P R I S M

Client Care Report

We looked at your health through a new lens...

Report # 1

The information contained in this report is not to be construed as medical advice

Prism's Philosophy

It's easy to get lost without a clear path forward.

How to Get the Most from this Report

The following report is an amalgamation of ideas from the Prism team based on prior experience and independent research. While the team is here to help and support you through your health journey, the information presented is not intended to be followed outside the guidance of the intuition of the individual. True health cannot be achieved without mindfulness, intent, and input.

We urge that these recommendations be taken as such: an arrangement of ideas and information from which the client can receive, analyze, and make the best decision going forward with the help of their primary advisor.

Above all is to listen to the body and strive to help it repair and heal.

None of the recommendations on this report are *requirements* for you. If you'd like to act upon a recommendation contained in this report, the team will be more than happy to assist further in executing.

A Gut Centric, Bioenergetic Perspective

While digestive issues are often considered idiopathic and chronic with no reliable treatment options, research has accumulated on the processes underlying these conditions. Prism aims to put the pieces together and apply these concepts in practice, under one unifying hypothesis.

The bioenergetic theory of health postulates that the primary determinant of health in an organism is its ability to generate energy effectively, which in turn supports the structure and the functions of the organism, and vice versa. Stress is thought of as anything that disrupts the homeostatic energy production and subsequent structure and function of the organism.

Digestion is a complex and energy intensive process, depending on a healthy microbial environment in the gut and low levels of stress. Thus, this report intends to identify and correct abnormalities in energy production, patterns of stress, and microbial imbalances.

Problems with digestion can be viewed as specific manifestations of systemic dysfunction. Various seemingly unrelated diseases are inextricably linked to abnormalities of gastrointestinal function, and vice versa. Crosstalk between the digestive system and the rest of the body can be mediated by the endocrine, nervous, muscular, and immune systems, all of which are crucial mediators of gut issues.

While your issue may not seem digestive or energetic in nature, we leverage these foundational ideas to guide our operations, as we believe them to be the ultimate root causes of our health.

These concepts are critical to Prism's operations to ensure coherent and complementary sets of recommendations through a bioenergetic perspective.

PRISM

Our Analysis

Here's what we think is going on:

Previous Diagnostics

Here is your previous information viewed through a new lens:

Anti RNP antibodies	**Your Result: 1.3 U**	**Our range: 0-0.9 U**
Ribonucleoproteins are molecular complexes that play a key role in genetic expression. Having antibodies against them signifies an autoimmune condition, where the body mounts an immune response to its own tissues.		
Thyroid stimulating hormone (TSH)	**Your Result: 2.53 uIU/mL**	**Our range: <1.5 uIU/mL**
Thyroid stimulating hormone (TSH) is made by the pituitary gland as apart of thyroid hormone production. It causes the thyroid gland to secrete thyroid hormones T4 and T3, and these in turn lower the output of TSH. Thus, high levels of TSH are indicative of poor thyroid hormone output. Even slightly elevated TSH has been shown to be a risk for impaired metabolic function and stress. TSH can also be lowered by stress hormones, so it should be interpreted alongside other thyroid metrics and symptoms.		
Thyroid peroxidase antibodies (TPO)	**Your Result: 291 IU/mL**	**Our range: <9 IU/mL**
Thyroid peroxidase is an enzyme involved in the production of thyroid hormones in the thyroid gland. Antibodies against this enzyme indicate that the body is mounting an immune response to its own tissue, suggestive of an autoimmune thyroid condition. Autoimmune conditions have been consistently linked to estrogen, stress, and inflammation stemming from the gut. Autoimmunity can also arise from a lack of vitamin A, C, and D, as well as zinc, as these nutrients act synergistically to shift the balance of immune cells towards regulation and away from inflammation.		
Free T3	**Your Result: 2.29 pg/mL**	**Our range: 3.5-4.5 pg/mL**
T3 is a thyroid hormone released in small amounts from the thyroid gland, but is primarily produced by other tissues from T4. T3 is the thyroid hormone primarily responsible for raising the metabolic rate. T3 is often carried in the bloodstream via binding proteins, however some of the T3 is not bound to any protein, making it more readily taken up by tissues. The Free T3 metric is a measurement of the unbound T3. High levels can indicate excessive supplementation, or hyperthyroidism. Low levels are suggestive of functional hypothyroidism.		
DHEA-S	**Your Result: 30.1 mcg/dL**	**Our range: 75-300 mcg/dL**
DHEA is a "youth" steroid with several actions that oppose those of estrogen and the HPA axis. An overproduction of DHEA-S may indicate a compensatory mechanism to stress, while low levels can signify an impairment in its production and increased susceptibility to stress.		
Reverse T3	**Your Result: 22.4 ng/dL**	**Our range: 9.2-16.7 ng/dL**
Reverse T3 is a thyroid hormone that is produced in response to stress, inflammation, poor liver function and nutrition from T4. It facilitates the opposite functions of active thyroid hormone, suppressing metabolism.		
Sex Hormone Binding Globulin	**Your Result: 90.4 nmol/L**	**Our range: 30-50 nmol/L**
Sex hormone binding globulin (SHBG) is the primary protein which sequesters androgens and estrogens, leaving them unavailable to exert their actions. Elevated levels of SHBG can be the result of excess estrogen, lack of carbohydrate intake, liver issues, and is generally seen in aging. Low levels of SHBG can be indicative of hypothyroidism and stress, and is a risk for several diseases including cardiovascular disease and even cancer.		
Total Testosterone	**Your Result: 593 ng/dL**	**Our range: 626-902 ng/dL**
The total amount of testosterone, indicative of overall androgenic activity. Poor glucose metabolism, low vitamin D or zinc status, a lack of saturated fat or carbohydrate (especially from starch), chronic inflammation and stress can all impair testosterone output.		
Free Testosterone	**Your Result: 128.1 pg/mL**	**Our range: 228.1-367.5 pg/mL**

