Health Studies Collegium Foundation

Rethink Health:
Standardized Herbs
Personal Predictive Biomarkers
Interdependent Sustainability



HSC Health Studies Collegium

DEDICATED TO CLINICAL RESEARCH & HEALTH POLICY



MD, Ph.D., CCN
FASCP, FACN, FACAAI,
FOCIS, FAML, FRSM
Fellow, Health Studies Collegium

Founder and Chairman,
PERQUE™ Integrative Health,
ELISA/ACT™ Biotechnologies,
RMJH Rx

Russell Jaffe

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FASCP, FACN, FACAAI, FOCIS, FAMLI, FRSM

Russell Jaffe
MD, Ph.D., CCN

Fellow, Health Studies Collegium
rjaffe@4HSC.org

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From sceptic to practitioner:

Rediscovery of **Physiology First**

The Alkaline Way to **restore enhance or protect health**



Nature, Nurture, Wholeness, Adaptive

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Personal journey from Submolecular reductionism to Physiology 1st Principles & Alkaline Way Wisdom Traditions:



Standardized safer Herbs

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THE NEXT BIG THING

Predictive Biomarkers Criteria...

All groups

Ethnic

Geographic

Socioeconomic

Predictive Significance

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High sensitivity

PREDICTIVE BIOMARKERS TESTS

Epigenetics,

Metabolomics &

Microbiomics

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PREDICTIVE BIOMARKERS TESTS

hsPB

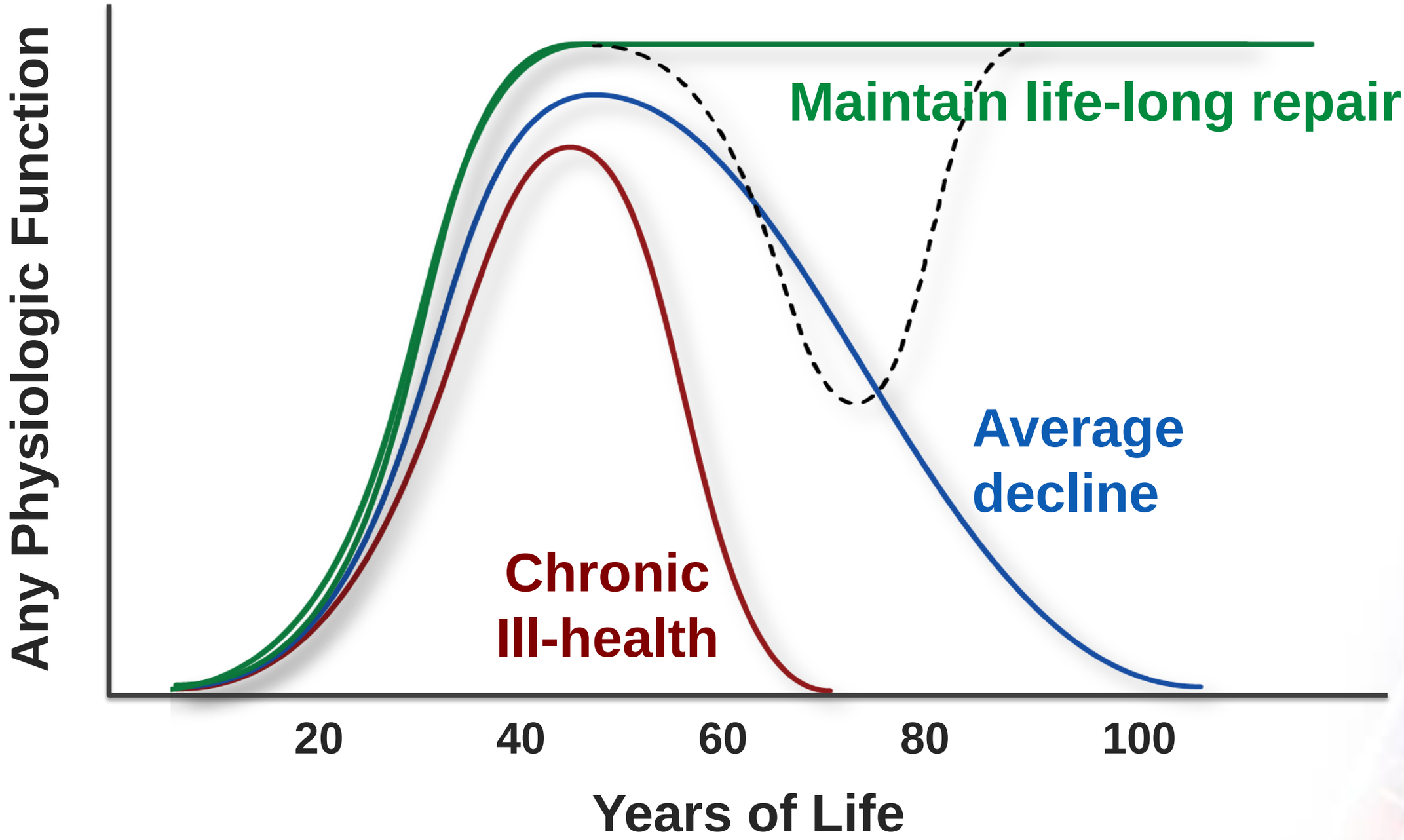


All cause morbidity & mortality

Compare therapy outcomes

Therapeutic Biomarkers

Averages deceive; individuals choose



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**

hsLRA

Immune Tolerance

Vitamin D:

Cell talk & adhesion

1st AM urine pH:

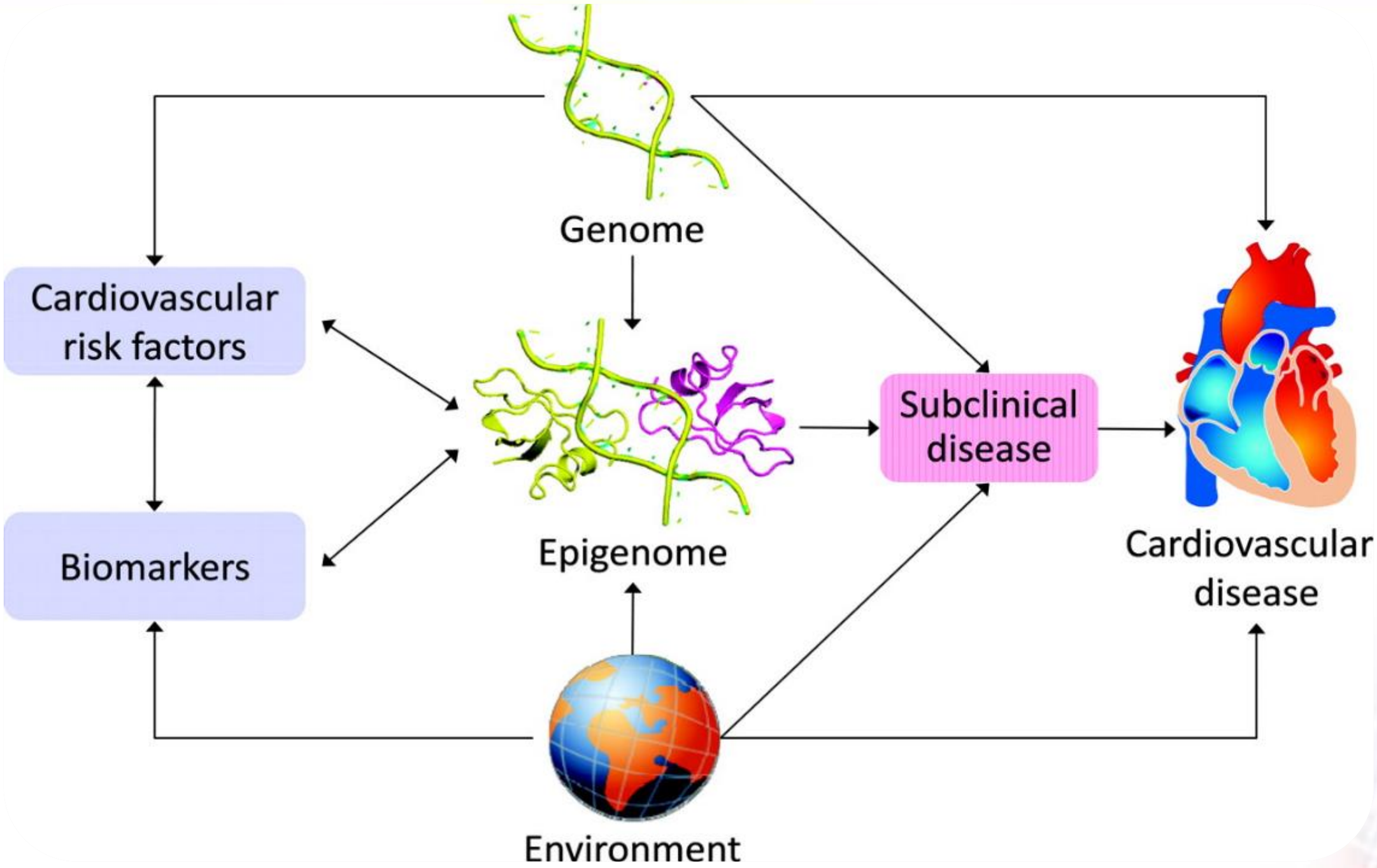
cell acidosis risk

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Jaffe R, Predictive Biomarkers Provide Evidence for Comparative Effectiveness Research, HSC 90_13:01 Advisory on Predictive Medicine & Health Promotion.

Gruenewald TL, Seeman TE, Ryff CD, Karlamangla A, Singer BH. Combinations of Biomarkers Predictive of Later Life Mortality. *PNAS*, 2006; 103 (38): 14158-14163.

Lifetime Health: 92% choices

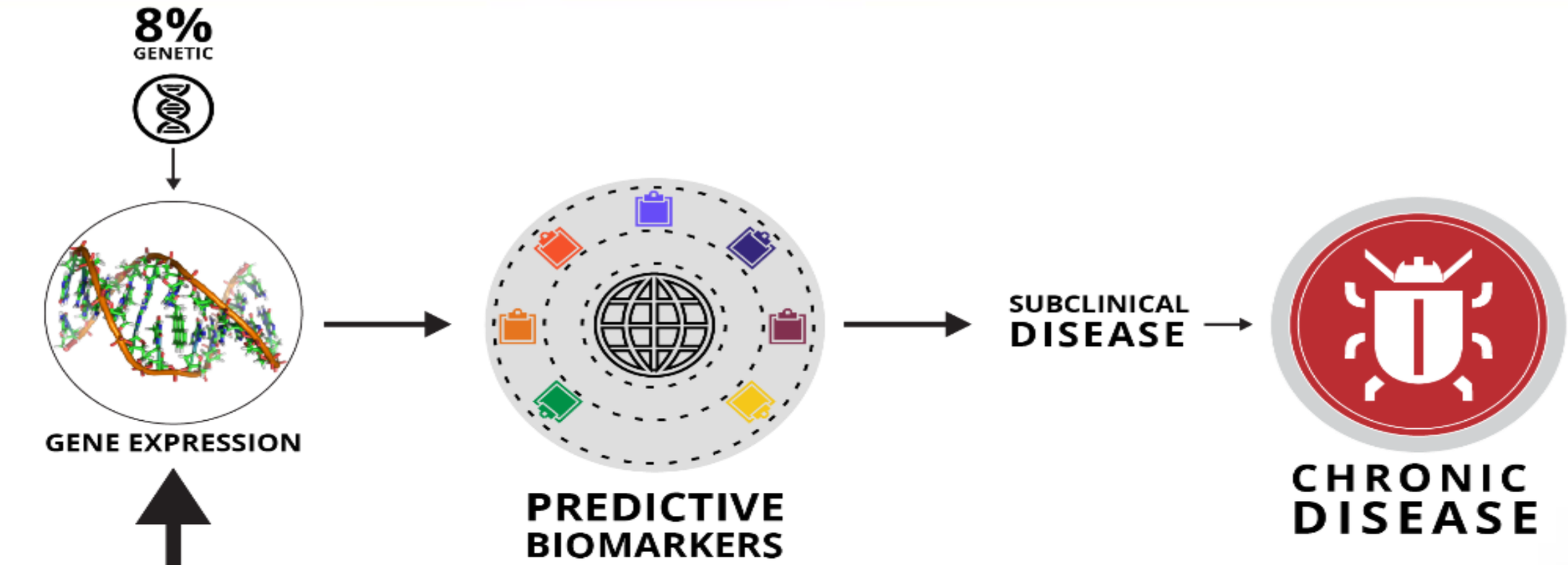


Baccarelli A, Rienstra M, Benjamin E J. Cardiovascular Epigenetics Basic Concepts and Results From Animal and Human Studies. *Circulation*: *Cardiovascular Genetics.* 2010; 3: 567-573.

