



Lab Results for Jason Sissel

Last Test Date: 2014-11-18

Vital Signs

While vital signs often do not give as much specific information as blood tests, they are commonly tracked as macroscopic measures of health.

Weight

Weight Your weight		177
Body Mass Index Measure of weight to hei...		25.4

Cardiovascular Health

Your cardiovascular system is made up of your heart and blood vessels, and is responsible for transporting oxygen, nutrients, hormones, and waste products throughout the body. A healthy cardiovascular system ensures a good balance of nutrients and optimal brain and body function.

Basic Lipid Panel

The basic lipid panel includes cholesterol levels (both the good HDL and the bad LDL and other non-HDL cholesterol), as well as triglycerides. Elevated levels of triglycerides or non-HDL cholesterol can increase your risk of cardiovascular disease, which can lead to heart attacks and strokes. Higher levels of artery-clearing HDL, however, can reduce this risk.

Total to HDL Ratio Total Cholesterol to HDL...		5.9
Triglycerides to H... Ratio of Triglycerides to ...		8.6
HDL "Good" Cholesterol		45
LDL Less Healthy Low-Densit...		143
Triglycerides Type of Fat		386
Total Cholesterol A Type of Fat		265
Non-HDL Choleste... All Less Healthy Cholest...		220


LDL Particles

Higher levels of LDL or “bad” cholesterol can result in increased amounts of plaque in your blood vessels, which can obstruct blood and oxygen flow to vital organs. While almost half of those with heart attacks have normal basic lipid panels, two-thirds of heart-attack victims have elevations in other types of LDL particles. By reducing those deeper LDL numbers, you can reduce your risk of a heart attack and stroke.

Apo B Protein in LDL ("Bad") Ch...		143
Lp(a) Different Form of LDL		12




HDL Particles

High density lipoprotein particles are often referred to as "good cholesterol" because they are associated with a lower risk of developing cardiovascular disease.

Apo A1 Protein in HDL ("Good") ...		168
--	--	-----

Inflammation

Inflammation is your body’s reaction to stress or injury. Though inflammation can be helpful in the short-term, long-term inflammation can be harmful and contribute to many chronic diseases, such as cardiovascular disease, cancer, diabetes, dementia, and osteoporosis.

hs-CRP General Inflammation Ma...		0.4
Lp-PLA2 Marker of Inflamed Vess...		203
Homocysteine Inflammation marker		10.5
Fibrinogen Inflammation marker imp...		232

Fatty Acids

Fatty Acids are oily substances that help build cell membranes, though in excess increase deposits in blood vessels leading to cardiovascular disease.


Free Fatty Acids

Free fatty acids (FFAs) enter the bloodstream when fat is metabolized, or broken down. An excess amount of free fatty acids can increase clogging deposits in blood vessels leading to cardiovascular disease.

Free Fatty Acids Fatty acids		0.54
--	--	------

Index

The omega-3 index is an indicator of how much of two fatty acids, EPA and DHA, you have in your blood. Studies have found that a lower omega-3 index may be linked to a higher risk of sudden cardiac death. Increasing your EPA and DHA intake could be beneficial to your cardiovascular health.

Omega Index Amount of omega-3 fatty...		1.4
Omega Risk Risk based on omega pr...		Moderate

Omega-3 Fatty Acids

Eicosapentaenoic ... Omega-3 fatty acid		0.2
Docosahexaenoic ... Omega-3 fatty acid		1.1

Omega-6 Fatty Acids

Omega-6 fatty acids (FAs) are essential fatty acids: your body needs them but cannot make them. Recent studies suggest that omega-6 FAs can lower your LDL, or "bad," cholesterol and reduce the risk for heart-related health conditions.

Arachidonic acid Omega-6 fatty acid		0.3
---	--	-----

Fatty Acids Ratios

The fatty acids ratios can help you and your health care provider gain more information about the fatty acids (FAs) within your body. One ratio may be a predictor for heart-related medical problems; another measures FAs that may benefit your heart health.

Omega-6:Omega-3... unsaturated fatty acid ratio		9.1
AA:EPA Ratio Ratio of two fatty acids		1.5

Metabolic Health

Metabolism is your body's way of chemically processing sugar and fat for use throughout the body as energy. An optimal metabolism supports healthy weight control and energy levels, while a dysfunctional metabolism can lead to undesired fluctuations in weight and fatigue or hyperactivity.

Diabetes & Insulin Resistance

High blood sugar can lead to cardiovascular disease, kidney disease, blindness, or ulcers. Insulin, a hormone created in the pancreas, helps the body use or store blood glucose from food. Insulin resistance can lead to higher levels of insulin and blood sugar, resulting in type 2 diabetes.