Free testosterone measures the unbound amounts of the primary androgen. Testosterone, can be bound to sex hormone binding globulin, sequestering it from exerting biological actions. This can lead to low free testosterone.		
Ferritin	**Your Result: 172 ng/mL**	**Our range: 50-150 ng/mL**
Ferritin is the primary protein that stores iron in cells. Its levels being elevated in the serum (which does not contain cells) indicates cell damage and inflammation, as the protein "leaks" into the serum and also participates in the inflammatory response. High levels can also indicate iron overload, while low levels can be the result of iron deficiency.		
Mean Corpuscular Volume (MCV)	**Your Result: 97.8 fL**	**Our range: 85-95 fL**
Mean corpuscular volume (MCV) is a measurement of the average size (volume) of red blood cells. Low MCV can indicate iron deficiency anemia due to poor dietary intake, inflammation or stress, or heavy metal poisoning. High MCV can be a result of hypothyroidism or megaloblastic anemia, driven by vitamin B9 or B12 deficiency.		
Absolute Eosinophils	**Your Result: 508 cells/uL**	**Our range: 136.25-378.75 cells/uL**
Absolute Eosinophils measures the number of eosinophils. Eosinophils are immune cells that respond to infections caused by parasites and play a role in allergic reactions. Elevated levels can indicate parasitic infection or allergy, while low levels are indicative of chronic stress.		
Copper	**Your Result: 68 mcg/dL**	**Our range: 70-175 mcg/dL**
A measure of copper in the blood that is not in red blood cells or clotting components. Serum copper tends to parallel dietary intake. Copper is vital for mitochondrial energy production and antioxidant function, but in excess it can contribute to oxidative stress.		

**Most labs ranges are not indicative of optimal health, rather are just where 95% of the population lies. Prism's ranges are tailored based on cited research and experience to reflect not just normal, but optimal levels.*

Comprehensive Health Survey

We dove into the foundations of how your body works. Here's what we found:

Do you gain weight easily?	**(2) This is a somewhat bothersome issue for me**
Easily gaining weight is a sign of slow metabolism, or the propensity to put on fat instead of generating energy. This can be the result of multiple factors, including but not limited to: hypothyroidism, chronically elevated serotonin or HPA axis functioning, an abundance of dietary polyunsaturated fats, inadequate micronutrient intake, dysregulated circadian rhythm, lack of sunlight, a lack of muscle mass, chronic inflammation, excess estrogen & environmental toxins.	
Do you feel "puffy," i.e your fat tends to be soft and feel like water retention?	**(4) This is a very bothersome issue for me**
Water retention tends to be promoted by estrogen.	
[WOMEN ONLY] Do you accumulate cellulite?	**(3) This is a fairly bothersome issue for me**
Cellulite may be a result of excess estrogen.	
Do you struggle with low appetite?	**(2) This is a somewhat bothersome issue for me**
A low appetite is indicative of chronic stress, potentially related to hormones like cortisol and serotonin.	
Do you tend to wake up when sleeping?	**(5) This is an extremely bothersome issue for me**

If you tend to wake up when sleeping, is it: within the first few hours of falling asleep OR later on in the night OR both?	**Both**
Waking within the first few hours of falling asleep can be due to inappropriate elevations in stress hormones such as adrenaline, cortisol and estrogen. Waking up later on in the night could be a sign of a gut disturbance, as undigested food and bacteria can stimulate the central nervous system. Parasites are also known to be more active and reproduce during the night, and thus waking up later in the night is a common sign of their presence in the gut.	
If you tend to wake up when sleeping, is it to: urinate OR eat something OR drink something OR seemingly no reason?	**Eat something**
Waking up in the night to eat something could indicate poor liver function, since this is the organ that stores carbs that provide energy throughout the night. Night time hypoglycemia can activate stress systems, causing awakening and cravings for carbohydrates and salty food. Bacterial endotoxin is primarily processed by the liver, and can damage it with enough exposure.	
Do you NOT dream?	**(3) This is a bothersome issue for me**
Dreaming happens during rapid eye movement (REM), one of the stages of sleep. Quality of sleep is in part characterized by our ability to oscillate between the different stages of sleep. If we do not dream, it is a sign of poor sleep, and the inability to enter the REM state due to elevated serotonin, and suppressed dopaminergic and cholinergic activity in the brain.	
Do you experience nightmares or sleep paralysis?	**(4) This is a very bothersome issue for me**
Regular nightmares are a sign of night time stress, and may be driven by hormones like cortisol, serotonin and noradrenaline. This may go hand in hand with hypothyroidism.	
Do you have trouble falling asleep?	**(3) This is a fairly bothersome issue for me**
Trouble falling asleep may be a result of too much artificial light exposure, a poor sleep schedule, or elevations in stress hormones like adrenaline, estrogen and cortisol at night.	
Do you feel like you DON'T get a restful sleep?	**(4) This is a very bothersome issue for me**
Sleep that is not restful can be indicative of excess serotonin, which should be converted into melatonin, producing restful sleep. An excess of serotonin may make you drowsy or sleepy, but it promotes an energy conserving hibernation state instead of a restorative sleep.	
Do you frequently feel cold, especially at the extremities (fingertips, toes, and nose)?	**(5) This is an extremely bothersome issue for me**
Feeling cold, especially at the extremities, is a common symptom of hypothyroidism.	
[WOMEN ONLY] Do you frequently have painful menstrual cramps?	**(2) This is a somewhat bothersome issue for me**
Frequent pain during menstruation can be indicative of excess estrogen.	
Do you suffer from chronic congestion without mucus?	**(2) This is a somewhat bothersome issue for me**
Chronic congestion without mucus is an inflammatory condition that can be the result of low carbon dioxide production.	
Do you frequently experience mucus buildup in the throat or nose?	**(2) This is a somewhat bothersome issue for me**
Mucus is produced in response to various inflammatory agents and thus having noticeable mucus buildup is typically viral, fungal or bacterial in origin.	

