

Casual Friday Series

Blood Test Applications

A BIOGENETIX CLINICAL PRESENTATION
biogenetix.com



5 Most Commonly Recommended Tests

**Biogenetix
General
Screen**

**Genova Dx
GI Effects**

**DUTCH
Complete**

**Vibrant
Wellness
Total Tox**

**Infinite
Allergy Labs
FAST88**



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BIOGENETIX GENERAL SCREEN

DESCRIPTION

TESTS INCLUDED

COLLECTION DETAILS

Clinician Pricing: \$149.00

Turnaround Time:

CPT Codes: 86141, 85025, 80053, 83550, 83540, 82728, 85384, 82977, 83036, 83090, 83615, 80061, 83735, 84100, 86376, 86800, 84436, 84479, 84443, 84480, 81001. If reflex testing is performed, concomitant CPT codes/charges will apply., 82306

Stability:

Overview:

BIOGENETIX GENERAL SCREEN

----> EvexiaDiagnostics.com



Biogenetix

| Test Code | Test Name |
|-----------|---|
| 005009 | Complete Blood Count (CBC) With Differential |
| 322000 | Comprehensive Metabolic Panel (CMP-14) |
| 120766 | C-Reactive Protein (CRP), High Sensitivity (Cardiac Risk Assessment) |
| 324741 | Ferritin + Iron + Total Iron-binding Capacity (TIBC) |
| 001610 | Fibrinogen Activity (Factor I Activity) |
| 001958 | Gamma-Glutamyl Transferase (GGT) |
| 102525 | Hemoglobin (Hb) A1c With eAG |
| 706994 | Homocysteine |
| 001115 | Lactic Acid Dehydrogenase (LD / LDH) |
| 346644 | Lipid Panel + VLDL + Non-HDL Cholesterol + TC/HDL Ratio |
| 001537 | Magnesium |
| 001024 | Phosphorus |
| 006684 | Thyroid Antibodies (Thyroglobulin Antibody + Thyroid Peroxidase (TPO) Antibody) |
| 000620 | Thyroid Profile With TSH |
| 002188 | Triiodothyronine (T3) |
| 377200 | Urinalysis, Complete w/ Micro. Exam (Reflex to Urine Culture, Comp)* |
| 081950 | Vitamin D, 25-Hydroxy |

Q Individual Tests

AVAILABLE TESTS

Show 25 entries

Search: cbc, 303754 or carbon d

| Test Name | CPT | Price | |
|---|-----|----------|---|
| 11-Deoxycortisol, LC/MS-MS (500171) | | \$80.00 | ☆ |
| 14.3.3 eta, Rheumatoid Arthritis (504550) | | \$150.00 | ☆ |
| 17-Hydroxypregnenolone, LC/MS-MS (140715) | | \$40.00 | ☆ |
| 17-OH Progesterone, LC/MS (070085) | | \$30.00 | ☆ |
| 17-OH Progesterone, LC/MS, 02 Specimens (070037) | | \$60.00 | ☆ |
| 17-OH Progesterone, LC/MS, 03 Specimens (070078) | | \$90.00 | ☆ |
| 17-OH Progesterone/Creatinine Ratio, 24-Hour Urine (070315) | | \$37.00 | ☆ |
| 17-OH Progesterone/Creatinine Ratio, Random Urine (070340) | | \$37.00 | ☆ |



Biogenetix

Common Additions:

- Insulin
- C Peptide
- Diabetes antibodies: GAD65 Ab, Insulin Ab, Islet Cell Ab
- Hormones: Testosterone (t/free), DHT, Estrogens, Progesterone etc.
- HLA DRDQ
- Rheumatoid Factor
- ANA w/pattern interpretation
- CCP Ab (Cyclic Citrullinated Peptide Ab)



