



****Disclaimer:** I am a clinical laboratory scientist, not a doctor. The following information has been researched over multiple years and has been reviewed by multiple other lab professionals, but never reviewed by a doctor. This was also made with limited knowledge of pediatric hormone therapy. Please be careful and stay safe <3 --Written 02/18/2025

Which Labs Do I Need?

Before Starting GAHT:

1. Baseline Estrogen and Testosterone
 - Used to evaluate the effectiveness of your hormone regimen moving forward. Your blood draw for testosterone should be between 6am-10am (assuming you have an average sleep schedule). This is because testosterone is highest in the morning and decreases significantly in the afternoon. If you are unable to schedule your blood draw for this time, consider picking a consistent time to schedule your test so that your lab values are comparable.
2. Comprehensive Metabolic Panel
 - Used to evaluate risk to the liver and kidneys—long-term hormone use *can* cause liver and kidney damage especially if using oral medications. If your baseline labs show pre-existing problems with liver and kidney function, consult a doctor to see if hormone therapy is safe for you. Consider avoiding oral hormone medications in favor of injections, patches, or gels if you have other conditions that impact your liver function.
 - Testosterone will increase your liver and muscle mass causing changes that will be seen in your comprehensive metabolic panels moving forward. A baseline test allows these changes to be tracked and monitored for your safety.
 - Anti-Androgens like spironolactone affect your electrolytes, namely sodium and potassium. These can both be measured as part of the Comprehensive Metabolic Panel. If you have either very low or very high sodium or potassium, consult a doctor before starting hormone therapy.
3. Lipid Panel
 - Used to evaluate your cholesterol and triglyceride levels. Elevated lipids are a risk factor for heart disease, and this test ensures you are in good health prior to starting a new medication. You can reduce your risk of heart disease by avoiding nicotine and tobacco products, getting regular movement/exercise, and limiting foods that are high in cholesterol.
4. Complete Blood Count
 - Used to evaluate your red blood cell count and hemoglobin/hematocrit levels.
 - Testosterone will increase your red blood cell count and hemoglobin/hematocrit levels. A baseline test allows these changes to be tracked and monitored for your safety.
 - Estrogen will decrease your red blood cell count and hemoglobin/hematocrit levels. If your baseline labs show anemia (low red blood cells, hemoglobin, and hematocrit) consider increasing your iron intake as you start estrogen-based hormone therapy. Consult a doctor if you have symptoms of anemia that are persistent as you adjust to hormone therapy (pallor, lightheadedness, fatigue, shortness of breath), or if your red blood cell count, hemoglobin, and hematocrit remain low despite increasing your iron intake.

During Your 1st Year of GAHT, Every 3 Months:

1. Estrogen and Testosterone
 - Used to evaluate the effectiveness of your hormone regimen. Your blood draw for testosterone should be between 6am-10am (assuming you have an average sleep schedule). This is because testosterone is highest in the morning and decreases significantly in the afternoon. If you are unable to schedule your

blood draw for this time, consider picking a consistent time to schedule your test so that your lab values are comparable. See “Notes on GAHT Effectiveness” below.

2. Comprehensive Metabolic Panel

- Used to monitor any damage to the liver and kidneys. Slight changes to your creatinine, AST, ALT, and Alk Phos are to be expected (usually these values decrease when estrogen is taken and increase when testosterone is taken). Despite this, these values should stay within “normal” range regardless of whether the male or female reference range is used. Consult a doctor if any values on your comprehensive metabolic panel are flagged as high or low after beginning GAHT. See “Notes on Kidney Function” below for additional information.
- If taking anti-androgens like spironolactone, this test is used to monitor your electrolytes. Potassium and sodium levels may change slightly as you continue to take an anti-androgen, but should remain in “normal” range. Consult a doctor if any values on your comprehensive metabolic panel are flagged as high or low after beginning GAHT.

3. Complete Blood Count

- Used to evaluate your red blood cell count and hemoglobin/hematocrit levels.
- Testosterone will increase your red blood cell count and hemoglobin/hematocrit levels, and estrogen will do the opposite. These changes are normal after starting GAHT.
- See “Notes on the Complete Blood Count” below for additional information.

