Lab results

Report

Client

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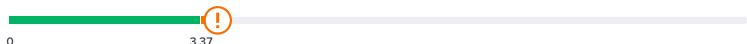🌐 https://www.drvaleriovittone.com
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Notes:

- STICK TO THE RESISTANT STARCH AND FIBRE COVERED IN DIETARY PLAN
- ALSO, DO NOT EAT NUTS OR OTHER FATS UNLESS THEY ARE COVERED IN THE LOW HISTAMINE/LECTIN/OXALATE GUIDE AND IN THE DIETARY PLAN THAT WE COVRED PREVIOUSLY

My Results

Lab Results Report

LAB TEST	RESULT	RANGE	TEST DATE
Cholesterol, Total	6.4 mmol/L	0 · 5.18 · 6.22	7 May 2021
Ferritin	244 ug/L	16 · 40 · 150 · 232	7 May 2021
Phosphate	1.47 mmol/L	0.32 · 0.81 · 1.13 · 1.45	7 May 2021
MCHC	319 g/L	320 · 360	7 May 2021
Non-HDL Cholesterol	3.7 mmol/L	0 · 3.37	7 May 2021
Vitamin D, 25-Hydroxy	32 nmol/L	25 · 50 · 75 · 250 · 375	7 May 2021
Creatinine	54 umol/L	44.44 · 62.22 · 80 · 97.78	7 May 2021
Hemoglobin	122 g/L	70 · 117 · 130 · 140 · 155 · 190	7 May 2021
Albumin	37 g/L	36 · 44 · 51	7 May 2021
LDL Cholesterol	3.2 mmol/L	0 · 2.59 · 3.37 · 4.9	7 May 2021
Platelets	318 10^9/L	30 · 140 · 200 · 270 · 400 · 999	7 May 2021
GGT	15 U/L	3 · 11 · 70	7 May 2021

Cholesterol, Total

Lab Results Report
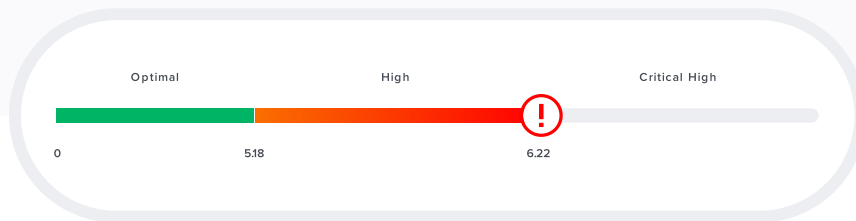

Your result **6.4 mmol/L**

Optimal range: 0 - 5.18 mmol/L

Date of test: 7 May 2021

Your levels are **critical high**

Based on your result

Optimal	High	Critical High

0   5.18   6.22

Results Tracker

2019 - 2021

Showing results in: mmol/L
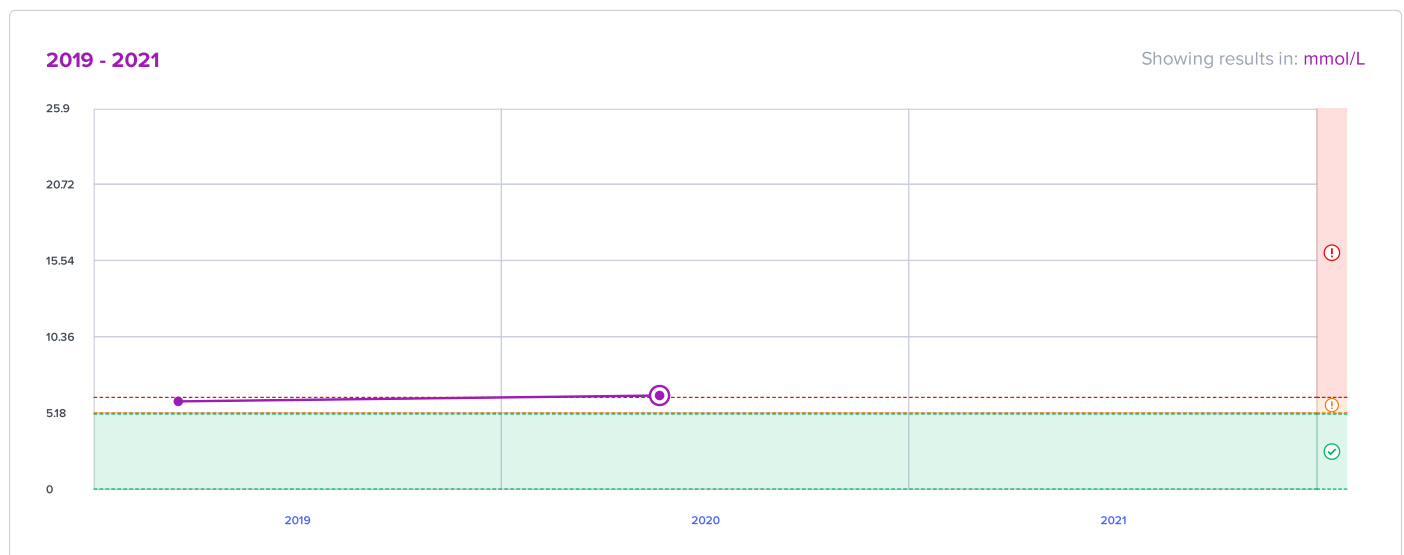
About Cholesterol, Total

This test measures the amount of total cholesterol in your blood.

Cholesterol is a fat-like substance that's a key component of cells. It's also used by the body to make steroid hormones (testosterone, estrogens, cortisol, aldosterone etc.), bile, and vitamin D [R].

Cholesterol that's found in the blood is bound into particles called lipoproteins. You can think of lipoproteins as the vehicles and cholesterol as the passenger. These lipoproteins differ in density (vehicle size), based on which there are three types of cholesterol:

- HDL-cholesterol (high-density lipoprotein cholesterol), known as the "good" cholesterol
- LDL-cholesterol (low-density lipoprotein cholesterol), known as the "bad" cholesterol
- VLDL-cholesterol (very-low-density lipoprotein cholesterol), also "bad" cholesterol

Total cholesterol is the sum of these three types of cholesterol in your body. A change in any of these cholesterols will affect your total cholesterol score.

HDL-cholesterol is known as "good" cholesterol, because HDL particles carry it away for disposal. LDL-cholesterol, on the other hand, is considered "bad" cholesterol because LDL particles deposit it in tissues such as the arteries [R, R, R].

Also Called

- Total Cholesterol
- Cardio IQ® Cholesterol, Total

Higher levels of total cholesterol has been associated with hardening of the arteries and heart disease. That's why it's important to monitor your cholesterol levels and maintain them in a healthy range [R, R].

Total cholesterol increases as we age up to around 50 years of age. It remains elevated until about 70, when it decreases gradually [R].

Experts recommend that you check your cholesterol regularly, about every 5 years, or more often if you have a higher risk of heart disease, due to factors such as [R]:

- A family history of heart disease
- Smoking
- Being overweight/obese
- Having diabetes or high blood pressure

Critical High Cholesterol, Total Health Effects

Your cholesterol levels are very high.

Your doctor will interpret your results, taking into account your medical history, symptoms, and other test results.

These can increase your cholesterol levels:

- Diets high in calories and saturated fats [R]
- Obesity [R]
- Lack of physical activity [R]
- Alcohol consumption [R]
- Hypothyroidism [R]
- Pregnancy [R]
- Rare genetic disorders that increase cholesterol (e.g. familial hypercholesterolemia) [R]

There are also many drugs that can increase cholesterol, including [R, R]:

- Corticosteroids
- Water pills (diuretics)
- Beta-blockers
- Antipsychotics
- Anticonvulsants
- Anabolic steroids

Causes shown here are commonly associated with high cholesterol. Work with your doctor or another health care professional to get an accurate diagnosis.

Cholesterol levels in this range are associated with a high risk of heart disease [R, R, R].

Prioritized recommendations

For Critical High Cholesterol, Total

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① ⓘ | # Work With Your Doctor

Info recommendation

Description

The most important thing is to work with your doctor to find out what's causing your high total cholesterol and to treat any underlying conditions. The additional lifestyle changes listed below are other things you may want to discuss with your doctor. None of these strategies should ever be done in place of what your doctor recommends or prescribes!

② | # Choose Healthy Fats

Dietary recommendation

Replace saturated fats with polyunsaturated fats in your diet.

Description

The fats in our diet can be broadly divided into *saturated* and *unsaturated* fat. Too much saturated fat can increase total cholesterol [R, R, R].

People who eat a lot of saturated fat may be at a higher risk of [R, R]:

- Weight gain
- Heart disease
- Stroke

Animal products, such as meat and dairy are highest in saturated fats [R].

On the other hand, unsaturated fat can be good for your cholesterol. Experts say you should look to add **polyunsaturated fats** (PUFAs) from sources like [R]:

- Walnuts
- Seeds
- Fish

Eat a healthy, balanced diet low in saturated fats and processed carbs [R, R, R].

How Choosing Healthy Fats Helps Reduce Cholesterol

Many experts recommend eating less saturated fat to help lower cholesterol. This may lower your risk of heart disease [R, R, R, R].

However, keep in mind that simply reducing saturated fats may not reduce your cholesterol. **This is especially true if you replace saturated fats with processed and sugary foods** [R].

To make a meaningful change, replace saturated fats with healthier alternatives, such as unsaturated fats. Good sources of these healthy fats include [R, R, R, R, R]:

- Fish
- Nuts
- Seeds
- Avocado
- Safflower, olive, and canola oil

Fish, walnuts, and seeds are rich in polyunsaturated fats (PUFAs). These fats may be the best replacement for saturated fat [R].

Consistently making these healthy replacements to dietary fat may lower cholesterol [R, R, R, R].

Diets rich in healthy fats include [R, R, R]:

- The Mediterranean diet
- The DASH diet
- Vegetarian diets

③

Mediterranean Diet

Dietary recommendation

Consider following the Mediterranean diet.

Description

The Mediterranean diet is based on the traditional cuisine from the Mediterranean regions. It's rich in foods like [R]:

- Fruits and vegetables
- Whole grains
- Healthy fats (fish and olive oil)

Red meat consumption is limited and dairy is eaten in moderation.

How The Mediterranean Diet Helps Reduce Cholesterol

The Mediterranean diet may lower total and "bad" cholesterol (LDL) [R, R, R].

Mediterranean diet is a good example of a healthy diet rich in monounsaturated fats. It includes lots of fruits and vegetables, fatty fish, olive oil, and nuts [R, R, R, R].

