Functional Tests for Immune Tolerance: LRA by ELISA/ACT
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Founder and Chairman,
PERQUE™ Integrative Health,
ELISA/ACT™ Biotechnologies,
RMJH Rx
• The immune system, inflammation and repair deficit.

• Role of high sensitivity assessment techniques for detecting delayed hypersensitivities: Why the LRA by ELISA/ACT method

• Comprehensive immune repair and enhancement components: The Alkaline way, personalized antioxidant/supportive nutrient intake, lifestyle changes
Predictive Biomarkers

*Ethnic*

*Geographic*

*Socioeconomic*

*Predictive Significance*
High sensitivity

PREDICTIVE BIOMARKERS TESTS

Epigenetics, Metabolomics & Microbiomics
hsPB

All cause morbidity & mortality

Compare therapy outcomes

Therapeutic Biomarkers
Lifetime Health: 92% choices


High Sensitivity Predictive Biomarkers (hsPB)
Personalized, Evidence-Based, Comparative

- **hsHgb A1c:** Sugar, insulin… AGEs
- **hsCRP:** Inflammation, repair disease
- **8 oxo-guanine:** Oxidative stress… ALEs
- **hsHomocysteine:** Methylation, detox… Sulfur
- **Omega 3 Index:** Omega 3:6; EFAs
- **Vitamin D:** Cell talk & adhesion
- **hsLRA**
  - Immune Tolerance
- **1st AM urine pH:** cell acidosis risk

Jaffe R, Predictive Biomarkers Provide Evidence for Comparative Effectiveness Research, HSC 90.13:01 Advisory on Predictive Medicine & Health Promotion.

# Essential Predictive Bio-Marker Tests to Determine Your Functional Age

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Your Immune System

Defense & Repair

Here to Defend & Repair
Human immune system:
* Innate: Repair & cancer deletion
* Adaptive: Defense & Repair

Over burdened immune system…
Hidden (delayed) hypersensitivity/allergy
Compare delayed allergy/hypersensitivity tests
**Adaptive Immune System**
(specific, acquired)
2nd line
Protects / remembers re-exposure

**Innate Immune System**
(nonspecific, surveillance)
1st line
Engulfs, recycles, renews

B lymphocytes
Defense WBCs

Antibodies

Defense cells:
T lymphocytes

Bacteria-killing substances
Skin protects outside:
Mucous membranes protects inside

Innate tissue response…
Scavenger cells
Innate Immune System

Skin, Nose, Mouth, Lungs, GI Tract

Provides immediate defense to anything foreign... repairs & anti-cancer as able.

Eliminate foreign invaders before they get in.
Adaptive Immune System

Blood, Lymph & tissue systems
Utilizes memory & antibody mechanism: specific.

Attacks invaders that get inside.
Adaptive Immune Responses

**Cell Mediated**

- **T cell**
  - Migrates to lymph nodes
  - Antigen stimulation
  - Memory T cell
  - T cytotoxic cell
  - T helper cell

**Cell-mediated Immunity**

**Antibody Mediated**

- **B cell**
  - Migrates to lymph nodes
  - Antigen stimulation
  - Plasma cell
  - Memory B cell

**Antibody-mediated Immunity**
Leaky Gut

75% immune system within gut: Peyer’s patches

Healthy Intestinal Lining

Damaged Intestinal Lining

Inflammation

Undigested Food Particles

Toxins

Intestinal Lining

Gap Junction

Yeast / Fungi

Blood Stream

Parasites & Harmful Bacteria

Leaky Gut
A Healthy Immune System...

No allergies… tolerance

*Neutralizes* infections & allergens

*Repairs* us from daily damage and *defends*

Dendritic WBCs recycle 50 pathogens/cell
Overloaded/Burdened Immune System means:

Constant defense mode

Repair function is postponed

Repair deficit = inflammation

CHRONIC ILLNESS

asthma, migraines, IBS, eczema, bloating
Hidden Immune Burdens

Delayed hypersensitivities/allergies hard to find. Symptoms occur…

3 Hours to 3 Weeks

After exposure
Symptoms may not even be specific… immune system burden drains vitality; ache-y
Overburdened Immune System

- Hospitable host to pathogens
- Allergens provoke symptoms
- Repair deferred ... after defense

LRA by ELISA/ACT™ tests...

