair
Minimum Volume 0.5 grams
Collection Container Plastic Ziploc bag
Transport Container Plastic Ziploc bag
Storage & Transport Instructions Room temperature
Causes for Rejection Inadequate volume; excess hair length not trimmed & discarded

Hemoccult-ICT (3 specimens)

CPT 82270 (x3)
Synonyms Fecal Occult Blood
Patient Preparation Do not collect samples three days before/after or during your menstrual period, or while you have bleeding hemorrhoids or blood in your urine, open cut on hands, or have strained during bowel movement.
Special Instructions Collect samples from 3 bowel movements approximately every other day. Collection card should be returned to BCL within 3 days of last specimen collection.
Specimen Volume samples of 3 different stools, placed onto collection card.
Minimum Volume same
Collection Container Hemoccult II specimen card. Place card in disposable container to collect stool. Use clean wooden specimen card. Date & time of each specimen must be noted on the front of the card.
Transport Container Hemoccult-ICT (3 specimens)
Storage & Transport Instructions Store card at room temperature. Protect slides from heat & volatile chemicals.
### Hemoglobin (Hgb) A1c
**CPT** 83036  
**Synonyms** HbA1c  
**Patient Preparation** None  
**Special Instructions** Do not freeze  
**Specimen Volume** 6 ml EDTA whole blood  
**Minimum Volume** same  
**Collection Container** EDTA tube.  
**Transport Container** Collection container  
**Storage and Transport Instructions** Store specimens at room temperature or refrigerate.  
**Causes for Rejection** Clotted Specimen

### Histamine
**CPT** 83088  
**Patient Preparation** Discontinue antihistamines two days before collection of specimen  
**Special Instructions** None  
**Specimen Volume** Draw until blood stops flowing into tube provided by Bio Center Lab. These tubes will draw blood to just below the black mark on the label. Immediately transfer unclotted blood into 5 mL 10% trichloroacetic acid (TCA). Mix specimen well by vigorously shaking TCA tube after adding blood. Stable one month if kept frozen.  
**Minimum Volume** same  
**Collection Container** Non-additive tube; draw this tube last if other tubes are being collected from the patient; do not allow whole blood to clot  
**Transport Container** Plastic transport tube with preservative.  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Inadequate specimen added to TCA aliquot; specimen not frozen.

### Homocysteine
**CPT** 82131  
**Patient Preparation** None  
**Special Instructions** Keep specimen cold and centrifuge within 60 minutes.  
**Specimen Volume** 1 mL serum  
**Minimum Volume** 0.5 mL  
**Collection Container** SST or red-stopper tube  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Refrigerate or freeze  
**Causes for Rejection** Gross hemolysis

### Indican, Urine
**CPT** 84999  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 12 mL urine  
**Minimum Volume** 5.0 mL  
**Collection Container** Clean container  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Less than 5.0 mL received

### Insulin
**CPT** 83525  
**Synonyms** Free Prostate-Specific Antigen  
**Patient Preparation** Fasting  
**Special Instructions** None  
**Specimen Volume** 1 mL serum  
**Minimum Volume** 0.5 mL  
**Collection Container** SST or red-stopper tube  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Gross hemolysis

### Lipid Profile
**CPT** 80061  
**Profile Includes** Cholesterol; triglycerides; high-density lipoprotein (HDL); very low-density lipoprotein (VLDL); low-density lipoprotein (LDL) & risk classification for coronary heart disease (CHD); cholesterol to HDL ratio & risk classification for CHD; LDL to HDL ratio & risk classification for CHD  
**Patient Preparation** Fasting  
**Special Instructions** None  
**Specimen Volume** 4 mL serum  
**Minimum Volume** 1.5 mL  
**Collection Container** SST or red-stopper tube  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Refrigerate or freeze  
**Causes for Rejection** Gross hemolysis

### Lutein
**CPT** 82491  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 1 mL serum; light protected  
**Minimum Volume** 0.2 mL  
**Collection Container** SST or red-stopper tube  
**Transport Container** Amber plastic transport tube  
**Storage & Transport Instructions** Refrigerate or freeze  
**Causes for Rejection** Gross hemolysis
Lycopene
CPT 82491
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum; light protected
Minimum Volume 0.2 mL
Collection Container SST or red-stopper tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Magnesium, RBC
CPT 83735
Synonyms RBC Mg
Patient Preparation None
Special Instructions None
Specimen Volume 6 mL Heparin whole blood
Minimum Volume 1 mL
Collection Container Heparin tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Frozen specimen