Overweight or obese men may reap the most benefits from this type of diet [R].

Studies suggest that the Mediterranean diet may be better than a low-fat, vegetarian, or Paleo diet at improving cholesterol [R, R, R].

What makes the Mediterranean diet a great choice?

- It's low in saturated fat [R]
- It focuses on healthy fat sources like olive oil and fish [R]
- It's rich in fiber [R]

Health experts agree that the Mediterranean diet may help improve cholesterol. Because of this, it may protect against heart disease [R, R, R].

Plant Sterols And Stanols

④

Supplement recommendation

Consider eating more plant sterols and stanols or taking a supplement.

Description

Sterols and stanols are compounds in plants that are similar to cholesterol [R, R].

Plant sterols and stanols are naturally found in foods like **nuts, vegetable oils, and fruits.** However, people usually don't eat enough of these [R].

Some companies add sterols and stanols to foods like **orange juice and margarine** [R, R].

How Plant Sterols & Stanols Help Reduce Cholesterol

Adding plant sterols and stanols to your diet may help lower total and "bad" (LDL) cholesterol. Plant sterols compete with cholesterol for absorption in the gut, which lowers cholesterol levels [R, R, R, R].

They may even boost the effectiveness of cholesterol-lowering diets and medications [R, R, R].

Sources of plant sterols and stanols that may reduce cholesterol include:

- **Nuts** like walnuts, pistachios, and almonds (at least 60 g/day) [R, R, R, R, R]
- **Rice bran oil** (18-50 g/day) [R, R]
- **Avocado** (135-500 g/day) [R, R]
- Plant sterol and stanol supplements (2-9 g/day for 4-6 weeks) [R]

You may also add plant sterols and stanols (2-3 g/day) to your diet by eating fortified foods like [R, R, R, R, R]:

- Spreads
- Dairy products
- Salad dressings
- Plant oils

However, not all fortified foods are healthy and good for your cholesterol.

Maintain A Healthy Weight

⑤

Lifestyle recommendation

Description

People have a healthy weight when they don't have too much or too little body fat [R].

Body mass index (BMI) can help determine body fat levels. Your BMI is your mass (in kg) divided by the square of your height (in meters) [R].

In general [R]:

- People with a BMI **between 18.5 and 25** tend to have a **healthy weight**
- People with a BMI **between 25 and 30** tend to be **overweight**
- People with a BMI **over 30** tend to be **obese**

People who are overweight or obese are more likely to have [R, R]:

- High blood pressure
- Type 2 diabetes
- Heart disease
- Joint problems
- Sleep problems

The best ways to lose weight are to consume fewer calories and exercise regularly [R].

How a Healthy Weight Prevents High Cholesterol

People who are overweight are more likely to have high cholesterol. Most experts say to aim for a **BMI below 25** for heart health [R, R, R].

Getting to a healthy weight can decrease your total and "bad" (LDL) cholesterol [R, R].

Some people may need to lose at least **5%** of their starting weight to see a drop in cholesterol. This is especially true for obese people or those with diabetes [R, R, R].

Lose weight if overweight. This will help lower your total cholesterol [R, R].

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(6) # Exercise
Lifestyle recommendation

Try to exercise regularly.

Description

Exercise can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [R].

There are many ways you can be active. You can walk, run, swim, dance, or play team sports. **Everything counts, and it's never too late to start!**

Try getting a mix of cardio (at least 150 min/week) and strength training (2 times/week) [R].

How Exercise Helps Reduce Cholesterol

Exercise is one of the best things you can do to lower cholesterol [R, R, R].

People who exercise for at least 150 minutes per week tend to have lower cholesterol. All types of exercise are helpful. In fact, strength and endurance training have about the same effect on cholesterol [R, R, R, R, R].

Low-intensity exercise, such as tai chi and yoga, may reduce cholesterol as well [R, R, R, R].

Exercise works especially well if you also eat a healthy diet [R, R, R, R].

Avoid Cigarette Smoke

Lifestyle recommendation

Description

You already know that tobacco is not great for your health. **Smoking affects your entire body.** It can damage your brain, heart, lungs, and more [R].

And even if you're not a smoker, **secondhand smoke can cause health issues similar to smoking** [R, R].

But, there's good news: **avoiding cigarette smoke can reverse many of its negative effects**. It's a great way to dramatically improve your health [R].

How Avoiding Cigarette Smoke Helps Reduce Cholesterol

Smokers have higher levels of total cholesterol and other fats and lower levels of "good" cholesterol (HDL) [R, R].

Smoking may reduce cholesterol clearance. It may decrease the rate at which the liver removes cholesterol from your blood [R].

Limit Alcohol Intake

Lifestyle recommendation

Consider drinking less alcohol.

Description

Many people drink alcohol in their free time. They like it because it temporarily improves their mood and mental state [R].

Experts agree that having 1-2 drinks per day likely won't cause harm. However, heavy drinking is bad for your health [R].

How Limiting Alcohol Intake Helps Decrease Cholesterol Levels

Lower your alcohol consumption or refrain from drinking altogether. Any form of alcohol could increase your risk of heart disease [R]

Excessive alcohol use can increase your total cholesterol levels [R, R, R].

Alcohol may increase cholesterol levels by impairing cholesterol breakdown [R].

Limit Coffee Intake

Dietary recommendation

Try to limit the amount of coffee you drink.

Description

People often drink coffee for an energy and mood boost [R, R].

However, **coffee also comes with some drawbacks.** Drinking a lot of coffee can increase blood pressure and anxiety [R, R].

How Limiting Coffee Intake Helps Reduce Cholesterol

Compounds found in coffee may increase how much cholesterol your body makes [R, R, R].

So, it's no surprise that high **coffee intake is linked to higher levels of total and LDL cholesterol**. This includes decaffeinated coffee. However, filtering the coffee may reduce its impact on cholesterol [R, R, R].

Drinking coffee in moderation may not affect your cholesterol. However, **heavy drinking (6 or more cups a day) may raise it significantly** [R, R, R].

Try replacing some of your coffee with green tea, which contains caffeine and has been shown to have positive effects on cholesterol.

Fiber

Dietary recommendation

Try to get more fiber from diet or supplements.

Description

Fiber is a type of carb that your body can't digest. It supports gut health, heart health, blood sugar control, and more [R, R].

Women should get 21-25 g of fiber per day, while men should get 30-38 g. Most people in the US don't get enough fiber [R, R].

Fiber supplements are available for people who don't get enough from their diets [R].

How Fiber Helps Reduce Cholesterol

Health officials recommend eating more fiber (3-10 g) to improve your cholesterol levels. Fiber stops your gut from absorbing too much cholesterol. By doing so, it lowers cholesterol levels in the blood [R, R, R].

High-fiber foods that may lower cholesterol include:

- Buckwheat [R, R, R]
- Oats [R]
- Barley [R, R]
- Beans [R]

- Apples [R]

Diets high in the above foods may be a good choice for reducing cholesterol. They include:

- The Mediterranean diet [R, R]
- Vegetarian diets [R, R]
- The DASH diet [R]

The following fiber supplements may also help improve cholesterol levels:

- Psyllium [R, R, R, R]
- Beta-glucans [R, R, R, R]
- Glucomannan [R, R]
- Inulin [R, R, R, R]
- Pectin [R, R]
- Resistant starch [R]

Remember, always speak to your doctor before taking any supplements, because they may interfere with your health condition or your treatment/medications!

⑪ Green Tea

Dietary recommendation

Try drinking more green tea.

Description

Green tea is made from the same plant as black tea (*Camellia sinensis*). However, the leaves and buds are processed differently [R].

Green tea contains catechins. These are antioxidants that help prevent oxidative stress [R].

EGCG is the main catechin found in green tea. It may help reduce inflammation and support weight loss [R].

How Green Tea Help Reduce Cholesterol

Green tea lowers the risk of heart disease [R, R].

Studies show that green tea and green tea extract may moderately reduce total cholesterol and "bad" cholesterol (LDL) [R, R, R, R]

Green tea contains EGCG which may improve cholesterol metabolism, reduce cholesterol production, and lower total cholesterol levels [R, R].

Discuss increasing your green tea intake or green tea extract supplementation with your doctor.

⑫ Berberine

Supplement recommendation

Consider supplementing with berberine.

Description

[Berberine](#) is an active compound of some plants used in traditional medicine, such as [[R](#)]:

- Barberry
- Oregon grape
- Goldenseal
- Chinese goldthread

You can also get berberine as a supplement. People use it to help with [[R](#), [R](#), [R](#)]:

- High blood sugar
- High cholesterol
- High blood pressure
- Polycystic ovary syndrome (PCOS)

How Berberine Helps Reduce Cholesterol

Berberine (0.9-1.5 g/day for 2-6 months) may lower total and "bad" (LDL) cholesterol while raising "good" (HDL) cholesterol [[R](#), [R](#), [R](#), [R](#)].

It may also improve cholesterol when it's combined with other ingredients, such as:

- [Milk thistle](#) [[R](#), [R](#)]
- [Red yeast rice](#) [[R](#), [R](#)]
- [Policosanol](#) [[R](#), [R](#)]
- [Coenzyme Q10](#) [[R](#)]

Berberine may help remove cholesterol from the blood and reduce its production [[R](#), [R](#)].

Remember, always speak to your doctor before taking any supplements, because they may interfere with your health condition or your treatment/medications!

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13 🔗 # Probiotics

Supplement recommendation

Consider supplementing with probiotics.

Description

Probiotic bacteria are "good" bacteria found mainly in the large intestine. They support your body and mind by [[R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#)]:

- Maintaining gut health
- Supporting a healthy immune system
- Improving your mood
- Helping to maintain healthy blood sugar

How Probiotics Help Reduce Cholesterol

Supplementation with [probiotics](#) may lower total cholesterol and "bad" (LDL) cholesterol. This effect is stronger with the intake of several species of probiotics and for a longer period of time [[R](#), [R](#), [R](#)].
Specially probiotic products that contain *Lactobacillus* strains may lower the blood levels of several fats including cholesterol [[R](#), [R](#), [R](#), [R](#)].
Probiotics may influence cholesterol levels by [[R](#), [R](#), [R](#), [R](#)]:

- Capturing cholesterol
- Using cholesterol during their own growth
- Reducing cholesterol absorption

The following species of probiotics may help:

- *Lactobacillus acidophilus* [R, R, R, R, R, R, R, R, R, R, R, R, R]
- *L. plantarum* [R, R, R, R, R]
- *L. reuteri* [R, R, R]
- *L. casei* [R, R, R]
- *Bifidobacterium animalis* [R, R, R, R, R, R, R, R, R]
- *B. bifidum* [R, R, R]
- *Streptococcus thermophilus* [R, R, R]

Remember, always speak to your doctor before taking any supplements, because they may interfere with your health condition or your treatment/medications!

