

## Your Treatment Plan: First Follow-up Consultation

**For:** Zianna Mullins

**Date:** 20/06/24

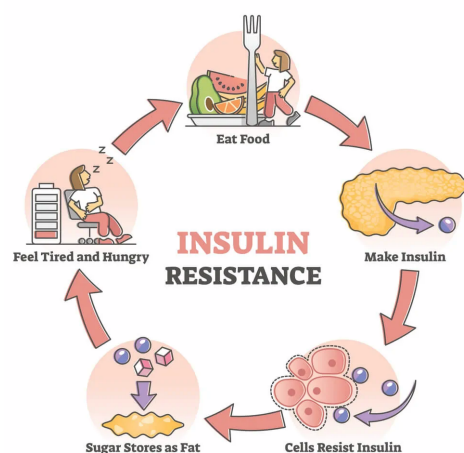
### Summary of key issues discussed in consult

#### 1. Review of notable blood test results (May - June 2024):

- **Ferritin** (iron stores) **28 L** Optimal ferritin is 70-80+  
Can be related to intake, absorption, copper antagonism, blood loss (through heavy periods). Affects include low energy, easy bruising, heavy periods (ironically), headaches, poor concentration, low exercise endurance, lightheadedness/dizzy when standing quickly, emotional fragility, anxiety/depression (due to its roles in neurotransmitter production) and changes to thyroid function.
- **Vitamin D 60 L** Optimal is 120-150  
Essential for various systems in the body; hormonal, immune, mental health, bone density long term. Also plays a role in insulin sensitivity, blood glucose uptake and production of ceruloplasmin (copper binding protein).
- **Fasting glucose 5.5 H** Optimal is <5.0 **Fasting insulin 9 H** Optimal is 3-5

Can relate to dietary choices, chronic stress response and/or your reduced insulin sensitivity/response (ie. insulin resistance) therefore fasting glucose baseline is higher than healthy range > this perpetuates the insulin resistance response, creates inflammation and oxidative stress throughout the body, contributes to fatigue (as insulin isn't doing a great job of letting glucose into cells for them to use as energy), and contributes fat gain/fat loss resistance as insulin is a 'fat-storage' hormone. There is also a bidirectional relationship between thyroid function and insulin resistance.

Also, when 'stress' is perceived by the body > cortisol is released > triggers a blood glucose release (from glycogen stores) into the blood > rise in blood sugar > insulin is then released by pancreas to decrease blood sugar > this chronic high blood sugar & following insulin with contribute to lack of insulin sensitivity/insulin resistance and higher than normal baseline levels.



- **TSH (Thyroid Stimulating Hormone) 2.24 H** Optimal is 0.5-1.5  
A brain messenger; this tells us the thyroid gland is being asked/stimulated to make more hormones typically due to low circulating levels throughout the body (a feedback loop)
- **T4 (the main inactive/storage hormone made by thyroid gland) 13 L** Optimal is 15-17  
Making T4 is a highly nutrient-dependent process (iodine, tyrosine, selenium, iron, zinc, Vit A, D, C) and is inhibited by stress, infections, fluoride/chloride/bromides, toxins (heavy metals eg lead, mercury), thyroid auto-antibodies, gluten intolerance/Celiac disease
- **T3 (the biologically active thyroid hormone) 3.4 L** Optimal is 5.5-6  
The majority of our T3 comes from conversion of T4 to T3 which happens in the gut and liver mostly (so good microbiome, liver health & detox pathways support this conversion). It's also highly dependent on adequate selenium, zinc & Vit D).
- **Reverse T3 (an inactive hormone) 491 H** Optimal is 200-250  
Also made from T4, so as a result will reduce the active T3 production level. Contributing factors that increase the conversion of T4 to Reverse T3 include stress/high cortisol, trauma, low calorie diets/fasting, poor gut health (eg. SIBO/unhealthy microbiome), chronic inflammation, infections, low iron, toxins/chemicals. When Reverse T3 levels are high it also blocks/competes for the T3 receptors sites in cells. This then reduces the ability for the active T3 to dock into cells to spark all the metabolic processes thyroid hormone is responsible for > underactive/hypothyroid symptoms.
- **Zinc/Copper/Ceruloplasmin:**

**Free copper 28 H, Zinc 9.9 L, Ceruloplasmin 0.22, Copper/Zinc Ratio 1.47 H**

A high 'free copper' can be related to low zinc and low ceruloplasmin (copper carrying protein). When zinc levels are low (poor intake/high excretion) copper will naturally rise. This then acts as an antagonist to the zinc levels in the body. This will drive and/or maintain a zinc deficiency. Zinc is essential for a multitude of actions in the body, including thyroid, skin, hormones and mental health.

Copper excess levels in the brain can impact the mood-regulating neurotransmitters; dopamine and norepinephrine (adrenaline). Too much copper tends to push the conversion of dopamine into norepinephrine, which then alters the delicate balance of these two mood-regulating neurotransmitters. And as dopamine levels decrease, the norepinephrine levels increase > manifesting as anxiety, panic, and depression.

Copper also binds to the GABA receptors. This interferes with the action of this calming neurotransmitter (GABA) > contributing to anxiety, depression and anger/frustration.

Chronic stress is a major factor that affects copper balance, as with this the body loses large amounts of zinc and magnesium from tissue storage. This shortage of zinc perpetuates elevation of copper levels. Also as copper levels rise in the body, potassium levels drop and calcium levels increase. This can create an 'adrenal burnout' scenario.