Magnesium, Serum
CPT 83735
Synonyms Serum Mg
Patient Preparation None
Special Instructions None
Specimen Volume 1.5 mL serum
Minimum Volume 0.5 mL
Collection Container Trace element non-additive tube
Transport Container Metal-free plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Hemolysis

Manganese, RBC
CPT 83785
Synonyms RBC Mn
Patient Preparation None
Special Instructions None
Specimen Volume 3 mL Heparin whole blood
Minimum Volume 1 mL
Collection Container Heparin tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Frozen specimen

Manganese, Serum
CPT 83785
Synonyms Serum Mn
Patient Preparation None
Special Instructions None
Specimen Volume 2 mL serum
Minimum Volume 1 mL
Collection Container Trace element non-additive tube
Transport Container Metal-free plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Hemolysis

Parasitology, Stool Exam (single specimen)
CPT 87177; 87272 (x2)
Profile Includes Stool exam (single specimen); Cryptosporidium Ag; Giardia Ag
Patient Preparation No bismuth, barium, laxatives, antidiarrheals and antibiotics for at least one week prior to collection.
Specimen Volume Using the collection spoon built into the lid of the Ecofix vial, add enough stool to bring combination of fluid and stool sample to red specimen line on vial. Filling vial to slightly above the red line is allowed. Close cap tightly and shake vigorously.
Minimum Volume Same
Collection Container Use clean dry container. Do not allow urine or water to come in contact with specimen.
Transport Container Para-Pak Ultra Ecofix plastic transport vial
Storage & Transport Instructions Room temperature
Causes for Rejection Frozen Specimen

Parasitology, Stool Exam (three specimens)
CPT 87177 (x3); 87272 (x6)
See instructions for Stool Exam (single specimen).
Collect three separate stool specimens, placing each in its own plastic transport tube, with time & date noted on the vial. Collection days should be spread out to approximately every other day.

Progesterone
CPT 84144
Patient Preparation None
Special Instructions None
Specimen Volume 2 mL serum
Minimum Volume 1 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis
## PSA

**CPT** 84153  
**Synonyms** Prostate-Specific Antigen  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 1 mL serum  
**Minimum Volume** 0.5 mL  
**Collection Container** SST or red-stopper tube  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Gross hemolysis

## PSA, Free

**CPT** 84154  
**Synonyms** Free Prostate-Specific Antigen  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 1 mL serum  
**Minimum Volume** 0.5 mL  
**Collection Container** SST or red-stopper tube  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Gross hemolysis

## Pyrroles, Urine

**CPT** 84999  
**Synonyms** Mauve Factor; Kryptopyrroles  
**Patient Preparation** (1) If first time testing for pyrroles, discontinue taking any B6 or Zinc one week prior to collecting specimen. (2) If under treatment for pyrroluria, continue taking vitamin B6 and Zinc  
**Special Instructions** None  
**Specimen Volume** Approximately 8 mL urine added to 500mg of ascorbic acid. Stable at least 1 month if kept frozen. Minimum Volume 2 mL  
**Collection Container** Clean container  
**Transport Container** Amber plastic transport tube or protected from light  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Ascorbic acid not used to maintain specimen stability

## Pyrroles, Urine (3 collections)

**CPT** 84999 x3  
**See Pyrroles, Urine** Special Instructions 3 collections  
A more comprehensive evaluation of pyrrole excretion may be done by collecting 3 specimens:  
Specimen #1: Collected in a calm mental state  
Specimen #2: Collected in an anxious mental state  
Specimen #3: Collected in an extreme anxious mental state.  
**Note:** Label specimens carefully with each condition

## RBC Elements Profile #1

**CPT** 83735, 84630, 82525, 82310  
**Profile Includes:** Magnesium; zinc; copper; calcium  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 6 mL Heparin whole blood  
**Minimum Volume** 1 mL  
**Collection Container** Heparin tube  
**Transport Container** Collection container  
**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!  
**Causes for Rejection** Frozen specimen