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14 🌱 # Dietary Antioxidants

Dietary recommendation

Try to eat more foods containing antioxidants.

Description

Our cells sometimes produce molecules called **reactive oxygen species (ROS)** [R].

High levels of ROS can cause oxidative stress and damage our cells. Oxidative stress plays a role in many health conditions, including [R]:

- High blood sugar
- Type 2 diabetes
- Heart disease
- Cancer

Antioxidants are substances that help combat ROS [R].

Some common antioxidants include vitamin C and vitamin E. **You can get most antioxidants from fresh fruits and vegetables** [R, R].

How Dietary Antioxidants Help Reduce Cholesterol

Eating a lot of tomatoes (200-400 g/day for 1-3 months) may lower total cholesterol and "bad" (LDL) cholesterol and raise "good" (HDL) cholesterol [R, R, R].

Tomatoes contain lycopene and other antioxidants. These compounds prevent some of the toxic effects of LDL cholesterol. **Supplementing with lycopene (25 mg per day for 1-2 months) may lower total and LDL cholesterol** [R, R].

Other antioxidant-rich foods may also improve your cholesterol. These include:

- Oranges [R, R, R, R]
- Grapes [R]
- Indian gooseberry [R, R, R, R]
- Tea [R, R, R, R]

If you don't eat enough of these foods, some supplements may help. Antioxidant supplements that may lower cholesterol include:

- Alpha-lipoic acid [R, R, R]
- Coenzyme Q10 [R]
- Vitamin C [R]

Remember, always speak to your doctor before taking any supplements, because they may interfere with your health condition or your treatment/medications!
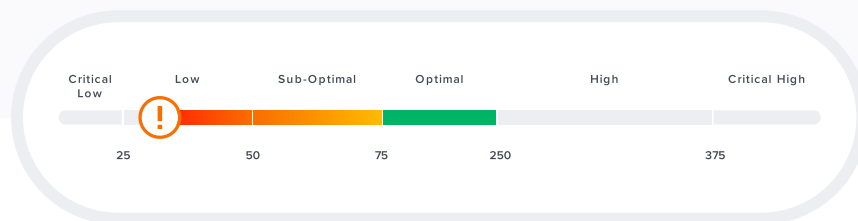
Vitamin D, 25-Hydroxy

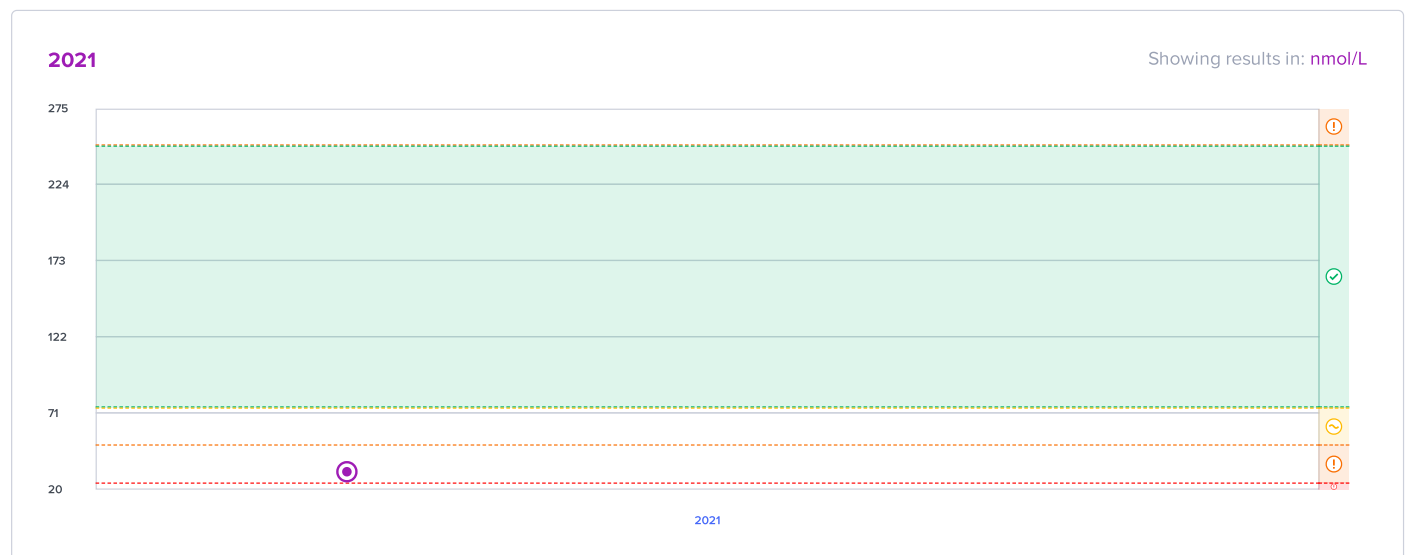Lab Results Report

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Your result 32 nmol/L

Optimal range: 75 - 250 nmol/L

Date of test: 7 May 2021

Your levels are **low**

Based on your result

Critical Low	Low	Sub-Optimal	Optimal	High	Critical High
25	50	75	250		375

Results Tracker

2021

Showing results in: nmol/L

275
224
173
122
71
20

2021

About Vitamin D, 25-Hydroxy

This test measures the amount of (25-hydroxy) vitamin D in your blood.

Known as the "sunshine vitamin," vitamin D helps maintain healthy levels of calcium and phosphorus by increasing their absorption in the gut. In this way, vitamin D is critical for bone health [R, R]. Vitamin D also plays a role in muscle strength and performance, immune function, cell production, blood pressure, and insulin secretion [R, R, R, R].

Vitamin D is produced by the skin upon exposure to sunlight. It can also be obtained in the diet, or through vitamin supplements [R].

Your skin first produces vitamin D3 (cholecalciferol), which is then activated in the liver and kidneys. More specifically, liver converts vitamin D into 25-hydroxyvitamin D (25[OH]D), the major circulating form of vitamin D. This form is then converted in the kidneys to the active 1,25-dihydroxyvitamin D form [R, R].

Vitamin D can be stored in fat tissue and is found throughout the body including bones, kidneys, heart, stomach, liver, skin, brain, ovaries, and testes [R, R].

Although 1,25-dihydroxy is the active form of vitamin D, its levels can be normal or even high in people who are otherwise deficient in overall vitamin D. For this reason, active vitamin D is not a good measurement of your vitamin D status [R]. Instead, 25-hydroxyvitamin D is more often used to determine if your vitamin D levels are healthy or abnormal [R].

Also Called

- Vitamin D2+D3
- Vitamin D total
- Vitamin D, 25-Hydroxy, Total
- Vitamin D 25 Hydroxy, Serum
- Vitamin D, 25-Hydroxy, Total, Immunoassay
- Vitamin D, 25-OH, Total, IA

Doctors will usually perform a vitamin D blood test to diagnose bone problems, detect potential parathyroid gland dysfunction, or to monitor the condition of people with diseases that interfere with fat absorption in the intestines (such as Crohn's disease) [R, R].

Vitamin D tests are also used to screen people who are at high risk of deficiency, such as [R, R]:

- People who don't get enough sun
- Older people
- Obese people
- People with darker skin
- Vegans
- Pregnant women and breastfed children

Low Vitamin D, 25-Hydroxy Health Effects

Your vitamin D levels are lower than normal.

Low vitamin D levels signal vitamin D deficiency. Your doctor will interpret your results, taking into account your medical history, symptoms, and other test results.

One of the major causes of low vitamin D levels is inadequate exposure to UV radiation from the sun, which prevents the skin from producing enough vitamin D. Specific risk factors include:

- Living at high latitudes (>37°) [R, R, R]
- Living in regions where there are large seasonal changes in sun exposure [R]
- Living in areas with high levels of air pollution, which blocks out sunlight [R]
- Over-use of sunscreen [R]
- Having darker skin [R, R]
- Keeping the skin covered up (in colder climates or certain cultures) [R, R]

Inadequate dietary intake is another major cause of vitamin D deficiency [R]. Studies suggest that people on a vegan diet, as well as pregnant women and breast-feeding children who are not on vitamin D supplementation may be at a higher risk of dietary insufficiency [R, R, R].

Other factors that can lower vitamin D levels include:

- Obesity and old age. These can interfere with the production and absorption of vitamin D [R, R, R].
- Malabsorption of vitamin D in gut diseases (Crohn's disease, ulcerous colitis, and celiac disease) [R, R]
- Smoking [R, R]
- Kidney disease [R]
- Liver disease [R]
- Some drugs, including anti-seizure medication [R]

Causes shown here are commonly associated with low vitamin D levels. Work with your doctor or another health care professional to get an accurate diagnosis.

Symptoms of low vitamin D levels include [R]:

- Bone pain
- Muscle pain
- General weakness
- Depression

Prioritized recommendations

For Low Vitamin D, 25-Hydroxy

1 ⓘ Work with your doctor
Info recommendation

Description

The most important thing is to work with your doctor to find out what's causing your low vitamin D levels and to treat any underlying conditions. The additional lifestyle changes listed below are other things you may want to discuss with your doctor. None of these strategies should ever be done in place of what your doctor recommends or prescribes!

2 Sun exposure
Lifestyle recommendation

Description

The easiest way you can boost vitamin D levels is by getting more sun, especially if you have a darker skin tone. However, never go overboard with sun exposure, as excess UV radiation can cause skin cancer [R, R, R]. Also, keep in mind that sunscreen blocks out the UV rays that make vitamin D in your skin.

3 Healthy and balanced diet
Dietary recommendation

Description

Implement a healthy diet and exercise program to help you lose weight if you are overweight [R].

4 Eat more foods that contain vitamin D

Dietary recommendation

Description

Eat more foods that contain vitamin D. Food sources that are naturally rich in vitamin D include [R]:

- Fatty fish, such as salmon and tuna
- Egg yolks
- Cheese
- Mushrooms

5 Common foods enriched with vitamin D

Dietary recommendation

Description

Although relatively few foods naturally contain large amounts of vitamin D, many common foods are often enriched with vitamin D, such as dairy, soy milk, orange juice and some cereals [R].

6 Drug alternatives

Info recommendation

Description

If your medications are likely to lower vitamin D levels, discuss alternative options with your doctor [R].