[IF SO] Is it exacerbated after eating?	**Yes**
Having mucus buildup being exacerbated by eating is strongly suggestive of there being infectious inflammation present in the GI tract, as the presence	
Do you suffer from dental problems such as bad breath, cavities, and gum inflammation?	**(2) This is a somewhat bothersome issue for me**
Many dental problems can result from bacterial overgrowths, and these microbes are concentrated in the gut, so it is reasonable to believe that the mouth is a reflection of the intestines in this respect.	
Do you often find that you are irritable or easily agitated?	**(4) This is a very bothersome issue for me**
Irritability and aggression are traits typically seen when hormones like estrogen, serotonin, adrenaline, and cortisol become elevated. This can also be a sign of elevated lactic acid.	
Do you suffer from "brain fog," low energy or feel like you do not have mental clarity?	**(5) This is an extremely bothersome issue for me**
Poorer cognitive function can have many underlying reasons, such as hypothyroidism, a deficiency of protective neurosteroids, elevated neuroinflammation, serotonin and lactic acid.	
Do you tend to have an "afternoon crash" after eating lunch?	**(2) This is a somewhat bothersome issue for me**
A crash in energy after eating suggests a reliance on the adaptive stress hormones, which decline after meals. Bacteria in the gastrointestinal tract can feed off of the food eaten at a meal, and the endotoxin and lactic acid they produce can inhibit energy metabolism systemically.	
Do you often feel "hyper aware," jittery, or restless?	**(4) This is a very bothersome issue for me**
These symptoms are a common manifestation of elevated stress hormones, typically cortisol, adrenaline and estrogen.	
Do you notice the sensation of your heart pounding or difficulty breathing?	**(2) This is a somewhat bothersome issue for me**
The sensation of heart palpitations and hyperventilation are both driven by the "fight or flight" hormones adrenaline and noradrenaline, as well as components of the HPA axis and estrogen, indicating high levels of stress. A lack of carbon dioxide produced from carbohydrate metabolism, mineral deficencies and inflammatory gut signals like serotonin can also drive these symptoms.	
Have you had a loss of pleasure in activities you normally enjoy?	**(2) This is a somewhat bothersome issue for me**
A loss of pleasure, or anhedonia, can be the result of high serotonin and low dopamine.	
Do you have skin issues such as dry skin, eczema, or acne?	**(5) This is an extremely bothersome issue for me**
An excess of estrogen or intestinal endotoxin overgrowth can lead to many skin issues.	
Can you trace a worsening of your symptoms back to a traumatic event?	**Yes**
Stressful life events can have long lasting impacts on the immune system, by either initiating chronic inflammation or dampening immunity which creates susceptibility to infection.	
Do you experience constipation?	**(2) This is a somewhat bothersome issue for me**

The inability to have complete and frequent bowel movements is driven by a lack of adequate bowel contractions or improper hydration of stool in the colon. These can be caused by bacterial or fungal overgrowths, low stomach acid, deficiencies of key nutrients, excess serotonin and hypothyroidism.	
Do you experience nausea?	**(4) This is a very bothersome issue for me**
Chronic nausea can be caused by low stomach acid, a galbladder issue, small intestinal fungal or bacterial overgrowths, or a lack of digestive enzymes. Hormones like estrogen and serotonin also tend to cause the digestive tract to be more sensitive.	
Do you experience bloating (subjective feeling)?	**(4) This is a very bothersome issue for me**
Upper GI bloating is primarily caused by gas buildup, as bacteria or fungi can produce gas by metabolizing food. Hypothyroidism can worsen this process. Hormones like estrogen and serotonin also tend to cause the digestive tract to be more sensitive.	
Do you experience distention (visible expansion of the abdomen)?	**(2) This is a somewhat bothersome issue for me**
Distention is primarily caused by gas buildup, as microbes in the colon can produce gas by metabolizing food. Hypothyroidism can worsen this process. Hormones like estrogen and serotonin also tend to cause the digestive tract to be more sensitive. It is also typically associated with constipation or incomplete bowel movements, especially when accompanied by bloating.	
Do you experience diarrhea?	**(2) This is a somewhat bothersome issue for me**
Diarrhea is the result of an "over excited" state, which can be driven by stress hormones like adrenaline and cortisol. It can also be driven by elevated serotonin and bacterial overgrowths. It is commonly associated with anxiety, which may be driven by similar processes.	
Do you experience belching?	**(2) This is a somewhat bothersome issue for me**
Excessive gas can be produced by microbes in the gut. Gas in the upper GI tract can be exacerbated by poor stomach acid, bile acid, and digestive enzyme secretion, which require adequate thyroid hormone to be produced.	
Do you experience flatulence?	**(4) This is a very bothersome issue for me**
Excessive gas can be produced by microbes in the gut, and can be worsened by constipation.	
Do you experience pain in your lower abdomen?	**(2) This is a somewhat bothersome issue for me**
An increased sensitization to the gut can be promoted by signals like estrogen, the prostaglandins, and serotonin. Gas buildup in colon due to bacterial or fungal overgrowth, or the inclusion of irritating factors in the diet can cause this in the lower GI tract.	
Do symptoms worsen IMMEDIATELY after eating?	**(2) This is a somewhat bothersome issue for me**
Food first starts getting broken down by the stomach, so symptoms immediately upon eating can be indicative of an issue with the stomach, such as low stomach acid or poor gastric motility.	
Do symptoms alleviate after a bowel movement?	**Sometimes**
The presence of stool in the GI tract is sufficient to cause elevations in stress mediators like serotonin, which can cause mood and digestive symptoms, so its elimination can indicate potential pathological pathways.	

At-Home Assessment

We got a small glimpse into your life to see how we can improve it. Here is what we learned:

How many times did you defecate per day for four days? Please separate values with commas. [example: 3, 1, 0, 2]	**12, 4, 9, 3**
Having very frequent bowel movements can be a sign of excess bacterial growth leading to a large fecal load, and enhanced urgency due to stress signals like adrenaline and serotonin.	
What Types on the Bristol Stool Scale did each of your bowel movements fall under? Please separate values with commas. [example: Type 2, Type 2, Type 4, Type 5, Type 7, Type 1, Type 6]	**Type 4/5 in the am - Type 5 mid am, Type 6 on day 2, Type 1 on day 3, Type 3 and type 5 in the mid afternoon on day 4**
Having type 5-7 stools is a key sign of inflammation or bacterial overgrowth, and can be the result of excess serotonin production.	
What were both of your temperature measurements each morning? Please separate values with commas. [example: 98.2, 98.4]	**97.04, 96.45, 97.12, 96.52**
Broda Barnes, MD, became famous for his simple and effective method for diagnosing hypothyroidism. Even in the absence of overt thyroid hormone abnormalities in the blood, people can still experience hypothyroid symptoms. Barnes noted that a low morning temperature (under 97.8°F or 36.6°C) was the most reliable predictor of whether a patient would benefit from thyroid therapy.	
Did your tongue have a white coating each of the four mornings? Please separate values with commas. [example: Yes, Yes, No, Yes]	**Yes, yes, yes, yes**
A white tongue, or oral thrush, is typically caused by a fungal or bacterial overgrowth that originates in the gut. It can also be caused by reverse peristalsis, the improper motility of the gastrointestinal system up instead of down, resulting in the bacteria or fungi moving up towards the mouth and presenting on the tongue.	

