



Sample Test Name

Date Of Birth: 04 OCT 1972
Sex: M
Lab ID: #####

Test Physician

Dr. Edward Chan
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Jalan Desa, Taman Desa, 58100.

INTEGRATIVE MEDICINE

BLOOD - SERUM

Result Range Units
102 *H 20.0 - 48.0 ng/mL



Zonulin

Integrative Medicine Comments

ZONULIN COMMENT:

Zonulin is a protein that modulates intestinal barrier function. Zonulin release facilitates the opening of tight junctions between the cells of the intestinal lining to allow for passage of nutrients and fluids into the body. However, Zonulin release can be "overstimulated" by certain external factors to cause excessive opening of tight junctions, leading to intestinal hyperpermeability or "leaky gut", inflammation, liver overload, nutrient deficiencies, rheumatoid arthritis and autoimmune disorders.

The two most dominant environmental influences that cause elevations of zonulin are:
1. Gut Microflora (bacteria, yeasts, parasites) Imbalances caused by dysbiosis, SIBO, Candida
2. Gluten/gliadin presence in the diet.
Another important component to the subject's clinical picture would be their genetic predisposition to Gluten sensitivity.

With the presence of a bacterial imbalance in the small intestine, there is a gradual erosion of the guts' natural defences (saliva, gastric enzymes, pancreatic enzymes, bile etc). Eventually the epithelial layer is colonized and zonulin production is stimulated, leading to the leaky gut conditions mentioned above.

Gluten has 2 components, but the key one is Gliadin (a glycoprotein in wheat) which induces zonulin production. The passage of Gluten across the gut wall under these conditions results in the body mounting an immune response to gluten's presence leading to coeliac disease. Patients with coeliac disease have noticeably elevated zonulin levels.

For ELEVATED ZONULIN LEVELS:

Identify the possible cause/s (Gut microorganism imbalance or the presence of dietary Gluten/gliadin) and remove to reduce further damage.
If it's gluten for gluten sensitivity or coeliac disease, remove gluten.

Tests ordered: Zon

(*) Result outside normal reference range

(H) Result is above upper limit of reference rang