## RBC Elements Profile #2

**CPT** 83735, 84630, 82525, 82310, 83785, 84255  
**Profile Includes:** Magnesium; zinc; copper; calcium; manganese; selenium  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 6 mL Heparin whole blood  
**Minimum Volume** 2 mL  
**Collection Container** Heparin tube  
**Transport Container** Collection container  
**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!  
**Causes for Rejection** Frozen specimen

## RBC Elements Profile #3

**CPT** 83735, 82310  
**Profile Includes:** Magnesium; calcium  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 6 mL Heparin whole blood  
**Minimum Volume** 2 mL  
**Collection Container** Heparin tube  
**Transport Container** Collection container  
**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!  
**Causes for Rejection** Frozen specimen

## Selenium, RBC

**CPT** 84255  
**Synonyms** RBC Se  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 1.5 mL Heparin whole blood  
**Minimum Volume** 0.5 mL  
**Collection Container** Heparin tube  
**Transport Container** Collection container  
**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!  
**Causes for Rejection** Frozen specimen
Selenium, Serum
CPT 84255
Synonyms Serum Se
Patient Preparation None
Special Instructions None
Specimen Volume 1.5 mL serum
Minimum Volume 0.5 mL
Collection Container Trace element non-additive tube
Transport Container Metal-free plastic transport tube
Storage & Transport Instructions Refrigerate or freeze

Strontium, Urine
CPT 82190
Synonyms Urine Sr
Patient Preparation None
Special Instructions None
Specimen Volume 20 mL urine
Minimum Volume 10 mL
Collection Container Clean container
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze

T3, Free (Unbound)
CPT 84481
Synonyms Free Tri-iodothyronine; f-T3
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum
Minimum Volume 0.5 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

T4, Free (Direct)
CPT 84439
Synonyms Free T4, Direct, Serum; Unbound T4
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum
Minimum Volume 0.5 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Plasma Specimen, gross lipemia

Testosterone
CPT 84403-90
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum
Minimum Volume 0.3 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Thyroid Antibodies
CPT 86800; 86376
Panel Includes Thyroid Antithyroglobulin Antibody, Thyroid Peroxidase (TPO) Antibodies
Patient Preparation None
Special Instructions None
Specimen Volume 2 mL serum
Minimum Volume 1 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis, gross lipemia

Thyroid Panel
CPT 84481; 84439; 84443
Panel Includes Free T3, Free T4, TSH
Patient Preparation None
Special Instructions None
Specimen Volume 2 mL serum
Minimum Volume 1 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis, gross lipemia
Trace Elements – Urine, Post Chelation UMEP
CPT 82108, 82310, 82300, 82495, 82525, 83540, 83735, 83785, 83655, 84630
Profile Includes Aluminum; Calcium; Cadmium; Chromium; Copper; Iron; Magnesium; Manganese; Lead; Zinc; Total 24-hour Volume
Patient Preparation Post chelation 24-hour collection begins at same time as the chelation therapy IV is begun. Patient must empty bladder immediately prior to IV. Urine must be collected for a full 24-hour period – including during the IV therapy, if necessary. 24-hour collection period begins immediately after patient has urinated (but not collected) to empty his/her bladder. Patient should note date & time in order to collect urine for a full 24-hour period. Special Instructions Results are based upon a full 24-hour collection. The patient must collect all urine during the 24-hour period. If, for some reason, the patient is unable to collect urine for a full 24 hours, please note the length of time of collection on the requisition or the approximate amount of urine sample lost due to non-collection.
Specimen Volume Measure the urine to obtain the 24-hour volume. Note total volume of 24-hour specimen and date & time of completion on requisition. Mix the 24-hour urine well by shaking the gallon jug before pouring an aliquot of 150 mL into the transport container.
Preferred Volume 25 mL aliquot
Minimum Volume 11 mL aliquot
Collection Container One-gallon mineral-free amber plastic jug. For convenience, a mineral-free cup may be used to catch urine and then be poured into the gallon jug. Do not rinse the collection cup between collections (trace minerals may be in the rinse water). Instead, seal cup with mineral-free plastic lid in-between use during the 24-hour collection period.
Transport Container Acid-washed mineral-free plastic transport bottle
Storage & Transport Instructions Refrigerate specimen during the 24-hour collection process. Refrigerate of freeze aliquot for transport.
Causes for Rejection Total 24-hour urine volume not noted on requisition; non-mineral-free containers used for collection & transport