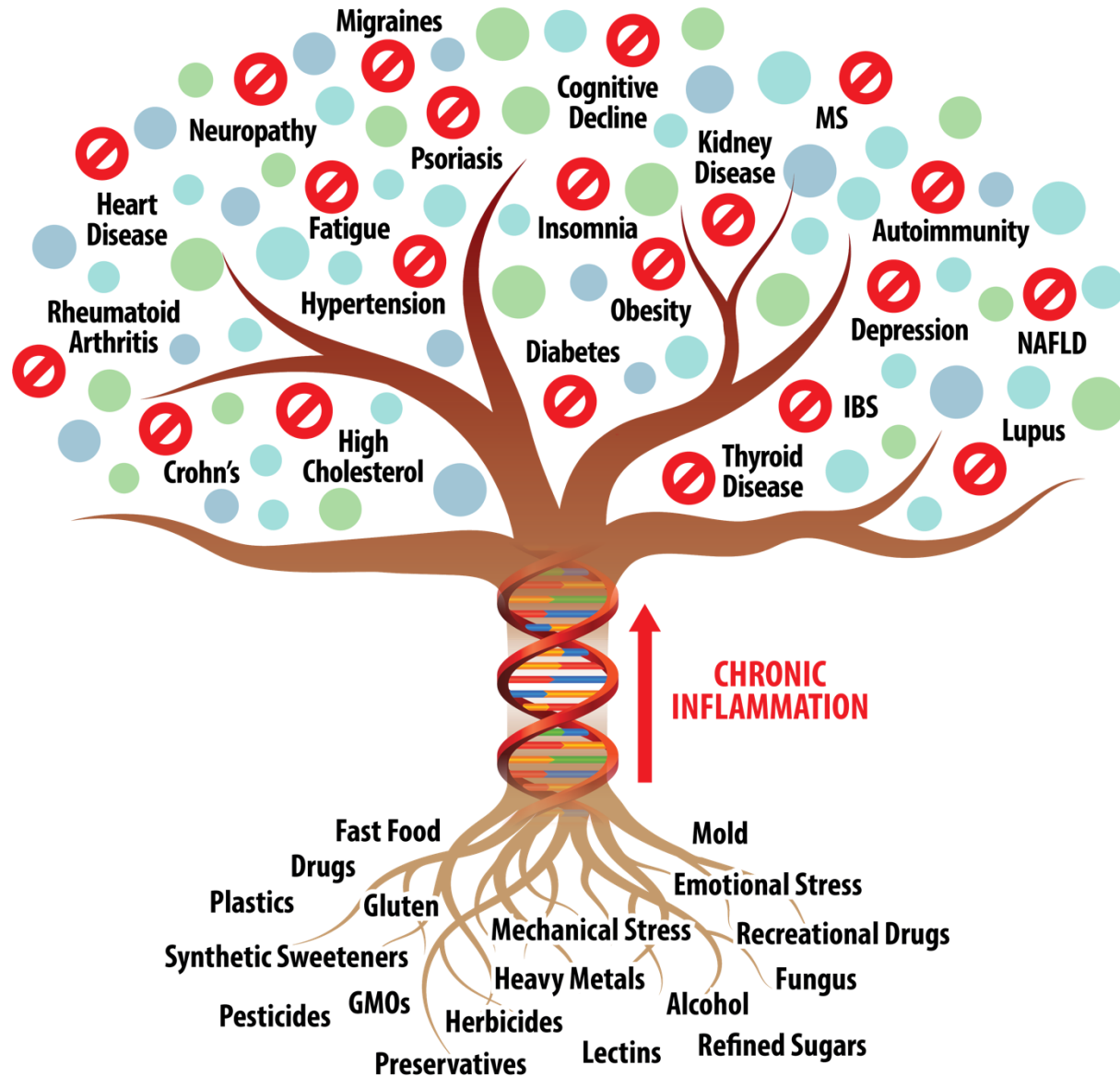
The Purpose of Functional Blood Chemistry



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Narrative Formation:

- The Perfect Story – Karen Eber
- Tell to Win – Peter Guber



Medicine

Functional Medicine

Narrative Requires that you answer
3 primary questions:

1. What is going on?



Biogenetix™

Narrative Requires that you answer
3 primary questions:

1. What is going on?
2. Why is it happening?

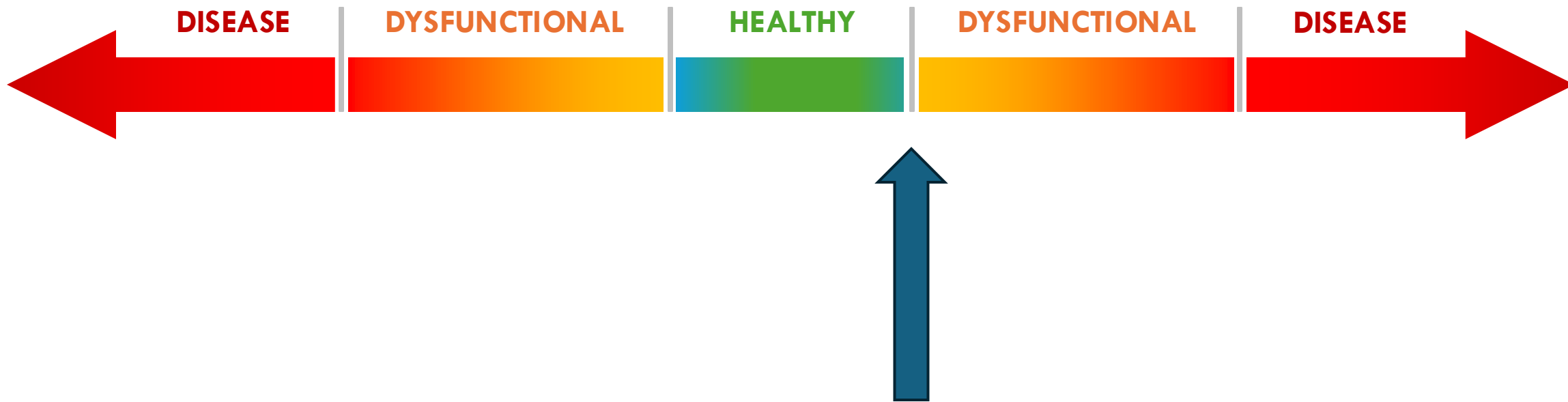
Narrative Requires that you answer
3 primary questions:

1. What is going on?
2. Why is it happening?
3. What do I do about it?

The Functional Model









*Functional Lab range
worksheet.

----> email your Biogenetix rep.



Biogenetix™

57 yo female
DM2
Anxiety
Weight Gain

CBC With Differential/Platelet

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|--------------------------------------|-------------------------|--------------------------|----------|--------------------|
| WBC ⁰¹ | 6.7 | | x10E3/uL | 3.4-10.8 |
| RBC ⁰¹ | 4.45 | | x10E6/uL | 3.77-5.28 |
| Hemoglobin ⁰¹ | 12.6 | | g/dL | 11.1-15.9 |
| Hematocrit ⁰¹ | 39.3 | | % | 34.0-46.6 |
| MCV ⁰¹ | 88 | | fL | 79-97 |
| MCH ⁰¹ | 28.3 | | pg | 26.6-33.0 |
| MCHC ⁰¹ | 32.1 | | g/dL | 31.5-35.7 |
| RDW ⁰¹ | 12.5 | | % | 11.7-15.4 |
| Platelets ⁰¹ | 238 | | x10E3/uL | 150-450 |
| Neutrophils ⁰¹ | 57 | | % | Not Estab. |
| Lymphs ⁰¹ | 34 | | % | Not Estab. |
| Monocytes ⁰¹ | 6 | | % | Not Estab. |
| Eos ⁰¹ | 2 | | % | Not Estab. |
| Basos ⁰¹ | 0 | | % | Not Estab. |
| Neutrophils (Absolute) ⁰¹ | 3.8 | | x10E3/uL | 1.4-7.0 |
| Lymphs (Absolute) ⁰¹ | 2.3 | | x10E3/uL | 0.7-3.1 |
| Monocytes(Absolute) ⁰¹ | 0.4 | | x10E3/uL | 0.1-0.9 |
| Eos (Absolute) ⁰¹ | 0.1 | | x10E3/uL | 0.0-0.4 |
| Baso (Absolute) ⁰¹ | 0.0 | | x10E3/uL | 0.0-0.2 |
| Immature Granulocytes ⁰¹ | 1 | | % | Not Estab. |
| Immature Grans (Abs) ⁰¹ | 0.0 | | x10E3/uL | 0.0-0.1 |

57 yo female
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LP+Chol/HDL+LDL/HDL+CHD Risk