*functional tests identifying causes of immune overload*

For immediate reactions (IgE): RAST testing (blood)
Intradermal (skin tests)
3 test methods:

- Antibody tests
- Particle size tests
- Lymphocyte response tests
Delayed Hypersensitivity

3 test methods:

• Antibody tests: Static, mis-leading
• Particle size tests: Random, mis-leading
• Lymphocyte response tests: hsLRA <3%!
Antibody Tests

- ELISA/EIA IgG, IgG4, IgA, IgM
- Quantify specific antibodies
  - Good from bad NOT possible
  - Long list items to avoid w/many false positives & false negatives
Particle Size Tests

- Particle size tests (automated cytotoxic):
  - Device measures blood particles

- Detect *Any* particle 10 micron in size… not just reactive lymphocytes
  - Lots of 10 µ particles in blood… Rouleaux RBC, platelet clumps, granulocyte debris…
  - Low specificity, not predictive
  - Not reproducible

Lymphocyte Response Assay by ELISA/ACT (Advanced Cell Test) Procedure

A simple one-ounce (30cc) blood sample…

can be used for >500 items:

- Foods, additives / preservatives
- Environmental chemicals
- Toxic minerals
- Medications
- Molds
- Danders, hairs, and feathers
- Herbs
Identify & Substitute

• The **LRA by ELISA/ACT** identifies the common substances that are overburdening the patient’s immune system.

• Substitute non-reactive items for reactive items for 3-6 months
  — Strongly reactive 6 months
  — Moderately reactive 3 months
hsLRA (ELISA/ACT™ method)

- Directly observe lymphocytes under conditions similar to body (ex-vivo)
- ALL 3 delayed allergy paths
- Advanced method few false positives (<1%)
- Can then detect intolerances (if any)
hsLRA

Non-reactive lymphocytes

Reactive lymphocytes

Olympus SC35 Magnification 600x
hsLRA by ELISA/ACT

Comprehensive Functional Ex-Vivo

Type III: Immune Complex

Type II: Reactive Antibody

Type I: Acute (IgE) RAST (IgE)

Type IV: T Cell Mediated

Predictive Biomarker 4

Immune Tolerance

hsLRA by ELISA/ACT
• The LRA by ELISA/ACT identifies the common substances that are overburdening the patient’s immune system.

• Substitute non-reactive items for reactive items for 3-6 months
  — Strongly reactive 6 months
  — Moderately reactive 3 months
Personalized recommendations based on Health Assessment Questionnaire:

- Supplements
- Helpful lifestyle recommendations
- Rotation diet plan

Joy in Living: The Alkaline Way
hsLRA: Successful Studies

“A Novel Treatment for Fibromyalgia Improves Clinical Outcomes in a Community-Based Study”

- 50% less pain
- 70% less depression
- 50% more energy
- 30% less stiffness

70,000+ Cases 30+ years
Patient & Practitioner Testimonials

hsLRA: Successful Studies

Type 1 and Type 2 Diabetes

- Reduction in HgbA1c
- Mean reduction in insulin in Type 2
- Fewer hypoglycemic episodes

70,000+ Cases 30+ years
Patient & Practitioner Testimonials

hsLRA by ELISA/ACT

Success cases
“ I have not had any migraines since I started on the LRA by ELISA/ACT program after having them for 20 years. It’s great to be free of them. ”

A patient from Herndon, VA
Success in chronic illness

“I have worked with ELISA/ACT Biotechnologies for more than 10 years and have found the LRA by ELISA/ACT to be the most reliable and effective solution to solving my patient’s chronic health conditions”

Norman Schwartz, MD – Milwaukee, WI
Chronic Fatigue Success

“I was amazed by my fast recovery from a four year struggle with chronic fatigue syndrome and depression once I began the LRA by ELISA/ACT program. I have returned to work, and my energy level and health are stronger than before I got sick. I never thought I could be this healthy.”

