

# Decoding clinical utility of LifeLabs Patient Assessment Panels

## Available in Ontario & Saskatchewan

LifeLabs Patient Assessment Panels are a great tool for gaining comprehensive insights about your patient's health status, improving your understanding of the underlying imbalances that lead to disease. Here you can find the clinical relevance for each of the panels and when you might consider ordering them for your patients.

LifeLabs Patient Assessment Panels offer a:

- **Comprehensive** list of tests curated to meet your practice needs
- **Convenient** ordering process
- **Cost-effective** alternative over individual test ordering

Test name	Biomarkers tested	Clinical relevance
Healthy Living Assessment	<ul style="list-style-type: none"> <li>• Complete Blood Count (CBC) + Differential*</li> <li>• Ferritin</li> <li>• Iron/Total Iron Binding Capacity (TIBC)</li> <li>• Calcium (Serum)</li> <li>• Glucose</li> <li>• Phosphorus</li> <li>• Hemoglobin A1c (HbA1c)</li> <li>• Thyroid Stimulating Hormone (TSH)†</li> <li>• C-Reactive Protein (CRP)</li> <li>• Potassium</li> <li>• Sodium</li> <li>• Chloride</li> <li>• Bicarbonate (CO2)</li> <li>• Magnesium (serum)</li> <li>• Albumin</li> <li>• Bilirubin (Direct)</li> <li>• Bilirubin (Total)</li> <li>• Alkaline Phosphatase (ALP)</li> <li>• Gamma Glutamyl Transpeptidase (GGT)</li> <li>• Alanine Aminotransferase (ALT)</li> <li>• Lactate Dehydrogenase (LDH)</li> <li>• Aspartate Amino Transferase (AST)</li> <li>• Protein (Total)</li> <li>• FIB-4 score</li> <li>• Creatinine</li> <li>• Blood Urea Nitrogen (BUN)</li> <li>• Uric Acid</li> <li>• Cholesterol</li> <li>• Low-Density Lipoprotein (LDL)</li> <li>• High-Density Lipoprotein (HDL)</li> <li>• Triglycerides</li> </ul> <p>*Reflex testing of Abnormal Blood Film Exam may occur if CBC results abnormal. Additional fee applies.</p> <p>†Reflex testing of Thyroxine Free (FT4) may occur if TSH results abnormal. Additional fee applies.</p>	<p>The Healthy Living and Enhanced Healthy Living Assessments can effectively establish a patient baseline as well as assist to monitor progress following prescribed lifestyle changes or interventions. These comprehensive panels of blood tests provide insight into liver, kidney, blood, electrolyte, heart, and metabolic health. They may be recommended for elevated IgG to candida, abnormal cortisol levels, low DHEAS, low testosterone, suspected anemia or nutritional deficiency, low levels of essential elements, gastric or peptic ulcers, and general malaise.</p> <p>New additions to this panel:</p> <ul style="list-style-type: none"> <li>• <i>Magnesium</i>: Monitoring magnesium has many clinical benefits from being a cofactor in many reactions to helping relax skeletal and smooth muscle.</li> <li>• <i>FIB-4 Score</i>: The increased incidence of liver disease, particularly MASLD is concerning. This helps us to monitor therapy, monitor disease progression and to reduce unnecessary liver biopsies.</li> </ul> <p>Tests removed from this panel:</p> <ul style="list-style-type: none"> <li>• <i>Fibrinogen</i>: To better support you and your patients, fibrinogen has been removed from these panels, eliminating the need for immediate centrifugation and streamlining sample handling.</li> </ul>