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---|-------------------------|--------------------------|--|--------------------|
| Lipids ⁰¹ | | | | |
| Cholesterol, Total ⁰¹ | 190 | | mg/dL | 100-199 |
| ▲ Triglycerides⁰¹ | 196 High | | mg/dL | 0-149 |
| ▼ HDL Cholesterol⁰¹ | 36 Low | | mg/dL | >39 |
| VLDL Cholesterol Cal | 35 | | mg/dL | 5-40 |
| ▲ LDL Chol Calc (NIH) | 119 High | | mg/dL | 0-99 |
| ▲ T. Chol/HDL Ratio | 5.3 High | | ratio | 0.0-4.4 |
| Please Note: ⁰¹ | | | | |
| | | | T. Chol/HDL Ratio Men Women 1/2 Avg.Risk 3.4 3.3 Avg.Risk 5.0 4.4 2X Avg.Risk 9.6 7.1 3X Avg.Risk 23.4 11.0 | |
| ▲ Estimated CHD Risk | 1.4 High | | times avg. | 0.0-1.0 |
| The CHD Risk is based on the T. Chol/HDL ratio. Other factors affect CHD Risk such as hypertension, smoking, diabetes, severe obesity, and family history of premature CHD. | | | | |
| ▲ LDL/HDL Ratio | 3.3 High | | ratio | 0.0-3.2 |
| Please Note: ⁰¹ | | | | |

Comp. Metabolic Panel (14)

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|-------------------------------------|-------------------------|--------------------------|-------------|--------------------|
| ▲ Glucose⁰¹ | 166 High | | mg/dL | 70-99 |
| BUN ⁰¹ | 17 | | mg/dL | 6-24 |
| Creatinine ⁰¹ | 0.76 | | mg/dL | 0.57-1.00 |
| eGFR | 91 | | mL/min/1.73 | >59 |
| BUN/Creatinine Ratio | 22 | | | 9-23 |
| Sodium ⁰¹ | 138 | | mmol/L | 134-144 |
| Potassium ⁰¹ | 4.2 | | mmol/L | 3.5-5.2 |
| Chloride ⁰¹ | 100 | | mmol/L | 96-106 |
| Carbon Dioxide, Total ⁰¹ | 23 | | mmol/L | 20-29 |
| Calcium ⁰¹ | 9.2 | | mg/dL | 8.7-10.2 |

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Comp. Metabolic Panel (14) (Cont.)

| | | | | |
|------------------------------------|-----------|-------------|-------|---------|
| Protein, Total ⁰¹ | 7.0 | | g/dL | 6.0-8.5 |
| Albumin ⁰¹ | 4.5 | | g/dL | 3.8-4.9 |
| Globulin, Total | 2.5 | | g/dL | 1.5-4.5 |
| Bilirubin, Total ⁰¹ | 0.4 | | mg/dL | 0.0-1.2 |
| Alkaline Phosphatase ⁰¹ | 121 | | IU/L | 44-121 |
| AST (SGOT) ⁰¹ | 35 | | IU/L | 0-40 |
| ▲ ALT (SGPT) ⁰¹ | 58 | High | IU/L | 0-32 |

Urinalysis, Complete

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|--|--|--------------------------|-------|--------------------|
| Urinalysis Gross Exam ⁰¹ | | | | |
| Specific Gravity ⁰¹ | 1.009 | | | 1.005-1.030 |
| pH ⁰¹ | 6.0 | | | 5.0-7.5 |
| Urine-Color ⁰¹ | Yellow | | | Yellow |
| Appearance ⁰¹ | Clear | | | Clear |
| WBC Esterase ⁰¹ | Negative | | | Negative |
| Protein ⁰¹ | Negative | | | Negative/Trace |
| Glucose ⁰¹ | Negative | | | Negative |
| Ketones ⁰¹ | Negative | | | Negative |
| Occult Blood ⁰¹ | Negative | | | Negative |
| Bilirubin ⁰¹ | Negative | | | Negative |
| Urobilinogen,Semi-Qn ⁰¹ | 0.2 | | mg/dL | 0.2-1.0 |
| Nitrite, Urine ⁰¹ | Negative | | | Negative |
| Microscopic Examination ⁰¹ | Microscopic follows if indicated. | | | |
| Microscopic Examination ⁰¹ | See below: Microscopic was indicated and was performed. | | | |
| WBC ⁰¹ | 0-5 | | /hpf | 0 - 5 |
| RBC ⁰¹ | None seen | | /hpf | 0 - 2 |
| Epithelial Cells (non renal) ⁰¹ | 0-10 | | /hpf | 0 - 10 |
| Casts ⁰¹ | None seen | | /lpf | None seen |
| Bacteria ⁰¹ | None seen | | | None seen/Few |