A patient from Newton, MA
Success Stories: Confirming observation

“The ELISA/ACT results are very intelligent, matching my intuitive experience of my son, while providing clinical confirmation that gives us leverage with those who provide care for him”

Nancy Faass, MSW, MPH
Clinical successes led to a fixed treatment guideline designed to...

- Restore tolerance;
- Reset Hypersensitivity

Reduce the foreign toxic load on the body

A study was designed...

Study subjects

Recruited and selected

Study inclusion and exclusion criteria were:
- Diagnosis confirmed
- Willingness & ability to comply
Community based FM study

- Substitute for *immunoreactive* substances identified by LRA by ELISA/ACT tests
- Correct *nutritional deficiencies* that reduce defense and repair abilities
- Initiate detox mechanisms that remove xenotoxins for individual
- Concentrate on enhancing *human healing response*
Results

Proven Successful Outcomes in 6 mos:

“A Novel Treatment for Fibromyalgia Improves Clinical Outcomes in a Community-Based Study”

- 50% less pain
- 70% less depression
- 50% more energy
- 30% less stiffness

Lymphocyte Response Assay by ELISA/ACT (Advanced Cell Test)

Proven Successful Outcomes in 6 mos:

“Tolerance loss in diabetics: association with foreign antigen exposure”

• 13% reduction in HbA1C levels in Type 2 and 46% in Type 1 diabetes
• 18% reduction of insulin levels in Type 2 diabetes

### Comparison of immuno-reactants in Type 1 and Type 2 diabetes

<table>
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<tr>
<th>Category</th>
<th>Type 1 DM</th>
<th>Type 2 DM</th>
</tr>
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<tbody>
<tr>
<td>Sweeteners</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>Toxic minerals</td>
<td>56</td>
<td>15</td>
</tr>
<tr>
<td>Env Chem</td>
<td>92</td>
<td>69</td>
</tr>
<tr>
<td>Additives</td>
<td>80</td>
<td>46</td>
</tr>
<tr>
<td>Cow dairy</td>
<td>69</td>
<td>28</td>
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History:

SA, 58 yo woman

Since childhood: Perpetual cold, constant sneezing, stuffy/runny nose, itchy throat

Immediate allergies to dust, pollen and grasses

Dx: 57 yo Chronic Unresponsive Allergic Rhinitis: Rx antihistamines & decongestants
LRA by ELISA/ACT Test Results

Personalized Report

LRA by ELISA/ACT®
TEST RESULTS

PATIENT’S COPY

ELISA/ACT Biotechnologies LLC
CLIA #49 D0668056
109 Carpenter Drive, Suite 100, Sterling, VA 20164
Tel: 800.553.5472 • 703.450.2980 • Fax: 703.450.2981
clientservices@ELISA ACT.com • www.ELISA ACT.com
Therapeutic interventions

LRA by ELISA/ACT program: 11 reactions including cadmium, pyrene, clove, propylene glycol, candida albicans, saccharine

Plan:
- Reduced immune burden by substituting for reactive items
- Strong reactions for 6 months
- Moderate reactions for 3 months
Implementation (continued):

• Health Assessment Questionnaire (HAQ) determines
  — personal activity,
  — attitude &
  — supplement needs.

• Supplements included buffered ascorbate, polyphenols quercetin dihydrate, multi strain probiotics, magnesium and choline citrate (to help maintain pH 6.5-7.5)
Outcome:
Post nasal drip dramatically reduced, more restful sleep and no heavy head in the mornings

Five months later: Different person! No fatigue and seasonal allergies have gone

Systematic substitution, alkalinization & optimized nutritional supplementation allowed SA to repair, rebuild her digestive competence & heal her body
Hashimoto’s Thyroiditis Case Study 1

History: LM, 30 YO woman, Dxed with Hashimoto’s Thyroiditis after at least 7 years of symptoms.

Symptoms: Fatigue, muscle weakness, joint pain, weight gain, bloating and digestive distress.