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Lifetime Health: 92% choices







92%
EPIGENETIC

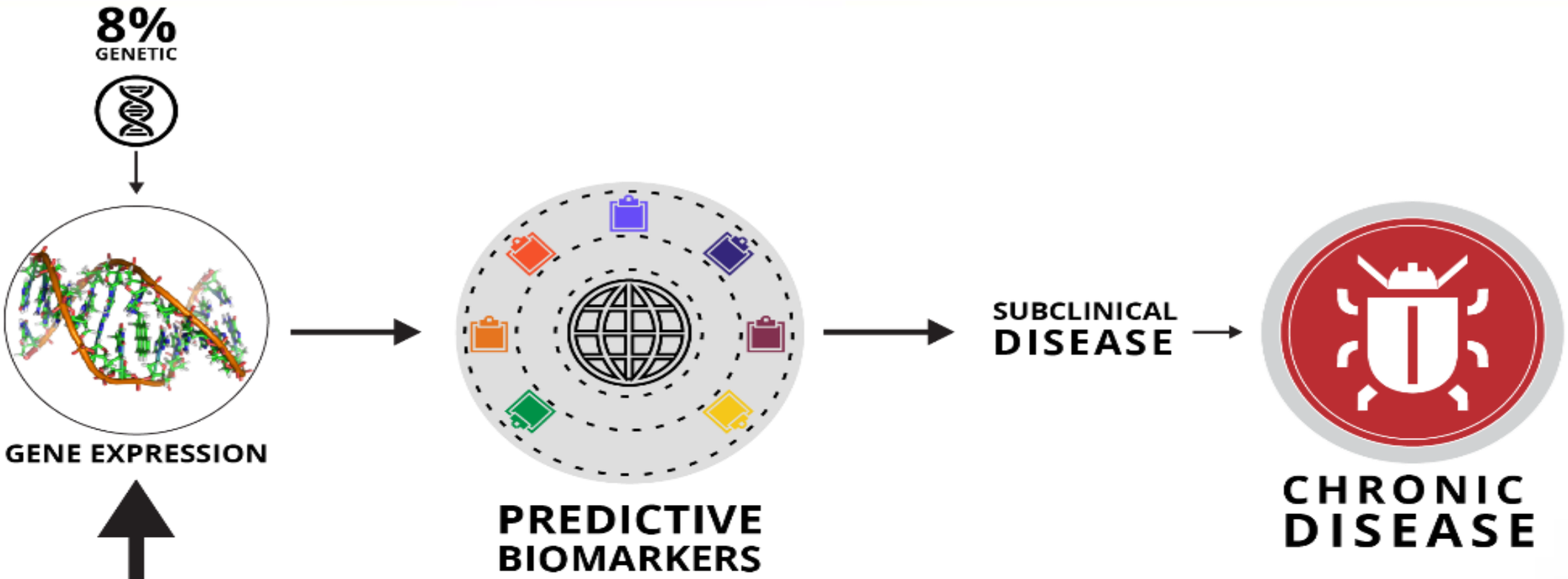
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***Modified from*: Baccarelli A, *et al*., Cardiovascular Epigenetics Basic Concepts and Results From Animal and Human Studies. *Circulation: Cardiovascular Genetics.* 2010; 3: 567-573.**

Jaffe R, Nash R, Ash R, Schwartz N, Corish R, Born T, Lazarus H. An Equation of Health: Role of Transparency and Opacity in Developing Healthcare Efficacy Measures and Metrics.
***J Management Development* 2007; 26 (5): 441-458.**

Jaffe R. The Alkaline Way: Integrative Management of Rheumatoid Arthritis and Other Autoimmune Conditions. *In*: Watson RR, Preedy V, *Eds*. *Bioactive Food as Interventions for Arthritis and Related Inflammatory Diseases*. Academic Press, 2013. p 97-112.

Herbs: Natures Pharmacy Reborn



Personalized proactive herbals based on biomarker goal values

***Modified from*: Baccarelli A, *et al*., Cardiovascular Epigenetics Basic Concepts and Results From Animal and Human Studies. *Circulation: Cardiovascular Genetics.* 2010; 3: 567-573.**

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Microbiome Essentials

- **Prebiotic fibers**:
  40-100 g/day; 80:20::soluble:insoluble

- **Probiotic bugs**:
  40-100 billion CFU/day; live, dairy free medium

- **Symbiotics**: Recycled Glutamine
  1.5-6 g/day taken on rising, before bed &/or exercise

Gibson GR, Roberfroid MB. Dietary modulation of the human colonic microbiota. Introducing the concept of prebiotics. *J Nutr* 1995;125:1401–1412.

Xue H, Sufit AJ, Wischmeyer PE. Glutamine therapy improves outcome of in vitro and in vivo experimental colitis models. *JPEN J Parenter Enteral Nutr*. 2011 Mar;35(2):188-197.

Gibson GR, Collins DM, Concept of Balanced Colonic Microbiota, Prebiotics, and Synbiotics". in "Probiotics, other nuritional factors, and intestinal microflora", Nestle Nutrition Workshop Series, Vol. 42, Lippincott-Raven, Philadelphia, 1999.

Predictive Biomarker 1



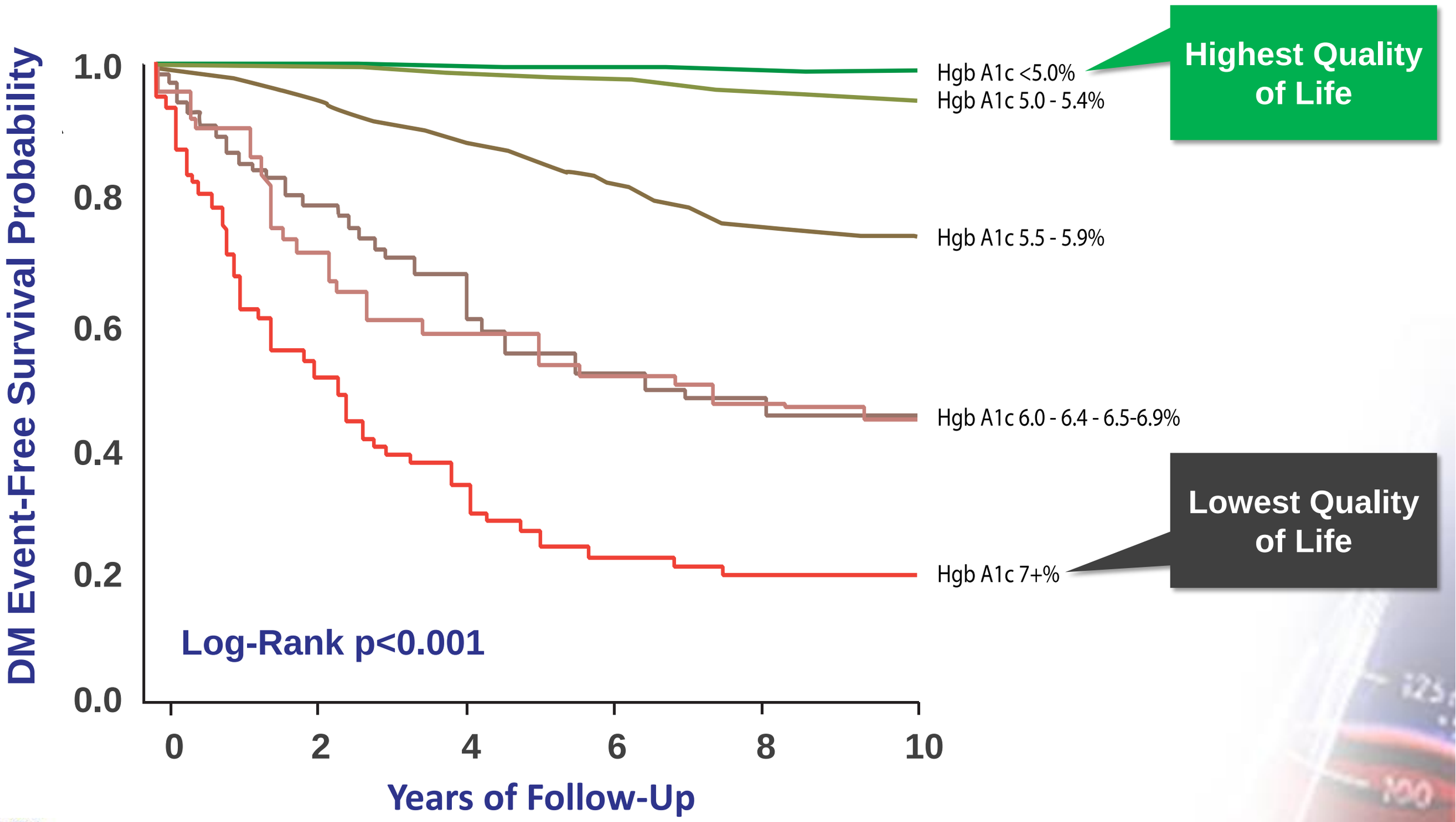
hsHemoglobin A1c = hsHgb A1c = hsHbA1c



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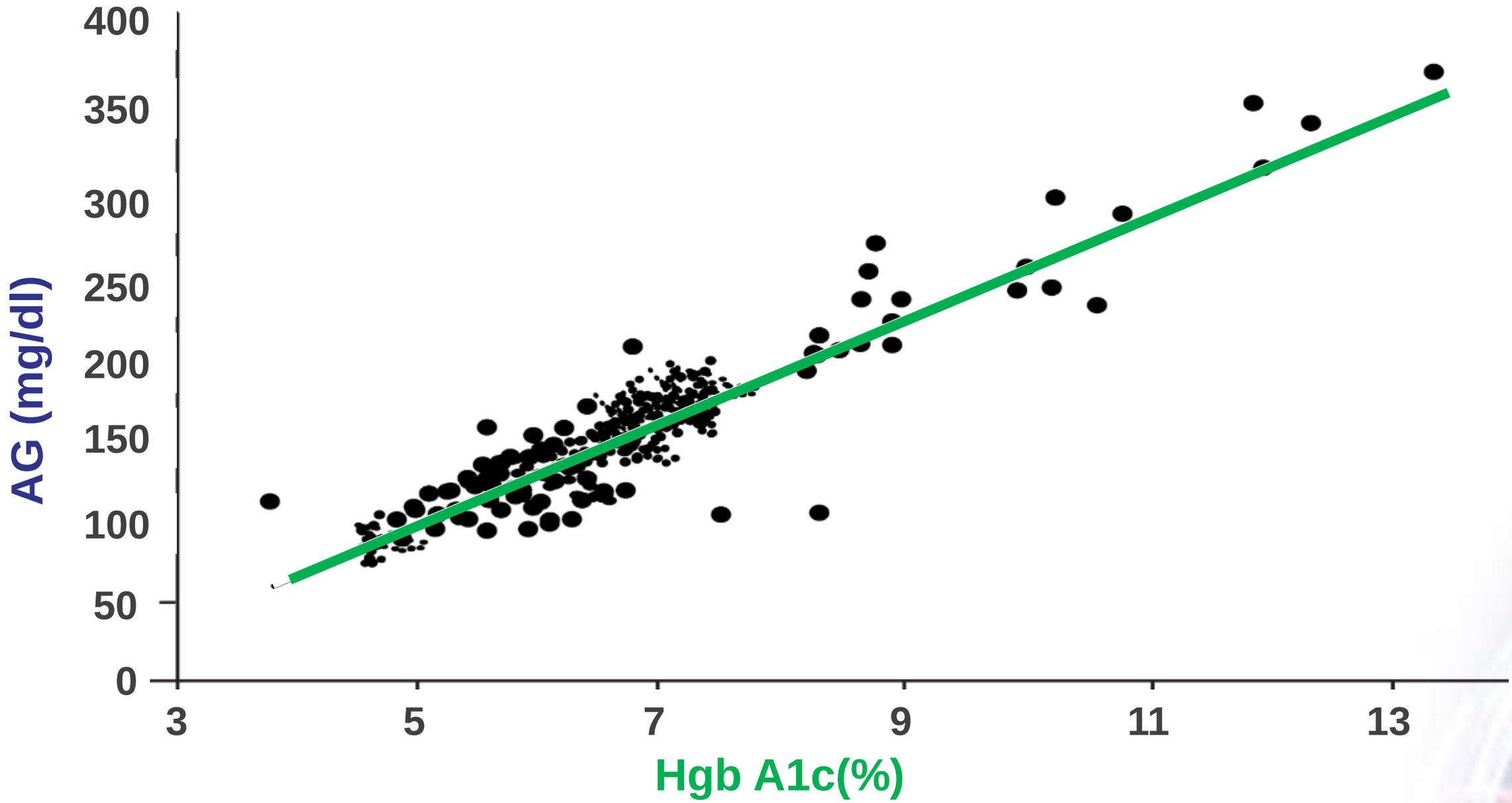
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Hgb A1c <5 *is* Predictive Biomarker



