



INTEGRATIVE ONCOLOGY
Professional
Training Program

CLINICIAN
GUIDES

Key Tests for Monitoring the Cancer Microenvironment

PLUS TUMOR ANALYSIS &
ONCOLOGY DECISION SUPPORT

CREATE AN ENVIRONMENT WHERE CANCER CANNOT THRIVE



American Institute of
Integrative Oncology
RESEARCH & EDUCATION

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Key Tests for Monitoring the Cancer Microenvironment

COMPREHENSIVE METABOLIC PANEL

CBC+PLATELETS+DIFFERENTIAL

KIDNEY FUNCTION

- GFR Glomerular Filtration Rate
- Serum Creatinine
- Blood Urea Nitrogen
- Serum Potassium
- Urinalysis
- Urine Protein
- Microalbuminuria
- Creatinine Clearance

LIVER FUNCTION & DETOX FUNCTION

- AST Aspartate Transaminase
- ALT Alanine Transaminase
- ALP Alkaline Phosphatase
- LDH Lactate Dehydrogenase
- GGT Gamma-Glutamyl Transpeptidase
- Bilirubin
- Glutathione Transferases
- SOD Dismutases
- Single Nucleotide Polymorphisms
- Phase 1 P450 Enzymes
- Phase 2 Enzymes

ELECTROLYTES

- Na+
- Cl-
- K+
- CO₂

VITAMIN D METABOLISM

- 25 OH Vitamin D
- 1,25 OH Vitamin D with patient with Autoimmune Inflammation
- Single Nucleotide Polymorphism
- VDR Vitamin D Receptor

BASIC COAGULATION EVALUATION

- Fibrinogen Activity
- Fibrinogen Degradation Products (FDP)
- D-Dimer
- Platelets
- WBC
- C-Reactive Protein
- Prothrombin Time (PT)
- Partial Prothrombin Time (PPT)
- Omega 3:6 Fatty Acids Ratio

INFLAMMATION

- C-Reactive Protein
- IL-6
- Ceruloplasmin
- Ferritin
- Uric Acid
- Fibrinogen Activity
- Omega 3:6 Fatty Acids Ratio
- ESR Sedimentation Rate

COPPER METABOLISM

- Ceruloplasmin
- Serum Copper
- Serum or Plasma Zinc

IRON METABOLISM

- Serum Fe
- Total IBC
- % IBC
- Ferritin
- Transferrin
- Soluble Transferrin Receptor

METHYLATION FUNCTION

- Homocysteine
- Methylmalonic Acid
- Primary Single Nucleotide Polymorphisms
- MTHF
- COMT

GLYCEMIC METABOLISM

- Fasting Glucose
- Fasting Insulin
- HgbA1c
- C-Peptide
- IGF-1 (Somatomedin)
- IGF-1 Receptor
- Leptin
- If indicated: ½ hr, 1 hr, 2 hr Post Prandial (75mg Glucose) Glucose, Insulin

ANGIOGENESIS

- Serum IL-8
- Fibrinogen Activity
- D-Dimer
- Ceruloplasmin
- Serum VEGF
- Serum Transforming Growth Factor beta 1
- Serum VEGF



REDOX FUNCTION

- Serum Carotenoids
- Vitamin A
- Serum Selenium
- Serum or Plasma Malondialdehyde
- Serum Iron, IBC, % Saturation
- Salivary Melatonin
- 8-OHdG
- Urine or Serum Lipidperoxides
- Single Nucleotide Polymorphisms
- Glutathione Transferases
- SOD Dismutases

ENDOCRINE FUNCTION

Thyroid

- hs-TSH
- Total and Free T3
- Total and Free T4
- Reverse T3

Adrenal

- Salivary Cortisol and DHEA (4 samples)
- Salivary Melatonin

Men

- Total and Free Testosterone
- Total and Free PSA
- Dihydrotestosterone
- SHBG
- DHEA Sulfate
- Pregnenolone

Women

- Estradiol
- Estrone
- Progesterone
- DHEA-Sulfate
- Pregnenolone
- SHBG
- Urinary Estrogen Metabolites 2-, 4-, 16-Hydroxyestrogens

Pituitary

- TSH
- ACTH
- Prolactin
- FSH
- LH

CIRCULATING TUMOR CELLS (CELLSEARCH)

- CTC/Breast, Prostate, Colorectal

GALECTIN-3

SERUM HER-2 –NEU

BONE METABOLISM

- Bone Specific Alkaline Phosphatase
- Ionized Serum Calcium
- Serum Phosphorus
- Urine N-Telopeptide

ADDITIONAL RELEVANT MINERALS

- Magnesium
- Selenium



Tumor Analysis Labs & Oncology Decision Support

Common Tumor Markers

- CEA Colorectal and other cancers
- CA 125 Ovarian
- CA 19.9 Colorectal, Pancreatic, Gastrointestinal
- CA 15.3 Breast
- CA 27.29 Breast
- HE4 Ovarian
- AFP Hepatic

Additional Considerations

- Lipase
- Amylase
- H. Pylori
- SIBO Small Intestine Bacterial Overgrowth
- Toxic Elements and Exposures (Heavy Metals, Environmental Chemicals)
- Urinary Organic Acids
- Food Sensitivities and Allergies
- Non-Celiac Gluten-Gliadin Sensitivity
- Detoxification Function Assessment
- Comprehensive Digestive and Stool Analysis
- Intestinal parasites
- Intestinal Dysbiosis
- Occult Infections
- BRCA 1 – BRCA 2 Assays
- Tamoxifen CYP2D6 Genotype

Genomic Studies

- Genova Diagnostic Lab Genovations Panels (<http://www.gdx.com>)

Specialty Labs - Tumor Cell Molecular, Receptor, Genomic and Genetic Analysis

OncoType	http://www.oncotypedx.com/
OncoBlot	http://oncoblotlabs.com/
Caris Life Sciences	http://www.carislifesciences.com/
Weisenthal Cancer Lab	http://weisenthalcancer.com/
Rational Therapeutics Cancer Research Lab	http://www.rational-t.com/
Response Genetics	http://www.responsegenetics.com/
Foundation One	http://foundationone.com/

Oncology Decision Support Tool

Eviti Advisor (free to clinicians) (http://www.eviti.com/cancer_care/oncology-treatment-plan-decision-support/)

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