



Lab Results for Ben Greenfield

DOB: 1981-12-20

Last Test Date: 2018-10-08

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.

	Nov 2017	Apr 2018	Sep 2018	High Risk	Moderate	Low Risk
Total Cholesterol <i>A Type of Fat</i>	224	248	267	≥ 240	200 - 240	< 200
LDL <i>Less Healthy Low-Density Lipoprotein</i>	77	100	102	≥ 130	100 - 130	< 100
HDL <i>"Good" Cholesterol</i>	134	132	151	< 40	40 - 60	≥ 60
Triglycerides <i>Type of Fat</i>	44	69	47	≥ 200	150 - 200	< 150
Total to HDL Ratio <i>Total Cholesterol to HDL Ratio</i>	1.7	1.9	1.8	≥ 5		< 5
Triglycerides to HDL Ratio <i>Ratio of Triglycerides to HDL</i>		0.5	0.3	≥ 4.1	2 - 4.1	< 2
Non-HDL Cholesterol (C...) <i>All Less Healthy Cholesterol</i>	90	116	116	≥ 160	130 - 160	< 130

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.

	Jul 2016	Aug 2017	Sep 2018	High Risk	Moderate	Low Risk
Apo B <i>Protein in LDL ("Bad") Cholesterol</i>	68	56	85	≥ 120	80 - 120	< 80
Lp(a) <i>Different Form of LDL</i>	< 10	34	10	≥ 75		< 75
Peak LDL Size <i>The size of LDL particles</i>	210.3	213.3	220.5	< 218.2	218.2 - 222.5	≥ 222.5
vLDL-C <i>Precursor to LDL Cholesterol</i>				< 5 or ≥ 41		5 - 41
LDL Particles <i>Number of LDL Particles</i>	1060	860	1048	≥ 1538	1260 - 1538	< 1260
LDL Phenotype <i>LDL Size Pattern</i>	B	B	A	B		A
Small LDL <i>Small Low-Density Lipoprotein</i>	177	136	167	≥ 217	162 - 217	< 162
Medium LDL <i>Medium Low-Density Lipoprotein</i>	162	144	185	≥ 271	201 - 271	< 201

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.

	Jul 2016	Aug 2017	Sep 2018	High Risk	Moderate	Low Risk
Apo A1 <i>Protein in HDL ("Good") Cholesterol</i>	166	216	234	< 114	114 - 132	≥ 132
Large HDL <i>Large High-Density Lipoprotein</i>	5811	12106	9526	< 6996	6996 - 9386	≥ 9386

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.

	Aug 2017	Nov 2017	Sep 2018	High Risk	Moderate	Low Risk
hs-CRP <i>General Inflammation Marker</i>	0.8	< 0.2	0.5	≥ 3	1 - 3	< 1
Homocysteine <i>Inflammation marker</i>	6.5		9.1	≥ 14	11 - 14	< 11
Fibrinogen <i>Inflammation marker important in bloo...</i>	403		310	≥ 465	391 - 465	< 391

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.

	Aug 2017	Sep 2018	High Risk	Moderate	Low Risk
Free Fatty Acids <i>Fatty acids</i>	0.5	0.17	≥ 0.71	0.6 - 0.71	< 0.6

Index

The omega-3 index is an indicator of the amount of two fatty acids in your red blood cells: the omega-3 fatty acids called eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). A lower index value indicates that you have less EPA and DHA in your red blood cells compared to other fatty acids. Studies have found that lower omega-3 index values may be linked to a higher risk of sudden cardiac death.

	Aug 2017	Nov 2017	Sep 2018	High Risk	Moderate	Low Risk
Omega Index <i>Amount of omega-3 fatty acids</i>	2.9	5.6	7.8	< 2.2	2.2 - 3.2	≥ 3.2
Omega Risk <i>Risk based on omega profile</i>	Moderate	Low	Low		Low	

Omega-3 Fatty Acids

Omega-3 Fatty Acids are essential fatty acids since the body can not make them on its own. These fatty acids are considered protective of the heart, and can lower the risk of many chronic diseases. Most of us do not consume as much of these fatty acids as our ancestors likely consumed.