Insulin Blood sugar storage hor...		<2
Hemoglobin A1c (...) Average blood sugar level		5.7
Glucose Blood Sugar		90

Thyroid

The thyroid gland is your body's regulator of metabolism. An underactive thyroid, or hypothyroid, can result in low energy, weight gain, and cold intolerance, while an overactive thyroid, or hyperthyroid, can cause hyperactivity, undesired weight loss, and heat intolerance.

TSH Thyroid-Stimulating Hor...		4.73
Triiodothyronine (...) Total triiodothyronine (T3)		80
Free T3 Available T3		3.2
T-Uptake Thyroxine Binding Sites		37
Thyroxine (T4, total) Total thyroxine (T4) level		7.5
Free T4 Available T4		1.7
Free Thyroxine Ind... A Thyroxine Index		2.8
Reverse T3 Reverse T3, Serum		24

Metabolic Hormones

Hormones influence how you metabolize fat, sugar, and protein to produce and store energy, and build tissues such as fat or muscle. Hormonal imbalance can lead to excess fat storage or the inability to gain muscle.

Cortisol The body's main stress h...		14.6
Insulin Blood sugar storage hor...		< 2
Insulin-Like Growt... A Measure of Growth Ho...		154
Z score IGF-1 compared to others		0.2

Reproductive Hormones

Reproductive hormones are controlled and produced by a complex interaction of your brain, adrenal glands, and reproductive organs. An imbalance in these hormones can affect many important functions, including overall growth and muscle gain, metabolism, mood, libido, and reproductive health.

Estradiol Main female sex hormone		31
Progesterone		< 0.5
FSH Follicle-stimulating horm...		2.5
Luteinizing Hormo... Sex Hormone		3
Free Testosterone Active Unbound Tesoter...		148.1
Testosterone (total) Steroid hormone		744
DHEA-S DHEA Sulfate (androgen)		145
SHBG Sex Hormone Binding Gl...		30

Liver Health

Your liver's main function is to filter blood coming from the digestive tract before passing it throughout the body. A vital organ, your liver is also responsible for detoxifying chemicals, metabolizing drugs, producing proteins, and more. Liver dysfunction can have a negative impact on your immune system and energy levels and can lead to liver disease and cancer.

Liver Enzymes and Function Tests

Liver enzymes help monitor liver function and liver inflammation, most commonly from medications, infections, or excess fat on the body. A marked elevation in liver enzymes can signify liver dysfunction.

ALT / SGPT Alanine aminotransferase		49
ALP Alkaline Phosphatase		46
AST / SGOT Aspartate aminotransfer...		24
Bilirubin (total) Made by the liver to help...		0.7
Albumin Type of protein in blood		4.6
Total Protein Total protein amount (se...		7.3
Globulin Immune protein		2.7
A/G Ratio Proportion, albumin/glob...		1.7

Kidney Health

Your kidneys help maintain blood pressure, keep the blood's acid-base level within a healthy range, and filter the blood so nutrients are absorbed and waste is passed out of the body as urine.

Kidney Function

Your kidney function reflects how well your kidneys are filtering your blood. Abnormal kidney function could result in the accumulation of waste products in the body, which can cause fatigue, headaches, nausea, and more.

Creatinine (serum) Creatinine in your blood		0.94
eGFR Marker for kidney function		102
eGFR (African Ame...) eGFR if African American		119
BUN Blood Urea Nitrogen		12
Albumin Type of protein in blood		4.6

Electrolytes

An electrolyte imbalance can lead to an imbalance in your body's acid-base status, hydration, or conduction of charges across cells, all of which are essential, especially with increased activity.

Electrolytes

An electrolyte imbalance can lead to an imbalance in your body's acid-base status, hydration, or conduction of charges across cells, all of which are essential, especially with increased activity.

Sodium An electrolyte outside c...		136
Potassium An electrolyte inside cells		4
Chloride Balances other electroly...		99
CO2 Carbon dioxide in blood		29
Calcium Blood and Bone Mineral		9.7

Bone Health

Your bones play many roles in your body, from storing minerals to protecting organs such as the brain. Bone markers are indicators of how well bone tissue is being removed and replaced, aka "bone remodeling." Significantly abnormal marker levels suggest possible bone disorders.

Bone

Bones are primarily made of calcium, supported by vitamin D, and regulated through constant bone remodeling. When bones remodel excessively or become inflamed, there may be large elevations in an enzyme called ALP (alkaline phosphatase).