Trace Elements - Urine, Pre & Post Chelation UMEP
CPT 82108, 82310, 82300, 82495, 82525, 83540, 83735, 83785, 83655, 84630
For Pre collection: 24-hour collection period begins immediately after patient has urinated (but not collected) to empty his/her bladder. Patient should note date & time in order to collect urine for a full 24-hour period. Urine must be collected for a full 24-hour period prior to having the chelating agent administered to the patient. Pre & Post Aliquots must be properly labeled when submitted. Both specimens must be submitted together.

TSH
CPT 84443
Synonyms Thyroid-Stimulating Hormone
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum
Minimum Volume 0.5 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Urinalysis + Urine Vitamin C
CPT (81002, if without urine sediment microscopy (81000, if with urine sediment microscopy); 81009
Synonyms UA + C
Profile Includes Color, appearance, & specific gravity are recorded. Dipstick testing includes: leukocyte esterase; nitrite; pH; protein; glucose; ketones; urobilinogen; bilirubin; blood (intact RBC); hemoglobin (lysed RBC); urine Vitamin C. Confirmatory tests are run if protein, ketones, or bilirubin are abnormal on dipstick test. Any abnormal color, appearance, or readings (except pH) on dipstick will be followed up with a microscopic analysis of the urine sediment.
Patient Preparation None
Special Instructions First morning urine is preferred, but not required. Wash hands prior to collection. For a midstream-catch specimen, patient should urinate a small amount of urine into the toilet, then collect urine in the collection container without stopping the urine stream. Female patients: if specimen may be contaminated with vaginal discharge or menstrual blood, the vaginal area should be thoroughly cleansed by wiping from front to back with moistened towelettes prior to collecting a urine specimen. Note on requisition if patient is currently menstruating.
Specimen Volume 20 mL urine; midstream-catch; light protected
Minimum Volume 15 mL
Collection Container Clean container
Transport Container Plastic transport tube; light protected
Storage & Transport Instructions Refrigerate within 10 minutes of collection. Keep refrigerated. DO NOT FREEZE!
Causes for Rejection Contaminated specimen; frozen specimen; unrefrigerated specimen; insufficient volume; specimen not protected from light. Specimen must be received by noon on Monday - Friday following the day of collection.
Vitamin A
CPT 84590
Synonyms Retinol
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum; light protected
Minimum Volume 0.2 mL
Collection Container SST or red-stopper tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Vitamin A, C, E Mini Profile
CPT 84590; 82180; 84446
Synonyms Antioxidant Mini Profile
Patient Preparation None
Special Instructions See instructions for vitamins A, E & Plasma C.
Vitamins A & E may share the same specimen tube.

Vitamin A, C, E, B12, Folate Profile
CPT 84590; 82180; 84446; 82607; 82746
Patient Preparation None
Special Instructions See instructions for vitamins A, E, B12, Folate & Plasma C. Vitamins A, E, B12 & Folate may share the same specimen tube.

Vitamin A, E, Beta Carotene, Lutein, Lycopene Profile
CPT 84590; 84446; 82380; 82491 (x2)
Synonyms Lipid Soluble Antioxidant Profile
Patient Preparation None
Special Instructions None
Specimen Volume 3 mL serum; light protected
Minimum Volume 1 mL
Collection Container SST or red-stopper tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Vitamin B Assessment Profile
CPT 84425; 84252; 84591; 84207
Profile Includes Vitamins B1, B2, B3, B5, B6
Patient Preparation None
Special Instructions See instructions for Vitamins B1, B2, B3, B5 & B6.