	Aug 2017	Nov 2017	Sep 2018	High Risk	Moderate	Low Risk
Eicosapentaenoic acid (E...) <i>Omega-3 fatty acid</i>	1	2.9	4.3	< 0.2 or ≥ 1.5		0.2 - 1.5

Docosahexaenoic acid (...) <i>Omega-3 fatty acid</i>	%	1.9	2.7	3.5	< 1.2 or ≥ 3.9	1.2 - 3.9
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Omega-6 Fatty Acids

Omega-6 fatty acids (FAs) are essential fatty acids: your body needs them but cannot make them. Instead, omega-6 FAs must come from your diet. When eaten in moderation, these fatty acids can lower your LDL, or "bad," cholesterol and reduce the risk for heart-related health conditions, but there is concern that many consume an excess of these fatty acids, which can potentially cause more harm than good.

		Aug 2017	Nov 2017	Sep 2018	High Risk	Moderate	Low Risk
Arachidonic acid <i>Omega-6 fatty acid</i>	%	5	5.4	5.4	< 5.2 or ≥ 12.9		5.2 - 12.9

Fatty Acids Ratios

		Aug 2017	Nov 2017	Sep 2018	High Risk	Moderate	Low Risk
Omega-6:Omega-3 Ratio <i>unsaturated fatty acid ratio</i>		7.8	4.9	3.5	< 5.7 or ≥ 21.3		5.7 - 21.3
EPA:AA Ratio <i>Ratio of two fatty acids</i>		0.2	0.5	0.8	< 0.2		≥ 0.2

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.

		Apr 2018	Sep 2018	Oct 2018	High Risk	Moderate	Low Risk
Insulin <i>Blood sugar storage hormone</i>	mIU/L		2.5		≥ 24	9 - 24	< 9
Hemoglobin A1c (HbA1c) <i>Average blood sugar level</i>	%		5.2		≥ 6.5	5.7 - 6.5	< 5.7
Glucose <i>Blood Sugar</i>	mg/dL	92	90	50	< 40 or ≥ 126	40 - 50 or 100 - 126	50 - 100
HOMA-IR SCORE <i>Predicting risk of insulin resistance an...</i>			0.6	0.3	≥ 2.9	1.9 - 2.9	< 1.9

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.

		Aug 2017	Apr 2018	Sep 2018	High Risk	Moderate	Low Risk
TSH <i>Thyroid-Stimulating Hormone</i>	mIU/L	1.08	3.41	3.69	< 0.45 or ≥ 4.21		0.45 - 4.21
Triiodothyronine (T3, total) <i>Total triiodothyronine (T3)</i>	ng/dL	83		45	< 71 or ≥ 201	71 - 80 or 181 - 201	80 - 181
Free T3 <i>Available T3</i>	pg/mL	2.5	2.2	1.7	< 2.3 or ≥ 4.2		2.3 - 4.2
T-Uptake <i>Thyroxine Binding Sites</i>	%	32		32	< 20 or ≥ 40	20 - 24 or 36 - 40	24 - 36

Thyroxine (T4, total) <i>Total thyroxine (T4) level</i>	$\mu\text{g/dL}$	7.1		5.3	< 4.5 or \geq 11.8	4.5 - 11.8
Free T4 <i>Available T4</i>	ng/dL	1	1	0.8	< 0.81 or \geq 1.78	0.81 - 0.93 or 1.71 - 1.78
Thyroid Peroxidase AB <i>An antibody to a thyroid enzyme</i>	IU/mL	6		3	\geq 34	< 34
Free Thyroxine Index <i>A Thyroxine Index</i>		2.3		1.7	< 0.4 or \geq 5.5	0.4 - 5.5
Reverse T3 <i>Reverse T3, Serum</i>	ng/dL	36		11	< 9.2 or \geq 24.2	9.2 - 24.2
Anti-Thyroglobulin Antib... <i>Antibodies to thyroid proteins</i>	IU/mL	< 1		< 1	\geq 1.1	< 1.1

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.