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<b>Enhanced Healthy Living Assessment (Fasting)</b>	Includes all tests in the Healthy Living Assessment, plus those listed below. <ul style="list-style-type: none"> <li>• Folate (Serum)</li> <li>• Vitamin B12</li> <li>• Folate (RBC)</li> <li>• Fasting Insulin</li> <li>• Vitamin D</li> <li>• Erythrocyte Sedimentation Rate (ESR)</li> </ul>	The Enhanced Healthy Living Assessment offers deeper insights beyond the Healthy Living Assessment, particularly into metabolic, blood, and heart health. This assessment panel should be collected while fasting.
<b>Autoimmune Panel</b>	<ul style="list-style-type: none"> <li>• Antinuclear Antibody (ANA)*</li> <li>• Thyroperoxidase Antibody (TPO)</li> <li>• Rheumatoid Factor (RA)</li> <li>• Anti-Thyroglobulin (ATG)</li> <li>• Transglutaminase</li> </ul> <p>*Reflex testing of ENA and/or DNA may occur if ANA results abnormal. Additional fees apply.</p>	The Autoimmune Panel provides insight into levels of a variety of disease-specific antibodies. Research shows that organ-specific (e.g. thyroid peroxidase) and non-organ specific antibodies (e.g. rheumatoid factor) rise steadily in the years prior to diagnosis of autoimmune disease. By monitoring antibody levels, functional medicine practitioners may be able to identify and prevent or treat potential autoimmune disorders. <sup>1</sup> The Autoimmune Panel may be recommended in the presence of elevated gliadin antibodies or moderate or high risk for celiac disease associated with HLA antigens or other celiac markers.
<b>Basic Thyroid Assessment</b>	<ul style="list-style-type: none"> <li>• Free Triiodothyronine (FT3)</li> <li>• Thyroid Stimulating Hormone (TSH)</li> <li>• Anti-Thyroglobulin (ATG)</li> <li>• Free Thyroxine (FT4)</li> <li>• Thyroperoxidase Antibody (TPO)</li> </ul>	The Basic Thyroid Assessment is useful to assess the function of the thyroid gland by measuring levels of thyroid hormones (T3, T4) and thyroid-stimulating hormone (TSH) in the blood, to aid in diagnosis of conditions like hyperthyroidism (overactive thyroid) or hypothyroidism (underactive thyroid) and monitor treatment effectiveness for thyroid disorder. Understanding the balance between T3 and T4 allows the healthcare provider to make judgement on subclinical hypothyroid that may not be apparent with fewer analytes.
<b>Enhanced Thyroid Assessment</b> <i>(Previously called Thyroid Panel)</i>	<ul style="list-style-type: none"> <li>• Free Triiodothyronine (FT3)</li> <li>• Thyroid Stimulating Hormone (TSH)</li> <li>• Anti-Thyroglobulin (ATG)</li> <li>• Free Thyroxine (FT4)</li> <li>• Thyroperoxidase Antibody (TPO)</li> <li>• Reverse T3</li> </ul>	The Enhanced Thyroid Assessment also includes reverse T3. The additional analyte increases the ability to understand thyroid dysfunction in cases where the clinical symptoms are not aligned with the previous laboratory values presenting within normal ranges for the other analytes.
<b>Thyroid Follow-Up Assessment</b>	<ul style="list-style-type: none"> <li>• Free Triiodothyronine (FT3)</li> <li>• Thyroid Stimulating Hormone (TSH)</li> <li>• Free Thyroxine (FT4)</li> </ul>	The Thyroid Follow-Up Assessment provides information on TSH and the balance between T3 and T4 which allows the healthcare provider to make judgement on subclinical hypothyroid that may not be apparent with fewer analytes. This aids in diagnosis of conditions like hyperthyroidism (overactive thyroid) or hypothyroidism (underactive thyroid) and monitor treatment effectiveness for thyroid disorder.
<b>Fatigue Panel</b>	<ul style="list-style-type: none"> <li>• CBC + Differential*</li> <li>• Iron/TIBC (includes Transferrin)</li> <li>• Thyroid Stimulating Hormone (TSH)<sup>†</sup></li> <li>• Ferritin</li> <li>• Mono Spot</li> <li>• Vitamin B12</li> <li>• Folate (Serum)</li> </ul> <p>*Reflex testing of Abnormal Blood Film Exam may occur if CBC results abnormal. Additional fee applies.</p> <p><sup>†</sup>Reflex testing of Thyroxine Free (FT4) may occur if TSH results abnormal. Additional fee applies.</p>	The Fatigue Panel provides insight into common causes of fatigue, which include anemias (macrocytic, microcytic, iron deficiency), infections (viral or bacterial), mononucleosis, and hypothyroidism. The Fatigue Panel informs on nutritional causes of anemias including iron, B12 and folate deficiency, thyroid function, and presence of antibodies to Epstein-Barr virus. The Fatigue Panel may be recommended in the presence of low cortisol or when clinical signs and symptoms of general malaise are evident.

