



Verisana LAB · c/o Brian Kalish · 818 N Quincy Street ·
Unit 806 · Arlington VA 22203

John Smith
1234 Main Street
ANYTOWN CA 45789

Surname, First name	Smith, John
DOB	01-07-1984
Sex	male
Laboratory #	4-1000
Date collected	01-30-2018
Date received	02-01-2018
Report date	02-09-2018

Laboratory report

Enclosed you will find the results of your laboratory examination. In addition to your results you will also receive a brief summary of the correlating effects, regarding the tested parameters. These are compiled without any knowledge on the clinical background and as such, may only be used as an interpretation aid. In case of health problems, please consult a doctor or practitioner for medical treatment and accompaniment for making the best decisions for your health. We explicitly warn against beginning, suspending or changing any medication or therapy without consulting your doctor or practitioner.

Test: Thyroid Test

Material: Blood spot **Date collected:** 02-01-2018

Analyte	Result	Reference range	Result
TSH	5.4 μ IU/ml	0.5-4.7 μ IU/ml	
fT3	1.7 pg/dl	2.1-4.2 pg/dl	
fT4	0.7 ng/dl	< 0.8-2.0 ng/dl	
aTPO	124IU/ml	< 60 IU/ml	

Thyroid Stimulating Hormone (TSH): TSH is a hormone produced by the pituitary gland in the brain that controls thyroid hormone production. To maintain stable amounts of thyroid hormones, the pituitary gland produces less TSH, when fT4 and fT3 levels increase, and more TSH, when fT4 and fT3 levels decrease. TSH is considered the most important indicator for thyroid conditions and is especially useful in the differential diagnosis of primary hypothyroidism from secondary hyperthyroidism. Primary hypothyroidism is due to the malfunctioning of the thyroid gland. It is usually characterized by

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significantly elevated TSH levels, and low fT4 and/or fT3 levels. Slightly elevated TSH levels alongside normal fT4 and fT3 concentrations are considered an early, mild form of hypothyroidism (subclinical hypothyroidism). In contrast, secondary hyperthyroidism is caused by disorders of the pituitary gland or hypothalamus. It is generally associated with increased TSH alongside high fT4 and/or fT3 values.

Free Triiodothyronine (fT3): T3 is a hormone secreted by the thyroid gland that regulates a few metabolic activities throughout the body. Almost all the T3 circulates tightly bound to protein. Only a small fraction is unbound and biologically active (fT3). Decreased fT3 levels can cause slower heart rate, constipation, and potentially weight gain. Abnormally low levels could indicate long-term illness, starvation or hypothyroidism.

Free Thyroxine (fT4): T4 is the predominant hormone produced by the thyroid gland. It appears to function as a pro-hormone for the more biologically active form T3. Only free thyroxine (fT4), that comprises a small fraction of total thyroxine, can be converted to T3. Low levels of fT4 may be caused by dietary issues, such as malnutrition or iodine deficiency. Strongly decreased values indicate hypothyroidism due to thyroid disease or pituitary gland disorders.

Thyroperoxidase antibody (aTPO): TPO is an enzyme involved in thyroid hormone synthesis. The determination of aTPO levels is the gold standard for detecting autoimmune thyroid disorders. Elevated aTPO levels are considered evidence of inflammation of the thyroid gland and often associated with autoimmune disorders, such as Graves' Disease or Hashimoto's Thyroiditis. In patients with normal TSH, fT3 and fT4 levels or with an early, mild form of hypothyroidism (subclinical hypothyroidism), the presence of elevated aTPO levels, predicts a higher risk of developing overt hypothyroidism.