		Nov 2017	Apr 2018	Sep 2018	High Risk	Moderate	Low Risk
Cortisol <i>Primary stress hormone</i>	$\mu\text{g/dL}$			24	< 2.3 or \geq 19.5		2.3 - 19.5
Insulin <i>Blood sugar storage hormone</i>	mIU/L	2.2		2.5	\geq 24	9 - 24	< 9
Insulin-Like Growth Fact... <i>A Measure of Growth Hormone</i>	ng/mL	99	84	97	< 117 or \geq 330		117 - 330
Z score <i>IGF-1 compared to others</i>		-0.8	-1.1	-0.8	< -2 or \geq 2		-2 - 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.

		Apr 2018	Sep 2018	Oct 2018	High Risk	Moderate	Low Risk
Estradiol <i>Main female sex hormone</i>	pg/mL	26	27	36	< 12 or \geq 39		12 - 39
Progesterone	ng/mL				< 0.2 or \geq 1.4		0.2 - 1.4
FSH <i>Follicle-stimulating hormone</i>	mIU/mL				< 1.6 or \geq 8		1.6 - 8
Luteinizing Hormone (LH) <i>Sex Hormone</i>	mIU/mL	0.5	1.8		< 1.7 or \geq 8.6		1.7 - 8.6
Free Testosterone <i>Active Unbound Testosterone</i>	pg/mL	73.1	78.5	115.3	< 46 or \geq 224		46 - 224
Testosterone (free) <i>Unbound Testosterone</i>	ng/dL				< 4.7 or \geq 24.5		4.7 - 24.5
Testosterone (total) <i>Steroid hormone</i>	ng/dL	800	881	1154	< 290 or \geq 1301		290 - 1301
DHEA-S <i>Adrenal Hormone</i>	$\mu\text{g/dL}$		319	275	< 89 or \geq 428		89 - 428
SHBG <i>Sex Hormone Binding Globulin</i>	nmol/L		84	66	< 10 or \geq 51		10 - 51

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.

	Apr 2018	Sep 2018	Oct 2018	High Risk	Moderate	Low Risk	
ALT / SGPT <i>Alanine aminotransferase</i>	IU/L	55	83	33	< 0 or ≥ 55	0 - 8 or 41 - 55	8 - 41
ALP <i>Alkaline Phosphatase</i>	IU/L	29	30	34	< 25 or ≥ 150	25 - 40 or 129 - 150	40 - 129
AST / SGOT <i>Aspartate aminotransferase</i>	IU/L	75	172	37	≥ 40		< 40
Bilirubin (total) <i>Made by the liver to help digest fat.</i>	mg/dL	0.5	0.5	0.7	< 0 or ≥ 1.3	0 - 0.2 or 1.2 - 1.3	0.2 - 1.2
Albumin <i>Type of protein in blood</i>	g/dL	4.7	5	5	< 3.5		≥ 3.5
Total Protein <i>Total protein amount (serum)</i>	g/dL	7	7.4	7.2	< 6 or ≥ 8.6		6 - 8.6
GGT (γ-GT) <i>Gamma-glutamyl transferase</i>	IU/L			15	≥ 65		< 65
Globulin <i>Immune protein</i>	g/dL	2.3	2.4	2.2	< 1.5 or ≥ 4.6		1.5 - 4.6
A/G Ratio <i>Proportion, albumin/globulin</i>		2	2.1	2.3	< 1.1 or ≥ 2.6		1.1 - 2.6

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.

	Apr 2018	Sep 2018	Oct 2018	High Risk	Moderate	Low Risk	
Creatinine <i>Creatinine in your blood</i>	mg/dL	1.36	1.23	1.28	≥ 1.2		< 1.2
eGFR <i>Marker for kidney function</i>	mL/min/1.73m ²	66	75	72	< 60		≥ 60
eGFR (African American ...) <i>eGFR if African American</i>	mL/min/1.73m ²	77	87	83	< 60		≥ 60
BUN <i>Blood Urea Nitrogen</i>	mg/dL	24	22	26	< 6 or ≥ 21		6 - 21
Albumin <i>Type of protein in blood</i>	g/dL	4.7	5	5	< 3.5		≥ 3.5
Uric Acid <i>Purine Breakdown Product</i>	mg/dL		6.6		< 3.7 or ≥ 8.7		3.7 - 8.7
BUN/Creatinine Ratio <i>BUN / Creatinine Serum</i>		18		20	< 9 or ≥ 21		9 - 21

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.