PRISM

Our Recommendations

Here's what we think will help you:

Precision Diagnostics

It's important to have both subjective and objective information when dealing with any issue. Here's what you can benefit from knowing:

NutrEval + Vitamin D (25-OH) ($464) **Provider: Genova Diagnostics**

The Genova NutrEval is a comprehensive analysis done using both urine and in blood, yielding 125 biomarkers. It covers micronutrient status and 4 heavy metals, in addition to urinary organic acids and plasma amino acids. Organic acids are intermediates of metabolism, and their measurement in urine, alongside plasma amino acids, is used to evaluate specific errors in metabolism. These errors can be any malfunctioning in any metabolic process: from the generation of energy from carbohydrates or fats to the synthesis of certain neurotransmitters and more. Errors of metabolism can result in any symptom and may not be identified by standard bloodwork.

25-OH vitamin D is the metric for vitamin D that best predicts its physiological actions. Low vitamin D leads to susceptibility of gastrointestinal infection, compromised structural integrity of the intestines, and increased parathyroid hormone activity, a stress hormone that independently causes gastrointestinal symptoms, as well as elevations in the HPA axis. It also lowers serotonin production in the gut. High levels can be the result of excessive supplementation.

Homocysteine ($22.95) **Provider: Ulta Lab Tests**

Homocysteine is a compound that is an intermediate of the methylation process. Methylation is critical to synthesizing and modifying DNA, neurotransmitters, and other important molecules within the body. Homocysteine can accumulate when there are deficiencies of vitamins B2, B6, B9 and B12, or nutrients choline, betaine, or glycine. It has numerous deleterious effects, contributing to oxidative stress, inflammation, mitochondrial dysfunction and excess excitation in the brain. Elevated homocysteine has been found in numerous inflammatory conditions.

Thyroid Peroxidase and Thyroglobulin Antibodies ($33.45) **Provider: Ulta Lab Tests**

Thyroid peroxidase and thyroglobulin are proteins involved in the production of thyroid hormones in the thyroid gland. Antibodies against this proteins indicate that the body is mounting an immune response to its own tissue, suggestive of an autoimmune thyroid condition. Autoimmune conditions have been consistently linked to estrogen, stress, and inflammation stemming from the gut. Autoimmunity can also arise from a lack of vitamin A, C, and D, as well as zinc, as these nutrients act synergistically to shift the balance of immune cells towards regulation and away from inflammation.

Free T3, Free T4, RT3 and TSH Panel ($68.74)

Provider: Ulta Lab Tests

Free T4 is a measure of the protein-unbound precursor thyroid hormone T4. T4 is the primary hormone released from the thyroid gland. T4 is largely inactive metabolically and needs to be converted in other tissues to the active thyroid hormone, T3. T4 is often carried in the bloodstream via binding proteins, however some of the T4 is not bound to any protein, making it more readily taken up by tissues. The Free T4 metric is a measurement of the unbound T4. High levels can indicate excessive supplementation, hyperthyroidism, or a poor conversion of T4 into T3. Low levels are suggestive of primary hypothyroidism.

Free T3 is a measure of the protein-unbound active thyroid hormone T3. T3 is a thyroid hormone released in small amounts from the thyroid gland but is primarily produced by other tissues from T4. T3 is the thyroid hormone primarily responsible for raising the metabolic rate. Like T4, T3 is often carried in the bloodstream via binding proteins, however some of the T3 is not bound to any protein, making it more readily taken up by tissues. The Free T3 metric is a measurement of the unbound T3. High levels can indicate excessive supplementation, or hyperthyroidism. Low levels are suggestive of functional hypothyroidism.

Thyroid stimulating hormone (TSH) is made by the pituitary gland as apart of thyroid hormone production. It causes the thyroid gland to secrete thyroid hormones T4 and T3, and these in turn lower the output of TSH. Thus, high levels of TSH are indicative of poor thyroid hormone output. Even slightly elevated TSH has been shown to be a risk for impaired metabolic function and stress. TSH can also be lowered by stress hormones, so it should be interpreted alongside other thyroid metrics and symptoms.

Reverse T3 (RT3) is a thyroid hormone that is produced in response to stress, inflammation, poor liver function and nutrition from T4. It facilitates the opposite functions of active thyroid hormone, suppressing metabolism.

Lipid Panel ($21.95)

Provider: Ulta Lab Tests

This test measures LDL and HDL cholesterol, as well as triglycerides. LDL cholesterol is the most common circulating form of cholesterol. LDL cholesterol can be elevated in states of stress or hypothyroidism, since thyroid hormones help utilize cholesterol to produce stress reducing hormones. It can also be too low, which is associated with infection and total mortality. Triglycerides are the most common type of fat in the blood. High levels can indicate problems with glucose metabolism. HDL is a type of lipoprotein that carries cholesterol and other fat-soluble components to the liver for storage or detoxification. Low levels can indicate problems with glucose metabolism, while high levels can indicate a toxic burden, including endotoxin.

Cortisol, A.M. ($15.95)

Provider: Ulta Lab Tests

Cortisol is the quintessential stress hormone, released from the adrenals in the final step of the HPA axis. Elevated morning cortisol and cortisol to DHEA-S ratio are excellent predictors of stress, metabolic and immune function, and mortality. A low morning cortisol is indicative of adrenal insufficiency, where the adrenal glands do not produce enough cortisol as an adaptive response to chronic stress.

DHEA Sulfate, Immunoassay ($30.95)

Provider: Ulta Lab Tests

DHEA is the most abundant steroid hormone in the body. DHEA levels are high during youth and decline with aging, as it plays a crucial role in opposing the stress systems. DHEA is also a crucial neurosteroid, improving cognitive function and supporting neuron growth and differentiation. An overproduction of DHEA-S may indicate a compensatory mechanism to stress, while low levels can signify an impairment in its production process, potentially due to chronic stress. High-normal levels are associated with superior longevity and disease prevention.