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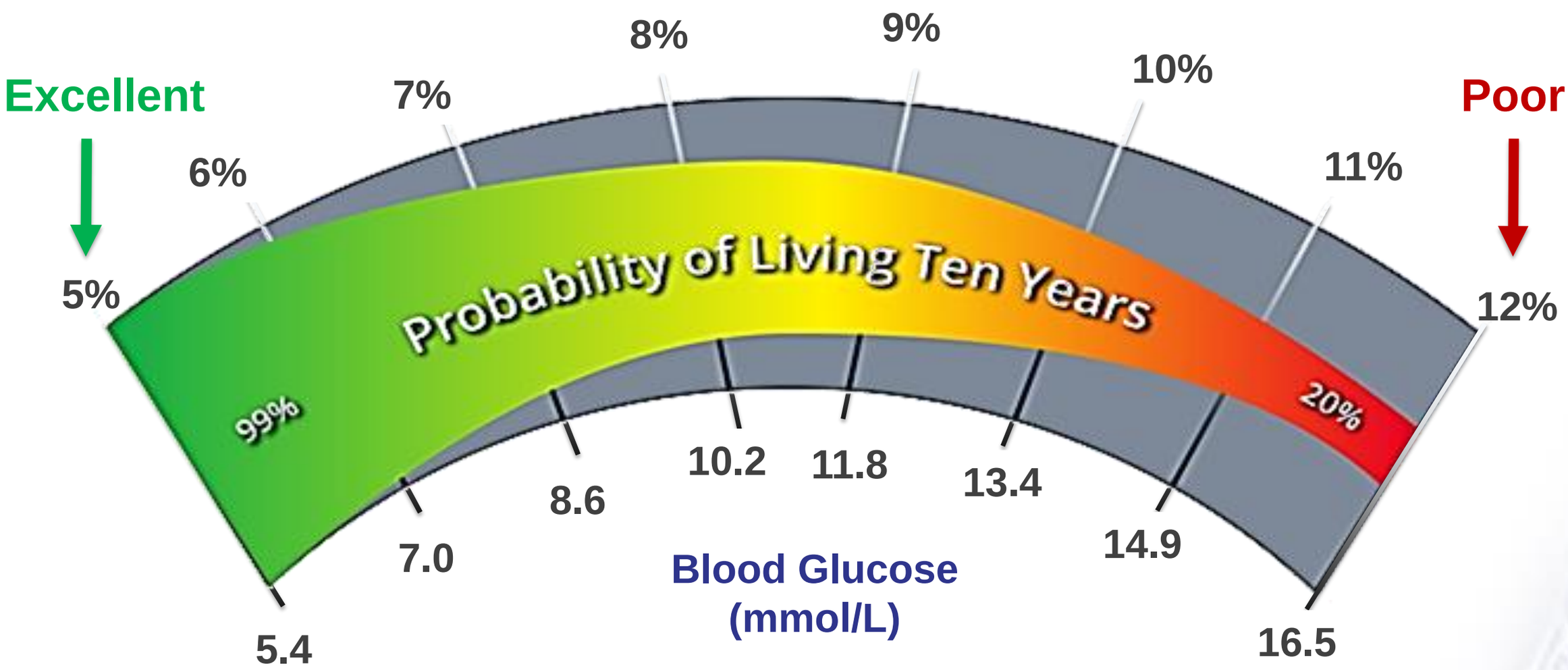
Hgb A1c Predicts AG (Average Glucose; Blood Sugar)



Hinzmann R, Schlaeger C, Tran C T. What Do We Need Beyond Hemoglobin A1c to Get the Complete Picture of Glycemia in People With Diabetes? *Int. J. Med. Sci*. 2012; 9: 665-681

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Hgb A1c / HgA1c Predicts Survival



Bunn HF, Haney DN, Gabbay KH, Gallop PM. Further Identification of the Nature and Linkage of the Carbohydrate in Hemoglobin A1c. ***Biochem Biophys Res Commun*****. 1975; 67(1): 103-109.**

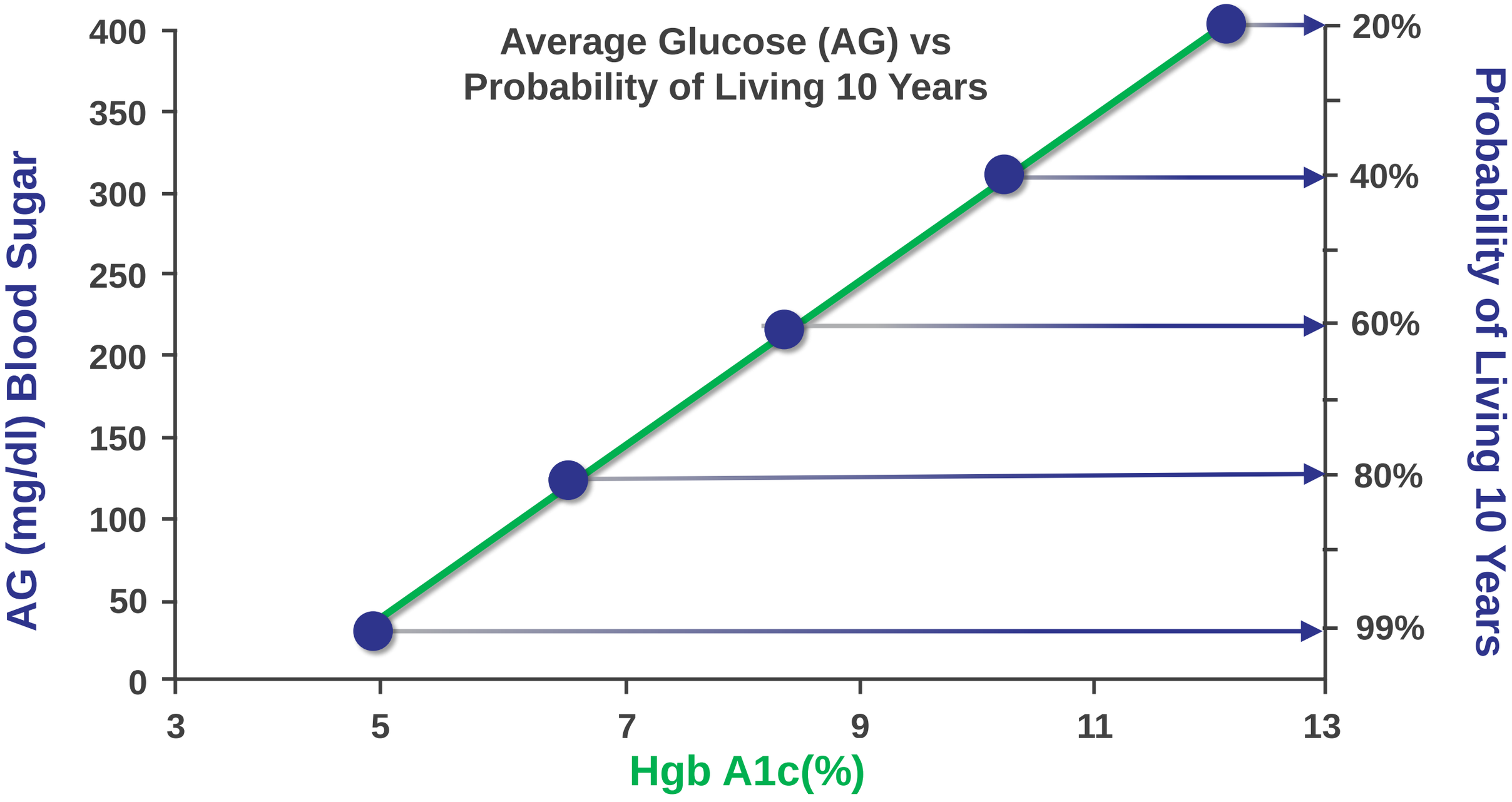
Luevano-Contreras C et al, ***Dietary Advanced Glycation End-Products and Aging. Nutrients*** **2010; 2: 1247-1265.**

Hinzmann R, Schlaeger C, Tran C T. What Do We Need Beyond Hemoglobin A1c to Get the Complete Picture of Glycemia in People with Diabetes? ***Int J Med Sci*** **2012; 9(8):665-681. doi:10.7150/ijms.4520**

Gruenewald TL, Seeman TE, Ryff CD, Karlamangla A, Singer BH. ***Combinations of Biomarkers Predictive of Later Life Mortality. PNAS,*** **2006; 103 (38): 14158-14163.**

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hsHgb A1c
Predictive Biomarker Report

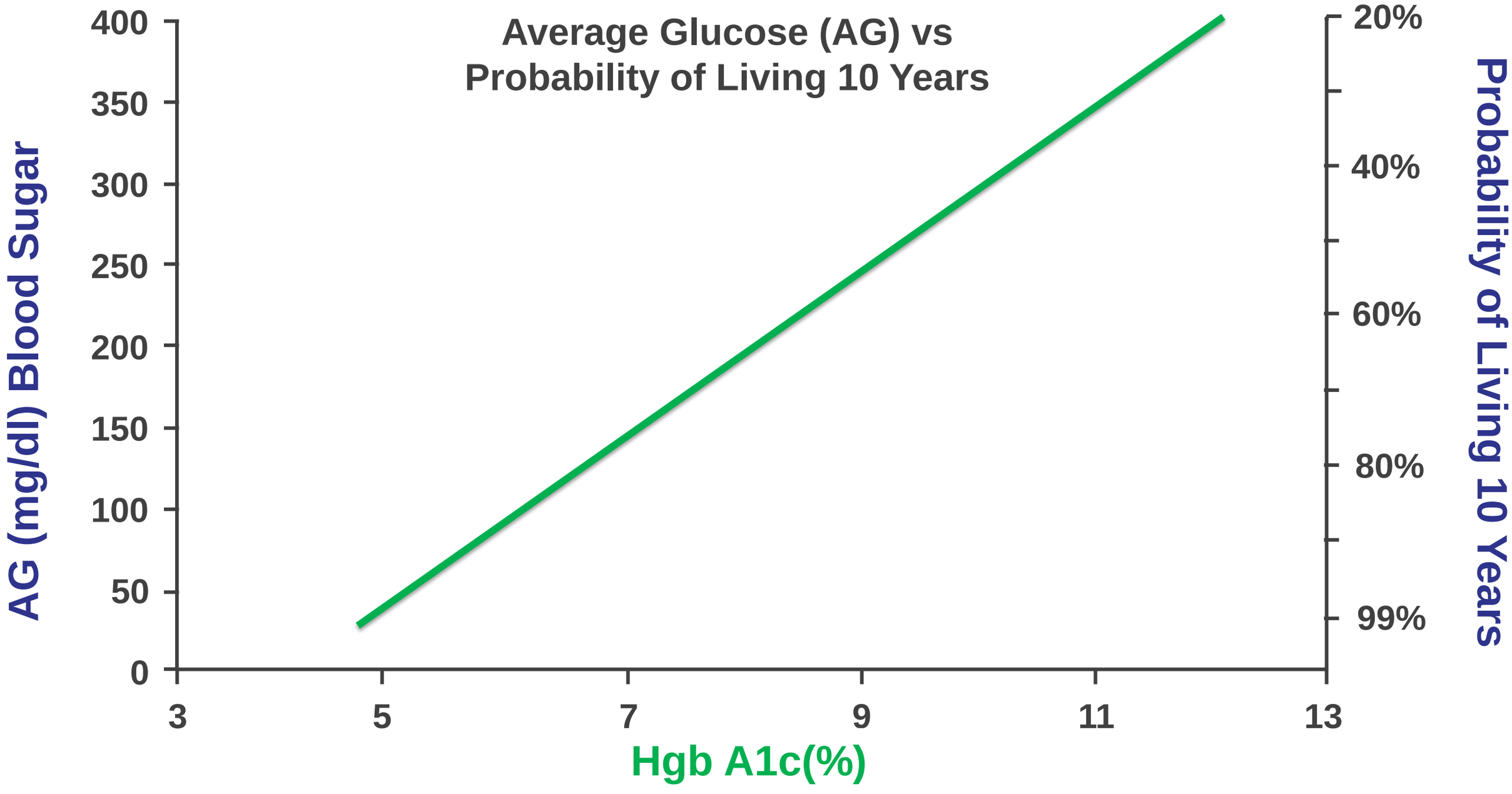


Hardy H et al, Probiotics, Prebiotics and Immunomodulation of Gut Mucosal Defenses: Homeostasis and Immunopathology, *Nutrients*, 2013; 5(6): 1869-1912.

Hinzmann R, Schlaeger C, Tran C T. What Do We Need Beyond Hemoglobin A1c to Get the Complete Picture of Glycemia in People with Diabetes? *Int. J. Med. Sci*. 2012; 9: 665-681

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hsHgb A1c
Predictive Biomarker Report



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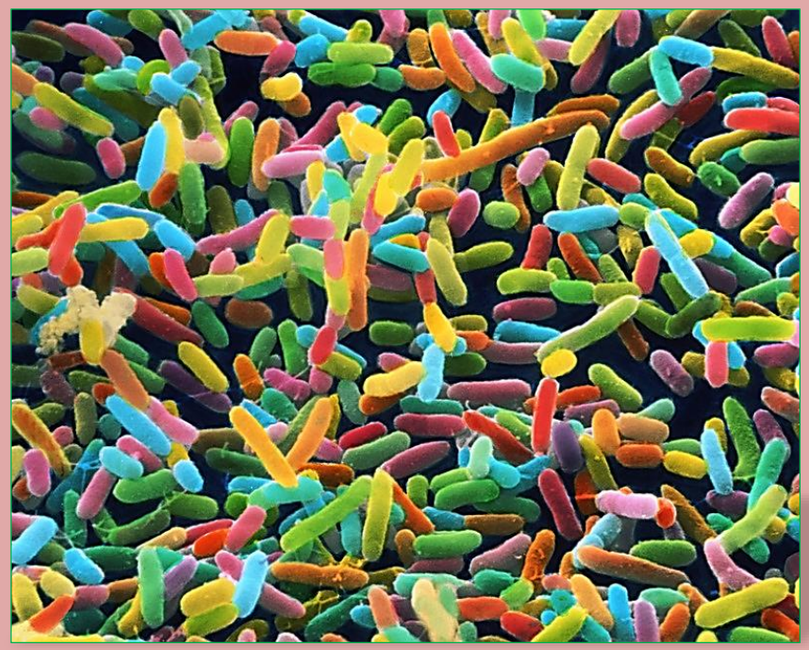
Hgb A1c >5%, Life Habit Solutions

- Immunotolerant Diet
- 40 Component Super Multi

40+ g Fiber



40+ Bn live Probiotics



Hyman M, Mani J, Jaffe R. Diabetes and Insulin Resistance, Food and Nutrients in Primary Care. In: Kohlstadt I, Ed. Advancing Medicine with Food and Nutrients, 2nd Ed., CRC Press, 2012, p 373-390.

