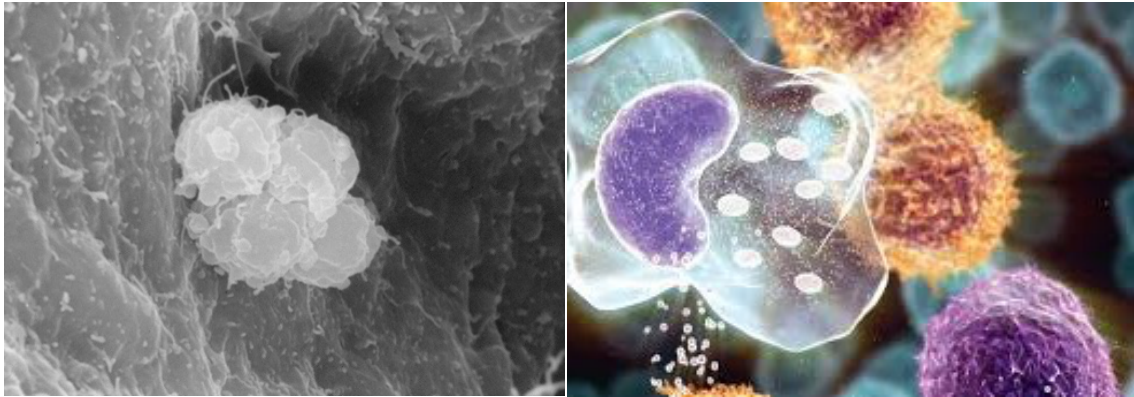


Immunity Strength Test and GIS™ Know Your Risk of Covid-19 and other Diseases

- **The immune system maintains the body's integrity and helps fight against infectious viruses. However, it may become unbalanced due to aging, sleep disorders, sedentary life and obesity, smoking, drug abuse and addictive behaviors, heavy exercise training, chronic inflammatory diseases, cancer treatments, high blood pressure, liver diseases, air pollution and exposure to toxic chemicals.**
- **Immunity is further weakened by sustained inflammation induced by medical conditions such as cirrhosis, diabetes and leaky tissue barriers, which cause compensatory immunosuppression.**
- **Because over-response of the immune system leads to autoimmune and allergic diseases and under-response/immune cell exhaustion allows opportunistic infections and viral reactivations, we face challenges in protecting natural tissue barriers of key vital organs like the liver, lungs and brain.**
- **An Immunity Strength Test differs from an Antibody Test. An Antibody Test indicates whether the immune system of an infected person has responded to viral infection whereas an Immune Strength Test actually scores immune response capacity and accredits Good Immune-Standing (GIS™) of individuals with high Immunity Strength. If a person has never been infected, an Immunity Strength Test provides infection risk information whereas an Antibody Test becomes meaningless since no antibodies would be present.**

Now that Coronavirus (Covid-19) is in full swing, it is desired to assess and strengthen our Immune System to fight back against the virus. Signs of a weakened immune system include being sick often, feeling fatigued or having perplexing medical symptoms. Warning signs of a weakened Immune System also include high and long-term stress levels due to emotional situations or stressful work projects; exhaustion despite sufficient sleep; frequent colds or colds that do not run their normal course; slow-healing wounds; frequent infections requiring more than two courses of antibiotics a year; and frequent diarrhea and constipation suggesting altered gut microbiota.



To address these concerns, Persona Biomed Spain has developed a three-part molecular diagnostic laboratory test to assess strength and weakness of your Immune System. This analysis measures (1) multiple blood biomarkers contributing to immune response regulation, (2) biological phenotype of circulating immune competent cells, and (3) functional responses to microbial products including viral diseases such as Cov- 19. These tests are intended to predict the risk of infection and sepsis, as well as other consequences of asymptomatic and symptomatic conditions and of an immune-inflammatory unbalance.

The three-phase analysis includes:

Phase 1: Multianalyte cytokine assays.

This determines blood concentration and interrelationships of a comprehensive panel of circulating immune-inflammatory plasma biomarkers and organ-specific regulatory factors from liver, lungs and neuroendocrine tissues. It provides a rapid assessment of whole-body immune regulation where clinical interpretation includes algorithmic analysis. Data are obtained by high-throughput multiplex assay platforms. If an altered pattern is detected, then a second phase of the screening is performed.

Phase 2: Immune cell phenotyping assay.

This includes identification of deviated immune cell maturation patterns, cell activation and exhaustion and altered expression of immune checkpoint biomarkers. Data are obtained by immune-cytometry, multiplex assays and ELISpot.

Phase 3: Innate & adaptive immune response assay.

This analyzes the secretome of peripheral blood mononuclear cells after *in vitro* stimulation with bacterial (lipopolysaccharide from *E. coli*), fungal (heat killed *Candida albicans*), and viral factors (i.e., polyinosinic:polycytidylic acid) to assess immune-inflammatory reaction level and signaling pathways. Data are obtained by immunocytometry and multiplex assay.

Immunity Strength Test or Immune System Check-up provides:

- A path forward for Precision Medicine, which provides a comprehensive insight into the immune-inflammatory functionality and status of special help for managing **Covid-19**.
- A tool in the management and tracking wellness of healthy individuals and in the care of patients with chronic diseases and co-morbidities.
- An assessment of effectiveness of a medical, pharmacological and surgical intervention, and an immune status monitoring to identify or predict response to immune-stimulation therapies.
- Guidance on immune-targeted therapies, given the success and high costs of new immunotherapies.

Results of an **Immunity Strength Test** may be affected by inter-individual variability caused by genetic, environmental, and circadian differences. To reduce such variability, standardized practices are used to ensure confidence in measured parameters. Final diagnosis and optimal patient management, however, are the responsibility of the referring physician or health care provider.

Testing requires a 9 ml blood specimen for analysis by Persona Biomed's diagnostic laboratory. Results are typically provided within two days.

This test has not been cleared or approved by the FDA but can be considered as investigational or supplemental advice about the strength or weakness of a patient's immune system.