Testosterone, Total and Free; and Sex Hormone Binding Globulin ($58.95)

Provider: Ulta Lab Tests

The total and unbound amounts of testosterone, indicative of overall androgenic activity, as well as SHBG, the primary protein which sequesters androgens and estrogens, leaving them unavailable to exert their actions. Elevated levels of SHBG can indicate a lack of insulin signaling from carbohydrates, while low levels can indicate chronically elevated insulin levels.

Estradiol, Ultrasensitive LC/MS/MS ($28.95)

Provider: Ulta Lab Tests

A measure of the body's primary estrogen in the blood.

hs-CRP ($14.95) — Provider: Ulta Lab Tests

C-reactive protein, a substance produced by the liver in response to inflammation in the body. It is a non-specific marker of inflammation and is used to evaluate the presence and intensity of inflammation. The CRP test helps assess the severity of an inflammation that may drive symptoms.

Prolactin ($13.95) — Provider: Ulta Lab Tests

Prolactin is a hormone involved in many stress systems and may be indicative of estrogen or serotonin activity. Prolactin may play a role in intestinal inflammation, poor Vitamin D status, hypothyroidism, sexual dysfunction and general anhedonia as it is inversely related to the reward systems.

Comprehensive Metabolic Panel (CMP) ($7.69) — Provider: Ulta Lab Tests

This panel provides several metrics that can illustrate a basic overview of an individual's metabolic health. It includes the following measures:

Albumin is a protein made by the liver, one of the major type of proteins in the blood. Low levels indicate poor liver function. Globulin is the other major type of protein in the blood. High levels may reflect overproduction of globulins, indicative of an immune response to infection or stress.
Alkaline phosphatase (ALP) an enzyme that plays a critical role in maintaining intestinal homeostasis, reducing inflammation, and detoxifying endotoxin. Elevated levels suggest liver damage or intestinal inflammation.
Alanine transaminase (ALT) is an enzyme found in the highest amounts in the liver. Injury to the liver results in release of the substance into the blood.
Aspartate aminotransferase (AST) is an enzyme found in high amounts in liver, heart, and muscle cells. It is also found in lesser amounts in other tissues.
Bilirubin is a yellowish pigment found in bile, a fluid made by the liver. A small amount of older red blood cells are replaced by new blood cells every day. Bilirubin is left after these older blood cells are removed. The liver helps break down bilirubin so that it can be removed from the body in the stool.
Calcium is an essential mineral vital for a variety of functions in the body: transmitting key signals within tissues and building bones and teeth. Calcium levels in the blood are primarily regulated by parathyroid hormone, which acts to liberate calcium from hard tissues into the blood. Parathyroid hormone is lowered when there is sufficient vitamin D, dietary calcium, and magnesium, and thus elevated calcium levels can suggest insufficiencies of these nutrients.
Carbon dioxide is both a result and driver of efficient energy production. Low levels may indicate impaired glucose metabolism, or from excess systemic acidity, since carbon dioxide helps to form our endogenous acid buffering agent. Carbon dioxide production is also the rate limiting step in the production of stomach acid.
Creatinine is a waste product of creatine, an important component of energy production in the brain and muscles, that must be excreted by the kidneys. Thus, high levels of creatinine are indicative of poor kidney function.
Glomerular Filtration Rate (GFR) is a calculation that's often done using the results from the Creatinine test. It provides the best overall assessment of kidney function by estimating how much blood passes through the glomeruli (tiny filters in the kidneys) each minute.
Glucose is the body's primary source of fuel. Low levels may suggest issues with the liver, since this organ is responsible for storing and producing glucose in between meals, whereas high levels are indicative of general inadequate metabolism.
Potassium is the most abundant mineral inside of cells, typically resident in cells when they are in a properly energized, low stress state. This test measures potassium in the serum, or outside of cells. Thus, elevated levels of serum potassium are indicative of poor energy production or stress, as the cells lose potassium to the extracellular fluids. This can lead to heart beat irregularities and weakness. Low potassium is indicative or poor dietary intake or excessive potassium loss through the kidneys and gut.
Total protein is the total amount of two classes of proteins, albumin and globulin that are found in the fluid portion of your blood. Proteins are important parts of all cells and tissues. Your albumin helps prevent fluid from leaking out of blood vessels and your globulins are an important part of your immune system.
Sodium is the most abundant mineral outside of cells when cells are in a properly energized, low stress state. This test measures sodium outside of cells. Elevated levels of sodium are indicative of poor energy production or stress, as the stress systems can cause sodium retention. Low sodium is indicative or poor dietary intake or excessive potassium loss through the kidneys and gut.
Blood urea nitrogen (BUN) is what forms when protein breaks down. Stress hormones, such as cortisol, adrenaline and noradrenaline break down our tissue protein, which gets metabolized by the liver and excretes urea-nitrogen as a byproduct. Thus, a high BUN can indicate elevations in these mediators. A high BUN can also indicate impaired kidney function as they are responsible for excreting the excess nitrogen from the blood.

All listed diagnostics can be ordered and facilitated by Prism upon request of the client.

Lifestyle

"Disease is not something personal and special, but only a manifestation of life under modified conditions." – Rudolf Virchow

Keep consistent wake and sleep times.

Don't be afraid to stay out late if it means a night of enjoyment! A few late nights will not ruin your health.

Waking and sleep times are both key contributors to entraining the circadian rhythm.

Sunlight

Get as much sun exposure as reasonably possible, especially at sunrise and sunset. Do not burn. Go inside or in the shade if you start to feel pain or discomfort. Sunscreen and sunglasses will mitigate most of the benefits of sunlight.

Natural light exposure allows our bodies to sync our biological clocks to the time of day, known as the circadian rhythm. This rhythm is vital to all aspects of our physiology, primarily in how our mitochondria function and how well they produce energy and hormone secretion.