Jaffe, R. Diabetes as an Immune Dysfunction Syndrome. In: Watson RR, Preedy VR, Eds. Bioactive Food as Dietary Interventions for Diabetes, Academic Press, 2013, p 41-52.

Hgb A1c >5%, herbal solutions

Herbal ***symbiotic*** sugar regulators > actives:

- ***Standardized*** **3% corosolic acid, 50 mg***

Lagerstroemia Speciosa



Hyman M, Mani J, Jaffe R. Diabetes and Insulin Resistance, Food and Nutrients in Primary Care. In: Kohlstadt I, Ed. Advancing Medicine with Food and Nutrients, 2nd Ed., CRC Press, 2012. p 373-390.

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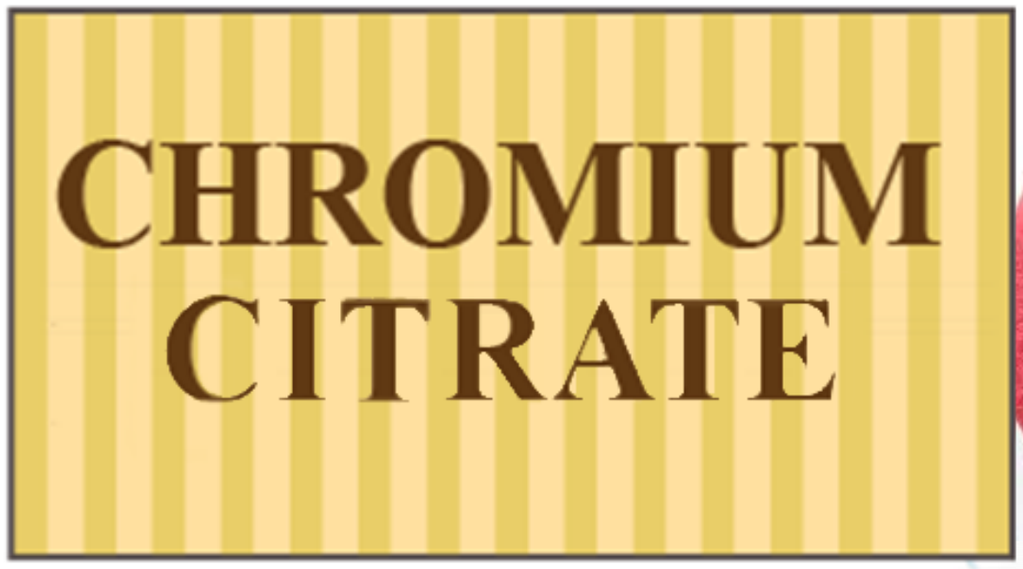
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Hgb A1c >5%, herbal solutions

Herbal ***symbiotic*** sugar regulators when
more active standardized* forms** then ***micellized with MCT:

- **3% corosolic acid, 50 mg***
- **Chromium as citrate, 250 mcg***

Chromium as citrate
250 mcg*





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Hgb A1c >5%, herbal solutions

Herbal ***symbiotic*** sugar regulators when
more active standardized* forms** then ***micellized with MCT:

- **Standardized corosolic acid, 50 mg***
- **Chromium as citrate, 250 mcg***
- **Vanadium as ascorbate, 250 mcg***

Vanadium **as ascorbate**
250 mcg*



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- **Standardized corosolic acid, 50 mg***
- **Chromium as citrate, 250 mcg***
- **Vanadium as ascorbate, 250 mcg***
- **French lilac, 150 mg***

French Lilac
150 mg*



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Hgb A1c >5%, herbal solutions

Herbal ***symbiotic*** sugar regulators when
more active standardized* forms** then ***micellized with MCT:

- **Standardized corosolic acid, 50 mg***
- **Chromium as citrate, 250 mcg***
- **Vanadium as ascorbate, 250 mcg***
- **French lilac, 150 mg***
- **Bitter Melon / Marah, 150 mg***

Bitter Melon / Marah
150 mg*



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Hgb A1c >5%, herbal solutions

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- **Standardized corosolic acid, 50 mg***
- **Chromium as citrate, 250 mcg***
- **Vanadium as ascorbate, 250 mcg***
- **French lilac, 150 mg***
- **Bitter Melon / Marah, 150 mg***
- **Huckleberry / Bilberry, 100 mg***

Huckleberry / Bilberry
100 mg*



Hyman M, Mani J, Jaffe R. Diabetes and Insulin Resistance, Food and Nutrients in Primary Care. In: Kohlstadt I, Ed. Advancing Medicine with Food and Nutrients, 2nd Ed., CRC Press, 2012. p 373-390.

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Hgb A1c >5%, herbal solutions

Herbal ***symbiotic*** sugar regulators when
more active standardized* forms** then ***micellized with MCT:

- **Standardized corosolic acid, 50 mg***
- **Chromium as citrate, 250 mcg***
- **Vanadium as ascorbate, 250 mcg***
- **French lilac, 150 mg***
- **Bitter Melon / Marah, 150 mg***
- **Huckleberry / Bilberry, 100 mg***
- **Agnus Castus, 250 mg***

Agnus Castus, 250 mg*



Hyman M, Mani J, Jaffe R. Diabetes and Insulin Resistance, Food and Nutrients in Primary Care. In: Kohlstadt I, Ed. Advancing Medicine with Food and Nutrients, 2nd Ed., CRC Press, 2012. p 373-390.

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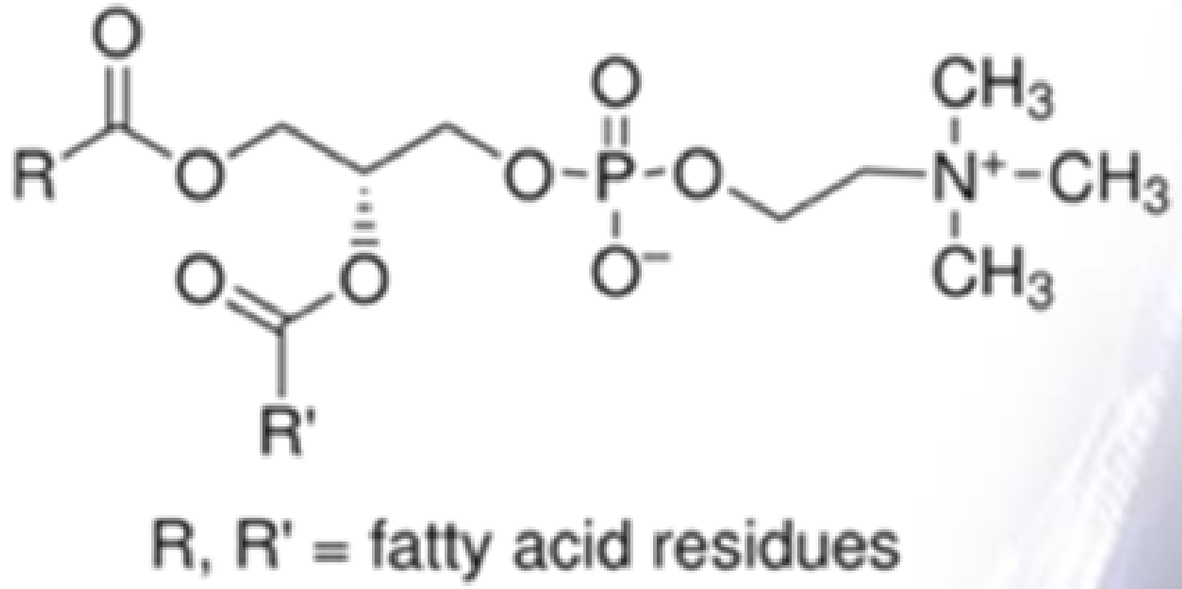
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Hgb A1c >5%, single softgel

Herbal ***symbiotic*** sugar regulators when
more active standardized* forms** then ***micellized with MCT:

- **Standardized corosolic acid, 50 mg***
- **Chromium as citrate, 250 mcg***
- **Vanadium as ascorbate, 250 mcg***
- **French lilac, 150 mg***
- **Bitter Melon / Marah, 150 mg***
- **Huckleberry / Bilberry, 100 mg***
- **Phosphatidylcholine, 71 mg***

Phosphatidylcholine
71 mg*



Hyman M, Mani J, Jaffe R. Diabetes and Insulin Resistance, Food and Nutrients in Primary Care. In: Kohlstadt I, Ed. Advancing Medicine with Food and Nutrients, 2nd Ed., CRC Press, 2012. p 373-390.

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Hgb A1c >5%, Manage AGEs

Herbal ***symbiotic*** glucose/sugar regulators
more active micellized for 3X greater uptake

- **Standardized corosolic acid, 50 mg***
- **Chromium as citrate, 250 mcg***
- **Vanadium as ascorbate, 250 mcg***
- **French lilac, 150 mg***
- **Bitter Melon / Marah, 150 mg***
- **Huckleberry / Bilberry, 100 mg***
- **Phosphatidylcholine, 71 mg***

Dose based on
Hgb A1c
or
Blood Sugar
results

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Hgb A1c <5%, Diabetes is a Choice

Diabetes Kills
Diabetes Costs
Diabetes is a choice

Personalize Alkaline Way based on **Hgb A1c**

Hyman M, Mani J, Jaffe R. Diabetes and Insulin Resistance, Food and Nutrients in Primary Care. In: Kohlstadt I, Ed. Advancing Medicine with Food and Nutrients, 2nd Ed., *CRC Press*, 2012. p 373-390.

Jaffe, R. Diabetes as an Immune Dysfunction Syndrome. In: Watson RR, Preedy VR, Eds. Bioactive Food as Dietary Interventions for Diabetes, *Academic Press*, 2013. p 41-52.

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Hgb A1c <5%, Diabetes is a Choice

Diabetes Kills 500,000/year
Diabetes Costs $150Bn/year
Diabetes is a lifestyle choice

Hyman M, Mani J, Jaffe R. Diabetes and Insulin Resistance, Food and Nutrients in Primary Care. In: Kohlstadt I, Ed. Advancing Medicine with Food and Nutrients, 2nd Ed., *CRC Press*, 2012. p 373-390.

Jaffe, R. Diabetes as an Immune Dysfunction Syndrome. In: Watson RR, Preedy VR, Eds. Bioactive Food as Dietary Interventions for Diabetes, *Academic Press*, 2013. p 41-52.