4. Lipid Panel

- Only necessary if you have a genetic risk for heart disease or high cholesterol, or if your previous lipid panel was abnormal. Only needed once yearly for preventative monitoring after starting GAHT.

After Your 1st Year of GAHT, Once Yearly:

1. Estrogen and Testosterone
2. Comprehensive Metabolic Panel
3. Complete Blood Count
4. Lipid Panel

Evaluating Your Labs

Notes on GAHT Effectiveness

While there are reference ranges for adult sex hormones, you ultimately get to decide what you want your hormone levels to look and feel like. Consider starting with a standard GAHT regimen and seeing how you feel, then adjusting your doses as needed. Not everybody’s hormone values will fall within the recommended ranges. Consider tracking your own lab values to see how your hormones have changed from your baseline.

If both your estrogen and testosterone are very low, you may notice changes in your mood, energy, and sex drive. While these changes are not immediately dangerous, there have been studies linking the prolonged lack of sex hormones to heart and bone damage.

Spironolactone has been known to rapidly decrease testosterone levels then slowly becomes less effective over time (while still maintaining some level of effectiveness in terms of testosterone suppression). Because of this, it is normal for your first few testosterone labs to be very low, and for later labs to be slightly higher. Spironolactone has also been reportedly ineffective for some people, especially over time. If you cannot achieve your desired testosterone suppression, consider increasing your dose, changing your anti-androgen medication, or using a regimen that does not include an anti-androgen component (such as estrogen injections alone).

Further testing like SHBG, FSH, and DHT may be helpful if you are struggling with achieving the hormone levels or physical changes you want. Will update this doc in the future with more information on the use of these tests, but they are linked below under “Ordering Tests Online” if you’d like to order them.

Notes on Kidney Function

Your kidney function is usually monitored through a value called “creatinine clearance”. There are male and female reference ranges for this value. If you are taking testosterone-based GAHT and you have stable testosterone levels between 300-1000 ng/dL, your “creatinine clearance” must be monitored using the male reference range. If the female reference range is used, it may appear that your kidneys are not functioning properly (this is because testosterone increases your muscle mass which in turn increases your creatinine. If the female reference range is used, it looks like your kidneys are all of a sudden no longer filtering out excess creatinine when in reality, the creatinine is just going up because of the testosterone.) When you interpret your “creatinine clearance” using the male reference range, it should be normal. If the value is still high, consider consulting a doctor for further testing to evaluate your kidney function.

Creatinine Reference Range (Serum): 0.5 – 1.2 mg/dL

Notes on the Complete Blood Count

This test has very different male/female reference ranges. If you have been taking GAHT for one year and have stable hormone levels, you should use the reference range that aligns with your hormone profile (if you take estrogen, use the female range; if you take testosterone, use the male range). If you are still in your first year of GAHT or if your hormone levels are not stable, these reference ranges will be hard to apply neatly. Consider comparing your current and past results to monitor changes. The table below may also be helpful to check for dangerously low or high values, regardless of your hormone profile or reference range.

Complete Blood Count Reference Ranges (general, pulled from KU Med in KC, Kansas)

	Adult Male Reference Range	Adult Female Reference Range
RBC	4.0-5.0 x 10 ⁶ /uL	4.4-5.5 x 10 ⁶ /uL
HGB	13.5-16.5 g/dL	12.0-15.0 g/dL
HCT	40-50%	36-45%
	Same Range Regardless of Gender	
MCV	80-100 fL	
MCH	26-34 pg	
MCHC	32-36 g/dL	
RDW	11.0-15.0%	
WBC	4.5-11.0 x 10 ³ /uL	

Suggested Hormone Ranges (pulled from the Association for Diagnostics & Laboratory Medicine and ARUP lab)

	Adult Male Reference Range	Adult Female Reference Range
Estradiol	10-42 pg/mL	15-350 pg/mL
Testosterone	320-1,000 ng/dL	<50 ng/dL