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Thyroid Panel With TSH

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|------------------------------|-------------------------|--------------------------|--------|--------------------|
| TSH ⁰¹ | 2.090 | | uIU/mL | 0.450-4.500 |
| Thyroxine (T4) ⁰¹ | 7.9 | | ug/dL | 4.5-12.0 |
| T3 Uptake ⁰¹ | 24 | | % | 24-39 |
| Free Thyroxine Index | 1.9 | | | 1.2-4.9 |

Iron and TIBC

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|----------------------|-------------------------|--------------------------|-------|--------------------|
| Iron Bind.Cap.(TIBC) | 410 | | ug/dL | 250-450 |
| UIBC ⁰¹ | 317 | | ug/dL | 131-425 |
| Iron ⁰¹ | 93 | | ug/dL | 27-159 |
| Iron Saturation | 23 | | % | 15-55 |

Hgb A1c with eAG Estimation

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---|-------------------------|--------------------------|-------|--------------------|
| ▲ Hemoglobin A1c ⁰¹ | 7.8 High | | % | 4.8-5.6 |
| Please Note: ⁰¹ | | | | |
| Prediabetes: 5.7 - 6.4 | | | | |
| Diabetes: >6.4 | | | | |
| Glycemic control for adults with diabetes: <7.0 | | | | |
| Estim. Avg Glu (eAG) | 177 | | mg/dL | |

Insulin Antibodies

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---|-------------------------|--------------------------|-------|--------------------|
| Insulin Antibodies ⁰³ | <5.0 | | uU/mL | |
| This test is also known as insulin autoantibody or IAA. | | | | |
| This test was developed and its performance characteristics determined by LabCorp. It has not been cleared or approved by the Food and Drug Administration. | | | | |
| Reference Range: | | | | |
| <5.0 Negative | | | | |
| > or = 5.0 Positive | | | | |



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Magnesium

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|-------------------------|-------------------------|--------------------------|-------|--------------------|
| Magnesium ⁰¹ | 2.1 | | mg/dL | 1.6-2.3 |

Fibrinogen Activity

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|-----------------------------------|-------------------------|--------------------------|-------|--------------------|
| Fibrinogen Activity ⁰¹ | 316 | | mg/dL | 193-507 |

Progesterone

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|----------------------------|-------------------------|--------------------------|--------------|--------------------|
| Progesterone ⁰¹ | 0.2 | | ng/mL | |
| | | Follicular phase | 0.1 - 0.9 | |
| | | Luteal phase | 1.8 - 23.9 | |
| | | Ovulation phase | 0.1 - 12.0 | |
| | | Pregnant | | |
| | | First trimester | 11.0 - 44.3 | |
| | | Second trimester | 25.4 - 83.3 | |
| | | Third trimester | 58.7 - 214.0 | |
| | | Postmenopausal | 0.0 - 0.1 | |

Insulin

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|-------------------------|-------------------------|--------------------------|--------|--------------------|
| ▲ Insulin ⁰¹ | 44.0 High | | uIU/mL | 2.6-24.9 |

Ferritin

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|------------------------|-------------------------|--------------------------|-------|--------------------|
| Ferritin ⁰¹ | 116 | | ng/mL | 15-150 |

Reticulocyte Count

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|----------------------------------|-------------------------|--------------------------|-------|--------------------|
| Reticulocyte Count ⁰¹ | 2.3 | | % | 0.6-2.6 |

Triiodothyronine (T3), Free

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---|-------------------------|--------------------------|-------|--------------------|
| Triiodothyronine (T3), Free ⁰¹ | 3.1 | | pg/mL | 2.0-4.4 |

Antipancreatic Islet Cells

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|--|-------------------------|--------------------------|-------|--------------------|
| Antipancreatic Islet Cells ⁰⁴ | Negative | | | Neg:<1:1 |