Vitamin B1
CPT 84425
Synonyms Thiamine
Patient Preparation None
Special Instructions None
Specimen Volume 4 mL Heparin whole blood; light protected
Minimum Volume 2.0 mL
Collection Container Heparin tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Frozen specimen

Vitamin B12
CPT 82607
Synonyms Cobalamin
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum; light protected
Minimum Volume 0.2 mL
Collection Container SST or red-stopper tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Hemolysis

Vitamin B12, Folate Profile
CPT 82607; 82746
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum; light protected
Minimum Volume 0.4 mL
Collection Container SST or red-stopper tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Hemolysis

Vitamin B2
CPT 84252
Synonyms Riboflavin
Patient Preparation None
Special Instructions None
Specimen Volume 4 mL Heparin whole blood, light protected
Minimum Volume 2.0 mL
Collection Container Heparin tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Frozen specimen
**Vitamin B3**

**CPT 84591**

**Synonyms** Niacinamide; Pyridine  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 4 mL Heparin whole blood; light protected  
**Minimum Volume** 2 mL  
**Collection Container** Heparin tube  
**Transport Container** Amber plastic transport tube  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Gross hemolysis

**Vitamin B5**

**CPT 84591**

**Synonyms** Pantothenic acid  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 2 mL Heparin whole blood; light protected  
**Minimum Volume** 1 mL  
**Collection Container** Heparin tube  
**Transport Container** Amber plastic transport tube  
**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!  
**Causes for Rejection** Frozen specimen

**Vitamin B6**

**CPT 84207**

**Synonyms** Pyridoxine; Erythrocyte AST/EGOT  
**Patient Preparation** None  
**Special Instructions** None  
**Specimen Volume** 2 mL Heparin whole blood; light protected  
**Minimum Volume** 1 mL  
**Collection Container** Heparin tube  
**Transport Container** Amber plastic transport tube  
**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!  
**Causes for Rejection** Frozen specimen

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**Vitamin C, Plasma**

**CPT 82180**

**Synonyms** Plasma Ascorbic Acid  
**Patient Preparation** None  
**Special Instructions** Separate plasma from cells and process specimen immediately after collection. Ratio of plasma to 3% metaphosphoric acid (MPA) must be maintained, so care must be taken to add exact amount of plasma to the provided 4.5 mL aliquot of MPA. Plasma-MPA specimen is stable at least 3 months if kept frozen.  
**Specimen Volume** 3 mL EDTA or Heparin plasma added to 4.5 mL cold MPA. Mix vigorously.  
**Minimum Volume** 2 mL plasma added to 3 mL (adjusted volume) cold MPA. If minimum volumes of plasma & MPA are used, it must be noted on the requisition as (2 mL plasma + 3 mL MPA used).  
**Collection Container** EDTA or Heparin tube  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Gross hemolysis; insufficient specimen; specimen not frozen; incorrect ratio of plasma to MPA