	Age	Male Reference Range	Female Reference Range
Estradiol	7-9	< 7.0 pg/mL	< 36.0
	10-12	< 11.0 pg/mL	1.0-87.0 pg/mL
	13-15	1.0-36.0 pg/mL	9.0-249.0 pg/mL
	16-17	3.0-34.0 pg/mL	2.0-266.0 pg/mL
Testosterone	14-15	33-385 ng/dL	NA
	16-17	185-886 ng/dL	NA

Ordering Tests Online

Quest Diagnostics

https://www.questhealth.com/?srsltid=AfmBOopIBHBGRal85zlmz9YvSXnthlQC5TyDxxLrGUQmnN4gilZ6b8_T

*Blood drawn at Quest locations only, follow link to Quest website and type test name into search field

- “Testosterone Test” \$75 (website lists test as appropriate for trans patients)
- “Post-Menopause Test Panel” \$78 (includes FSH and estradiol, website lists test as for “women 45 years and older”, disregard)
- “Women’s Hormone Test Panel—Basic” \$231 (includes FSH, LH, estradiol, total testosterone, unconjugated DHEA, TSH, prolactin. Website lists test as not appropriate for HRT monitoring, disregard)
- “Men’s Hormone Test Panel—Basic” \$226 (includes free, bioavailable, and total testosterone, SHBG, albumin, estradiol, prolactin. Website lists test as appropriate for trans patients)
- “Comprehensive Metabolic Panel (CMP)” \$55
- “Complete Blood Count (CBC)” \$35

Example labs to order while continuing hormone therapy:

On Masculinizing Therapy-- Testosterone Test, CMP, CBC, Total Cost = \$165

On Feminizing Therapy-- Post-Menopause Test Panel, Testosterone Test, CMP, CBC, Total Cost = \$243
or Women’s Hormone Test Panel, CMP, CBC, Total Cost = \$321

Labcorp OnDemand

<https://www.labcorp.com/patients/buy-or-request-test-online>

*Blood drawn at Labcorp locations only, follow link to LabCorp website and type test name into search field

- “Total Testosterone Test” \$69 (website lists test as for “AMAB” patients only, disregard)
- “Estradiol E2 Test” \$69 (website assumes test is for women, disregard)
- “Comprehensive Metabolic Panel (CMP) Test” \$49
- “Complete Blood Count (CBC) Test” \$29
- “Dihydrotestosterone (DHT) (Endocrine Sciences)” available but requires a doctor’s order

Example labs to order while continuing hormone therapy:

On Masculinizing Therapy-- Total Testosterone Test, CMP, CBC, Total Cost = \$147

On Feminizing Therapy-- Estradiol E2 Test, Total Testosterone Test, CMP, CBC, Total Cost = \$216

Walk-In-Lab

https://www.walkinlab.com/?srsltid=AfmBOor-4hKghjnw-3x10_1aPJTyCcyPI8Gh0W9AkYklz1mHjkuDi41R

*Blood drawn at both Labcorp or Quest locations, follow link to Walk-In Lab website and type test name into search field

*Walk-In-Lab is banned in NY, NJ, RI, MA, MD, AZ (depending on facility used, ie, Quest or Labcorp)

- “Testosterone Total Serum Test” \$55 (website lists as appropriate for trans patients taking testosterone, disregard and order as needed regardless of testosterone use)
- “Estrogen Blood Test, Total” \$69 (website lists test as appropriate for both men and women but not trans patients specifically, disregard)
- “Complete Blood Count (CBC) and Comprehensive Metabolic Panel (CMP-14) Blood Test Panel” \$45
- “Dihydrotestosterone (DHT) Blood Test, LC/MS” \$97

Example labs to order while continuing hormone therapy:

On Masculinizing Therapy-- Testosterone Total Serum Test, CBC/CMP Combo, Total Cost = \$100

On Feminizing Therapy-- Testosterone Total Serum Test, Estrogen Blood Test, CBC/CMP Combo, Total Cost = \$169