

## The Functional Comprehensive Metabolic Blood Chemistry

*A comprehensive blood chemistry panel is the single most efficient and effective tool for evaluating your health, it screens for a wide range of conditions, including several types of anemia; indications of gut, viral and bacterial infections; insulin resistance and hypoglycemia; liver and kidney issues; and thyroid and adrenal function. Having all these markers run collectively, not in a piecemeal format allows Tanya to move forward with your case in the most efficient and effective manner, being able to identify underlying foundational mechanisms and thus tailoring your plan accordingly.*

### 1. Metabolic Profile: Lipids, glucose, liver and renal function includes:

#### **Complete Blood Count with Differential:**

Parameter	Male	Female
Hemoglobin g/L	135 - 180	115 - 160
WBC x10 <sup>9</sup> /L	4.00 - 11.00	4.00 - 11.00
Platelets x10 <sup>9</sup> /L	150 - 400	150 - 400
MCV fL	78 - 100	78 - 100
PCV	0.40 - 0.52	0.37 - 0.47
RBC x10 <sup>12</sup> /L	4.5 - 6.5	3.8 - 5.8
MCH pg	27.0 - 32.0	27.0 - 32.0
MCHC g/L	310 - 370	310 - 370
RDW	11.5 - 15.0	11.5 - 15.0
Neutrophils	2.0 - 7.5	2.0 - 7.5
Lymphocytes	1.0 - 4.5	1.0 - 4.5
Monocytes	0.2 - 0.8	0.2 - 0.8
Eosinophils	0.04 - 0.40	0.04 - 0.40
Basophils	< 0.1	< 0.1

Sodium & calcium

Potassium

Chloride

Bicarbonate

Urea

Creatinine

Bilirubin

Alkaline phosphatase

Liver markers: AST ALT CK LDH

Gamma- GT

Albumin

**Total cholesterol HDL & LDL & VLDL (more detailed lipid markers)**

Triglycerides

**ESR and HsCRP:** inflammatory markers

**Homocysteine:** Cardiovascular marker & can be an indicator of poor methylation

Uric acid

### 2. Essential Nutrients Profile

#### **Complete iron panel**

Iron Total

Iron binding capacity

% Saturation

**Ferritin**

**Vitamin D**

**Magnesium, B12 and Folate**

### **3. Comprehensive thyroid profile**

TSH- Thyroid Stimulating Hormone

TT4

FT4

TT3

FT3

Anti-thyroid peroxidase

(anti-TPO) antibodies

Thyroglobulin antibodies

T3 uptake & Reverse T3

This is **the** most comprehensive thyroid assessment test, collated through the work Tanya has done with Dr Datis Karrazian and Isabella Wentz

### **4. Immunoglobulins**

The five subclasses of antibodies are:

- **Immunoglobulin A (IgA)**, which is found in high concentrations in the mucous membranes, particularly those lining the respiratory passages and gastrointestinal tract, as well as in saliva and tears.
- **Immunoglobulin G (IgG)**, the most abundant type of antibody, is found in all body fluids and protects against bacterial and viral infections.
- **Immunoglobulin M (IgM)**, which is found mainly in the blood and lymph fluid, is the first antibody to be made by the body to fight a new infection.
- **Immunoglobulin E (IgE)**, which is associated mainly with allergic reactions (when the immune system overreacts to environmental antigens such as pollen or pet dander). It is found in the lungs, skin, and mucous membranes.

**Measured together they can provide important information about immune system functioning, especially relating to infection or autoimmune disease.**

**Cost of panel £235** plus the blood draw fee, which varies, from differing providers.

## Why a Comprehensive Blood Chemistry a worthwhile investment on your part?

A comprehensive blood chemistry panel is the single most efficient and effective tool for evaluating your health, it screens for a wide range of conditions, including several types of anemia; indications of gut, viral and bacterial infections; insulin resistance and hypoglycemia; liver and kidney issues; and thyroid and adrenal problems. But, many of these functions listed here can only be illuminated when interpreting the results, as it is in functional medicine, within a **patterns analysis** model. Such a model recognizes that the bodily systems i.e. digestive, immune, endocrine, cardiovascular are not separated silos but interconnected through our biochemistry of hormones, neurotransmitters enzymes and chemical reactions that occur 24-7 and have a causative effect upon each other.

A blood chemistry test is a snapshot in time of the culmination of all these reactions, and therefore can tell an overall story of where to dig deeper, **if** interpreted in this way. A patterns analysis goes far beyond the concept of “ideal” ranges for individual markers i.e.: - “your total cholesterol is *high* this needs to be lowered” or “everything on you blood test is in-range, nothing is wrong”. As markers begin to shift away from “range” and symptoms start to occur, a picture begins to emerge. The training of understanding blood chemistry from a view of patterns analysis, identifies more subtle physiological imbalances or highlights system/s moving away from “homeostasis” and towards sub-optimal function, that present as multiple symptoms. Thus looking for patterns of function better explains or provides more targeted reasoning as to *why* a marker is raised and or what systems are involved. Returning to the high cholesterol marker as an example to demonstrate this here:

*In terms of why the total cholesterol is high, we must analyse not only the “total” cholesterol, we must also pay attention to: the LDL/HDL ratio, the triglycerides, glucose, inflammatory markers (such as CRP), electrolyte activity, liver-related markers, adrenal-related markers, thyroid functions and GI inflammatory markers. All of these pathways can play into **why** cholesterol can be raised. By reviewing these markers and categories, we can form a more truly integrated impression that seeks to understand what is taking place within the many complex layers of the body. We don't simply say you require a statin or the nutritional equivalent – red yeast extract to lower the cholesterol. We keep digging to assess the **why**.*

*“Combining both the important subjective data of your health time line and lifestyle with the objective blood biochemistry/or tests you've provided allows me as a practitioner to best begin to formulate the nature of the problem and a management plan to address. This is why I encourage new patients to invest in such a comprehensive baseline test for me to work with”.*

## Tanya

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