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	Apr 2018	Sep 2018	Oct 2018	High Risk	Moderate	Low Risk
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Sodium <i>An electrolyte outside cells</i>	mmol/L	136	136	139	< 133 or ≥ 146	133 - 146
Potassium <i>An electrolyte inside cells</i>	mmol/L	4.9	4.4	4.4	< 3.5 or ≥ 5.1	3.5 - 5.1
Chloride <i>Balances other electrolytes</i>	mmol/L	102	103	104	< 97 or ≥ 109	97 - 109
CO2 <i>Carbon dioxide in blood</i>	mmol/L	27	21	31	< 22 or ≥ 30	22 - 30
Calcium <i>Blood and Bone Mineral</i>	mg/dL	9.6	9.3	9.9	< 8.7 or ≥ 10.3	8.7 - 10.3

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).

		Apr 2018	Sep 2018	Oct 2018	High Risk	Moderate	Low Risk
25-Hydroxy Vitamin D <i>Precursor to vitamin D</i>	ng/mL		52		< 30 or ≥ 100		30 - 100
25-hydroxy Vitamin D2 <i>Vitamin D found in plants and supple...</i>	ng/mL				≥ 100		< 100
25-hydroxy Vitamin D3 <i>Vitamin D from sunlight and meat</i>	ng/mL				≥ 100		< 100
Calcium <i>Blood and Bone Mineral</i>	mg/dL	9.6	9.3	9.9	< 8.7 or ≥ 10.3		8.7 - 10.3
ALP <i>Alkaline Phosphatase</i>	IU/L	29	30	34	< 25 or ≥ 150	25 - 40 or 129 - 150	40 - 129

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.

		Dec 2017	Apr 2018	Sep 2018	High Risk	Moderate	Low Risk
Platelet Count <i>Clot-forming cell fragments</i>	$\times 10E3/\mu L$	453	283	261	< 155 or ≥ 379		155 - 379
Mean Platelet Volume (...) <i>Average platelet size</i>	fL	8	8.3	10.8	< 7.5 or ≥ 11.6		7.5 - 11.6

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.

		Dec 2017	Apr 2018	Sep 2018	High Risk	Moderate	Low Risk
White Blood Cell Count <i>Immune system cells</i>	$\times 10E3/\mu L$	5.9	7.4	7.8	< 3.8 or ≥ 10.8		3.8 - 10.8

Neutrophil Count (ANC) <i>Type of white blood cell</i>	<i>x10E3/μL</i>	3.823	5.047	5.538	< 1.5 or \geq 7	1.5 - 7
% Neutrophil <i>Part of WBC differential</i>	%	64.8	68.2	71	< 40 or \geq 75	40 - 75
Lymphocyte Count (abso... <i>Calculation of WBC type</i>	<i>x10E3/μL</i>	1.64	1.88	1.607	< 0.8 or \geq 3.1	0.8 - 3.1
% Lymphocytes <i>Part of WBC differential</i>	%	27.8	25.4	20.6	< 14 or \geq 47	14 - 47
Monocytes (absolute) <i>type of white blood cell</i>	<i>x10E3/μL</i>	0.271	0.363	0.382	< 0.2 or \geq 0.9	0.2 - 0.9
% Monocytes <i>Part of WBC differential</i>	%	4.6	4.9	4.9	< 4 or \geq 12	4 - 12
Eosinophil (absolute) <i>Calculation of WBC type</i>	<i>x10E3/μL</i>	0.142	0.104	0.164	< 0 or \geq 0.5	0 - 0.5
% Eosinophils <i>Part of WBC differential</i>	%	2.4	1.4	2.1	< 0 or \geq 5	0 - 5
Basophil (absolute) <i>Calculation of WBC type</i>	<i>x10E3/μL</i>	0.024	0.007	0.109	< 0 or \geq 0.3	0 - 0.3
% Basophils <i>Part of WBC differential</i>	%	0.4	0.1	1.4	< 0 or \geq 4	0 - 4
Immature Granulocytes <i>Immature granulocytes</i>	%				\geq 1	< 1
Immature Granulocytes (...) <i>Immature Granulocytes (Absolute)</i>	<i>x10E3/μL</i>				\geq 0.1	< 0.1

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.