**Vitamin C, Plasma - Post IVC Specimen**

**CPT 82180**

**Synonyms** Plasma Ascorbic Acid  
**Patient Preparation** None  
**Special Instructions** Note on requisition grams of IVC given. Draw specimen from site on opposite arm used for IVC immediately after completed infusion. Separate plasma from cells and process specimen immediately after collection. Ratio of plasma to 3% metaphosphoric acid (MPA) must be maintained, so care must be taken to add exact amount of plasma to the provided 4.5 mL aliquot of MPA. Plasma-MPA specimen is stable at least 3 months if kept frozen.  
**Specimen Volume** 3 mL EDTA or Heparin plasma added to 4.5 mL cold MPA. Mix vigorously.  
**Minimum Volume** 1 mL plasma added to 1.5 mL (adjusted volume) cold MPA. If minimum volumes of plasma & MPA are used, it must be noted on the requisition as (1 mL plasma + 1.5 mL MPA used).  
**Collection Container** EDTA or Heparin tube  
**Transport Container** Plastic transport tube  
**Storage & Transport Instructions** Freeze  
**Causes for Rejection** Gross hemolysis; insufficient specimen; specimen not frozen; incorrect ratio of plasma to MPA; grams of IVC not noted on requisition  
**Note:** Diabetic patients who monitor blood glucose with a finger stick strip and meter: high level post I.V.C. (ascorbic acid) will cause a “FALSE POSITIVE” on the finger stick test. Wait eight hours or more to check the patient’s glucose with the finger stick and meter. If a test is needed during this time, have a serum glucose performed in a certified clinical laboratory.
<table>
<thead>
<tr>
<th>Test</th>
<th>CPT</th>
<th>Synonyms</th>
<th>Patient Preparation</th>
<th>Special Instructions</th>
<th>Specimen Volume</th>
<th>Collection Container</th>
<th>Transport Container</th>
<th>Storage &amp; Transport Instructions</th>
<th>Causes for Rejection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vitamin C Screen, Urine</strong></td>
<td>81099</td>
<td>Urine C</td>
<td>None</td>
<td>None</td>
<td>2 mL urine</td>
<td>Clean container</td>
<td>Plastic transport tube</td>
<td>Freeze within 30 minutes of collection; keep frozen</td>
<td>specimen not kept frozen; specimen not protected from light</td>
</tr>
<tr>
<td><strong>Vitamin D, 25-Hydroxy</strong></td>
<td>82306</td>
<td>25-Hydroxycholecalciferol; 25-OH-D</td>
<td>None</td>
<td>None</td>
<td>1 mL serum</td>
<td>SST or red-stopper tube</td>
<td>Amber plastic transport tube</td>
<td>Refrigerate or Freeze</td>
<td></td>
</tr>
<tr>
<td><strong>Vitamin E</strong></td>
<td>84446</td>
<td>Alpha Tocopherol</td>
<td>None</td>
<td>None</td>
<td>1 mL serum</td>
<td>SST or red-stopper tube</td>
<td>Amber plastic transport tube</td>
<td>Refrigerate or freeze</td>
<td>Gross hemolysis</td>
</tr>
<tr>
<td><strong>Yeast Species (Oral)</strong></td>
<td>87201</td>
<td></td>
<td>None</td>
<td>Swish 10 mL sterile water in mouth for 1 minute then spit back into collection container</td>
<td>10 mL mouth wash</td>
<td>Sterile collection cup</td>
<td>Sterile collection cup</td>
<td>Refrigerate</td>
<td>Frozen specimen</td>
</tr>
<tr>
<td><strong>Zinc, RBC</strong></td>
<td>84630</td>
<td></td>
<td>None</td>
<td>None</td>
<td>6 mL Heparin whole blood</td>
<td>Heparin tube</td>
<td>Collection container</td>
<td>Refrigerate or freeze</td>
<td></td>
</tr>
<tr>
<td><strong>Zinc, Serum</strong></td>
<td>84630</td>
<td>Serum Zn</td>
<td>None</td>
<td>None</td>
<td>2 mL serum</td>
<td>Trace element non-additive tube</td>
<td>Metal-free plastic transport tube</td>
<td>Refrigerate or freeze</td>
<td>Moderate or excessive hemolysis</td>
</tr>
</tbody>
</table>
## Cytotoxic Standard List 1

<table>
<thead>
<tr>
<th>FRUITS</th>
<th>VEGETABLES</th>
<th>NUTS AND SEEDS</th>
<th>SPICES/HERBS</th>
<th>ADDITIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>Asparagus</td>
<td>Almond</td>
<td>Chocolate</td>
<td>BHA/BHT</td>
</tr>
<tr>
<td>Banana</td>
<td>Avocado</td>
<td>Cashew</td>
<td>Mustard</td>
<td>Chlorine</td>
</tr>
<tr>
<td>Blueberry</td>
<td>Bean, String</td>
<td>Pecan</td>
<td>Pepper, Black</td>
<td>Dye, Blue</td>
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<tr>
<td>Cantaloupe</td>
<td>Broccoli</td>
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<td>Vanilla</td>
<td>Dye, Green</td>
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<tr>
<td>Coconut</td>
<td>Cabbage</td>
<td>Coffee</td>
<td>Yeast</td>
<td>Dye, Red</td>
</tr>
<tr>
<td>Grape, Seedless</td>
<td>Carrot</td>
<td>Tea</td>
<td>NUTS AND SEEDS</td>
<td>Dye, Yellow</td>
</tr>
<tr>
<td>Grapefruit</td>
<td>Cauliflower</td>
<td>PROTEINS</td>
<td>Almond</td>
<td>Fluorine</td>
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<tr>
<td>Lemon</td>
<td>Celery</td>
<td>Beef</td>
<td>Cashew</td>
<td>MSG</td>
</tr>
<tr>
<td>Orange</td>
<td>Cucumber</td>
<td>Chicken</td>
<td>Pecan</td>
<td>Nutrasweet</td>
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<tr>
<td>Peach</td>
<td>Garlic</td>
<td>Pork</td>
<td>BEVERAGES</td>
<td>Sodium Nitrate</td>
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<tr>
<td>Pear</td>
<td>Lettuce</td>
<td>Turkey</td>
<td>Coffee</td>
<td>Splenda</td>
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<tr>
<td>Pineapple</td>
<td>Mushroom</td>
<td>Codfish</td>
<td>Tea</td>
<td>Sulfur Dioxide</td>
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<td>Strawberry</td>
<td>Olives</td>
<td>Salmon</td>
<td>SUGARS</td>
<td>Tobacco</td>
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<td>Watermelon</td>
<td>Onion</td>
<td>Shrimp</td>
<td>Fructose</td>
<td>GRAINS</td>
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## Cytotoxic Standard List 2