Vitamin D3 supplements

Supplement recommendation

Description

Discuss vitamin D3 supplements with your doctor. Vitamin D supplements can be taken with foods high in fat to enhance absorption [R, R, R].

LDL Cholesterol

Lab Results Report

Your result **3.2 mmol/L**
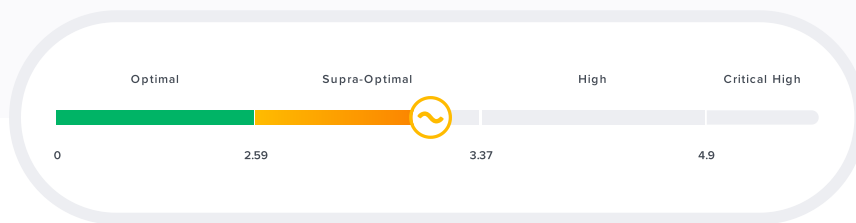
Optimal range: 0 - 2.59 mmol/L

Date of test: 7 May 2021

Your levels are **supra-optimal**

Based on your result

Optimal	Supra-Optimal	High	Critical High
0	2.59	3.37	4.9

Results Tracker

2019 - 2021

Showing results in: mmol/L
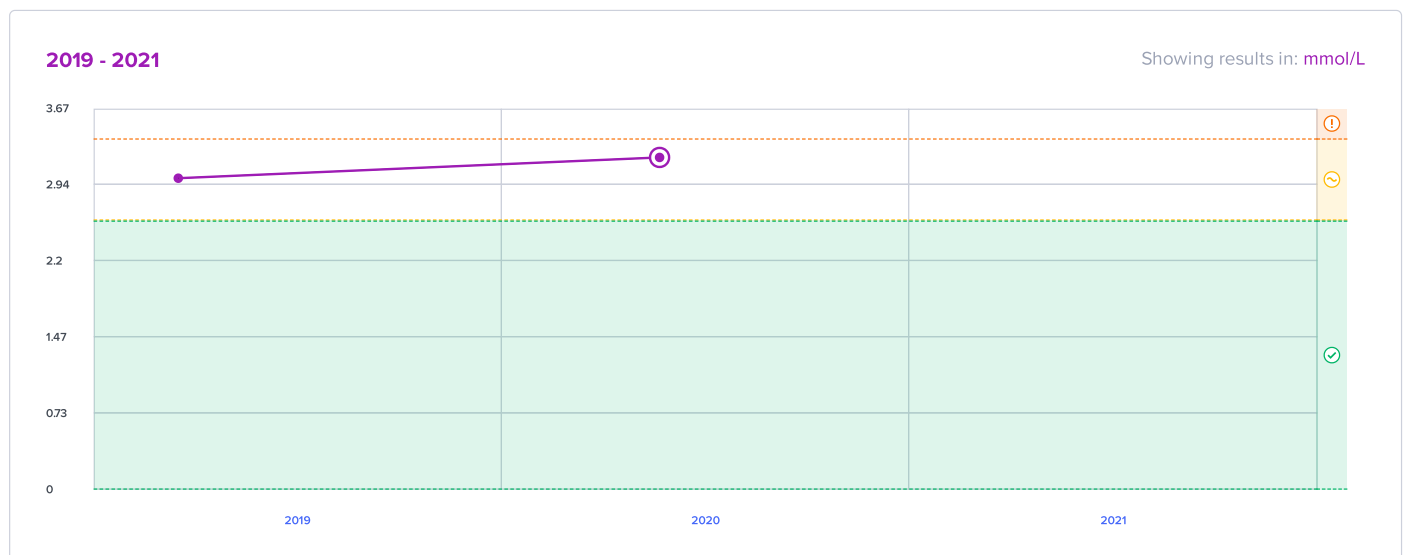
About LDL Cholesterol

This test measures the amount of LDL-cholesterol, also known as "bad" cholesterol, in your blood.

LDL-cholesterol is cholesterol bound to low-density lipoprotein (LDL) particles. Lipoprotein particles transport cholesterol in the bloodstream much like cars transport passengers [R].

LDL- cholesterol is considered the "bad" cholesterol because it deposits in blood vessels. Cholesterol can penetrate arterial walls where it combines with oxygen (oxidizes). This is a key step in the development of hardening of the arteries and heart disease [R, R].

High LDL-cholesterol is considered a strong risk factor for developing heart disease [R, R].

Supra-Optimal LDL Cholesterol Health Effects

Your LDL-cholesterol levels are slightly higher than optimal.

If you are at risk of developing heart disease, you may want to decrease your levels. Your doctor will interpret your results, taking into account your medical history, symptoms, and other test results.

These can increase LDL-cholesterol:

- Diets high in calories and saturated fats [R]

Also Called

- LDL cholesterol - Direct
- LDL-Cholesterol
- LDL-C
- LDL Chol Calc (NIH)
- LDL Chol Calc Reportable

- Lack of physical exercise [R]
- Drinking coffee [R]
- Underactive thyroid (hypothyroidism) [R]

There are also many drugs that can increase cholesterol, including [R, R]:

- Anabolic steroids
- Corticosteroids, drugs used to treat inflammation
- Water pills (diuretics)
- Beta-blockers
- Immunosuppressive drugs

Causes shown here are commonly associated with high LDL cholesterol. Work with your doctor or another health care professional to get an accurate diagnosis.

LDL-cholesterol levels in this range have been associated with a slightly higher risk of heart disease [R, R, R].

Prioritized recommendations

For Supra-Optimal LDL Cholesterol

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① ⓘ | Work With Your Doctor

Info recommendation

Description

The most important thing is to work with your doctor to find out what's causing your high LDL cholesterol and to treat any underlying conditions. The additional lifestyle changes listed below are other things you may want to discuss with your doctor. None of these strategies should ever be done in place of what your doctor recommends or prescribes!

② 🌱 | Choose Healthy Fats

Dietary recommendation

Replace saturated fats with polyunsaturated fats in your diet.

Description

The fats in our diet can be broadly divided into *saturated* and *unsaturated* fat. Too much-saturated fat can increase "bad" (LDL) cholesterol [R, R, R].

People who eat a lot of saturated fat may be at a higher risk of [R, R]:

- Weight gain
- Heart disease
- Stroke

Animal products, such as meat and dairy are highest in saturated fats [R].

On the other hand, unsaturated fat can be good for your cholesterol. Experts say you should look to add **polyunsaturated fats** (PUFAs) from sources like [R]:

- Walnuts
- Seeds
- Fish

How Choosing Healthy Fats Helps Reduce Cholesterol

Many experts recommend eating less saturated fat to help lower cholesterol. This may lower your risk of heart disease [R, R, R, R].

However, keep in mind that simply reducing saturated fats may not reduce your cholesterol. **This is especially true if you replace saturated fats with processed and sugary foods** [R].

To make a meaningful change, replace saturated fats with healthier alternatives, such as unsaturated fats. Good sources of these healthy fats include [R, R, R, R, R]:

- Fish
- Nuts
- Seeds
- Avocado
- Safflower, olive, and canola oil

Fish, walnuts, and seeds are rich in polyunsaturated fats (PUFAs). These fats may be the best replacement for saturated fat [R].

Making these healthy replacements may lower cholesterol by [R, R, R, R].

Diets rich in healthy fats include [R, R, R]:

- The Mediterranean diet
- The DASH diet
- Vegetarian diets

③ 🌱 # Mediterranean Diet

Dietary recommendation

Consider following the Mediterranean diet.

Description

The Mediterranean diet is based on the traditional cuisine from the Mediterranean regions. It's rich in foods like [R]:

- Fruits and vegetables
- Whole grains
- Healthy fats (fish and olive oil)

Red meat consumption is limited and dairy is eaten in moderation.

How The Mediterranean Diet Helps Reduce Cholesterol

The Mediterranean diet may lower total and "bad" cholesterol (LDL) [R, R, R].

Overweight or obese men may reap the most benefits from this type of diet [R].

Studies suggest that the Mediterranean diet may be better than a low-fat, vegetarian, or Paleo diet at improving cholesterol [R, R, R].

What makes the Mediterranean diet a great choice?

- It's low in saturated fat [R]
- It focuses on healthy fat sources like olive oil and fish [R]
- It's rich in fiber [R]

Health experts agree that the Mediterranean diet may help improve cholesterol. Because of this, it may protect against heart disease [R, R, R].

Maintain A Healthy Body Weight

Lifestyle recommendation

Try to maintain a healthy weight.

Description

People have a healthy weight when they don't have too much or too little body fat [R].

Body mass index (BMI) can help determine body fat levels. Your BMI is your mass (in kg) divided by the square of your height (in meters) [R].

In general [R]:

- People with a BMI **between 18.5 and 25** tend to have a **healthy weight**
- People with a BMI **between 25 and 30** tend to be **overweight**
- People with a BMI **over 30** tend to be **obese**

People who are overweight or obese are more likely to have [R, R]:

- High blood pressure
- Type 2 diabetes
- Heart disease
- Joint problems
- Sleep problems

The best ways to lose weight are to consume fewer calories and exercise regularly [R].

How A Healthy Weight Prevents High Cholesterol

People who are overweight are more likely to have high cholesterol. Most experts say to aim for a **BMI below 25** for heart health [R, R, R].

Getting to a healthy weight can decrease your total and "bad" (LDL) cholesterol [R, R].

Some people may need to lose at least **5%** of their starting weight to see a drop in cholesterol. This is especially true for obese people or those with diabetes [R, R, R].

Lose weight if overweight. This will help lower your total cholesterol [R, R].

Exercise

Lifestyle recommendation

Try to exercise regularly.

Description

Exercise can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [R].

There are many ways you can be active. You can walk, run, swim, dance, or play team sports. **Everything counts, and it's never too late to start!**

Try getting a mix of cardio (at least 150 min/week) and strength training (2 times/week) [R].

How Exercise Helps Reduce Cholesterol

Exercise is one of the best things you can do to lower cholesterol [R, R, R].

People who exercise for at least 150 minutes per week tend to have lower cholesterol. All types of exercise are helpful. In fact, strength and endurance training have about the same effect on cholesterol [R, R, R, R].

Low-intensity exercise, such as tai chi and yoga, may reduce cholesterol as well [R, R, R, R].

Exercise works especially well if you also eat a healthy diet [R, R, R, R].

---

(6) # Limit Coffee Intake

Dietary recommendation

Limit your coffee intake.

Description

People often drink coffee for an energy and mood boost [R, R].