		Dec 2017	Apr 2018	Sep 2018	High Risk	Moderate	Low Risk
Hematocrit <i>Fraction of red blood cells</i>	%	38.4	40.7	44.5	< 36 or \geq 51		36 - 51
RBC <i>Red blood cell count</i>	<i>x10E6/μL</i>	4.14	4.36	4.81	< 4.1 or \geq 5.7		4.1 - 5.7
Hemoglobin <i>Protein in red blood cells</i>	<i>g/dL</i>	12.9	13.6	14.5	< 12.5 or \geq 17.1		12.5 - 17.1
MCV <i>Mean corpuscular volume</i>	<i>fL</i>	92.8	93.5	92.5	< 80 or \geq 99		80 - 99
MCH <i>Mean cell hemoglobin</i>	<i>pg</i>	31.3	31.2	30.1	< 27 or \geq 35		27 - 35
MCHC <i>RBC hemoglobin concentration</i>	<i>g/dL</i>	33.7	33.4	32.6	< 32 or \geq 37		32 - 37
RDW <i>Red cell distribution width</i>	%	14.6	15.6	12.9	\geq 15.1		< 15.1

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.

		Aug 2017	Dec 2017	Sep 2018	High Risk	Moderate	Low Risk
Iron (serum) <i>Iron in liquid part of blood</i>	<i>μg/dL</i>	100	101	81	< 45 or \geq 170	45 - 65 or 166 - 170	65 - 166
Ferritin <i>Iron storage protein</i>	<i>ng/mL</i>	117	111	72	< 30 or \geq 301		30 - 301
Total Iron Binding Capac... <i>Estimates Transferrin level</i>	<i>μg/dL</i>	290	318	289	< 250 or \geq 426		250 - 426
Unsaturated Iron-Bindin... <i>Iron transport protein not bound to Iron</i>	<i>μg/dL</i>				< 150 or \geq 376		150 - 376
Iron Saturation <i>The percent of Iron transport protein ...</i>	%	34	32	28	< 20 or \geq 50		20 - 50

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.

		Jul 2016	Aug 2017	Sep 2018	High Risk	Moderate	Low Risk
Folate <i>Folic Acid</i>	ng/mL	13.5	11.3	9.9	< 3		≥ 3
25-Hydroxy Vitamin D <i>Precursor to vitamin D</i>	ng/mL	58	42	52	< 30 or ≥ 100		30 - 100
25-hydroxy Vitamin D2 <i>Vitamin D found in plants and supple...</i>	ng/mL				≥ 100		< 100
25-hydroxy Vitamin D3 <i>Vitamin D from sunlight and meat</i>	ng/mL				≥ 100		< 100
Vitamin B12 <i>Essential nutrient for cells</i>	pg/mL	1008	> 2000	1326	< 211	211 - 300	≥ 300
Vitamin A <i>Essential Vitamin</i>	µg/dL		50	73	< 38 or ≥ 98		38 - 98
Thiamine blood <i>Essential nervous system vitamin</i>	nmol/L		269	373	< 77 or ≥ 186		77 - 186

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.

		Apr 2018	Sep 2018	Oct 2018	High Risk	Moderate	Low Risk
RBC Magnesium <i>The Magnesium in our cells</i>	mg/dL		4.6		< 4.2 or ≥ 6.4		4.2 - 6.4
Copper <i>Essential mineral</i>	mcg/dL		92		< 70 or ≥ 175		70 - 175
Selenium <i>Trace mineral</i>	ng/mL		122		< 70 or ≥ 150		70 - 150
Zinc <i>Essential trace mineral</i>	mcg/dL		69		< 60 or ≥ 130		60 - 130
Calcium <i>Blood and Bone Mineral</i>	mg/dL	9.6	9.3	9.9	< 8.7 or ≥ 10.3		8.7 - 10.3

Tumor Markers

Tumor markers are substances produced by the body or the tumor cells, in response to the uncontrolled growth process seen in cancerous tumors. Some markers may be used to screen for cancers while others are more useful in evaluating the effect of cancer treatment.