25-Hydroxy Vitami... Precursor to vitamin D		11
25-hydroxy Vitami... Vitamin D found in plant...		< 4
25-hydroxy Vitami... Vitamin D from sunlight ...		11
Calcium Blood and Bone Mineral		9.7
ALP Alkaline Phosphatase		46

Blood Health

Your blood consists of two main components: the cellular components (red blood cells, white blood cells, and the cell fragments known as platelets); and the liquid component, called plasma. Together, these two parts of the blood are responsible for many functions, including oxygen transport, temperature regulation, blood clotting, and immune defense.












Platelets

Platelets help form blood clots at the site of an injured blood vessel. Knowing your platelet count, as well as how large your platelets are, may help reveal any bleeding or clotting problems.

Platelet Count Clot-forming cell fragme...		169
Mean Platelet Volu... Average platelet size		9








White Blood Cells

Your white blood cells are responsible for protecting your body from disease and foreign materials. A low white blood cell count is a decrease in the disease-fighting cells your body depends on, while an overproduction of white blood cells could indicate the presence of diseases like leukemia.

White Blood Cell C... Immune system cells		6
Neutrophil Count (...) Type of white blood cell		2.382
% Neutrophil Part of WBC differential		39.7
Lymphocyte Count... Calculation of WBC type		2.628
% Lymphocytes Part of WBC differential		43.8
Monocytes (absolu... type of white blood cell		0.438
% Monocytes Part of WBC differential		7.3
Eosinophil (absolu... Calculation of WBC type		0.486
% Eosinophils Part of WBC differential		8.1
Basophil (absolute) Calculation of WBC type		0.066
% Basophils Part of WBC differential		1.1

Red Blood Cells

Red blood cells are the most numerous cell type in your blood and have one main role: to carry oxygen to tissues in your body and transport carbon dioxide back to the lungs to be exhaled. If your blood lacks enough healthy red blood cells, you may be anemic.

Hematocrit Fraction of red blood cells		48.2
RBC Red blood cell count		5.27
Hemoglobin Protein in red blood cells		16.3
MCV Mean corpuscular volume		91.4
MCH Mean cell hemoglobin		30.9
MCHC RBC hemoglobin concen...		33.8
RDW Red cell distribution width		13.6

Iron

Iron is an essential mineral needed to form hemoglobin, the main protein found in red blood cells. Iron deficiency can lead to anemia, while excess iron can be toxic to the liver or other organs.

Iron (serum) Iron in liquid part of blood		149
Ferritin Iron storage protein		132
Total Iron Binding ... Estimates Transferrin level		354
Iron Saturation The percent of Iron trans...		42

Vitamins & Minerals

Vitamins and minerals are substances obtained from food and supplements needed for normal growth and body processes. Deficiencies in certain vitamins and minerals can interfere with normal body function.

Vitamins

Vitamins are organic substances required for normal health and function. For example, vitamin B12 is essential for cellular development, including the development of red and white blood cells. Deficiency in B12 can lead to anemia and immune dysfunction.

Folate Folic Acid		10.9
25-Hydroxy Vitami... Precursor to vitamin D		11
25-hydroxy Vitami... Vitamin D found in plant...		< 4
25-hydroxy Vitami... Vitamin D from sunlight ...		11
Vitamin B12 Essential nutrient for cells		415

Minerals

Minerals are inorganic substances needed for many of your body's processes such as cellular development, carrying oxygen to tissues, and bone growth. Mineral deficiencies result in weak bones, organ malfunction, and poor cellular development, which can cause conditions such as anemia.

RBC Magnesium The Magnesium in our c...		4
Calcium Blood and Bone Mineral		9.7

Lab Notes

2014-11-18 LDL

Desirable range <100 mg/dL for patients with CHD or diabetes and <70 mg/dL for diabetic patients with known heart disease.

2013-10-30 LDL

Desirable range <100 mg/dL for patients with CHD or diabetes and <70 mg/dL for diabetic patients with known heart disease.

2014-11-18 Non-HDL Cholesterol (Calculated)

Target for non-HDL cholesterol is 30 mg/dL higher than LDL cholesterol target.

2013-10-30 Non-HDL Cholesterol (Calculated)

Target for non-HDL cholesterol is 30 mg/dL higher than LDL cholesterol target.

2014-11-18 hs-CRP

Lower relative cardiovascular risk according to AHA/CDC guidelines. For ages >17 Years: hs-CRP mg/L Risk According to AHA/CDC Guidelines <1.0 Lower relative cardiovascular risk. 1.0-3.0 Average relative cardiovascular risk. 3.1-10.0 Higher relative cardiovascular risk. Consider retesting in 1 to 2 weeks to exclude a benign transient elevation in the baseline CRP value secondary to infection or inflammation. >10.0 Persistent elevation, upon retesting, may be associated with infection and inflammation.