However, **coffee also comes with some drawbacks.** Drinking a lot of coffee can increase blood pressure and anxiety [R, R].

How Limiting Coffee Intake Helps Reduce Cholesterol

Compounds found in coffee may increase how much cholesterol your body makes [R, R, R].

So, it's no surprise that high **coffee intake is linked to higher levels of total and LDL cholesterol**. This includes decaffeinated coffee. However, filtering the coffee may reduce its impact on cholesterol [R, R, R].

Drinking coffee in moderation may not affect your cholesterol. However, **heavy drinking (6 or more cups a day) may raise it significantly** [R, R, R].

---

(7) # Fiber

Dietary recommendation

Get more fiber from diet or supplements.

Description

Fiber is a type of carb that your body can't digest. It supports gut health, heart health, blood sugar control, and more [R, R].

Women should get 21-25 g of fiber per day, while men should get 30-38 g. Most people in the US don't get enough fiber [R, R].

Fiber supplements are available for people who don't get enough from their diets [R].

How Fiber Helps Reduce Cholesterol

Health officials recommend eating more fiber (3-10 g) to improve your cholesterol levels. Fiber stops your gut from absorbing too much cholesterol. By doing so, it lowers cholesterol levels in the blood [R, R, R].

High-fiber foods that may lower cholesterol include:

- Buckwheat [R, R, R]
- Oats [R]
- Barley [R, R]
- Beans [R]
- Apples [R]

Diets high in the above foods may be a good choice for reducing cholesterol. They include:

- The Mediterranean diet [R, R]
- Vegetarian diets [R, R]
- The DASH diet [R]

The following fiber supplements may also help improve cholesterol levels:

- Psyllium [R, R, R, R]
- Beta-glucans [R, R, R, R]
- Glucomannan [R, R]
- Inulin [R, R, R, R]
- Pectin [R, R]
- Resistant starch [R]

---

(8)   # Berberine

Supplement recommendation

Consider supplementing with berberine.

Description

Berberine is an active compound of some plants used in traditional medicine, such as [R]:

- Barberry
- Oregon grape
- Goldenseal
- Chinese goldthread

You can also get berberine as a supplement. People use it to help with [R, R, R]:

- High blood sugar
- High cholesterol
- High blood pressure
- Polycystic ovary syndrome (PCOS)

How Berberine Helps Reduce Cholesterol

Berberine (0.9-1.5 g/day for 2-6 months) may lower total and "bad" (LDL) cholesterol while raising "good" (HDL) cholesterol [R, R, R, R].

It may also improve cholesterol when it's combined with other ingredients, such as:

- Milk thistle [R, R]
- Red yeast rice [R, R]
- Policosanol [R, R]
- Coenzyme Q10 [R]

Berberine may help remove cholesterol from the blood and reduce its production [R, R].

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(9) **Garlic**

Dietary recommendation

Eat more garlic.

Disclaimer:

Please note: *Garlic can interact with blood thinners (like aspirin, Plavix, Coumadin). If you are on blood thinners, consult your doctor before supplementing with garlic [R].*

Description

Garlic is a vegetable often used to flavor food. It's been a part of traditional medicine for thousands of years [R].

Today, people take garlic to help control their blood pressure and cholesterol [R].

How Garlic Helps Reduce Cholesterol

Garlic (600-900 mg/day for 3-6 months) may help lower total and "bad" (LDL) cholesterol [R, R, R, R, R].

Garlic may help lower cholesterol by blocking its production [R, R, R].

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(10) **Black Seed**

Supplement recommendation

Consider supplementing with black seed.

Description

Black seed (black cumin) and its oil are used in cooking and traditional medicine [R].

People use black seed for [R, R, R, R, R]:

- Asthma
- Allergies
- High blood sugar
- High blood pressure
- Joint pain

How Black Seed Helps Reduce Cholesterol

Black seed supplements may lower total and "bad" (LDL) cholesterol. The antioxidants and healthy fats in black seed may explain these effects [R, R, R].

Studied doses include [R, R, R]:

- **Powder**: 0.5-2 g/day for 1-2 months
- **Oil**: up to 5 g/day for 1-3 months
- **Extract**: 0.7-1 g/day for 2 months

It is sometimes combined with turmeric, garlic, or fenugreek in supplements for high cholesterol [R, R, R].

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(11)

Spirulina

Supplement recommendation

Consider supplementing with spirulina.

Description

Spirulina is a supplement made from blue-green algae that grows in fresh and marine water [R, R].

Dried spirulina is up to 70% protein. It's also rich in vitamins, antioxidants, and healthy fats. [R, R].

People use spirulina supplements to reduce [R, R]:

- Cholesterol
- Blood pressure
- Blood sugar

How Spirulina Helps Reduce Cholesterol

Spirulina supplements (1-10 g/day for 2-12 months) may reduce "bad" (LDL) cholesterol and raise "good" (HDL) cholesterol [R].

Spirulina may stop your gut from absorbing too much cholesterol from food. It may also prevent some of the toxic effects of LDL cholesterol [R, R, R].

Spirulina may be especially helpful for people with [R, R, R, R]:

- Obesity
- High blood pressure
- High blood sugar

Relaxation Techniques

Lifestyle recommendation

Practice relaxation techniques.

Description

We all get stressed from time to time.

Stress has a positive side — it can help you deal with a challenge or avoid danger. However, **it's not healthy to be stressed for a long time** [R, R].

Relaxation techniques such as yoga and meditation can relieve stress in different ways. Most of them focus on breathing and help you get rid of negative thoughts and emotions [R].

People use relaxation techniques to improve conditions like [R, R, R]:

- Anxiety
- Depression
- Chronic pain

How Relaxation Techniques Help Reduce Cholesterol

Stress and anxiety may increase your cholesterol. People under a lot of stress are much more likely to have high "bad" (LDL) cholesterol [R, R, R].

Fortunately, when stress increases cholesterol, it only seems to do so for a short while. Total cholesterol tends to drop back down after stressful situations are over [R].

Relaxation techniques like yoga and meditation may help combat stress and lower cholesterol. They have shown a positive effect on cholesterol levels. Meditative movements like yoga, qi gong and tai chi were shown to decrease cholesterol levels in diabetic patients [R, R, R].

Dietary Antioxidants

Dietary recommendation

Eat more foods containing antioxidants.

Description

Our cells sometimes produce molecules called **reactive oxygen species (ROS)** [R].

High levels of ROS can cause oxidative stress and damage our cells. Oxidative stress plays a role in many health conditions, including [R]:

- High blood sugar
- Type 2 diabetes
- Heart disease
- Cancer

Antioxidants are substances that help combat ROS [R].

Some common antioxidants include vitamin C and vitamin E. **You can get most antioxidants from fresh fruits and vegetables** [R, R].

How Dietary Antioxidants Help Reduce Cholesterol

Eating a lot of tomatoes (200-400 g/day for 1-3 months) may lower "bad" (LDL) cholesterol and raise "good" (HDL) cholesterol [R, R, R].

Tomatoes contain lycopene and other antioxidants. These compounds prevent some of the toxic effects of LDL cholesterol. **Supplementing with lycopene (25 mg per day for 1-2 months) may lower total and LDL cholesterol** [R, R].

Other antioxidant-rich foods may also improve your cholesterol. These include:

- Oranges [R, R, R, R]
- Grapes [R]
- Indian gooseberry [R, R, R, R]
- Tea [R, R, R, R]

If you don't eat enough of these foods, some supplements may help. Alpha-lipoic acid is an antioxidant supplement that may lower LDL cholesterol [R, R, R].

---

(14)

L-Carnitine
Supplement recommendation

Consider supplementing with L-carnitine.

Description

L-carnitine is a compound that helps you burn fat. It also prevents toxic substances from building up in cells [R].

Your body can usually make enough carnitine to meet its needs. You can also get it from **meat and dairy products** [R].

People use L-carnitine for [R, R, R, R, R]:

- Heart problems
- Overactive thyroid
- Infertility in men
- Polycystic ovary syndrome (PCOS)
- Blood sugar control

How L-Carnitine Helps Reduce Cholesterol

L-carnitine (2-3 g/day for 2-12 months) may lower total and "bad" (LDL) cholesterol levels [R, R, R].

L-carnitine probably works by helping the body burn fats for energy [R].

It may also be helpful for people with health issues like diabetes and kidney problems [R, R, R].

Artichoke Leaf Extract

Supplement recommendation

Consider supplementing with artichoke leaf extract.

Description

Artichokes are packed with antioxidants and fiber. People eat the heart of the artichoke. However, many of the plant's active compounds are also found in its leaves [R, R].

People use artichoke leaf extracts to help [R, R, R]:

- Lower cholesterol
- Lower blood pressure
- Improve digestion

How Artichoke Leaf Extract Helps Reduce Cholesterol

Artichoke leaf extract (up to 2.7 g/day for 5-12 weeks) may lower total and "bad" (LDL) cholesterol [R].

Compounds from artichoke leaf extract help your body get rid of cholesterol. They may also prevent your body from making too much cholesterol [R, R].

Fenugreek

Dietary recommendation

Add fenugreek to your diet.

Description

Fenugreek is a leafy green legume originating from central Asia. Its leaves and seeds are both used in cooking. Some people also use the seeds to make tea [R, R].