Hgb A1c <5%, Diabetes is a Choice

Diabetes Kills
Diabetes Costs
Diabetes is a choice

68-99% risk ↓

Personalize Alkaline Way based on **Hgb A1c**

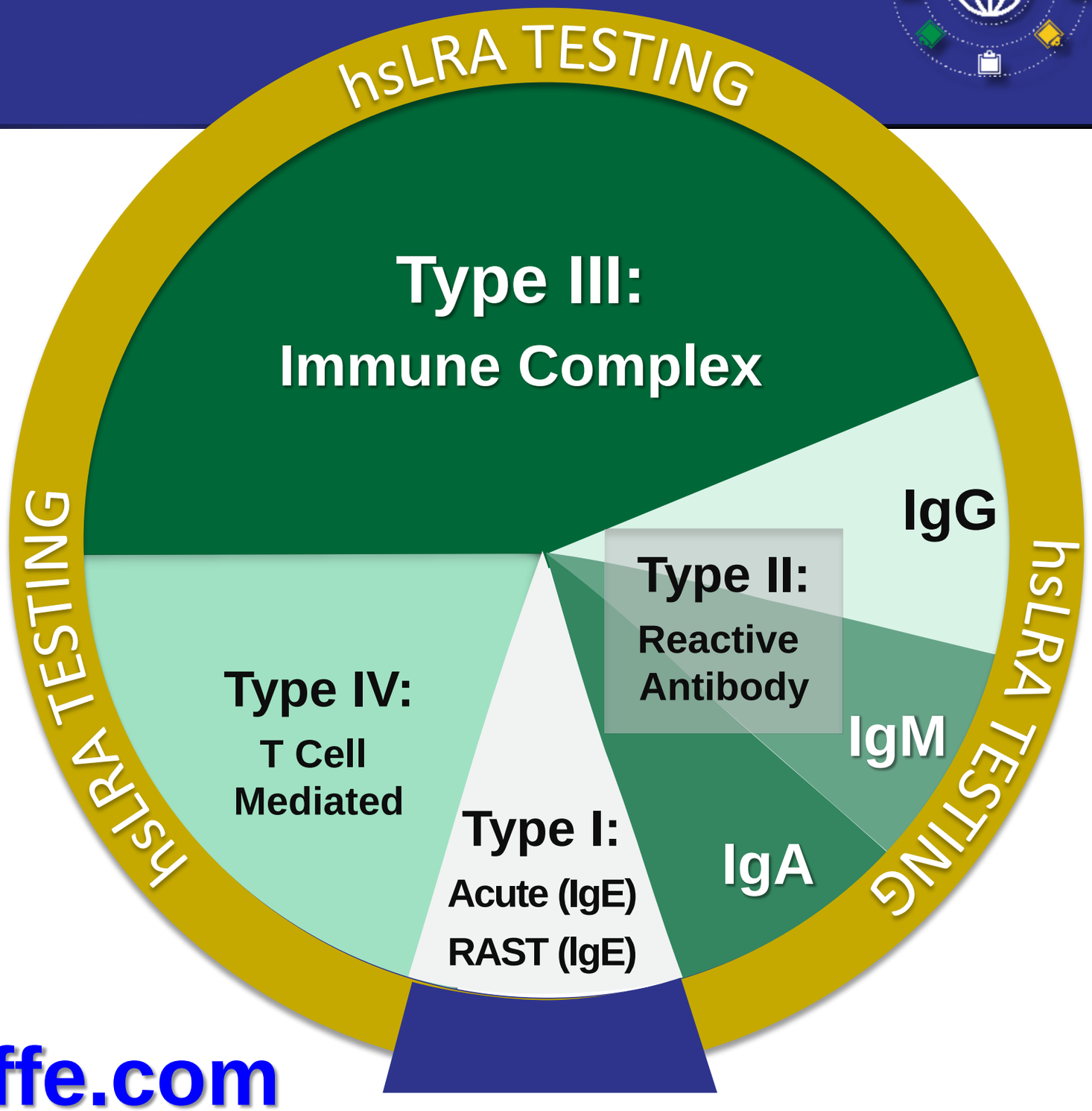
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hsLRA

Comprehensive Functional *Ex-Vivo*



www.DrRussellJaffe.com

www.HealthStudiesCollegium.org

Lymphocyte Response Assay
(Amplified Advanced Cell Culture Test)

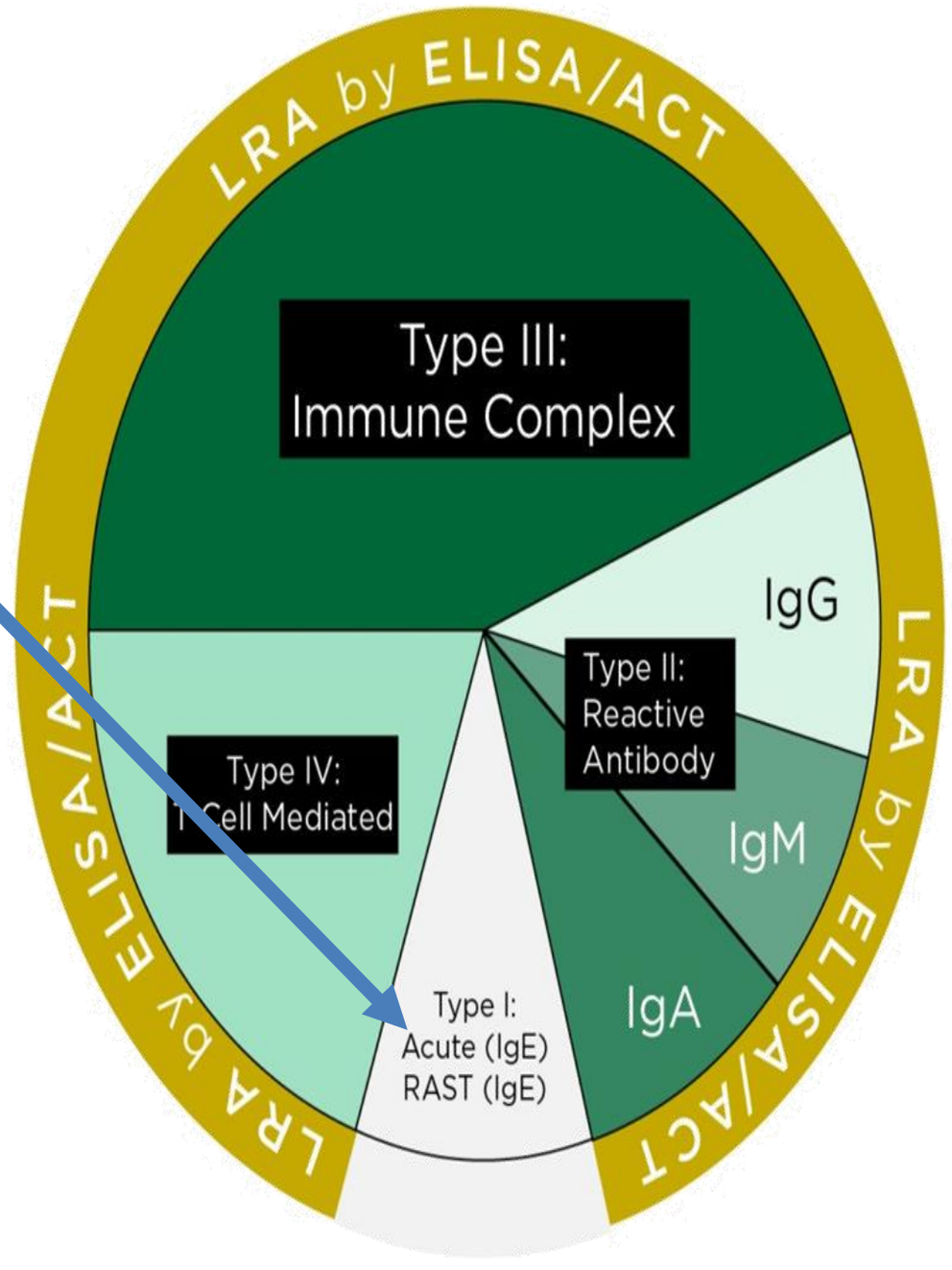
***Ex vivo* sample for >500 cell cultures:**

- Foods, additives / preservatives
- Environmental chemicals
- **Toxic minerals/heavy metals:**
- Medications
- Molds
- Danders, hairs, and feathers
- Herbs

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Acute Allergy: Type 1, IgE Hypersensitivity

Runny eyes,
Sudden itching,
Hives,
Sudden swelling,
Anaphylaxis



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@ELISAACT.com • www.ELISAACT.com

hsLRA Immune Enhancement Program

- Substitute for **immunoreactive** substances:

  6+ months for strong reactions,

  3+ months for moderate reactions

- Correct nutritional **deficiencies** that reduce defense and repair abilities
- Initiate **detox** mechanisms
- **Alkalinize**:

  Enhance human healing response

Personalized Report



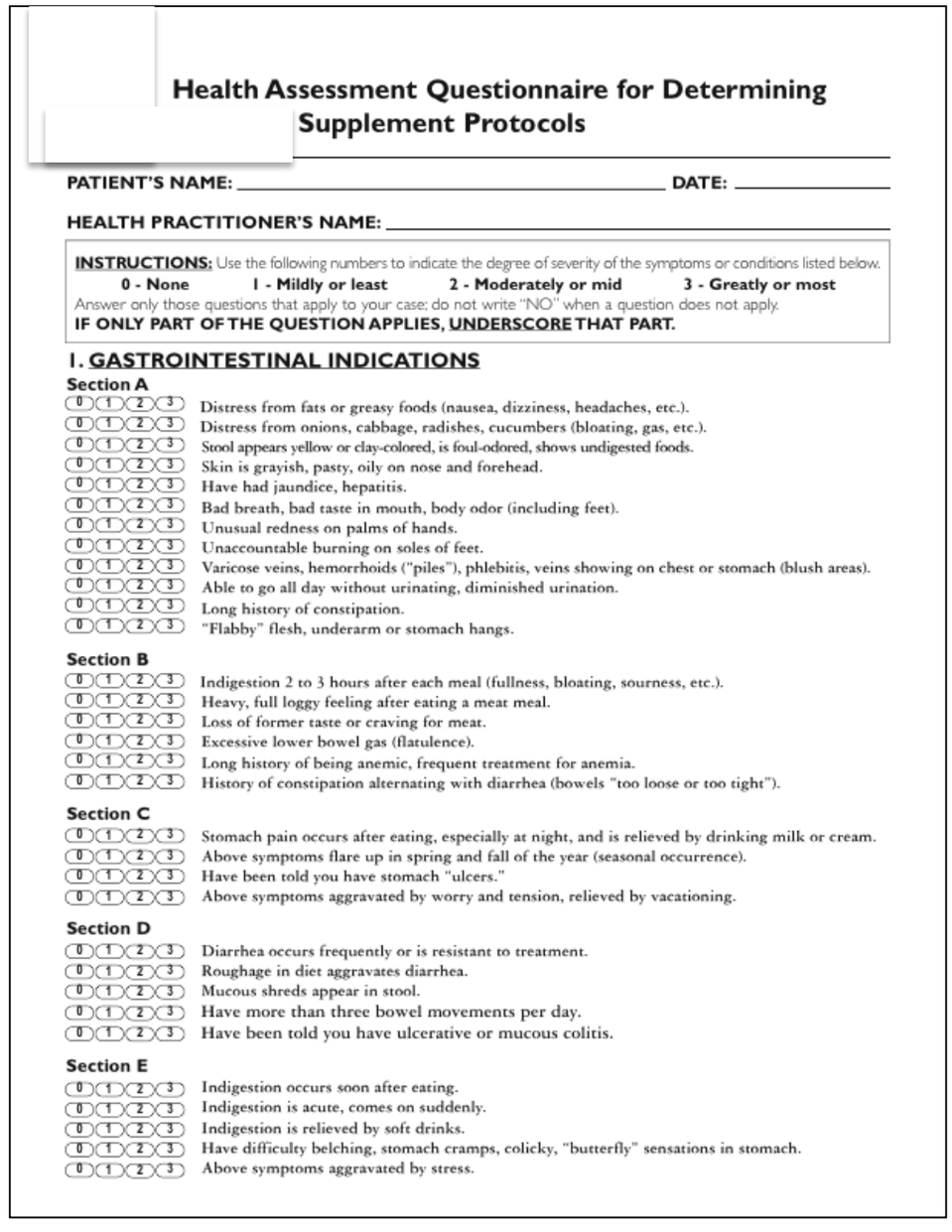
LRA by ELISA/ACT®
TEST RESULTS

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@ELISAACT.com • www.ELISAACT.com

Health Assessment Questionnaire (HAQ)

- Personalized recommendations based on **Health Assessment Questionnaire**:
  - Supplements
  - Activity & environment recommendations
  - Rotation diet *option*
- Joy in Living: The **Alkaline Way**



Health Assessment Questionnaire for Determining Supplement Protocols

PATIENT'S NAME: _____ DATE: _____

HEALTH PRACTITIONER'S NAME: _____

INSTRUCTIONS: Use the following numbers to indicate the degree of severity of the symptoms or conditions listed below.
0 - None **1 - Mildly or least** **2 - Moderately or mid** **3 - Greatly or most**
Answer only those questions that apply to your case; do not write "NO" when a question does not apply.
IF ONLY PART OF THE QUESTION APPLIES, UNDERSCORE THAT PART.

I. GASTROINTESTINAL INDICATIONS

Section A

0 1 2 3 Distress from fats or greasy foods (nausea, dizziness, headaches, etc.).
0 1 2 3 Distress from onions, cabbage, radishes, cucumbers (bloating, gas, etc.).
0 1 2 3 Stool appears yellow or clay-colored, is foul-odored, shows undigested foods.
0 1 2 3 Skin is grayish, pasty, oily on nose and forehead.
0 1 2 3 Have had jaundice, hepatitis.
0 1 2 3 Bad breath, bad taste in mouth, body odor (including feet).
0 1 2 3 Unusual redness on palms of hands.
0 1 2 3 Unaccountable burning on soles of feet.
0 1 2 3 Varicose veins, hemorrhoids ("piles"), phlebitis, veins showing on chest or stomach (blush areas).
0 1 2 3 Able to go all day without urinating, diminished urination.
0 1 2 3 Long history of constipation.
0 1 2 3 "Flabby" flesh, underarm or stomach hangs.

Section B

0 1 2 3 Indigestion 2 to 3 hours after each meal (fullness, bloating, sourness, etc.).
0 1 2 3 Heavy, full loggy feeling after eating a meat meal.
0 1 2 3 Loss of former taste or craving for meat.
0 1 2 3 Excessive lower bowel gas (flatulence).
0 1 2 3 Long history of being anemic, frequent treatment for anemia.
0 1 2 3 History of constipation alternating with diarrhea (bowels "too loose or too tight").