2013-10-30 hs-CRP

Lower relative cardiovascular risk according to AHA/CDC guidelines. For ages >17 Years: cCRP mg/L Risk According to AHA/CDC Guidelines <1.0 Lower relative cardiovascular risk. 1.0-3.0 Average relative cardiovascular risk. 3.1-10.0 Higher relative cardiovascular risk. Consider retesting in 1 to 2 weeks to exclude a benign transient elevation in the baseline CRP value secondary to infection or inflammation. >10.0 Persistent elevation, upon retesting, may be associated with infection and inflammation.

2013-10-30 Free Fatty Acids

SAMPLE SLIGHTLY LIPEMIC.

2013-10-30 Omega Risk

The Omega-3 Index is associated with a moderate risk of cardiovascular disease because it is in the central two population quartiles. The Omega-3 Index categories are based on the top (75th percentile) and bottom (25th percentile) quartiles of the reference population. Consumption of foods high in omega-3 fatty acids (EPA and DHA) or supplements containing omega-3 fatty acids can increase the Omega-3 Index. Index <1.1: High Index 1.1-3.3: Moderate Index >3.3: Low

2013-10-30 Insulin

Insulin analogues may demonstrate non-linear cross-reactivity in this assay. Interpret results accordingly.

2014-11-18 Hemoglobin A1c (HbA1c)

According to ADA guidelines, hemoglobin A1c <7.0% represents optimal control in non-pregnant diabetic patients. Different metrics may apply to specific patient populations. Standards of Medical Care in Diabetes-2013. Diabetes Care. 2013;36:s11-s66 For the purpose of screening for the presence of diabetes <5.7% Consistent with the absence of diabetes 5.7-6.4% Consistent with increased risk for diabetes (prediabetes) >or=6.5% Consistent with diabetes This assay result is consistent with an increased risk of diabetes. Currently, no consensus exists for use of hemoglobin A1c for diagnosis of diabetes for children.

2013-10-30 Hemoglobin A1c (HbA1c)

According to ADA guidelines, hemoglobin A1c <7.0% represents optimal control in non-pregnant diabetic patients. Different metrics may apply to specific patient populations. Standards of Medical Care in Diabetes-2013. Diabetes Care. 2013;36:s11-s66 For the purpose of screening for the presence of diabetes <5.7% Consistent with the absence of diabetes 5.7-6.4% Consistent with increased risk for diabetes (prediabetes) >or=6.5% Consistent with diabetes This assay result is consistent with a decreased risk of diabetes. Currently, no consensus exists for use of hemoglobin A1c for diagnosis of diabetes for children.

2014-11-18 Glucose

Fasting reference interval

2013-10-30 Glucose

Fasting reference interval

2013-10-30 Cortisol

Reference Range: For 8 a.m.(7-9 a.m.) Specimen: 4.0-22.0 Reference Range: For 4 p.m.(3-5 p.m.) Specimen: 3.0-17.0 * Please interpret above results accordingly *

2013-10-30 Z score

This test was developed and its performance characteristics have been determined by Quest Diagnostics Nichols Institute, San Juan Capistrano. Performance characteristics refer to the analytical performance of the test.

2013-10-30 Estradiol

Reference range established on post-pubertal patient population. No pre-pubertal reference range established using this assay. For any patients for whom low Estradiol levels are anticipated (e.g. males, pre-pubertal children and hypogonadal/post-menopausal females), the Quest Diagnostics Nichols Institute Estradiol, Ultrasensitive, LCMSMS assay is recommended (order code 30289).

2013-10-30 Testosterone (total)

For more information on this test, go to <http://education.questdiagnostics.com/faq/ TotalTestosteroneLCMSMS>

2014-11-18 25-hydroxy Vitamin D2

25-OHD3 indicates both endogenous production and supplementation. 25-OHD2 is an indicator of exogenous sources such as diet or supplementation. Therapy is based on measurement of Total 25-OHD, with levels <20 ng/mL indicative of Vitamin D deficiency, while levels between 20 ng/mL and 30 ng/mL suggest insufficiency. Optimal levels are > or = 30 ng/mL.

2013-10-30 25-hydroxy Vitamin D2

25-OHD3 indicates both endogenous production and supplementation. 25-OHD2 is an indicator of exogenous sources such as diet or supplementation. Therapy is based on measurement of Total 25-OHD, with levels <20 ng/mL indicative of Vitamin D deficiency, while levels between 20 ng/mL and 30 ng/mL suggest insufficiency. Optimal levels are > or = 30 ng/mL.

2013-10-30 Folate

Reference Range Low: <3.4 Borderline: 3.4-5.4 Normal: >5.4