Established Tumor Indicators

Tumor markers are proteins that are made by the body in response to cancerous tumor cells or by the tumor cells themselves. An abnormal test result does not mean you have a cancer diagnosis—it means that your doctor will probably want to order more tests to help make the correct diagnosis.

		Apr 2018	High Risk	Moderate	Low Risk
PSA <i>Prostate-Specific Antigen</i>	ng/mL	0.1	≥ 4		< 4

Toxicology

Toxicology

We are exposed to many toxic substances in our environment that interfere with our physiologic functioning. Some of these substances are stored in our tissues and can be measured.

		Aug 2017	Sep 2018	High Risk	Moderate	Low Risk
Lead	<i>µg/dL</i>					
Blood lead levels		1	1	≥ 10		< 10
Mercury	<i>µg/L</i>					
Blood Mercury levels		6	4	≥ 10		< 10

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

		Feb 2014	High Risk	Moderate	Low Risk
Weight	<i>pounds</i>				
Your weight		175	< 1		≥ 1
Body Mass Index	<i>Kg/m²</i>				
Measure of weight to height		21.9	≥ 30	25 - 30	< 25

Release Notes

2018-09-04

Lab Report released by Elliott Franklin

2013-08-13

Lab Report released by Yasmin Nibbe with note: No critical values were found. Please schedule consult at your earliest convenience to discuss minor laboratory abnormalities with a practitioner. Yasmin Nibbe, MD

Lab Notes

2016-07-28

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

2016-04-11

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

2016-02-22

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

2015-01-27

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

2015-01-23

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

2013-08-13

Results confirmed on dilution. According to ATP-III Guidelines, HDL-C >59 mg/dL is considered a negative risk factor for CHD.

2016-07-28

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

2016-04-11

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

2016-02-22

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

2015-01-27

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

2015-01-23

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

2016-07-28

Risk: Optimal < 80 mg/dL; Moderate 80-119 mg/dL; High > or = 120 mg/dL Cardiovascular event risk category cut points (optimal, moderate, high) are based on National Lipid Association recommendations - Davidson et al. J Clin Lipidol. 2011;5:338

2016-04-11

Risk: Optimal < 80 mg/dL; Moderate 80-119 mg/dL; High > or = 120 mg/dL Cardiovascular event risk category cut points (optimal, moderate, high) are based on National Lipid Association recommendations - Davidson et al. J Clin Lipidol. 2011;5:338

2016-02-22

Risk: Optimal < 80 mg/dL; Moderate 80-119 mg/dL; High > or = 120 mg/dL Cardiovascular event risk category cut points (optimal, moderate, high) are based on National Lipid Association recommendations - Davidson et al. J Clin Lipidol. 2011;5:338

2016-07-28

Verified by repeat analysis.

2016-07-28

Risk: Optimal >222.5; Moderate 222.5-218.2; High <218.2 Adult cardiovascular event risk category cut points (optimal, moderate, high) are based on adult U.S. reference population. Association between lipoprotein subfractions and cardiovascular events is based on Musunuru et al. ATVB. 2009;29:1975.

2016-07-28

Risk: Optimal <1260; Moderate 1260-1538; High >1538

2016-07-28

Risk: Optimal Pattern A; High Pattern B

2016-07-28

Risk: Optimal <162; Moderate 162-217; High >217

2016-07-28

Risk: Optimal <201; Moderate 201-271; High >271

2016-07-28

Risk, Male: Optimal > or = 115 mg/dL; High < 115 mg/dL Risk, Female: Optimal > or = 125 mg/dL; High < 125 mg/dL Cardiovascular event risk category cut points (optimal, high) are based on the AMORIS study, Walldius and Jungner, J Int Med. 2004;255:188

2016-07-28

Risk: Optimal >9386; Moderate 9386-6996; High <6996

2016-07-28

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.

2016-04-11

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.

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2013-08-13

Relative Risk for Future Cardiovascular Event Low <1.00 Average 1.00 - 3.00 High >3.00

2016-07-28

Homocysteine is increased by functional deficiency of folate or vitamin B12. Testing for methylmalonic acid differentiates between these deficiencies. Other causes of increased homocysteine include renal failure, folate antagonists such as methotrexate and phenytoin, and exposure to nitrous oxide.