Test name	Biomarkers tested	Clinical relevance
<b>Female Day 3 Panel</b> <i>(Previously called Female Hormone Panel)</i>	<ul style="list-style-type: none"> <li>• Cortisol AM</li> <li>• Follicle Stimulating Hormone (FSH)</li> <li>• Progesterone</li> <li>• Dehydroepiandrosterone Sulphate (DHEAS)</li> <li>• Luteinizing Hormone (LH)</li> <li>• Total Testosterone</li> <li>• Estradiol (E2)</li> </ul>	<p>This panel is beneficial for patients showing signs of hormonal or metabolic imbalance, which can affect multiple systems and lead to conditions like polycystic ovary syndrome (PCOS), thyroid or adrenal dysfunction, metabolic syndrome, mood and cognitive issues, and menstrual irregularities. The Female Day 3 Panel may be recommended during the follicular phase of the menstrual cycle to evaluate key reproductive and regulatory hormones. It's particularly useful for diagnosing hormone imbalances and addressing concerns such as unexplained weight changes, persistent fatigue, menstrual irregularities, fertility issues, or mood disturbances. The panel includes FSH and LH to assess hypothalamic-pituitary health.</p> <p><i>Note: Naturopaths are advised to use their clinical discretion to determine the most suitable testing day. The above timeline is recommended as the most common use case if the patient has a 28-day cycle. However, variations may occur based on factors such as an atypical ovulation day, or cycles that are shorter or longer than the standard 28-day period, and if a patient is going through cycle changes or is no longer menstruating.</i></p>
<b>Female Day 21 Panel</b>	<ul style="list-style-type: none"> <li>• Estradiol (E2)</li> <li>• Progesterone</li> </ul>	<p>The Female Day 21 Panel is clinically useful for evaluating luteal phase adequacy, especially concerning ovarian function. It's commonly indicated for menstrual irregularities, suspected anovulation, and fertility concerns. This panel assesses key female hormones during the luteal phase, with serum progesterone measured around Day 21 to confirm ovulation and luteal phase status. Estradiol is also re-evaluated to ensure peak levels were reached during the follicular phase and maintained, providing insight into hormonal balance and the ability to support a healthy endometrial lining.</p> <p><i>Note: Naturopaths are advised to use their clinical discretion to determine the most suitable testing day. The above timeline is recommended as the most common use case if the patient has a 28-day cycle. However, variations may occur based on factors such as an atypical ovulation day, or cycles that are shorter or longer than the standard 28-day period, and if a patient is going through cycle changes or is no longer menstruating.</i></p>
<b>Female Fertility Panel</b>	<ul style="list-style-type: none"> <li>• Anti-Müllerian Hormone (AMH)</li> <li>• Free Thyroxine (FT4)</li> <li>• Prolactin (PRL)</li> <li>• Estradiol (E2)</li> <li>• Luteinizing Hormone (LH)</li> <li>• Total Testosterone</li> <li>• Follicle Stimulating Hormone (FSH)</li> <li>• Progesterone</li> <li>• Thyroid Stimulating Hormone (TSH)</li> <li>• Free Testosterone</li> </ul>	<p>The Female Fertility Panel provides insight into the most common hormone abnormalities that can affect fertility including elevated prolactin, thyroid disorders, progesterone insufficiency, and polycystic ovary syndrome. The Fertility Panel may be recommended in the presence of decreased progesterone and elevated androgens in women or whenever infertility is a clinical concern.</p>
<b>Hematology Panel</b>	<ul style="list-style-type: none"> <li>• CBC + Differential*</li> <li>• Folate (RBC)</li> <li>• Folate (Serum)</li> <li>• Iron/TIBC (includes Transferrin)</li> <li>• Ferritin</li> <li>• Vitamin B12</li> </ul> <p>*Reflex testing of Abnormal Blood Film Exam may occur if CBC results abnormal. Additional fee applies.</p>	<p>The Hematology Panel provides insight into common markers of blood health. The Complete Blood Count (CBC) reports on the health of red blood cells, white blood cells and platelets. Iron, vitamin B12 and folate biomarkers are included to assess for anemias. The Hematology Panel may be recommended in the presence of suspected anemias, nutritional deficiencies or any conditions related to blood health (e.g. infections, leukemias, blood clotting disorders).<sup>2,3,4,5</sup></p>