Section C

0 1 2 3 Stomach pain occurs after eating, especially at night, and is relieved by drinking milk or cream.
0 1 2 3 Above symptoms flare up in spring and fall of the year (seasonal occurrence).
0 1 2 3 Have been told you have stomach "ulcers."
0 1 2 3 Above symptoms aggravated by worry and tension, relieved by vacationing.

Section D

0 1 2 3 Diarrhea occurs frequently or is resistant to treatment.
0 1 2 3 Roughage in diet aggravates diarrhea.
0 1 2 3 Mucous shreds appear in stool.
0 1 2 3 Have more than three bowel movements per day.
0 1 2 3 Have been told you have ulcerative or mucous colitis.

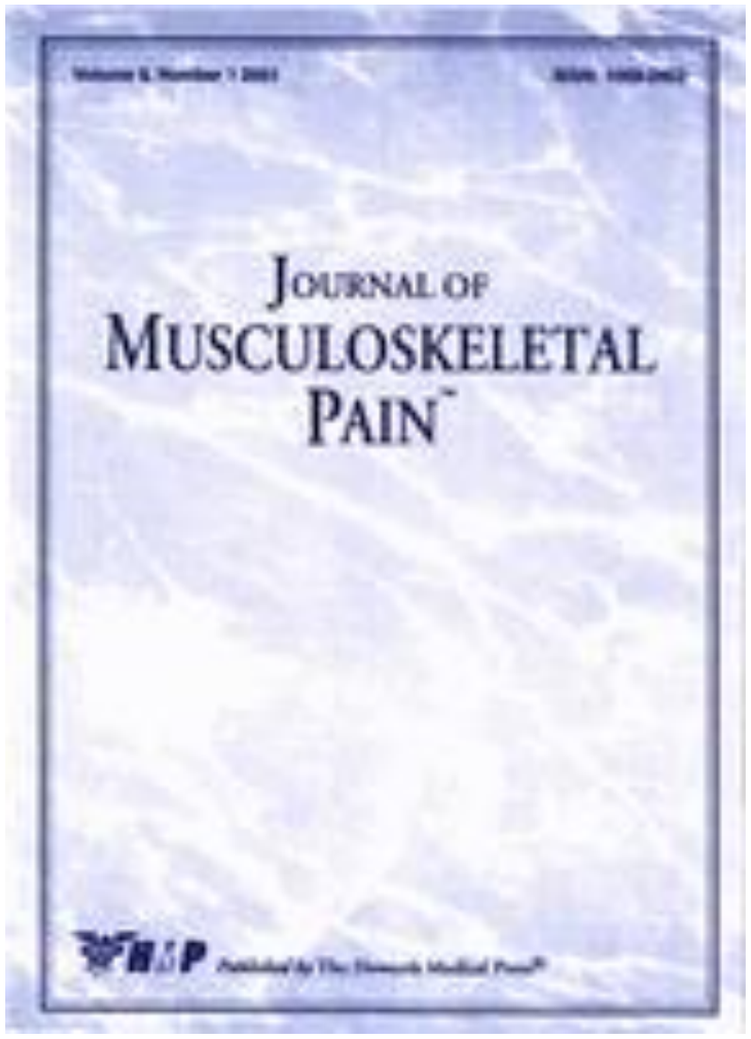
Section E

0 1 2 3 Indigestion occurs soon after eating.
0 1 2 3 Indigestion is acute, comes on suddenly.
0 1 2 3 Indigestion is relieved by soft drinks.
0 1 2 3 Have difficulty belching, stomach cramps, colicky, "butterfly" sensations in stomach.
0 1 2 3 Above symptoms aggravated by stress.

Multiple Successful Outcome 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**



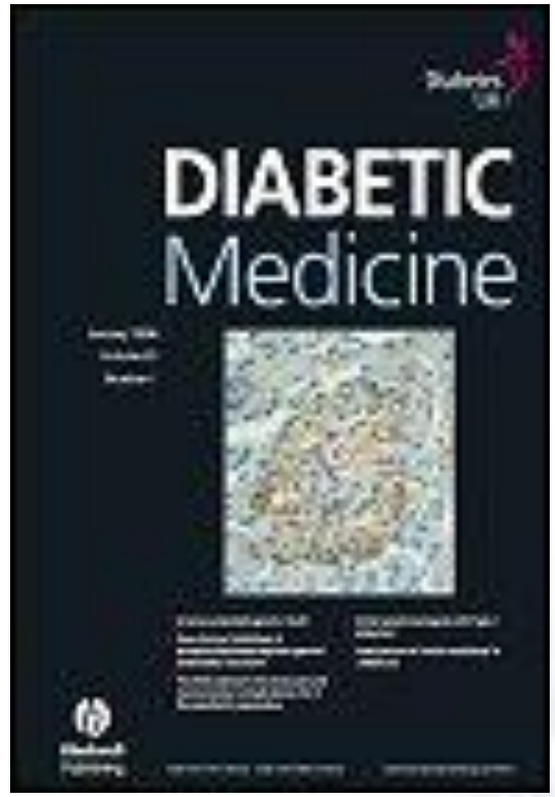
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Jaffe RM, Deuster PA. A Novel Treatment of Fibromyalgia Improves Clinical Outcomes in a Community-Based Study. *Journal of Musculoskeletal Pain*, Vol. 6, No. 2.

hsLRA: Successful Diabetes Studies

"Tolerance loss in diabetics:
Link with foreign antigen exposure"

- **>1 % ⬇ in HbA1C levels in both Type 2 & Type 1 diabetes**
- **18% reduction of insulin levels in Type 2 diabetes**



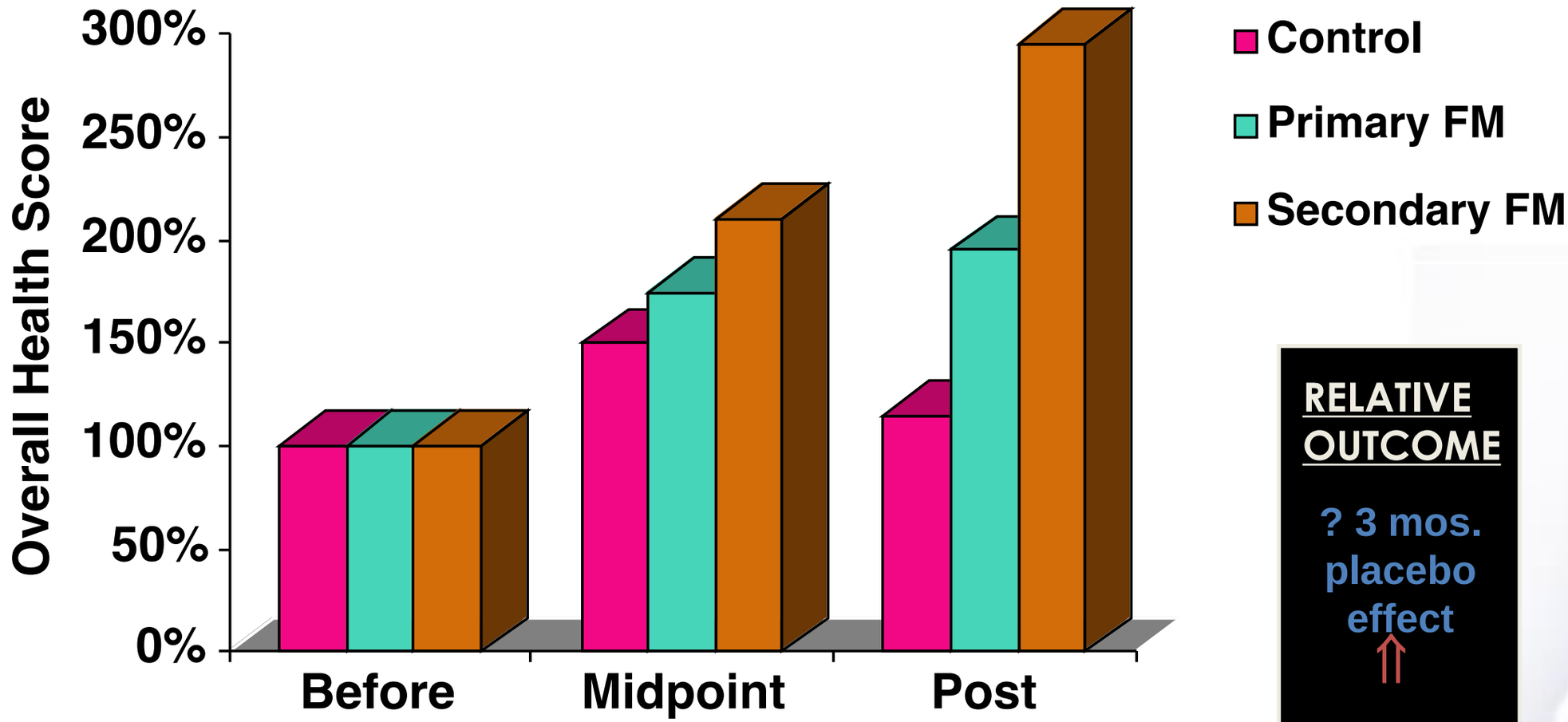
70,000+ Cases 30+ years
Patient & Practitioner Case Successes

Jaffe R, Mani J, DeVane J, Mani H. Tolerance loss in diabetics: Association with foreign antigen exposure. ***Diabetic Medicine: Journal British Diabetic Association*** **2006 Aug; 23(8): 924-925.**

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Case-Controlled Outcome Study:

Overall Health Scores Change in Study Subjects



RELATIVE OUTCOME

? 3 mos. placebo effect

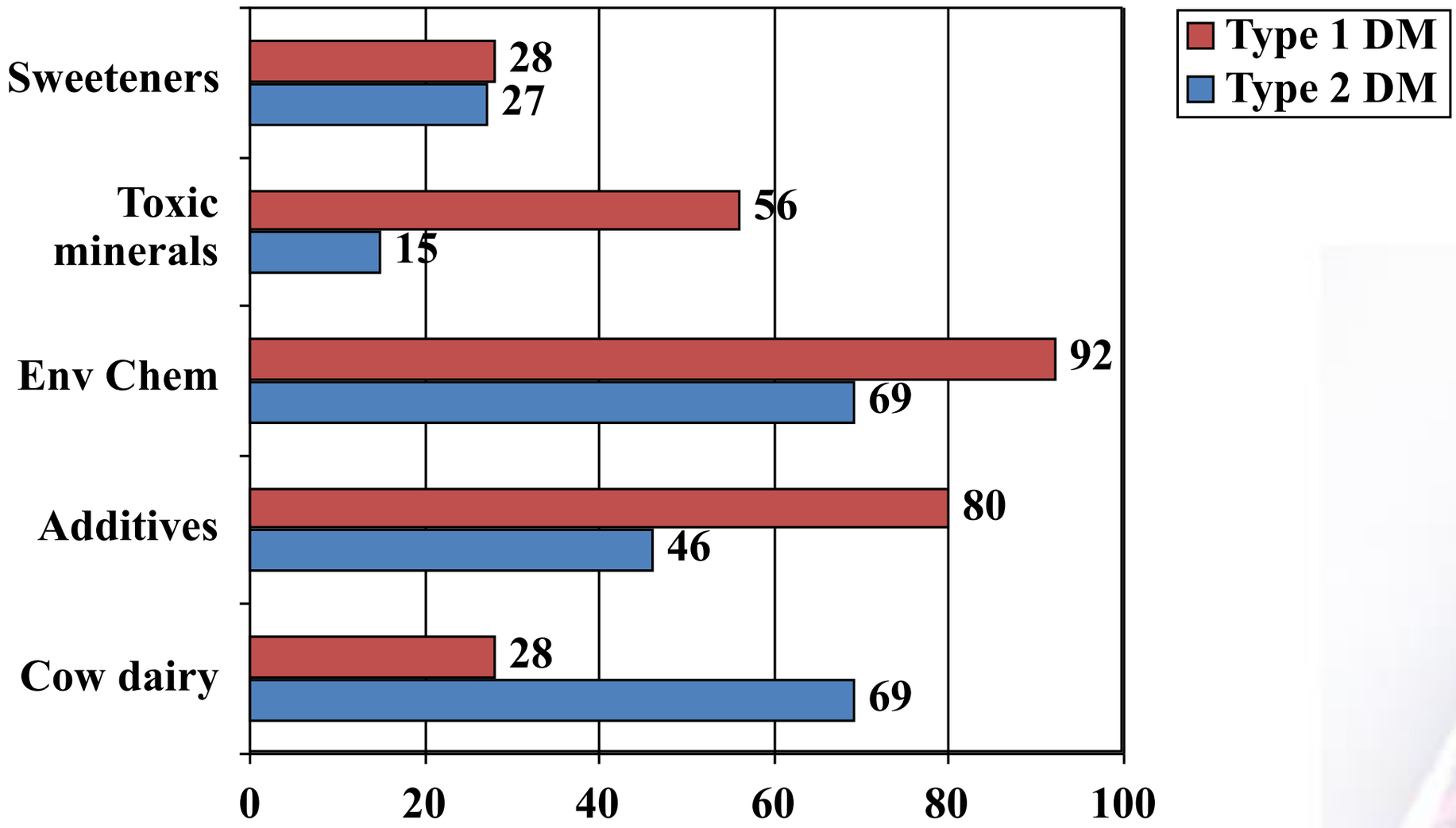
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Jaffe RM, Deuster PA. A Novel Treatment of Fibromyalgia Improves Clinical Outcomes in a Community-Based Study. *Journal of Musculoskeletal Pain*, Vol. 6, No. 2.

