



Serum Testing

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Basic Rules of Testing

- Establish a baseline prior to initiating therapy.
- Follow up to evaluate for safety and management.
- Start with a reasonable amount of testing. You can always do more.
- When there is a discrepancy between a lab test and the patient's symptoms, the patient will always win.

When to order?

Before first visit

At 3-6 month intervals after initiating treatment

Whenever symptoms don't make sense



What to order initially

- CBC
- Comprehensive Metabolic Panel
- VAP
- Homocysteine, C-Reactive Protein
- Insulin, A1C
- Hormone Levels
- Vitamin Levels
- Cancer Screens
- Urine NTX

Second stage if needed

- Heavy Metals
- Comprehensive vitamin testing
- Genetic risk factors
- Disease specific
 - Autoimmune
- Advanced and emerging
 - Cytokine levels, IL-6, IL-1beta, TNF alpha

What to Order

- Start with the basics of good medicine
 - CBC
 - Hemoglobin/Hematocrit

Need to get a baseline prior to starting testosterone

Comprehensive Metabolic Panel

➤ Evaluate

- Glucose
- Renal and Liver functions
- Electrolytes
- Calcium and Magnesium levels
- Albumin for Testosterone calculator

Evaluate for pre existing disease

Magnesium important for adrenals

Diabetic Assessment

- Fasting glucose
- Fasting Insulin
- Hemoglobin A1C
 - 3 month evaluation of glucose control
- Look for trends for early prediction of type 2 diabetes

VAP Cholesterol Panel

- Cholesterol, Triglycerides, HDL, LDL
- Non HDL Cholesterol
- Lipoprotein (a)
- Particle Size
 - Usually something good and something that needs improvement can be found in this test
 - Helps to identify if aggressive management is needed
 - Helps to identify which patients need cardiac imaging

Other cardiac screening tests

- Homocysteine- inflammatory and cardiac marker
- CoQ10 level- baseline prior to treatment
 - Important if on statins
- AA/EPA ratio- omega 3 status
- HS- CRP- inflammation
- Vitamin B 12

HORMONE TESTS

- DHEA-S
- IGF-1, ? IGF BP-3
- Free and Total Testosterone
- Sex Hormone Binding Globulin
- Estradiol, ?E1
- Progesterone
- FSH/LH
- ? DHT
- ? Prolactin
- 25 Hydroxy Vitamin D

Thyroid Studies

- TSH
- Free T3
- Free T4
- Thyroid Peroxidase Antibody

Adrenal Function

- Probably best evaluated with serial salivary cortisol tests (4 in 1 day)
- Can do am and pm Free Cortisol and Cortitropin levels, but doesn't show fluctuations
- Can do 24 hour urine testing for metabolites, but also won't show fluctuations

Cancer Markers

- PSA
 - Reflex to % free PSA if above 4
- CA 125
- CA 19-9, CEA, genetic testing etc. if history indicates further evaluation

Osteoporosis Screen

- 2nd AM urine spot test for N telopeptides



Specialized Testing

- Done after evaluation of patient if indicated
 - Genetic testing
 - Nutritional testing
 - Stimulation Tests

Follow up Panels

- Every patient is unique and will require an individualized plan.
- If initiating a new medication or treatment, may want to evaluate in 2-3 months
- If on stable medication program, may only need to be tested every 6 months.

Remember

- Treat the patient first not the lab test
- Look for trends
- Repeat tests that do not make sense
- Consider other forms of testing if appropriate