2016-07-28

This insulin assay shows strong cross-reactivity for some insulin analogs (lispro, aspart, and glargine) and much lower cross-reactivity with others (detemir, glulisine).

2016-04-11

This insulin assay shows strong cross-reactivity for some insulin analogs (lispro, aspart, and glargine) and much lower cross-reactivity with others (detemir, glulisine).

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2016-07-28

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.

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2013-08-13

. Increased risk for diabetes: 5.7 - 6.4 Diabetes: >6.4 Glycemic control for adults with diabetes: <7.0

2016-07-28

Fasting reference interval

2016-04-11

Fasting reference interval

2016-02-22

Fasting reference interval

2015-01-27

Fasting reference interval

2015-01-23

Fasting reference interval

2016-07-28

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 *

2016-04-11

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 *

2016-02-22

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 *

2015-01-27

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2013-08-13

Cortisol AM 6.2 - 19.4 Cortisol PM 2.3 - 11.9

2016-07-28

This test was developed and its analytical performance characteristics have been determined by Quest Diagnostics Nichols Institute San Juan Capistrano. It has not been cleared or approved by FDA. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.

2016-04-11

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2015-01-27

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.

2015-01-23

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2016-07-28

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). Please note: patients being treated with the drug fulvestrant (Faslodex(R)) have demonstrated significant interference in immunoassay methods for estradiol measurement. The cross reactivity could lead to falsely elevated estradiol test results leading to an inappropriate clinical assessment of estrogen status. Quest Diagnostics order code 30289-Estradiol, Ultrasensitive LC/MS/MS demonstrates negligible cross reactivity with fulvestrant.

2016-04-11

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2013-08-13

Roche ECLIA methodology

2016-07-28

Verified by repeat analysis.

2016-07-28

Tanner Stages Male (nmol/L) Female (nmol/L) (7-17 Years) Tanner I 47-166 47-166 Tanner II 23-168 25-129 Tanner III 23-168 25-129 Tanner IV 21-79 30-86 Tanner V 9-49 15-130 TOTAL TESTOSTERONE; Confirmed by repeat analysis.

2016-04-11

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2016-07-28

Vitamin D Status 25-OH Vitamin D: Deficiency: <20 ng/mL Insufficiency: 20 - 29 ng/mL Optimal: > or = 30 ng/mL
For 25-OH Vitamin D testing on patients on D2-supplementation and patients for whom quantitation of D2 and D3 fractions is required, the QuestAssureD(TM) 25-OH VIT D, (D2,D3), LC/MS/MS is recommended: order code 92888 (patients >2yrs). For more information on this test, go to: <http://education.questdiagnostics.com/faq/FAQ163> (This link is being provided for informational/educational purposes only.)

2016-04-11

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2015-01-27

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.

2015-01-23

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2013-08-13

Vitamin D deficiency has been defined by the Institute of Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. JCEM. 2011 Jul; 96(7):1911-30. Medicine and an Endocrine Society practice guideline as a level of serum 25-OH vitamin D less than 20 ng/mL (1,2). The Endocrine Society went on to further define vitamin D insufficiency as a level between 21 and 29 ng/mL (2). 1. IOM (Institute of Medicine). 2010. Dietary reference intakes for calcium and D. Washington DC: The National Academies Press. 2. Holick MF, Binkley NC, Bischoff-Ferrari HA, et al.

2015-01-27

Reference Range: Not established

2015-01-23

Reference Range: Not established

2015-01-27

Reference Range: Not established

2015-01-23

Reference Range: Not established

2016-07-28

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

2016-04-11

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

2016-02-22

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

2015-01-27

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

2015-01-23

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

2013-08-13

A serum folate concentration of less than 3.1 ng/mL is considered to represent clinical deficiency.

2013-08-13

Note: Values greater than or equal to 75 nmol/L may indicate an independent risk factor for CHD, but must be evaluated with caution when applied to non-Caucasian populations due to the influence of genetic factors on Lp(a) across ethnicities. **Please note reference interval change.**