All components of sunlight also have indispensable biological roles. Ultraviolet light allows us to produce vitamin D. Vitamin D can lower HPA axis functioning, as well as other stress hormones such as parathyroid hormone and serotonin. Vitamin D has a multitude of antimicrobial effects, and in general supports immunity, and helps to repair the gut barrier. It also plays a critical role in enhancing androgen production. Independently from vitamin D, ultraviolet light lowers blood pressure. The red and near infrared light component of sunlight has critical anti-inflammatory effects by enhancing mitochondrial energy production, even penetrating the skin to affect deeper tissues. Infrared light restructures the water in our cells and activates certain proteins, both of which enhances various functions within them. Blue, green and amber wavelengths have been shown to improve various skin conditions like eczema, acne and psoriasis.

Critically, blue, red, ultraviolet and near infrared wavelengths also have been shown to reduce body fat when applied directly to the fat tissue. Blue light increases metabolism systemically through its signaling to the brain and nervous system, while red, infrared and ultraviolet portions of the spectrum have mitochondrial enhancing effects.

Furthermore, bright light is a cardinal pro-energy and anti-stress factor. Light signals are transmitted from the eyes to the brain's suprachiasmatic nucleus (SCN), the master controller of our circadian rhythms. Bright light exposure allows our HPA axis to peak in the morning when it should but triggers a sustained decrease in its activity throughout the day. Secretion of thyroid hormones is also dictated by bright light, and bright light therapy has been shown to enhance thyroid function as well. Bright light exposure has demonstrated profound effects on the autonomic nervous system, balancing out the "fight or flight" and "rest and digest" states, which lowers stress. Bright light also helps with sleep problems like insomnia due to its regulatory effects on the stress mediators.

Eliminate blue light at night

This type of light includes all device screen light and most light fixtures. It excludes candlelight or other light from fire and red or near infrared lights. If it is not possible to avoid blue light at night for you, then click here good blue light blocking glasses to purchase.

Blue light at night can disrupt the circadian rhythm by suppressing melatonin release and increasing HPA axis function. Limiting blue light has shown to be therapeutic for sleep and stress at night.

Walking

Walk as much as is reasonable and comfortable, especially after meals.

Walking, especially when outdoors, is a simple, safe, and effective way to lower stress and enhance gut motility.

Grounding

Touch your bare feet to the ground on grass or soil as much as reasonably possible. As little as 20 minutes of contact with the earth can have significant benefit.

The earth's surface contains a near infinite number of electrons and contact with the earth transmits them to the body. The earth also exhibits a characteristic electromagnetic frequency, and grounding exposes the body to this frequency. These processes have a wide range of beneficial effects on our health, primarily by exerting antioxidant properties.

Grounding has been shown to decrease inflammation, enhance immunity, reduce pain, and soreness. Other studies have demonstrated that exposure to the Earth's frequency stabilizes the circadian rhythm and improves sleep and has anti-stress effects, lowering blood pressure, reducing the HPA axis and improving parasympathetic "rest and digest" tone in the nervous system. Grounding has pro-metabolic effects, improving mitochondrial function and even decreasing blood sugar and improving markers of tissue damage and liver function.

Bright light therapy

A lack of exposure to bright daytime sunlight exposure to the eyes can result in elevations in the HPA axis, melatonin and prolactin throughout the day. These hormonal signals have been implicated in contributing to poorer mood, while implementing bright light can be therapeutic. Incandescent style lights mimic the sun's wavelength composition and can serve as a good substitute if bright sunlight is not accessible throughout the day.

Any 10,000-lux bright light therapy device will work.

As many incandescent style lights as necessary to achieve a satisfactory amount of brightness can work well. Typically, this will be 5-10 bulbs.

Use during normal daytime hours when bright outdoor light is not available.

During the winter, these tools can be used to "supplement" natural bright sunlight when days are shorter, turning them on earlier in the day and keeping them on later into the evening to compensate for the excessive darkness.

Therapeutic phlebotomy

Iron tends to accumulate in the body over time, as excretion mechanisms are limited and often insufficient to clear out toxic levels of iron. Thus, therapeutic phlebotomy (blood donation) serves as an excellent and safe way to lower iron levels. In those with high iron (ferritin) levels, it can improve liver disease and insulin sensitivity, conferring long term protection from cardiovascular disease.

CLICK HERE: https://www.oneblood.org/donate-now.html to find a place for donation near you.

After donation, re-test iron panel to gauge iron status. Blood donation can be done as often as once every 2 months in normal individuals.

Diet

The fundamentals of your health. Here's what we think you can adjust:

Pro-metabolic principles

Focus on animal proteins and simple carbohydrates, which will be easy to digest.

Animal proteins include different cuts of beef, lamb, bison, elk and venison, eggs, shellfish and fish, cottage cheese and Greek yogurt.

Some simple carbohydrate sources would be fruits like grapes, apples, pineapples and oranges, fruit juices, honey, cane sugar, and very well-cooked white rice and potatoes.

Well-cooked green and root vegetables, such as leafy greens, Brussels sprouts, cauliflower, sweet potatoes, jicama, squash, and more, are encouraged as well.

These polyunsaturated fat rich oils are highly prevalent in most packaged foods and restaurants. Commercial pork, fish and chicken fat also contain high quantities of these fats, and as such it is optimal to eat leaner varieties of these animals. Ruminant (red) meat is much lower in polyunsaturated fat. The big sources to limit are soybean oil, canola oil, corn oil, cottonseed oil, sunflower oil, safflower oil, margarine, peanut oil, rice bran oil and grapeseed oil. Opting for fats like extra virgin olive oil, coconut oil, and animal fats like butter and beef tallow will decrease intake of polyunsaturated fats.

Excellent sources of calcium include dairy products: any type of milk (whichever you prefer, but especially lower fat varieties), cheeses, cottage cheese, and Greek yogurt. Canned fish with bones like sardines is another good option. Well-cooked greens like mustard greens, napa cabbage, broccoli or Bok choy are some good options as well. If these foods are not well tolerated or available, consider supplementing with calcium carbonate at 1250 mg (level unpacked 1/4 tsp) up to twice daily (PureBulk, use code "PRISM" at checkout for 10% off).

Feel free to experiment with different types and amounts of foods.

This is not meant to be a restrictive, difficult to adhere to diet, but rather principles about food you can apply to better construct meals.

See the uploaded diet materials for more thorough guidance.

The goal here is to focus on foods that optimize the generation of energy from food while minimizing stress and digestive irritation. The primary pillars of this approach are to ensure adequate, quality protein, adequate carbohydrate and calcium, and to focus on saturated fats while limiting polyunsaturated fats.