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



Jaffe R, Mani J, DeVane J, Mani H. Tolerance loss in diabetics: Association with foreign antigen exposure. *Diabetic Medicine: : A Journal of the British Diabetic Association* 2006 Aug;23(8): 924-925.

Migraine Success

“ 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



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Success in chronic illness

“ I 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

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Alkaline Way

Food and Chemical Effects on Acid/Alkaline Body Chemical Balance





MORE ACID
(Consume Less)

Food Category	⊖⊖⊖⊖	⊖⊖⊖	⊖⊖	⊖
Citrus Fruit Fruit		Cranberry Pomegranate	Plum Prune Tomato	Coconut Fig Guava Persimmon Juice Cherimoya Date Dry Fruit
Bean Vegetable Legume Pulse Root	Soybean Carob	Pea Green, Snow Peanut Legumes (other) Carrot Chick Pea/Garbanzo	Bean Pinto, White, Navy/Red, Aduki, Lima or Mung Chard Split Pea	Bean Fava, Kidney, Black-eyed, String/Wax Spinach Zucchini Chutney Rhubarb
Grain Cereal Grass	Barley *Processed Flour*	Corn Rye Oat Bran	Wheat Semolina, Spelt, teff, Kamut White Rice Buckwheat	Triticale Brown Rice Millet Kasha
Fowl	Pheasant	Chicken	Goose/Turkey	Wild Duck
Meat Game Fish/Shell Fish	Beef Shell Fish (Processed) Lobster	Pork/Veal Mussel/Squid	Lamb/Mutton Game Meat Shell Fish (Whole)	Gelatin/Organs Venison Fish
Egg				Egg, Chicken
Processed Dairy Cow/Human Soy Goat/Sheep	*Processed Cheese* Ice Cream	Casein Cottage Cheese Milk, Soy	Milk; Goat, Cow, Sheep	Cream/Butter Yogurt Cheese; Goat, Sheep
Oil Seed/Sprout Nut	*Cottonseed Oil/Meal* *Fried Food* Hazelnut Walnut Brazil Nut	Oil Chestnut, Palm Kernel Lard Pistachio Seed Pecan	Oil Almond, Sesame, Safflower Tapioca Seitan or Tofu	Oil Canola, Pumpkin Seed, Grape Seed, Sunflower Pine Nut
Beverage Preservative Sweetner Vinegar	*Beer* *"Soda"* *Table Salt* Yeast/Hops/Malt *Sugar*/Cocoa White/Acetic Vinegar	Coffee Aspartame Saccharin Red Wine Vinegar	*Alcohol* Black Tea Benzoate Balsamic Vinegar	*Kona Coffee* *MSG* Honey/Maple Syrup Rice Vinegar
Spice/Herb	Pudding/Jam/Jelly	Nutmeg	Vanilla Stevia	Curry
Therapeutic	*Antibiotics*	*Psychotropics*	*Antihistamines*	

Food and Chemical Effects on Acid/Alkaline Body Chemical Balance





MORE ALKALINE
(Consume More)

Food Category	⊕	⊕⊕	⊕⊕⊕	⊕⊕⊕⊕
Citrus Fruit Fruit	Orange Banana Blueberry Raisin, Grapes Currant Strawberry	Lemon Pear Avocado Apple Blackberry Cherry Peach	Grapefruit Canteloupe Honeydew Olive Mango Citrus Loganberry	Lime Nectarine Raspberry Watermelon Tangerine Pineapple
Bean Vegetable Legume Pulse Root	Brussel Sprout Beet Chive/Scallion Celery/Cilantro Squash Artichoke Lettuce Jicama Turnip Greens	Potato/Bell Pepper Mushroom/Fungi Cauliflower Cabbage Eggplant Pumpkin Collard Greens	Kohlrabi Parsnip/Taro Garlic Asparagus Kale/Parsley Endive/Arugula Jerusalem Artichoke Ginger Root Broccoli	Lentil Brocoflower Seaweed Noril|Kombu|Wakame|Hijiki Onion/Miso Daikon/Taro Root Sea Vegetables Burdock/Lotus Root Sweet Potato/Yam
Grain Cereal Grass	Quinoa Wild Rice Oat			
Fowl				
Meat Game Fish/Shell Fish				
Egg	Egg, Duck	Egg, Quail		
Processed Dairy Cow/Human Soy Goat/Sheep	Ghee Human Breast Milk			
Oil Seed/Sprout Nut	Oil Avocado, Coconut, Olive/Macadamia, Linseed/Flax Seeds (most)	Oil Cod Liver, Primrose Sesame Seed Almond Sprout	Poppy Seed Pepper Chestnut Cashew	Pumpkin Seed
Beverage Preservative Sweetner Vinegar	Ginger Tea *Sulfite* Sucanat Umeboshi vinegar	Green or Mu Tea Rice syrup Apple Cider Vinegar	Kambucha Molasses Soy Sauce	Mineral Water Sea Salt
Spice/Herb	White Willow Bark Slippery Elm Artemesia Annua	Herbs Aloe Vera Nettle	Spices/Cinnamon Valerian Licorice Agave	Baking Soda
Therapeutic	Algae, Blue Green	Sake		Umeboshi Plum

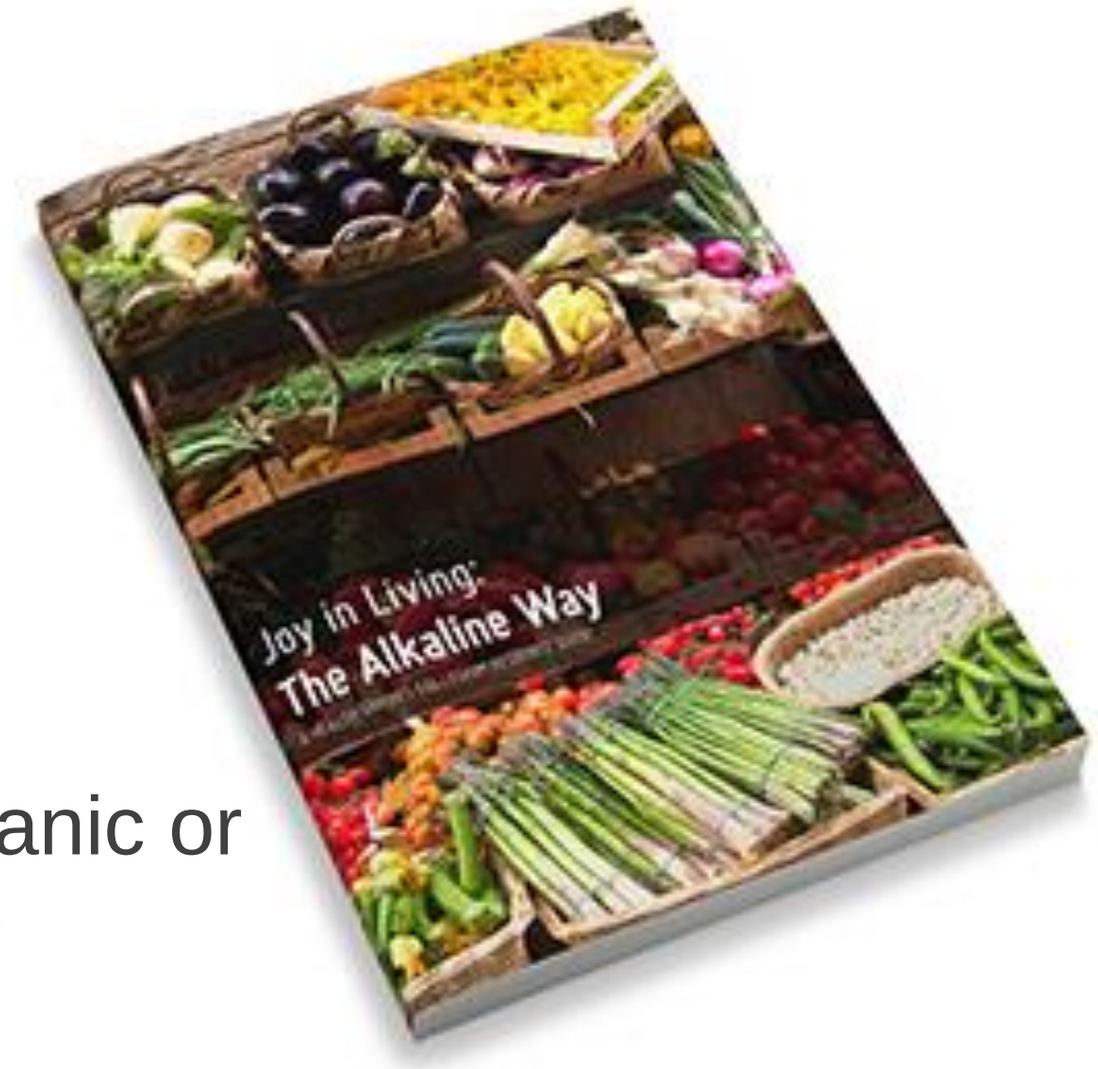
Italicised items are NOT recommended

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Jaffe R. The Alkaline Way in Digestive Health. *In*: Watson RR, Preedy VR, Eds. Bioactive Food as Dietary Interventions in Liver and Gastrointestinal Disease. *Academic Press*, 2013, 1-21.

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



Jaffe R. The Alkaline Way in Digestive Health. *In*: Watson RR, Preedy VR, Eds. Bioactive Food as Dietary Interventions in Liver and Gastrointestinal Disease. *Academic Press*, 2013, 1-21.

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Qualified Predictive Biomarkers
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**

hsLRA :

Immune Tolerance

Vitamin D:

Cell talk & adhesion

1st AM urine pH:

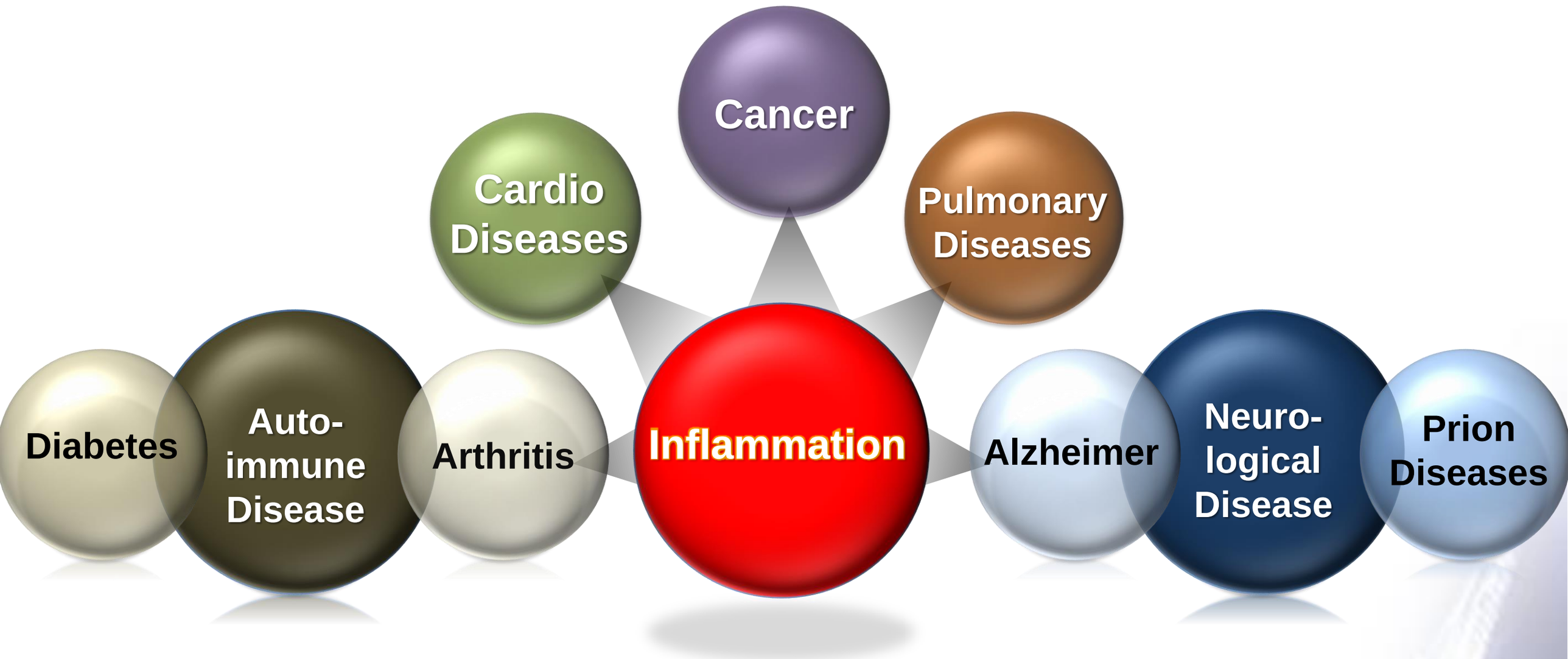
cell acidosis risk

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Jaffe R, Predictive Biomarkers Provide Evidence for Comparative Effectiveness Research, HSC 90_13:01 Advisory on Predictive Medicine & Health Promotion.