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C-Reactive Protein, Cardiac

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---|-------------------------|--------------------------|---------|--------------------|
| ▲ C-Reactive Protein, Cardiac ⁰¹ | 4.62 High | | mg/L | 0.00-3.00 |
| Relative Risk for Future Cardiovascular Event | | | | |
| | | | Low | <1.00 |
| | | | Average | 1.00 - 3.00 |
| | | | High | >3.00 |

GAD-65 Autoantibody

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|------------------------|-------------------------|--------------------------|-------|--------------------|
| ▲ GAD-65 ⁰⁴ | 9.1 High | | U/mL | 0.0-5.0 |

Homocyst(e)ine

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|------------------------------|-------------------------|--------------------------|--------|--------------------|
| Homocyst(e)ine ⁰¹ | 5.6 | | umol/L | 0.0-14.5 |

Uric Acid

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|--|-------------------------|--------------------------|-------|--------------------|
| Uric Acid ⁰¹ | 6.3 | | mg/dL | 3.0-7.2 |
| Therapeutic target for gout patients: <6.0 | | | | |

Phosphorus

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|--------------------------|-------------------------|--------------------------|-------|--------------------|
| Phosphorus ⁰¹ | 3.0 | | mg/dL | 3.0-4.3 |

LDH

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|-------------------|-------------------------|--------------------------|-------|--------------------|
| LDH ⁰¹ | 220 | | IU/L | 119-226 |

GGT

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---------------------|-------------------------|--------------------------|-------|--------------------|
| ▲ GGT ⁰¹ | 62 High | | IU/L | 0-60 |

Thyroid Antibodies

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---|-------------------------|--------------------------|-------|--------------------|
| Thyroid Peroxidase (TPO) Ab ⁰¹ | 13 | | IU/mL | 0-34 |
| ▲ Thyroglobulin Antibody ⁰¹ | 1.8 High | | IU/mL | 0.0-0.9 |

Thyroglobulin Antibody measured by Beckman Coulter Methodology
It should be noted that the presence of thyroglobulin antibodies may not be pathogenic nor diagnostic, especially at very low levels. The assay manufacturer has found that four percent of individuals without evidence of thyroid disease or autoimmunity will have positive TgAb levels up to 4 IU/mL.

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DHEA-Sulfate

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|----------------------------|-------------------------|--------------------------|-------|--------------------|
| DHEA-Sulfate ⁰¹ | 132.0 | | ug/dL | 29.4-220.5 |

Estradiol

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|-------------------------|-------------------------|--------------------------|-----------------|--------------------|
| Estradiol ⁰¹ | <5.0 | | pg/mL | |
| | | Adult Female | Range | |
| | | Follicular phase | 12.5 - 166.0 | |
| | | Ovulation phase | 85.8 - 498.0 | |
| | | Luteal phase | 43.8 - 211.0 | |
| | | Postmenopausal | <6.0 - 54.7 | |
| | | Pregnancy | | |
| | | 1st trimester | 215.0 - >4300.0 | |
| Roche ECLIA methodology | | | | |

C-Peptide, Serum

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---|-------------------------|--------------------------|-------|--------------------|
| ▲ C-Peptide, Serum ⁰¹ | 6.8 High | | ng/mL | 1.1-4.4 |
| C-Peptide reference interval is for fasting patients. | | | | |

Testosterone, Total, LC/MS

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---|-------------------------|--------------------------|-------|--------------------|
| Testosterone, Total, LC/MS ⁰³ | 29 | | ng/dL | |
| This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration. | | | | |
| Reference Range: | | | | |
| Adult Females | | | | |
| Premenopausal 10 - 55 | | | | |
| Postmenopausal 7 - 40 | | | | |

Reverse T3, Serum

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|-----------------------------------|-------------------------|--------------------------|-------|--------------------|
| Reverse T3, Serum ^{A,04} | 19.4 | | ng/dL | 9.2-24.1 |

Vitamin D, 25-Hydroxy

| Test | Current Result and Flag | Previous Result and Date | Units | Reference Interval |
|---------------------------------------|-------------------------|--------------------------|-------|--------------------|
| ▼ Vitamin D, 25-Hydroxy ⁰¹ | 19.7 Low | | ng/mL | 30.0-100.0 |