A low protein intake can contribute to increases in HPA axis activity and decreased elimination of estrogens. Animal proteins are generally more easily digestible and of higher quality than plant proteins.

Carbohydrates are vital for lowering the stress systems, like the HPA axis and adrenaline/noradrenaline. Carbohydrates are also imperative for proper thyroid hormone production and metabolism, and for raising androgens. Finally, they serve as a key source of fuel for the immune system, and for several cells in the gut, which maintains a healthy digestive environment.

The metabolic products of polyunsaturated fatty acids are increased with their excessive consumption, and these products are critical mediators of various pain and inflammatory disorders, including those in the gut. They accumulate in the body with aging and metabolic disorders and functionally leave all tissues at risk for damage.

Polyunsaturated fats have been shown to suppress the metabolic rate, and their metabolites serve vital roles in promoting systemic inflammation, hypothyroidism, and stress. They have also been shown to decrease androgens.

Calcium, along with vitamin D, is critical for regulating parathyroid hormone levels, a stress hormone that can induce inflammation, suppress the rate of metabolism, and contribute to gastrointestinal distress. Calcium can also inhibit the absorption of iron, which can be advantageous in situations of iron excess. Calcium intake is often insufficient in people dealing with inflammatory conditions, and these conditions, such as allergies, can be ameliorated by calcium.

Avoid food and supplement additives as much as reasonably possible.

These include, but are not limited to: citric acid, polysorbate 80, gums, flour with fortified iron and other vitamins, carrageenan, dyes and silica. Essentially, if something seems like it shouldn't be in a food or supplement, it's best to avoid it.

Although filed by the FDA under "Generally Recognized as Safe," many of these manufactured substances have been shown to have health implications relevant to digestive pathology. Others have very little study on their safety and health effects, especially in humans.

Metabolic meals service & other on the go / no cooking options

Some other good options that do not require cooking:

Protein sources: Epic (low fat) pork rinds, Beef jerky, Cheese, Milk, Cottage cheese, Greek Yogurt, Canned fish or shellfish without vegetable oil (sardines, oysters, clams, mussels, mackerel, etc.), Low fat, low additive canned or deli meats

Carbohydrate sources: Fruits, Dried fruits, Fruit juice, Chips without vegetable oil (soybean oil, canola oil, corn oil, cottonseed oil, sunflower oil, safflower oil, margarine, peanut oil, rice bran oil and grapeseed oil. Siete, Barnana, Bugles, some Xochitl brands are good), Chocolate, Raw honey, Crackers

Speak with your advisor on more brands or foods that fall into this category.

Eating out and having little time to prepare food is a key contributor to poor diet quality. Metabolic meals is a service that offers pre-made meals with high quality ingredients.

Salt foods to taste.

Purposefully restricting salt intake is known to activate sympathetic activity as well as other stress systems, like the renin-angiotensin-aldosterone system. Salt restriction also impairs glucose metabolism, while adding salt improves insulin sensitivity. Dietary salt is also important for proper gastric acid secretion.

Supplements & Pharmaceuticals

What your hidden link might be. Here's a targeted regimen for your needs:

Katialis Soap — Katialis

Use daily as soap while bathing.

This soap contains three key ingredients for the health of the skin: sulfur, zinc, and salicylic acid. Sulfur has shown mild antibacterial and antifungal properties and is effective in the treatment of skin conditions such as acne and rosacea. Zinc supplementation can also be used to alleviate fungal overgrowths and skin issues like acne, dry skin, and eczema through antibacterial, anti-inflammatory and antioxidant properties. Salicylic acid applied topically to the skin has potent anti-inflammatory effects, and exfoliates the skin, aiding in skin regeneration.

Magnesium bicarbonate — PristineHydro

Divide your daily amount into several servings. Consume straight or dilute 1-2 tsp solution with 16 oz water (mountain milk). Drinking 1-2 oz before bedtime may aid with heartburn.

Magnesium is one of the fundamental anti-stress electrolytes that cells need to rest and relax properly. Magnesium opposes several endogenous stress mediators, mainly the HPA axis and serotonin systems. It can also help properly hydrate the colon and produce more frequent and quality bowel movements. Magnesium deficiency can actually manifest as a vitamin D deficiency, since it is required for the activation, metabolism and transport of vitamin D precursors. The bicarbonate form is dissolved in liquid, is well absorbed and acts quickly.

L-Glutamine — Nutricost

5 grams (1 scoop) dissolved in a liquid, 3 times daily, for at least 8 weeks.

Glutamine becomes depleted during times of stress, and is an essential fuel for the intestines. Glutamine supplementation has been shown to reduce symptoms like abdominal pain and distention through improving intestinal permeability, reducing inflammation, providing energy substrate and bolstering immunity.

Sodium Butyrate — BodyBio, use code "PRISM111" for 15% off.

One capsule daily, without food. Can be increased to two capsules daily if no effect is seen.

Butyrate is the primary metabolic fuel of the cells in the colon. This gives it a few key actions. It lowers inflammation (including allergic), promotes tolerance of foods, stimulates gut mucus production, reduces gut permeability, improves motility and even favorably impacts the bacterial composition by reducing endotoxin. It has been shown to reduce symptoms in IBS, IBDs and diverticulitis such as diarrhea, pain, gas and bloating.

Lactobacillus plantarum — SuperSmart

1 capsule per day

Lactobacillus plantarum is a bacterium that can degrade histamine, which can lead to skin, allergenic, and digestive issues by stimulating the immune system and serotonin release.

Phosphatidylcholine — Double Wood Supplements

1 capsule per day with a meal

Phostphatidylcholine is a fatty compound which is a major component of our cellular and mitochondrial structure, especially supporting the lining of the intestines. Due to this, it has anti-inflammatory and repairing effects on the gut as well as on the liver. Phosphatidylcholine is also the major constituient of bile. It tends to promote energy production due to its influence on the mitochondria.

Thiamine HCl — PureBulk, use code "PRISM" at checkout for 10% off

1/2 capsule (50 mg) with breakfast and then again at lunch. Be sure to select capsules (not bags) and gel caps (not veg).