People use fenugreek tea or supplements for [R, R, R, R]:

- Reproductive health
- Blood sugar control
- Decreasing cholesterol

How Fenugreek Helps Reduce Cholesterol

Fenugreek may lower total and LDL cholesterol. Different forms of fenugreek have been used, including [R, R, R, R]:

- Leaf powder
- Seed extract
- Seed powder

Fenugreek contains active compounds that may help you absorb less cholesterol from food. It's also high in healthy fats and dietary fiber, which help lower cholesterol [R, R, R].
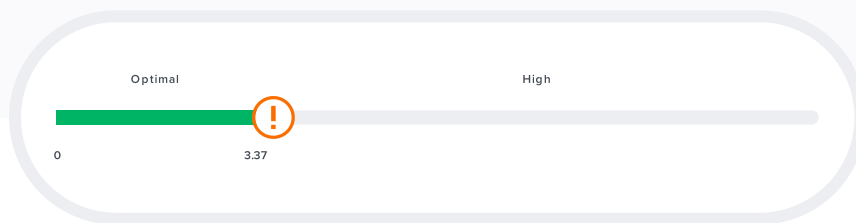
Non-HDL Cholesterol

Lab Results Report

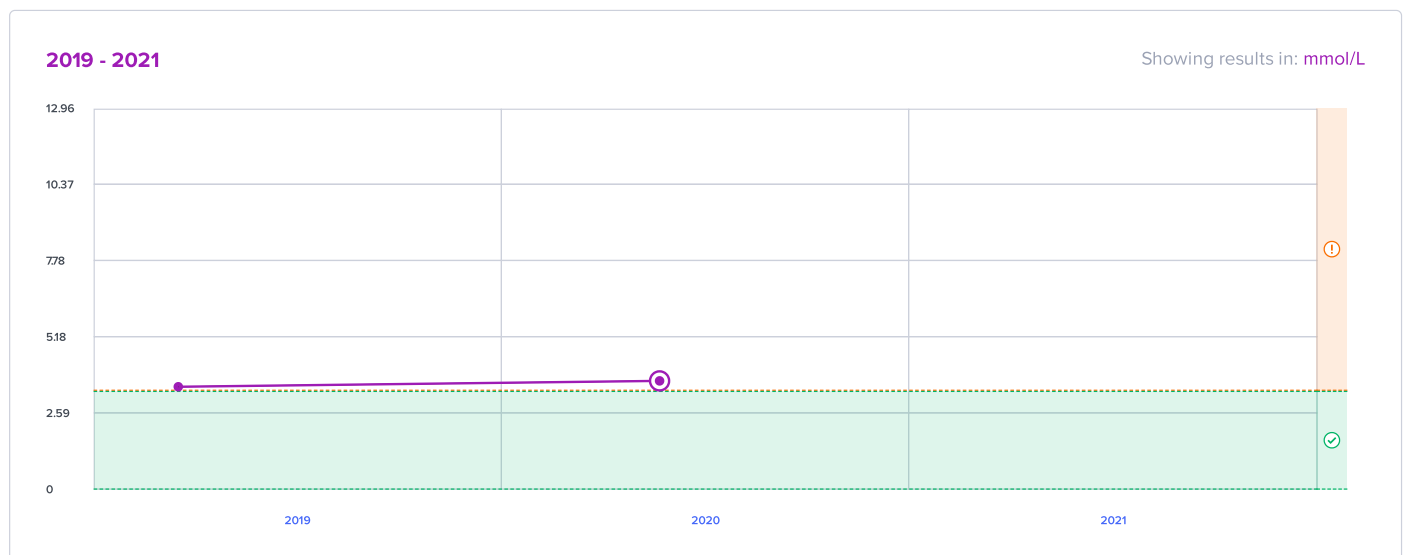**Your result** **3.7 mmol/L**

Optimal range: 0 - 3.37 mmol/L

Date of test: 7 May 2021

Your levels are **high**

Based on your result

Optimal   High

0   3.37

Results Tracker

2019 - 2021

Showing results in: mmol/L

12.96		
10.37		
7.78		
5.18		
2.59		
0		

2019   2020   2021

About Non-HDL Cholesterol

Essentially, this test looks at the total amount of "bad" (LDL + VLDL) cholesterol in your blood.

Non-HDL cholesterol is a measure of all of cholesterol that's carried by LDL and VLDL particles. It's calculated by subtracting your HDL-cholesterol, known as "good" cholesterol, from your total cholesterol [R].

Non-HDL cholesterol is associated with the risk of heart disease [R, R, R, R, R, R, R, R]. In general, the lower your non-HDL cholesterol, the better.

High Non-HDL Cholesterol Health Effects

Your non-HDL-cholesterol is high.

This is caused by an elevation in one of the other cholesterol types- LDL-C or VLDL-C. Check your LDL-C and VLDL-C markers to find out which one is causing the increase in your non-HDL-C levels.

High non-HDL-C levels are associated with an increased risk of heart disease [R, R, R, R, R, R, R].

Also Called

- Non-HDL-C

Prioritized recommendations

① 📋 | ## Check individual markers
Lifestyle recommendation

Description

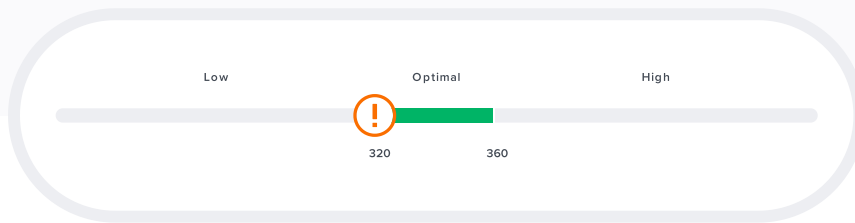Check your LDL-C and VLDL-C markers for more information.

MCHC

Lab Results Report

Your result **319 g/L**
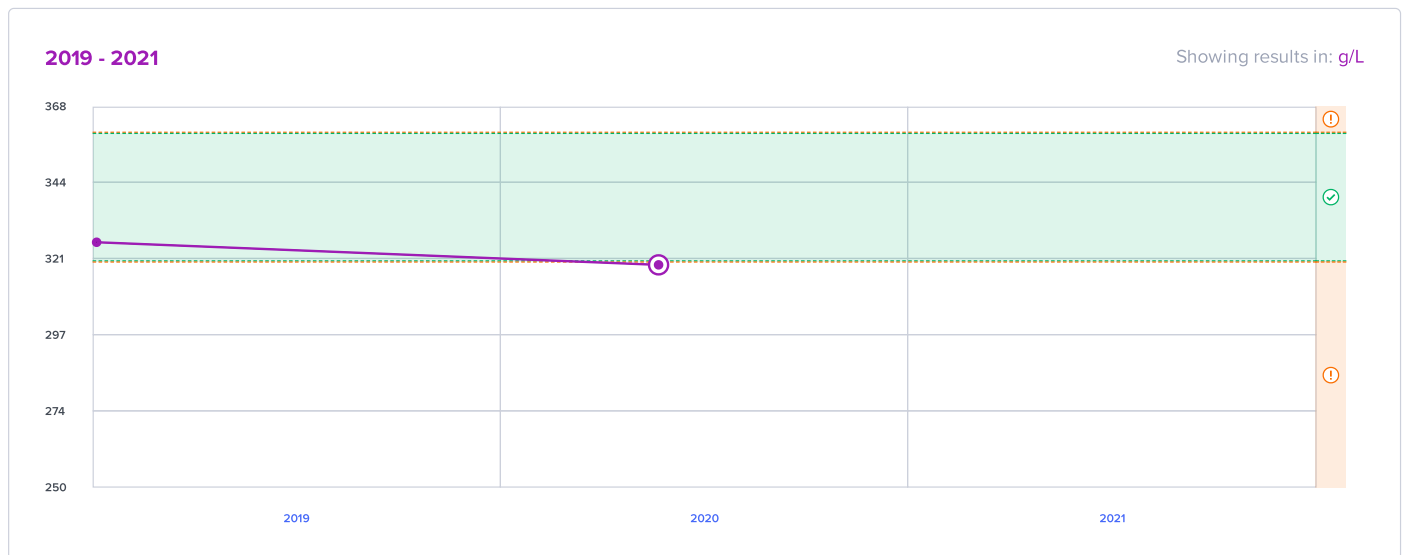
Optimal range: 320 - 360 g/L

Date of test: 7 May 2021

Your levels are **low**

Based on your result

Low	Optimal	High
	320 360	

Results Tracker

2019 - 2021

Showing results in: g/L

About MCHC

Mean corpuscular hemoglobin concentration (MCHC) is the average amount of hemoglobin per red blood cell, relative to the size of the cell. In other words, it tells you what percentage of your blood cells are made up of hemoglobin, the protein that helps transport oxygen in the blood. It is calculated from hemoglobin and your red blood cell count.

Mean corpuscular hemoglobin concentration (MCHC) can be used to help diagnose different types of anemia [R].

Decreased MCHC causes hypochromia ("hypo-" = low, "chromia" = color), which makes the red blood cells paler. Meanwhile, increased MCHC causes red blood cells to become darker, also known as hyperchromia [R, R].

An MCHC test is usually done as a part of a complete blood count (CBC), that also looks at other properties of your red blood cells. Your doctor will interpret a rise or drop in the MCHC together with other tests, such as RBC, hemoglobin, hematocrit, RDW etc.

Remember that some lab-to-lab variability occurs due to differences in equipment, techniques, and chemicals used. Don't panic if your result is slightly out of range in the app - as long as it's in the normal range based on the laboratory that did the testing, your value is normal

Also Called

- Mean corpuscular hemoglobin concentration
- Mean. Corp. Hemo. Conc. (MCHC)

Low MCHC Health Effects

Your mean corpuscular hemoglobin concentration (MCHC) is below normal.

This can cause hypochromia, or paler red blood cells [R].

Your doctor will interpret this result, taking into account your medical history and other tests, such as RBC, hemoglobin, and other red blood cell indices. A result that is slightly lower may not be of medical significance, as this test often varies from day to day and from person to person.

Low MCHC can be caused by:

- Iron deficiency and iron deficiency anemia due to dietary deficiency, gut issues that decrease iron absorption (e.g. Celiac disease), or toxins that interfere with iron absorption (e.g. lead) [R]
- Anemia of chronic disease, found in conditions such as HIV [R, R]
- Thalassemia (a blood disorder that causes abnormal hemoglobin production) [R]
- A rare genetic disorder called Inherited sideroblastic anemia [R]

Causes listed above are commonly associated with low MCHC. Work with your doctor or another health care professional to get an accurate diagnosis.

When your MCHC is low, you can experience symptoms of underlying conditions, chiefly anemia. They include [R]:

- Fatigue
- Shortness of breath
- Dizziness
- Headache
- Pale skin
- Chest pain

Prioritized recommendations

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1 ⓘ Work With Your Doctor
Info recommendation

Description

The most important thing is to work with your doctor to find out what's causing your low MCHC and to treat any underlying conditions. The additional lifestyle changes listed below are other things you may want to discuss with your doctor. None of these strategies should ever be done in place of what your doctor recommends or prescribes

2 ⓘ Check Your Iron Levels
Info recommendation

Description

Iron (Fe) is an essential mineral. It helps make hemoglobin, a protein that carries oxygen to cells. In this way, iron **increases energy** and supports **brain and immune system function** [R, R, R].

Foods rich in iron include [R]:

- Oysters
- White beans
- Beef
- Chocolate
- Spinach
- Fortified cereals

Groups at risk of iron deficiency include [R]:

- Women
- Children
- Vegetarians
- Routine blood donors

Why Should You Check Your Iron Levels When Your MCHC is Low?