Gruenewald TL, Seeman TE, Ryff CD, Karlamangla A, Singer BH. Combinations of Biomarkers Predictive of Later Life Mortality. *PNAS*, 2006; 103 (38): 14158-14163.

Inflammation Rethought = Remove Repair Blocks



Grundy SM, Cleeman JI, Daniels SR, Donato KA *et. al*., Diagnosis and management of the metabolic syndrome: An American Heart Association/National Heart, Lung, and Blood Institute Scientific Statement. *Circulation*, 2005;112(17):2735-2752.

Kahn R, Buse J, Ferrannini E, Stern M et. al., The Metabolic Syndrome: Time for a Critical Appraisal: joint statement from the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes Care*. 2005 Sep;28(9):2289-2304.

Jaffe R, Mani J. Rethink Health: Inflammation Is Actually Repair Deficit: Using Physiology First to Achieve Better Outcomes, Part 1: Value and Importance of Understanding Inflammation as Repair Deficit. *Townsend Letter for Doctors and Patients*. 2013, Jun (359): 68-74.

Essential Predictive Bio-Marker Tests to Determine Your Functional Age

Test Name	Test Descriptions	Predictive Goal Values
hsHgb A1c (hsHemoglobin A1c)	Sugar / insulin / energy… **AGE**	**<5%**
hsCRP (hsC-Reactive Protein)	Repair, inflammation immune status	**<0.5 mg/L**
hsHCY (hsHomocysteine)	Detox, epigenetic, methylation… **Sulfur**	**< 6 µmol/L**
hsLRA (hsLymphocyte Response Assay)	Immune memory / repair tolerance	**No delayed reactions**

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Elective Predictive Bio-Marker Tests to Determine Your Functional Age

Test Name	Test Descriptions	Predictive Goal Values
1st AM Urine pH (acid/alkaline status)	Mineral need & cell acidosis risk	**6.5 – 7.5**
Vitamin D (25-Hydroxy-cholecalciferol)	Vitamin D level (cell communication status)	**50 – 80 ng/mL**
Omega-3 Index (Omega 3:6 EFA ratio)	Omega 3:6 ratio; EFAs	**>8%**
8-OHdG (8-Oxo-Guanine)	Oxidative stress and antioxidant status	**<5 ng/mg creatinine**

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Predictive Bio-Marker Tests to Determine Your Functional Age

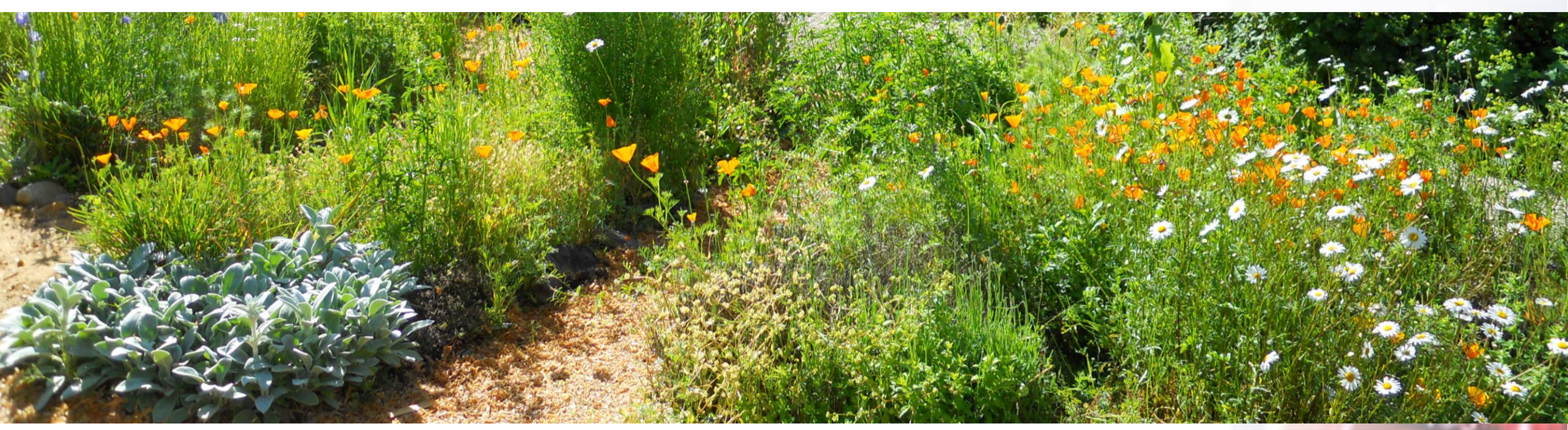
Test Name	Test Descriptions	Predictive Goal Values
hsHgb A1c (hsHemoglobin A1c)	Sugar/insulin/energy… **AGE**	<5%
hsCRP (hsC reactive protein)	Repair & inflammation immune status	<0.5 mg/L
hsHCY (hsHomocysteine)	Detox, epigenetic, methylation… **Sulfur**	< 6 µmol/L
hsLRA (hslymphocyte response assay)	Immune memory/immune tolerance	No reactions
Ur pH >6º rest (1st AM Urine pH)	Mineral status & cell acid/alkaline balance	6.5 – 7.5
Vitamin D (25-Hydroxy-cholecalciferol)	Cell communication status	50 – 80 ng/mL
Omega-3 Index (Omega 3/6 EFA ratio)	Omega 3:6 ratio; EFAs	>8%
8-OHdG (8-Oxo-Guanine)	Oxidative stress/antioxidant nucleus status	<5 ng/mg creatinine

Biological Detoxification:
Physiology 1st, Better Outcomes

Functional, Integrative BioDetox in practice:

Cautionary Principle: Use nature's pharmacy first

Inform, inspire, & motivate by example & with examples



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Life: Experience trumps theory

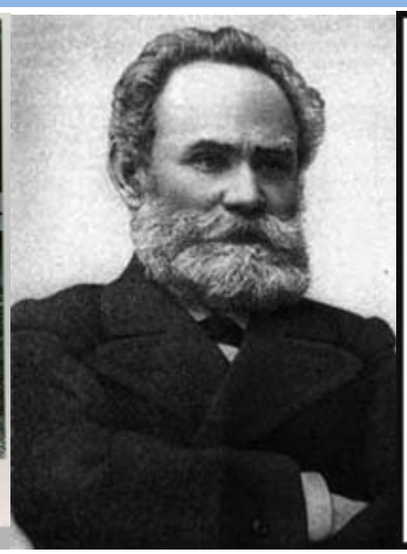
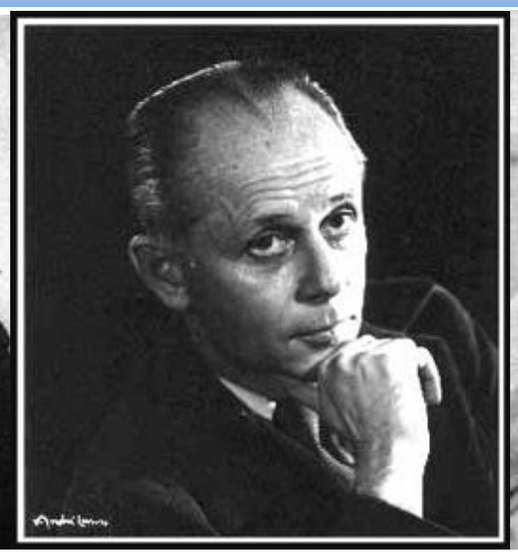
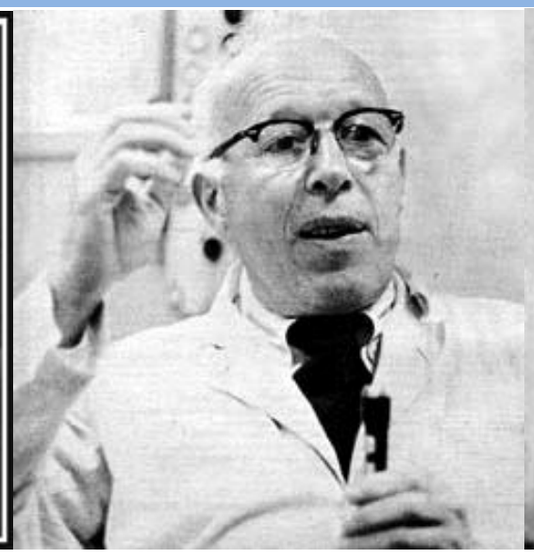
Trust experts; Verify in *your* experience…

Hope, healing touch & go by *your* results

Governing Systems… integrative science

- **±20-40 quality years, *personalized* risk & resilience *now***
- **Biomarkers of control systems quantified**
- **Lower costs of care with better outcomes**
- **Apply what is known; remove obstacles**

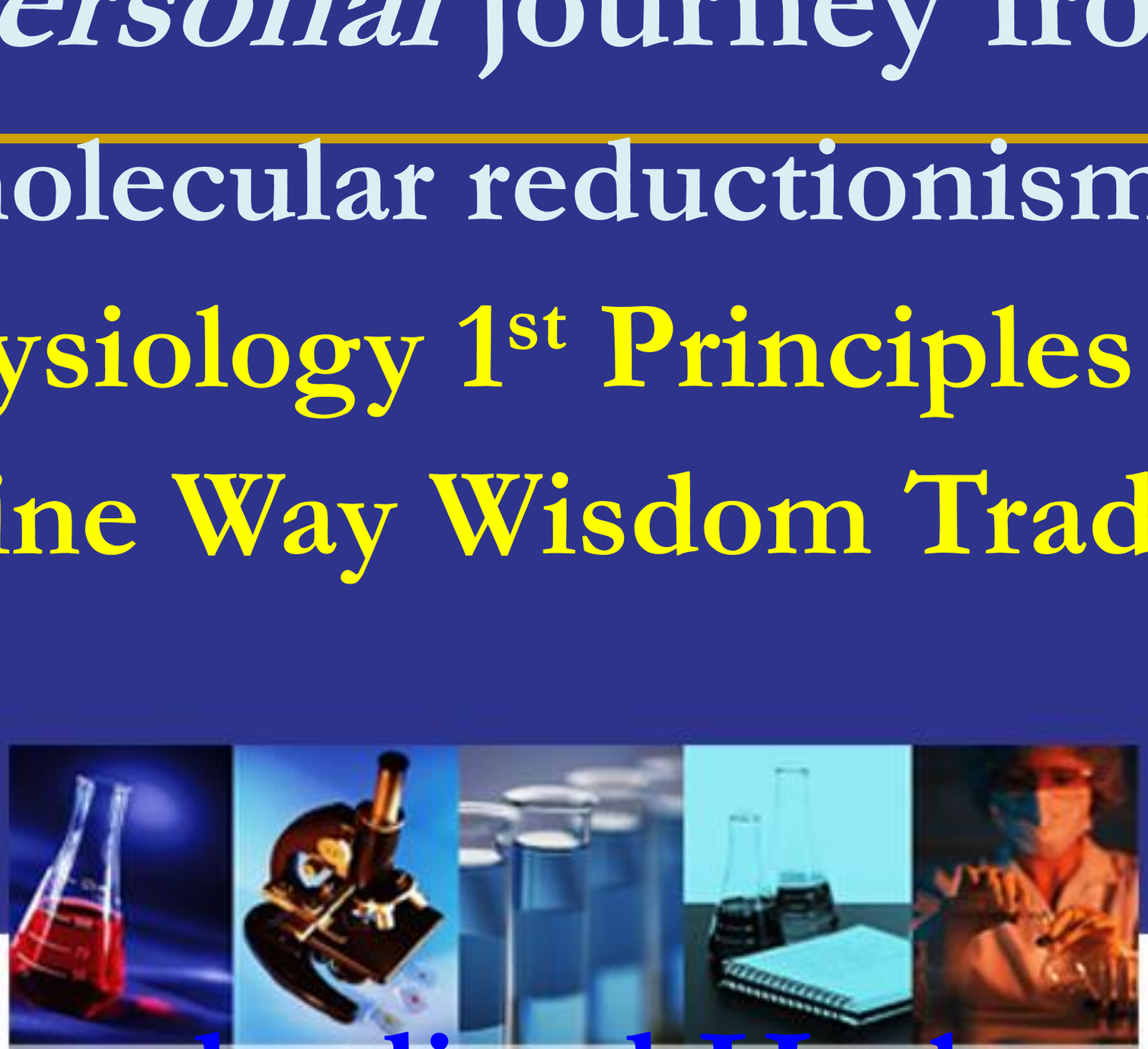



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Personal journey from Submolecular reductionism to Physiology 1st Principles & Alkaline Way Wisdom Traditions:



Standardized Herbs

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Health Studies Collegium Foundation

Rethink Health:
Standardized Safer Herbs
Personal Predictive Biomarkers
Interdependent Sustainability



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