Vitamin B1 is a central nutrient in energy production. B1 is critical for various steps in the metabolic chain, and thus combats fatigue and enhances cellular energy production. B1 is very important for gut motility, as the signals in the gut's nervous system depend on vitamin B1 to be produced in adequate amounts. Higher doses of B1 also inhibit the degradation of carbon dioxide, which aids in tissue oxygen delivery, lowering inflammation and blood pressure. Thiamine also has a key role in the antioxidant system, which can help protect against conditions of oxidative damage.

Progesterone — PureBulk, use code "PRISM" at checkout for 10% off

Start with 4-6 drops daily (12-18 mg total). Apply this to the gums or sublingually (under the tongue) and allow it to be absorbed without swallowing it.

Allow 2-3 weeks at this dosage level before increasing or decreasing the dose.

Taken orally, progesterone can be dosed between 100-200 mg (33-66 drops or 1-2 mL).

Progesterone is a steroid that our body produces and has a range of unique protective effects for our health. Progesterone opposes the HPA axis and estrogen at several levels, inhibits mast cell activity, and is critical for brain growth and development. Progesterone has potent calming, anti-inflammatory, anxiolytic and anti-addiction effects.

When taken orally, most of the progesterone is converted to allopregnanolone, our body's primary inhibitory neurosteroid. It has profound calming effects by acting on the GABA system, and dampens the HPA axis response, lowering our systemic stress levels. Allopregnanolone also has striking anti-inflammatory and anti-serotonin effects in the gut.

PRISM

More Information

Here are some notes to better understand your report and outline the scientific literature used:

Index

Stress - Anything that interrupts the body's homeostasis. This could be physical, emotional, psychological, infectious, among countless other contributors to systemic stress. Stress manifests through several different hormones, signaling molecules, and other processes that have numerous consequences on health. Stress tends to suppress the immune system, deplete nutrients, disrupt organ function, break down tissue, impair metabolism and ultimately contribute to inflammation and oxidative stress. Periodic stress is normal and even healthful, but chronic stress plays a pivotal role in nearly every health issue.

Metabolism- The interconversion of different molecules in the body. This process constitutes the ability of the body to produce energy from the food we eat, as well as to produce structural and signaling molecules. Impairments in metabolism can thus cause energy, structural and regulatory abnormalities, which manifest as issues with health.

Intestinal permeability - A process in which the single celled lining of the small and/or large intestines become separated, creating microscopic openings in the gut. This process exposes bacterial components, toxins and food particles to the inner layers of the gut, which can drive digestive symptoms and inflammation. Additionally, these components can leak into the bloodstream and contribute to systemic inflammation.

Inflammation - A part of the immune system that is geared towards the breakdown of cells, foreign matter and microorganisms. While inflammation is imperative for resisting infections and overcoming tissue damage, it should be resolved quickly thereafter. Inflammation can drive the stress systems, contribute to oxidative stress and impair metabolism, and thus plays a key role in various health issues if chronically activated.

Oxidative stress - An imbalance between our body's antioxidants and pro-oxidants. Pro-oxidants are produced during inflammation, exposure to metals like iron and mercury, and during impaired metabolism. These pro-oxidants can disrupt normal cell signaling, metabolism, and can directly damage components of the cell, which can drive further inflammation. Oxidative stress is a key contributor to nearly every health issue imaginable.

Thyroid - A gland that produces the hormone T4, a precursor thyroid hormone, and a small amount of T3, which is the master regulator of metabolism. T4 can be activated into T3 or inactivated to form reverse T3 in other tissues. Thyroid function and hypothyroidism encompasses not just the production of T4 and T3 from the thyroid itself, but also the conversion of T4 into T3 in other organs, and the response from the body to these T3.

HPA Axis- This is a system in the body which starts in the hypothalamus (H) in the brain, stimulates the pituitary gland (P), ultimately producing the hormone cortisol in the adrenal glands (A). Cortisol is classically referred to as the primary stress hormone. The HPA axis is the primary stress system in the body, both promoting and being promoted by other factors in the stress response.

Endotoxin- A component of many bacteria which induces a potent inflammatory response, including the secretion of serotonin, in the gut. Endotoxin circulating throughout the body is also the primary consequence of intestinal permeability. Endotoxin increases the HPA axis, drives intestinal permeability, and impairs numerous aspects of metabolism.

Estrogens- Typically recognized as the "female hormone," in excess this class of compounds can impair liver function, slow down gut motility, reduce stomach acid, increase the HPA axis, promote fungal overgrowth, serotonin signaling, inflammation and can directly drive digestive symptoms.

Motility- How fast the food you eat goes through the digestive tract, which is often slowed in gut issues, and allows for excessive bacterial growth.

Adrenaline/Noradrenaline- Adrenaline and noradrenaline are the principle "fight or flight" signaling compounds in the body, responsible for short term bursts of energy through the sympathetic nervous system. This system contrasts with the "rest and digest," or parasympathetic nervous system, and thus its overactivation can contribute to gut pathology.

Serotonin- Serotonin is a signaling molecule primarily secreted in the intestines in response to bacterial accumulation or irritation and produces many of the symptoms of digestive issues. Systemically, serotonin can stimulate the HPA axis and slow down energy metabolism.

Androgens- A class of hormones especially important for male health. Androgens exert inhibitory function on the HPA axis and protect against the sensitivity and pain symptoms in gut issues. Decreased androgenic activity can be caused by excess estrogens, HPA axis activity, or hypothyroidism.

Stomach acid- This acid needs to produced in the stomach in adequate amounts in order to ensure proper breakdown of food, nutrient absorption and elimination of bacteria, which are key in maintaining digestive health.

Bile acids – A family of compounds produced in the liver, and concentrated and released from the gallbladder into the small intestine. Bile acids have antimicrobial effects, help us digest and absorb fat and vitamins, and are involved in detoxification. Bile acids are derived from the nutrients cholesterol, taurine and glycine.

Mitochondria – Compartments in our cells that produce energy. Their ability to produce energy efficiently and safety, i.e. mitochondrial function, is perhaps the most fundamental aspect of health.
Circadian Rhythm – The synchronization of your body's internal "clock," or sense of what time of the day it is. This process governs nearly every aspect of health, as disruptions in the circadian rhythm have shown to cause conditions like obesity, insulin resistance, sleep disorders, hormone dysregulation and even digestive conditions like IBS.

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