Supporting the production of ceruloplasmin to 'mop up the free copper' is essential (this needs quality dietary protein, Vitamins A & D), as is introducing copper antagonists like zinc, vitamin B6, molybdenum, manganese and antioxidants through a slow-and-low copper detox protocol.

You may also find [this blog](#) I wrote helpful.

## Further testing

There are various indicators that your past and/or ongoing psychological stress is impacting your physical health.

As discussed, I recommend you complete the **Adrenocortex Stress Profile Test**. This is a 4-point salivary cortisol, plus DHEA test you do at home over 1 day. All instructions are included in the collection kit. I've ordered this for you from Nutripath. You should receive an email from the lab to finalise the order.

This will evaluate your cortisol status (high, low or at HPA/'burn out' phase) which will help direct my treatment options for you.

## The Hormone Hierarchy

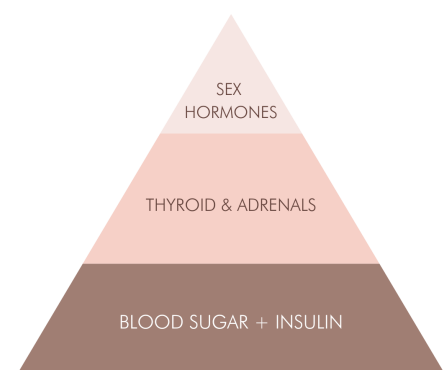
Our entire hormonal system is like a symphony orchestra. There are groups of hormones with specific roles and actions, just like the different sections of an orchestra. When all are communicating well with each other (listening and responding) everything is usually optimal and balanced (and sounds amazing).

If one area goes 'out of time' or 'out of tune' (underactive, overactive, non-responsive etc) there will be knock-on effects that become noticeable within the orchestra's performance.

Assessing - *and addressing* - any imbalance within the foundation (Tier 1) is critical, because this alone can disrupt the entire system that is build upon it.

In your case, we now know about the foundational issues of **blood sugar balance/insulin** (Tier 1) and will begin working on these. The suspected issues with your **thyroid** (Tier 2) have now been confirmed we'll begin to work on these also, whilst we await your **adrenal** (cortisol) results.

THE HORMONE HIERARCHY



As healthy **sex hormones** (Tier 3) depend greatly on the supporting tiers (Tiers 1 & 2), I will also begin to support healthy ovulation & progesterone production. This will work to alleviate your premenstrual symptoms as healthy levels of progesterone also improve insulin sensitivity, sleep and reduce anxiety.

## Treatment & Prescriptions

To start with, I want to focus on your **nervous system** as I feel this is impacting many areas. I also want to provide support for your **thyroid gland**, enhance your **insulin sensitivity**, work on **copper-detox**, and healthy **progesterone production**. I've created your script in Vital.ly. You should receive an email, then follow the prompts to either create an account, or log in. Purchase your products directly from [Vital.ly](https://vital.ly) and they'll be posted to you. See next page for your products, explanations, directions for use etc.

Product	Why I've prescribed it	Dosage instructions	How long to take it for
<b>P-Lift</b>	Support healthy hormone cycles, healthy thyroid function and relieves symptoms of PMT.	Take 1 capsule, 1 x day with/after food.	Until advised.
<b>Metibol Xcell</b> <i>*Not suitable in pregnancy*</i>	Herbal and nutritional formula to support healthy blood sugar metabolism.	Take 1 capsule, 1 day with food - especially one with a higher carbohydrate load.	We'll review dose and frequency after next blood test in 3-4 months.
<b>Rapid D</b>	An active form of Vit D, raises levels up to 3x quicker than standard vitamin D.	Take 1 tablet, 1 x day with any meal for <u>4 weeks</u> .  After 4 weeks, reduce to 1 tablet, 2 x week (e.g Tues & Thurs)	We'll review dose and frequency after next blood test in 3-4 months.
<b>MagCalm</b>	Magnesium, glycine and taurine combined with relaxant herbs to support your stress response.	Mix 2 scoops into water, consume 2 hours before bed.	Until advised.
<b>Biome Acne Probiotic</b>	Three probiotic strains for healthy skin flora.	Take 1 capsule, 1 x day.	Minimum 3 months.
<b>Manganese Plus</b>	To help clear excess copper	Take 2 capsules, 2 x day with/after food.	Until advised.
<b>MolyZinc</b>	To help clear excess copper	Take 1 capsule, 1 x day with/after food.	Until advised.
<b>Heme Synergy</b> <i>Already prescribed.</i>	Already prescribed.	Take 1 capsule, every 2nd day with/after food.  Separate dose away from Moly Zinc, tea/coffee, by at least 1 hour and don't take with a heavy calcium meal (e.g yoghurt, milk).	We'll review dose and frequency after next blood test in 3-4 months.

## Other notes

I'm not sure where you're up to with contraception currently, so I've presumed you're taking some time to work on your health/currently in a 'conscious preconception stage'. Hence my note about the Metibol Xcell.

Exercise (cardio and/or weights) can be a stressor to the nervous system - particularly if you're not in a balanced state here - so I would suggest leaving a day in between strength training sessions, and on these days doing 'power walks' (30-60min) at a Zone 2 pace (look this up for more guidance here) or your yoga practice instead.

A couple of suggestions for great protein powders:

<https://www.athealthaustralia.com.au/products/naturally-natural-protein-powder> (unflavoured)

<https://www.athealthaustralia.com.au/collections/protein-powder/products/naturally-vanilla-protein-powder>

## Next time

Let's check back in after you've been taking your supplements for 4-5 weeks, with a Follow-Up Consultation (30min).

If you have any questions about your Treatment Plan or your products, please get in touch.

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