Iron deficiency is one of the most common causes of numerous abnormalities related to blood cells, including a low MCHC [R].
Without enough iron in the body, red blood cells cannot make enough hemoglobin. The lack of hemoglobin in red blood cells results in a lower MCHC.
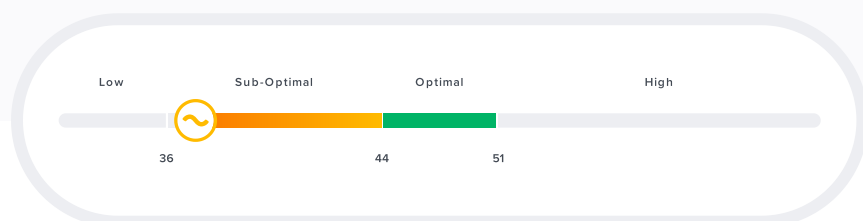
Albumin

Lab Results Report

Your result **37 g/L**

Optimal range: 44 - 51 g/L

Date of test: 7 May 2021

Your levels are sub-optimal

Based on your result

Low	Sub-Optimal	Optimal	High

36   44   51

Results Tracker

2021

Showing results in: g/L

70.8

62.4

54

45.6

37.2

28.8

2021

About Albumin

This test measures the amount of albumin in your blood.

Albumin is the most abundant protein in the blood. It has several important functions. It [R, R, R, R]:

- keeps fluids inside blood vessels and maintains blood volume.
- binds and transports hormones, vitamins, fatty acids, and minerals around the body.
- serves as the main antioxidant in the blood.

Albumin is made in the liver. Albumin levels increase in response to hormones such as insulin and decrease when the liver has to make other proteins, in response to infection or inflammation. Albumin can also decrease due to nutritional deficiencies, and liver and kidney damage or disease [R].

Finally, albumin levels tend to decrease as we age [R].

Remember that there is some lab-to-lab variability in ranges due to differences in equipment, techniques, and chemicals used. Don't panic if your result is slightly out of range in the app - as long as it's in the normal range based on the laboratory that did the testing, your value is normal.

Sub-Optimal Albumin Health Effects

Also Called

- Albumin, Serum

Your albumin levels are within the normal range, but are lower than ideal [R, R, R].

These can decrease albumin levels:

- Chronic illness and infection [R, R, R]
- Chronic inflammation [R]
- Obesity [R]
- Malnutrition or a low-protein diet [R, R, R]
- Gut disorders that cause malabsorption of protein, such as celiac or Crohn's disease [R, R, R, R]
- Liver disease [R, R]
- Kidney disease [R, R]
- Aging [R]

Albumin levels are normally lower in pregnancy [R].

Your doctor will interpret your result, taking into account your medical history, symptoms, and other test results.

Prioritized recommendations

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1 ⓘ | Work With Your Doctor
Info recommendation

Description

Your albumin is in the normal range, but slightly below optimal. Your doctor will interpret this test, taking into account your medical history and other test results. A result that is slightly low may not be of medical significance, as this test often varies from day to day and from person to person.

Remember that low albumin is a consequence and not a cause of underlying health issues. Therefore, focusing on changing your albumin levels may not improve your health, but beneficial lifestyle changes that improve your overall health may also increase your albumin levels.

Such lifestyle changes, listed below, are other things you may want to discuss with your doctor. None of these strategies should ever be done in place of what your doctor recommends or prescribes!

2 | Sufficient Protein Intake
Dietary recommendation

Ensure that you have enough protein in your diet.

Description

Proteins, fats, and carbs are macronutrients. You need these nutrients in large ('macro') amounts. They provide your body with the energy it needs to function properly [R].

You should choose high-quality foods that give you the "best" version of each macronutrient. For example, too much saturated fat and protein from animal sources may increase the risk of heart disease [R, R].

Good sources of protein include [R, R]:

- Lean meats
- Eggs
- Soy
- Beans

It's important to get enough protein from good food sources. You should be getting **at least 0.8 g of protein for each kg of body weight** (or 0.36 g for each pound of body weight) **per day** [R].

Note that the amount of protein you need can depend on many factors. These include:

- How much exercise you get

- Your age
- Your overall health
- How much muscle you'd like to build

How Dietary Protein Affects Albumin

Albumin is an indicator of nutritional status.

The liver makes use of amino acids, the building blocks of any protein, and several minerals and vitamins to keep the albumin production process going. Low albumin levels are considered a representation of malnutrition and a poor diet [R, R, R].

Make sure you have a well balanced diet that guarantees a healthy supply of energy and enough protein (animal or plant-derived). Some research has shown that increasing dietary protein can increase albumin levels [R, R, R].

However, in some groups of people, like those with kidney disease, a high protein diet may have the opposite effect. If you have kidney disease, ask your doctor if a high-protein diet makes sense for you [R].

It is recommended to get around 0.8 g of protein for each kg of body weight daily. To calculate the grams of dietary protein you should have daily, you can multiply your weight in pounds by 0.36. For a person weighing 200 pounds, that is 75g [R].

3 Maintain A Healthy Body Weight

Lifestyle recommendation

Description

People have a healthy weight when they don't have too much or too little body fat [R].

Body mass index (BMI) can help determine body fat levels. Your BMI is your mass (in kg) divided by the square of your height (in meters) [R].

In general [R]:

- People with a BMI **under 18.5** tend to be **underweight**
- People with a BMI **between 18.5 and 25** tend to have a **healthy weight**
- People with a BMI **between 25 and 30** tend to be **overweight**
- People with a BMI **over 30** tend to be **obese**

People with a BMI outside the healthy range are more likely to have [R, R, R]:

- Nutrient imbalances
- Heart disease
- Bone and joint problems

People who are overweight or obese are more likely to have [R, R]:

- High blood pressure
- Type 2 diabetes
- Heart disease
- Joint problems
- Sleep problems

The best ways to lose weight are to consume fewer calories and exercise regularly [R].

How Maintaining A Healthy Weight Helps With Low Albumin Levels

Losing weight if you are overweight. Obesity is associated with chronic inflammation, which can lower albumin [R].

On the other hand, if you are underweight, try to reach a healthy weight. Low weight has been associated with poor health and low albumin levels, especially in the elderly [R].

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④ 🏋️

Optimize Sleep

Lifestyle recommendation

Try to get 7-8 h of good-quality sleep every night.

Description

Sleep supports your body and mind. It helps:

- Support brain health [R, R]
- Maintain a healthy weight and appetite [R, R, R]
- Regulate blood pressure [R, R]
- Balance blood sugar [R, R]

Ways to sleep better include [R]:

- Reducing your bright light exposure (screen time) in the evenings
- Sticking to a regular sleep schedule
- Avoiding hunger or large meals before bed
- Avoiding nicotine, caffeine, and alcohol before bed
- Maintaining a sleep area that's cool, dark, and quiet

How Optimizing Sleep Helps With Low Albumin Levels

Get the recommended 6-8h of sleep each night. Extremes in total sleep duration (<5h and >9h), including napping time, have been associated with increased loss of albumin through urine [R, R].

If you think you might have a sleep disorder, talk to your doctor. Sleep apnea may also reduce albumin by increasing its loss through urine [R, R].

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⑤ 🏋️

Exercise

Lifestyle recommendation

Try to exercise regularly.

Description

Exercise can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [R].

There are many ways you can be active. You can walk, run, swim, dance, or play team sports. **Everything counts, and it's never too late to start!**

Try getting a mix of cardio (at least 150 min/week) and strength training (2 times/week) [R].

How Exercising Helps with Low Albumin Levels

Exercise regularly!

Some studies show that aerobic exercise boosts albumin levels by stimulating its production. This effect of exercise on albumin is probably an adaptation to increase blood volume and performance. Higher amounts of aerobic exercise can increase albumin levels to a further degree [R, R, R].

Aerobic exercise seems more effective than strength exercise for raising albumin levels. However, strength exercise might have the opposite effect in men. Strength training might reduce albumin levels due to increased albumin loss and increased protein requirement for building muscle. Getting some guidance from a dietician or nutritionist to plan a diet that supplies all the protein your body needs could be helpful [R].

6

Mediterranean Diet

Dietary recommendation

Consider trying the Mediterranean diet.

Description

The Mediterranean diet is based on the traditional cuisine from the Mediterranean region. It's rich in foods like [R]:

- Fruits and vegetables
- Whole grains
- Healthy fats (fish and olive oil)

Red meat consumption is limited and dairy is eaten in moderation.

How Mediterranean Diet Helps With Low Albumin Levels

Research has shown that switching to a higher-quality diet like the Mediterranean diet can help with low albumin [R, R].

Mediterranean diet may help by decreasing inflammation. Inflammation decreases albumin production [R, R, R].
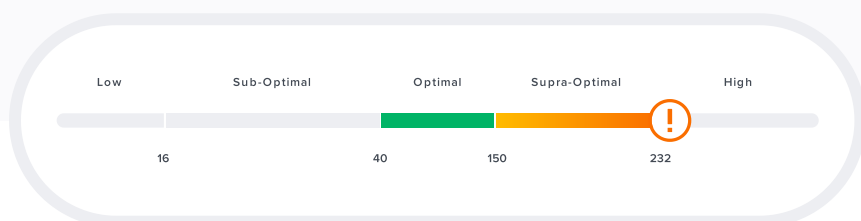
Ferritin

Lab Results Report

Your result **244 ug/L**

Optimal range: 40 - 150 ug/L

Date of test: 7 May 2021

Your levels are **high**

Based on your result

Low	Sub-Optimal	Optimal	Supra-Optimal	High

16   40   150   232

Results Tracker

2021

Showing results in: ug/L

400

327

254

181

108

35.2

2021

*Ranges for this lab marker depend on your age. The graph above is showing the ranges for the selected result.

About Ferritin

This test measures ferritin, a protein that stores and transport iron in the blood.

Iron has many important roles in our bodies. For example, it's critical for making red blood cells and it's needed for muscle and heart cells to produce energy. However, iron by itself can be toxic, primarily because it produces free radicals that cause damage to cells and tissues. For this reason, the body uses special proteins like ferritin to safely store and transport iron to where it is needed [R].

Low ferritin levels signal that the body's iron stores are low. Higher levels, on the other hand, may indicate that you have a condition that causes the body to store too much iron [R].

However, ferritin also plays a role in the immune response, and increases in conditions such as chronic inflammation, infections, and cancer, irrespective of iron levels [R].

This test therefore serves as a measure of the total amount of iron stored in your body, but can also point to inflammatory conditions [R].

High Ferritin Health Effects

Also Called

- Ferritin, Serum

Your ferritin levels are high.

