

Pre-Diabetes Report

Jane Doe

Date Collected: 8/12/2016

SAMPLE

Pre-Diabetes Report PATIENT COPY

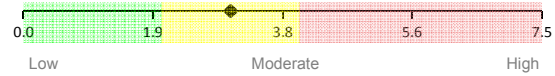
Patient Name: Doe, Jane
Patient DOB: 5/14/1961
Physician

BMI:
Gender: F

Batch Number:
Accession Number:
Date Received: 8/13/2016
Report Date: 8/16/2016

Pre-Diabetic Risk Score

3.0



This score is a way to estimate your risk of developing diabetes and associated complications such as heart disease or stroke. It is based upon your test results in the pre-diabetes and lipoprotein profile sections of this report, which are indicators of your ability to metabolize food (glycemic control) and transport fats (lipoproteins) in your blood. The following tests have the largest impact on your pre-diabetes risk score: hemoglobin A1c, fasting blood sugar and metabolic syndrome traits. Factors that significantly affect your pre-diabetic risk but that are not included in this risk score include weight, blood pressure (hypertension), smoking, inflammation and family history.

Test		Pre-Diabetes Biomarkers		Patient Results	Reference Value
Triglycerides	mg/dL			226	30 - 150
HDL	mg/dL			32	>40
Insulin	μIU/mL			18.5	< 21.0
Glucose	mg/dL			99	70 - 105
Hemoglobin A1c	%			5.7	<5.6
Adiponectin *	μg/mL		[1]	7.6	5.5 - 26.0
C-Peptide	ng/mL			3.95	0.70 - 7.10

* For research use only

[1] The height and weight were not provided for this patient. As a result, the reference range for adiponectin could not be appropriately reported and the BMI could not be calculated.

PreDiabetes Report Physician Copy

Patient Name: Doe, Jane
Patient DOB: 5/14/1961
Physician

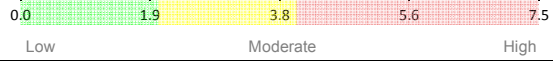
BMI:
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Test Component		Flag	Result	Reference Range
Triglycerides mg/dL		H	226	30 - 150
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PATIENT COPY

Component Summaries

This information is provided for educational purposes.

Insulin

Insulin is a hormone that allows blood sugar to be utilized by muscle, liver and fat cells throughout the body. Its main function is to regulate plasma glucose levels within a narrow range and therefore tells a lot about the efficiency with which a person can metabolize carbohydrates. Especially in persons without diabetes, elevated fasting insulin can facilitate diagnosis of insulin resistance, which predisposes a person to both cardiovascular disease, stroke and diabetes. Insulin levels can be elevated for two reasons: the body is de-sensitized to the action of insulin (insulin resistance), or blood sugar levels are high enough to warrant excess release of insulin in order to process the glucose in the bloodstream. In the absence of full-blown diabetes, to which high insulin is a precursor, the primary line of therapy is lifestyle changes – specifically weight loss, when visceral adiposity (fat in the midsection) is present, and exercise.

Glucose

Blood glucose (also known as blood sugar) is a measure of the amount of glucose circulating in blood plasma. Since the body's tendency toward homeostasis tightly regulates blood sugar levels, too much or too little blood sugar can indicate a metabolic abnormality. Abnormally low fasting blood sugar (hypoglycemia) can be caused by certain medications, excess alcohol intake, hormone deficiencies, severe illness, pancreatic tumors or severely restricted caloric intake. High fasting glucose can be indicative of a person with decreased sensitivity to endogenous insulin, which is a hallmark of insulin resistance, and eventually diabetes.

Hemoglobin A1c

HbA1c is a marker for the average blood glucose level over the previous 2-3 months, but weighted heavily for the previous 2-4 weeks. HbA1c is considered a relatively long term marker of glycemic control compared to glucose levels and is also considered a good test for measuring blood sugar control in known diabetics. In addition, some consider HbA1c a valuable marker for accelerated aging since it is an indicator of the damaging effects of glycation in the body. Advanced glycation end products, including HbA1c, have been linked to chronic diseases such as cardiovascular disease, diabetes, cancer and neurodegeneration. In diabetics, high levels strongly increase the risk of diabetic complications such as heart disease, neuropathy, retinopathy (blindness) and nephropathy (kidney disease).

C-Peptide

C-peptide, which is a precursor to the insulin molecule, is a measure of endogenous (from the patient's own pancreas, not from an injection or pill) insulin production and secretion. C-peptide levels help distinguish between type 1 diabetes (an autoimmune disorder where the pancreas cannot produce enough insulin) and type 2 diabetes (a disorder in blood sugar metabolism where the pancreas produces plenty of insulin but the body is resistant to it.) Type 1 diabetics will typically have low C-peptide levels because their pancreas is unable to produce insulin. Type 2 diabetics will typically have normal or high C-peptide levels. C-peptide is also useful in diagnosing the cause of hypoglycemia (low blood sugar) in the absence of type 1 or 2 diabetes, specifically in the case of insulinoma (a tumor of the pancreatic β -cells).

Adiponectin

Adiponectin is a peptide hormone produced by adipocytes (fat cells) whose main function is to help muscles use glucose for energy. It tells cells to burn glucose and fatty acids (carbs and fats) for fuel. High levels of adiponectin are good, as it is an indicator of efficient cellular energy production and metabolism. Excess body fat will naturally secrete inflammatory enzymes, which suggests an intricate relationship between low adiponectin, high inflammation and obesity. Factors that increase adiponectin include weight loss, exercise, certain vitamins and minerals, omega 3 fatty acids, intermittent fasting and some diabetic medications.

Metabolic Syndrome Traits

A diagnosis of metabolic syndrome, which is a condition where a person's overall metabolism does not function properly and predisposes them to diabetes, is confirmed if any three of the following five traits exist in a patient: 1) high triglycerides (2) high fasting glucose (3) low HDL (4) high blood pressure or (5) high waist circumference. SpectraCell's Cardiometabolic Test measures the first three of these five traits and lists how many of these three metabolic syndrome traits are present using blood drawn from the patient. Metabolic syndrome traits (4) and (5) above can easily be measured during a patient's physical examination.

Triglycerides

Triglycerides are the major transporters of dietary fats throughout the bloodstream as well as the main storage unit for fat in adipose tissue (fat cells). Elevated triglycerides are a major risk factor for heart disease and diabetes since they are indicative of abnormal lipoprotein metabolism. Through a complex metabolic interaction, triglycerides promote the formation of small, dense LDL particles, which are particularly dangerous. Diets high in carbohydrates or excessive alcohol will increase triglyceride levels, while omega 3 fatty acids can reduce triglyceride levels substantially in a dose-dependent manner. Exercise can also lower triglycerides.