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<b>Inflammation Panel</b>	<ul style="list-style-type: none"> <li>• Albumin</li> <li>• Erythrocyte Sedimentation Rate (ESR)</li> <li>• Fibrinogen</li> <li>• CBC + Differential*</li> <li>• Ferritin</li> <li>• C-Reactive Protein (CRP)</li> </ul> <p>*Reflex testing of Abnormal Blood Film Exam may occur if CBC results abnormal. Additional fee applies.</p>	The Inflammation Panel provides insight into a variety of markers of inflammation. Acute phase reactants are proteins that rise or fall in the presence of inflammation. The positive acute phase reactants CRP, ESR, ferritin and fibrinogen increase in the presence of inflammation. The negative acute phase reactant, albumin, decreases with inflammation. Red blood cell distribution width (RDW) is another good biomarker of inflammation. Inflammation increases gut permeability, may interfere with steroidogenesis, promotes obesity, is a cause of cardiovascular disease and has been implicated in mood disorders. The Inflammation Panel may be recommended in the presence of elevated IgG antibodies to food or candida, elevated fecal calprotectin, a low anabolic/catabolic hormone ratio, an elevated oxidative stress marker such as 8OHdG, and any other clinical condition that may be exacerbated by inflammation.
<b>Iron Panel</b>	<ul style="list-style-type: none"> <li>• Iron/TIBC (includes Transferrin)</li> <li>• Ferritin</li> <li>• CBC + Differential*</li> </ul> <p>*Reflex testing of Abnormal Blood Film Exam may occur if CBC results abnormal. Additional fee applies.</p>	The Iron Panel is useful for evaluating fatigue, hair loss, anemia, digestive issues, and monitoring iron therapy. It helps detect iron deficiency, assess anemia types, monitor treatment, and screen for iron overload or related conditions.
<b>IV Panel</b>	<ul style="list-style-type: none"> <li>• Glucose-6-Phosphate Dehydrogenase (G6PD)</li> <li>• Bicarbonate (CO2)</li> <li>• Albumin</li> <li>• Sodium</li> <li>• Creatinine (including eGFR)</li> <li>• Calcium</li> <li>• Potassium</li> <li>• CBC + Differential*</li> <li>• Magnesium (serum)</li> <li>• Chloride</li> <li>• Alanine Aminotransferase (ALT)</li> <li>• C-Reactive Protein (CRP)</li> </ul> <p>*Reflex testing of Abnormal Blood Film Exam may occur if CBC results abnormal. Additional fee applies.</p>	The IV Panel provides a report on several analytes that support IV nutrient therapy. G6PD is one of the most common enzyme deficiencies and can lead to hemolysis during IV therapy with Vitamin C in susceptible individuals <sup>6</sup> . With the inclusion of G6PD, this panel can help to identify patients who might have a harmful experience with some forms of IV nutrient therapy.
<b>Lipids Assessment (Fasting Preferred)</b>	<ul style="list-style-type: none"> <li>• Cholesterol</li> <li>• High-Density Lipoprotein (HDL)</li> <li>• Low-Density Lipoprotein (LDL)</li> <li>• Triglycerides</li> </ul>	The Lipids Panel reports on cholesterol, triglycerides and the lipid transport proteins LDL and HDL. Lipid levels are standard tests for assessing risk of cardiovascular disease. The Lipids Panel may be recommended in the presence of low DHEAS in men or women, when androgens are high in women, or whenever cardiovascular disease is suspected.