Initial interventions: Synthroid and Euthyrox in Europe
Hashimoto’s Thyroiditis
Case Study 1 (contd.)

Therapeutic Interventions:
LRA by ELISA/ACT program
20 reactions (including nightshades, tricophyton, benzaldehyde and methylene chloride)

Implementation: Substituted reactive items + individualized nutrients and Alkaline Way

Outcome: Initially, energy level dramatically increased, followed by pain reduction. Subsequently, thyroid medication levels reduced
“This is the best I have felt” in years!
History: ED, 36 YO woman, P5 G3

Symptoms: Lack of energy, 18 kg overweight, “little joy in living”, morning temperature often <98°F

Routine Lab tests: Total T3 and T4: normal

Additional tests: Free T3, normal freeT4

TSH, 2 hour glucose & insulin,
free cortisol, free DHEA
Therapeutic Interventions:
LRA by ELISA/ACT program
Reactions included Cow dairy, MSG, Arsenic, Sulfite & chloroform)

Implementation: Substituted reactive items + individualized nutrients and Alkaline Way.
In addition: 2 grains of desiccated thyroid whenever temp was low, green lights and salt/soda baths

Outcome: Within 6 months: asymptomatic, 10kg wt. loss, free thyroid hormones, free cortisol & DHEA, glucose & insulin: ALL NORMAL
Averages deceive; individuals choose
Lifetime Health: 92% choices

Predictive Biomarker 2

High Sensitivity

C Reactive Protein = hsCRP
Chronic Inflammation = Chronic Disease = Chronic Repair Deficit (cont’d)

By 2025 in US:
~ 50 MM Diabetics & 100 MM Pre-diabetics

Source: CDC and AHA
High Sensitivity C-Reactive Protein (hs-CRP)

Inflammation vs Probability of Living 10 Years

Calculated Framingham 10-Year Risk Score

Probability of Living 10 Years

High Sensitivity C-Reactive Protein (hs-CRP)

Inflammation vs Probability of Living 10 Years

Calculated Framingham 10-Year Risk Score

hs-CRP mg/L

Probability of Living 10 Years

>20

10-20

5-10

<5

<0.5

20

40

60

>80

80%

99%

99%

20%
hsCRP Pro Repair
Antioxidant Nutrients

1. **Personal C Cleanse**
   - Only 100% l-ascorbate, fully reduced & buffered

2. **Dark fruits; super foods**
   - Polyphenolics

3. **B methyl cofactors**
   - Balanced Natural Forms

4. **BioDetox**
   - Ascorbates & Chlorophyll

5. **High sulfur foods**
   - GGOBE

6. **Acetylenes & EPA/DHA**
   - Purer, uncontaminated, micellized = better uptake

---


Individual Ascorbate Based on Oxidative Stress

Ascorbate Calibration
± Probiotics, recycled Glutamine, Mg, Polyphenolics

Healthy
- 1.5 grams; ½ tsp
- Every 15 min
- 6 grams / hour

Moderate Ills
- 3 grams; 1 tsp
- Every 15 min
- 12 grams / hour

Chronic Ills
- 6 grams; 2 tsp
- Every 15 min
- 24 grams / hour

Ascorbate needs from 4-100+ g/day

Individual Ascorbate Need Based on Calibration (gm)

% Subjects

Ascorbate Calibration Amount (gm)

~5%(185) <4 gm (healthy);
~10% (348) from 5-10 gm (usual)
~80% (2798) from 10-130 gm (walking worried/wounded)
~5% (166) > 130 gm (multiple chronic diseases)


Based on Jaffe Protocol 1987-2008
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Candidate Predictive Biomarker 5

Metabolic Acidosis Risk
1st AM Ur pH as Predictive Biomarker

- Status: cell acids & minerals
- Enzyme catalysts pH sensitive

- Protein efficiency >90+% or <10%
- Mg^{++} forgotten electrolyte

Urine >6° rest, Goal Value: pH 6.5-7.5

Excess acid wears you out
Too Acidic (<6.5)

Healthy Repair / Restore Zone
Healthy pH (6.5-7.5)