<table>
<thead>
<tr>
<th>FRUITS</th>
<th>VEGETABLES</th>
<th>PROTEINS</th>
<th>SPICES/HERBS</th>
<th>NUTS AND SEEDS</th>
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<tr>
<td>Apricot</td>
<td>Bean Sprouts</td>
<td>Bacon</td>
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<td>Blackberry</td>
<td>Beet</td>
<td>Casien</td>
<td>Bay Leaves</td>
<td>Brazil</td>
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<td>Cherry</td>
<td>Brussel Sprouts</td>
<td>Catfish, Channel</td>
<td>Carob Powder</td>
<td>Flaxseed</td>
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<td>Cranberry</td>
<td>Catsup</td>
<td>Clam</td>
<td>Cayenne Pepper</td>
<td>Pistachio</td>
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<td>Date</td>
<td>Chili Pepper</td>
<td>Crab</td>
<td>Cinnamon</td>
<td>Poppyseed</td>
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<td>Grape, Concord</td>
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<td>Duck</td>
<td>Ginger</td>
<td>Safflower Oil</td>
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<tr>
<td>Honeydew Melon</td>
<td>Okra</td>
<td>Flounder</td>
<td>Horseradish</td>
<td>Sesame Seeds</td>
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<tr>
<td>Lime</td>
<td>Onion, Green</td>
<td>Haddock</td>
<td>Licorice</td>
<td>Sunflower Seeds</td>
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<td>Nectarine</td>
<td>Pumpkin</td>
<td>Ham</td>
<td>Nutmeg</td>
<td>Walnuts</td>
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<td>Radish</td>
<td>Lamb</td>
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<td>Pomegranate</td>
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<td>Zucchini</td>
<td>Lobster</td>
<td>Rosemary</td>
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<td>Beer</td>
<td>Caffeine</td>
<td>Oyster</td>
<td>Sage</td>
<td>Malt</td>
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<td>Pepsi/Coca-Cola</td>
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<td>Popcorn</td>
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<td>Dr. Pepper</td>
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<td>Sardine</td>
<td>Lentils</td>
<td>Quinoa</td>
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<td>Sugars</td>
<td>Scallops</td>
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<td>Pea, Chick</td>
<td>Rice, Wild</td>
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<td>Dextrose</td>
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<td>Tapioca</td>
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<td>Stevia</td>
<td>Trout, Rainbow</td>
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<td>FRUITS</td>
<td>VEGETABLES</td>
<td>PROTEINS</td>
<td>SUGARS</td>
<td>ADDITIVES</td>
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<td>----------------</td>
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<td>----------------------</td>
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<tr>
<td>Apple</td>
<td>Corn</td>
<td>Chicken</td>
<td>Sugar, Cane</td>
<td>MSG</td>
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<td>Banana</td>
<td>Onion</td>
<td>Egg, Whole</td>
<td>Grains</td>
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<td>Grape, Seedless</td>
<td>Potato, White</td>
<td>Milk, Cow</td>
<td>Flour, White</td>
<td>Spices/Herbs</td>
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<td>Orange</td>
<td>Tomato</td>
<td>BEVERAGES</td>
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<td>Legumes</td>
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<td>Rice</td>
<td>Vanilla</td>
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<tr>
<td>Soybean</td>
<td></td>
<td>Tea</td>
<td>Wheat, Whole</td>
<td>Yeast</td>
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</tbody>
</table>
Experts

Nutrition

Environment

Science

RIORDAN CLINIC
Utilizing natural and integrative approaches to achieve real health

LABORATORY
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