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<b>Liver/Digestion Plus Panel</b>	<ul style="list-style-type: none"> <li>• Alanine Aminotransferase (ALT)</li> <li>• Bilirubin (Direct)</li> <li>• FIB-4 score</li> <li>• Aspartate Amino Transferase (AST)</li> <li>• Bilirubin (Total)</li> <li>• Gamma Glutamyl Transpeptidase (GGT)</li> <li>• Alkaline Phosphatase (ALP)</li> <li>• CBC + Differential*</li> <li>• Lactate Dehydrogenase (LDH)</li> </ul> <p>*Reflex testing of Abnormal Blood Film Exam may be required if blood film is abnormal and requires hematologist review. Additional fee applies.</p>	Liver Digestion Plus Panel includes Fibrosis-4 (FIB-4) score. A simple, non-invasive, and convenient testing option, with promising clinical utility in defining NAFLD patients with increased risk of clinically significant fibrosis and reducing unnecessary biopsies. The FIB-4 score is calculated from aspartate aminotransferase (AST), alanine aminotransferase (ALT), complete blood count (CBC), and age.
<b>Men's Health Panel</b>	<ul style="list-style-type: none"> <li>• Bioavailable Testosterone</li> <li>• Low-Density Lipoprotein (LDL)</li> <li>• High-Density Lipoprotein (HDL)</li> <li>• PSA Ratio</li> <li>• Cholesterol</li> <li>• Prolactin</li> <li>• Triglycerides</li> </ul>	The Men's Health Panel provides insight via the biomarkers most relevant to men's health and may be recommended when androgens are low, estrogens are high or when signs and symptoms related to sexual or cardiac health are noted.
<b>Metabolic Panel (Fasting)</b>	<ul style="list-style-type: none"> <li>• Gamma Glutamyl Transpeptidase (GGT)</li> <li>• Glucose</li> <li>• Sex Hormone Binding Globulin (SHBG)</li> <li>• C-Reactive Protein (CRP)</li> <li>• Insulin</li> <li>• Hemoglobin A1c (HbA1c)</li> <li>• Triglycerides</li> <li>• LDL</li> <li>• HDL</li> <li>• Cholesterol</li> </ul>	The Metabolic Panel informs on biomarkers commonly used to identify metabolic syndrome, which manifests with three or more of the following signs: abdominal obesity, elevated serum glucose, elevated triglycerides, high blood pressure, and low HDL levels. The Metabolic Panel is recommended in the presence of certain hormone patterns linked to increased risk of metabolic syndrome. These include elevated cortisol, high androgen levels in women, and low androgen levels in men.
<b>Methylation Panel</b>	<ul style="list-style-type: none"> <li>• Homocysteine</li> <li>• Folic Acid (serum)</li> <li>• Vitamin B12</li> </ul>	The Methylation Panel provides insight into serum levels of vitamins required for methylation as well as indicators of ability to methylate. Vitamins B12 and folate are essential for methylation and homocysteine is a good indicator of ability to methylate. <sup>2</sup> Methylation is essential for DNA/RNA production, neurotransmitter synthesis, estrogen metabolism, detoxification, histamine metabolism, fat metabolism, cellular energy and liver health. The Methylation Panel may be recommended in the presence of high estrogens, a low ratio of 2-methoxyestrone to 2-hydroxyestrone, or whenever signs and symptoms of impaired methylation are observed.
<b>Mineral Panel</b>	<ul style="list-style-type: none"> <li>• Calcium (ionized)</li> <li>• Zinc (serum)</li> <li>• Copper (serum)</li> <li>• Magnesium (serum)</li> </ul>	The Mineral Panel provides insight into serum levels of common minerals including calcium (the active ionized form), copper, magnesium and zinc. Serum levels of minerals are generally reflective of recent intake, but a normal result does not preclude the possibility of a mild or moderate deficiency since body stores may be lower than serum levels. The Mineral Panel may be recommended when urine essential elements are abnormal, hair element analysis exhibits a noticeable 'left shift' or whenever deficiencies or insufficiencies of key minerals are suspected.

Test name	Biomarkers tested	Clinical relevance
<b>Nutrient Panel</b>	<ul style="list-style-type: none"> <li>• Vitamin A</li> <li>• Vitamin B1</li> <li>• Vitamin B6</li> <li>• Vitamin B12</li> <li>• Vitamin C</li> <li>• Vitamin D</li> <li>• Vitamin E</li> <li>• Calcium (ionized)</li> <li>• Zinc (serum)</li> <li>• Copper (serum)</li> <li>• Magnesium (serum)</li> </ul>	The Nutrient Panel provides insight into the serum levels of vitamins A, B6, B12, C and E. It also reports on serum levels of common minerals including calcium (the active ionized form), copper, magnesium and zinc. Serum levels of vitamins and minerals are generally reflective of recent intake, but a normal result does not preclude the possibility of a mild or moderate deficiency since body stores may be lower than serum levels. The Nutrient Panel may be recommended when nutrient deficiency or malabsorption is suspected, urine essential elements are abnormal, hair element analysis exhibits a noticeable 'left shift' or whenever deficiencies or insufficiencies of key minerals are suspected.
<b>Vitamin Panel</b>	<ul style="list-style-type: none"> <li>• Vitamin A</li> <li>• Vitamin B1, Whole Blood</li> <li>• Vitamin B6</li> <li>• Vitamin B12</li> <li>• Vitamin C</li> <li>• Vitamin D</li> <li>• Vitamin E</li> </ul>	The Vitamin Panel provides insight into the serum levels of vitamins A, B6, B12, C and E. Serum levels of vitamins are generally reflective of recent intake, but a normal result does not preclude the possibility of a mild or moderate deficiency since body stores may be lower than serum levels. The Vitamin Panel may be recommended when nutrient deficiencies are suspected, or when there is evidence of malabsorption.

#### References:

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