Catabolic illness tears you down
Too Alkaline (>7.5)

1st urine >6+ hours rest
Ur equilibrates with cells

Metabolic Acidosis Risk

Buffering Mineral Need vs Probability of Living 10 Years

Buffering Capacity %

Metabolic Acidosis

Catabolic Ammonia Loss

Alkaline Way Mg++ / Choline Citrate, etc.

pH (Urine >6° Rest)

<5  5.5  6  6.5  7  7.5  8  8.5  >9

Probability of Living 10 Years

.60

.75

.90

.95

.99

40

60

80

100

60

80

100

Health Studies Collegium
DEDICATED TO CLINICAL RESEARCH & HEALTH POLICY
Biomarkers Solutions: Magnesium, Mg++

Mg uptake block w/ Choline Citrate: 440-880+ Mg/d
elemental magnesium

Mg++ displaces toxic minerals, protects fats…
Choline → acetylcholine, cholinergic bile Citrate → energizes & alkalinizes
### Alkaline Way

#### Food and Chemical Effects on Acid/Alkaline Body Chemical Balance

#### MORE ACID
(Consume Less)

<table>
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<tr>
<th>Food Category</th>
<th>Citrus Fruit</th>
<th>Fruit</th>
<th>Cranberry</th>
<th>Pomegranate</th>
<th>Plum</th>
<th>Prune</th>
<th>Tomato</th>
<th>Coconut</th>
<th>Fig</th>
<th>Guava</th>
<th>Persimmon</th>
<th>Juice</th>
<th>Cherimoya</th>
<th>Date</th>
<th>Dry Fruit</th>
<th>Bean</th>
<th>Fava</th>
<th>Kidney</th>
<th>Black-eyed</th>
<th>String/Wax</th>
<th>Spinach</th>
<th>Zucchini</th>
<th>Chutney</th>
<th>Rhubarb</th>
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#### MORE ALKALINE
(Consume More)

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<th>Food Category</th>
<th>Orange</th>
<th>Banana</th>
<th>Blueberry</th>
<th>Raisin</th>
<th>Grapes</th>
<th>Curd</th>
<th>Blackberry</th>
<th>Cherry</th>
<th>Peach</th>
<th>Grapefruit</th>
<th>Cantaloupe</th>
<th>Honeydew</th>
<th>Olive</th>
<th>Mango</th>
<th>Citrus</th>
<th>Loganberry</th>
<th>Lime</th>
<th>Nectarine</th>
<th>Raspberry</th>
<th>Watermelon</th>
<th>Tangerine</th>
<th>Pineapple</th>
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#### Food Category

- Citrus Fruit
- Fruit
- Vegetables
- Legumes
- Pulse Root
- Grain Cereal Grains
- Fowl
- Game Fish/Shellfish
- Egg
- Processed Dairy Cow/Human Soy/Goat/Sheep
- Oil Seed/Sprout Nut
- Beverage Preservative Sweetener Vinegar
- Spice/Herb
- Therapeutic

#### Italics
Italiced items are NOT recommended.
Alkaline Way brings healthy balance

- Alkalinizing foods & water
- Activity & 1st AM Ur pH
- Mg++ w/ Choline Citrate
- Abdominal breathing
- Green light & sunlight
- Eat in harmony with your nature & lifestyle
- Eat locally grown, vine ripened, organic or biodynamically derived, as possible
- Make restorative sleep a priority
- Work muscles & relax in = proportions

Inflammation Rethought =
Remove Repair Blocks


High Sensitivity Predictive Biomarkers (hsPB) Personalized, Evidence-Based, Comparative

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A healthy functioning immune system defends \textit{and} repairs.

\textit{Essential} predictive high sensitivity assessment techniques include detecting delayed hypersensitivities, hsCRP, HbA1c and homocysteine.

Living the alkaline way along and incorporating personalized antioxidant/supportive nutrient intake is key for adequate repair and immune system function.
Functional Tests for Immune Tolerance: LRA by ELISA/ACT

Health Studies Collegium Foundation

Rethink Health
Russell Jaffe

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