However, a result that's higher than normal, doesn't necessarily mean that your have a health condition needing treatment. Your doctor will interpret your result, taking into account your medical history, symptoms, and other test results.

These can increase ferritin levels:

- Chronic inflammatory conditions and autoimmune disorders (e.g. rheumatoid arthritis) [R, R, R, R, R]
- Infections [R, R]
- Obesity and metabolic disturbances such as insulin-resistance [R, R, R, R]
- Smoking [R, R]
- Alcoholism [R, R]
- Iron overload, in conditions such as hemochromatosis and transfusion-dependent anemias (e.g. thalassemia) [R, R, R]
- Liver disease [R]
- Chronic kidney disease [R, R]
- Hyperthyroidism [R]
- Cancer [R, R]

Causes shown here are commonly associated with high ferritin levels. Work with your doctor or another health care professional to get an accurate diagnosis.

Even if your iron levels are normal, high ferritin levels can cause problems by "locking away" your body's iron in long-term storage, which can mean that not enough iron is available for important tasks like the formation of new blood cells [R].

Symptoms that have been associated with high ferritin levels include [R, R, R, R, R, R, R]:

- Lack of energy and fatigue
- Weight loss
- Stomach pain
- Joint pain
- Low sex drive and infertility
- Heart problems

Prioritized recommendations

For High Ferritin

---

1 ⓘ Work With Your Doctor
Info recommendation

Description

Work with your doctor to find out what's causing your high ferritin and to treat any underlying conditions.

2 Maintain A Healthy Body Weight
Lifestyle recommendation

Description

People have a healthy weight when they don't have too much or too little body fat [R].

Body mass index (BMI) can help determine body fat levels. Your BMI is your mass (in kg) divided by the square of your height (in meters) [R].

In general [R]:

- People with a BMI **between 18.5 and 25** tend to have a **healthy weight**
- People with a BMI **between 25 and 30** tend to be **overweight**
- People with a BMI **over 30** tend to be **obese**

People who are overweight or obese are more likely to have [R, R]:

- High blood pressure
- Type 2 diabetes
- Heart disease
- Joint problems
- Sleep problems

The best ways to lose weight are to consume fewer calories and exercise regularly [R].

How Maintaining A Healthy Weight Helps Decrease Ferritin

Ferritin levels may be higher in obese and overweight patients, especially if they have other diseases such as high blood pressure and diabetes. Such higher ferritin levels likely reflect inflammation, rather than higher iron storage [R, R, R, R, R].

Avoid Cigarette Smoke

Lifestyle recommendation

Description

You already know that tobacco is not great for your health. **Smoking affects your entire body.** It can damage your brain, heart, lungs, and more [R].

And even if you're not a smoker, **secondhand smoke can cause health issues similar to smoking** [R, R].

But, there's good news: **avoiding cigarette smoke can reverse many of its negative effects**. It's a great way to dramatically improve your health [R].

How Avoiding Cigarette Smoke Affects Ferritin

Cigarette smoke alters iron metabolism.

Smokers tend to have higher levels of iron and ferritin [R, R].

However, cigarette smoke could increase the production of abnormal ferritin and reduce its iron storage properties [R, R, R].

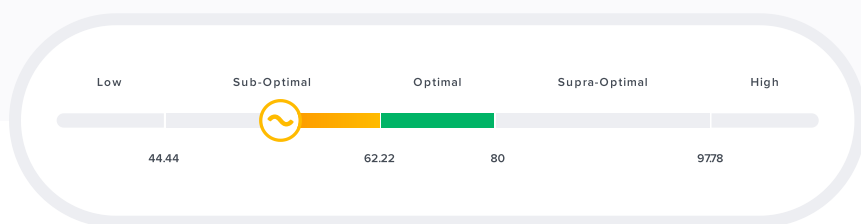Check your iron levels for more information.

Creatinine

Lab Results Report

Your result **54 umol/L**

Optimal range: 62.22 - 80 umol/L
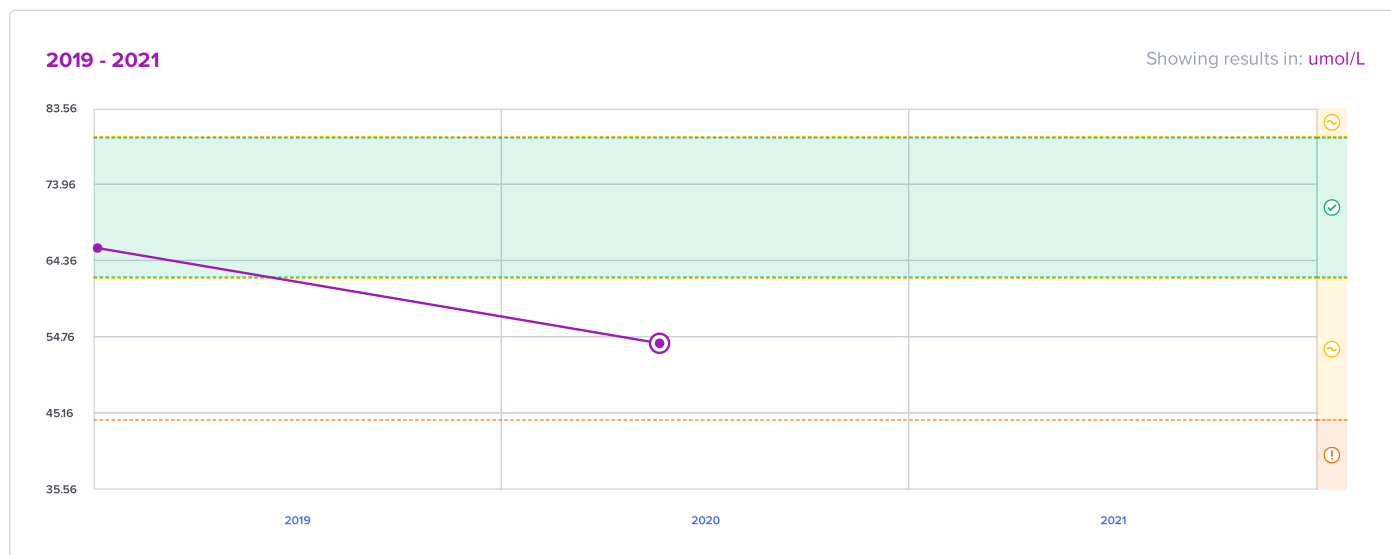
Date of test: 7 May 2021

Your levels are sub-optimal

Based on your result

Low	Sub-Optimal	Optimal	Supra-Optimal	High

44.44   62.22   80   97.78

Results Tracker

2019 - 2021

Showing results in: umol/L

83.56
73.96
64.36
54.76
45.16
35.56

2019   2020   2021

About Creatinine

This test measures the levels of creatinine in your blood.

Creatinine is a waste product of the normal wear and tear of muscles. It is produced from creatine, a protein needed to generate the energy for muscle contractions [R, R].

The production of creatinine essentially reflects lean body mass, and because muscle mass changes little from day to day, the production rate is also fairly constant. Women, children, and older people tend to have lower levels of creatinine compared to adult men because they have less muscle mass [R].

Creatinine is removed from the body by the kidneys, which filter almost all of it from blood into urine. When kidneys aren't working properly, creatine remains in the blood and builds up. That is why blood creatinine levels can be used to check how well your kidneys are working [R, R].

Remember that there is some lab-to-lab variability in ranges due to differences in equipment, techniques, and chemicals used. Don't panic if your result is slightly out of range in the app - as long as it's in the normal range based on the laboratory that did the testing, your value is normal. The range of this test also depends on your age. Ask your doctor to explain your results.

Also Called

- Creatinine, Serum
- Creatinine - Serum

However, also bear in mind that this test is not very sensitive when it comes to kidney health. Creatinine levels may not increase above normal until more than 50% of total kidney function is lost. A more sensitive test, eGFR, is calculated based on your creatinine value, taking into account your age, gender, and ethnicity -- all of which affect your creatinine levels [R].

Sub-Optimal Creatinine Health Effects

Your creatinine is within the normal range but lower than optimal. Lower creatinine levels are not always a concern. They often just indicate low muscle mass [R, R, R].

These can cause low creatinine:

- Low muscle mass [R]
- Vegetarian diet [R]
- Limb amputation (low creatinine is normal in this case) [R]
- Liver disease [R]
- Pregnancy (low is normal) [R]

Your doctor will interpret your result, taking into account your medical history, symptoms, and other test results.

Prioritized recommendations

For Sub-Optimal Creatinine

---

1 ⓘ Work With Your Doctor

Info recommendation

Description

Discuss the lifestyle changes listed below with your doctor. None of these strategies should ever be done in place of what your doctor recommends or prescribes!

2 Maintain Muscle Mass

Lifestyle recommendation

Consider taking steps to ensure you maintain muscle mass.

Description

Preserving muscle mass requires a combination of diet and exercise. The following strategies have been shown to help maintain muscle mass [R, R]. Discuss them with your doctor to make sure these strategies are right for you

- Progressive resistance training
- Maintain a regular eating schedule, and make sure to get a balanced diet
- Consume an adequate amount of protein. It is recommended to get around 0.8 g of protein for each kg of body weight daily [R]
- Measure your Vitamin D levels and supplement with Vitamin D if low. Vitamin D receptors are found in muscles and Vitamin D has been found to enhance muscular strength [R]
- Consider supplementing with omega-3-fatty acids, which have been shown to improve muscle mass and strength [R]

How Muscle Mass Affects Creatinine

Creatinine is often considered a marker of healthy muscle mass. Creatinine levels have been correlated with the amount of lean muscle mass. A low creatinine can indicate a decrease in muscle mass [R, R].

Limit Alcohol Intake

Lifestyle recommendation

Consider drinking less alcohol.

Description

Many people drink alcohol in their free time. They like it because it temporarily improves their mood and mental state [R].

Experts agree that having 1-2 drinks per day likely won't cause harm. However, heavy drinking is bad for your health [R].

Low-moderate alcohol consumption is usually defined as [R, R, R]:

- **Women**: up to 1 drink per day
- **Men**: up to 2 drinks per day

How Alcohol Affects Creatinine

If your creatinine is abnormally low, reduce or eliminate your alcohol consumption. Alcohol is associated with a decrease in creatinine.

Several studies have noted that alcoholics frequently have a low creatinine. One study that followed men for 14 years showed that people who drank alcohol had decreased creatinine levels. This was dose dependent, meaning that people that drank more had lower levels of creatinine [R, R, R].
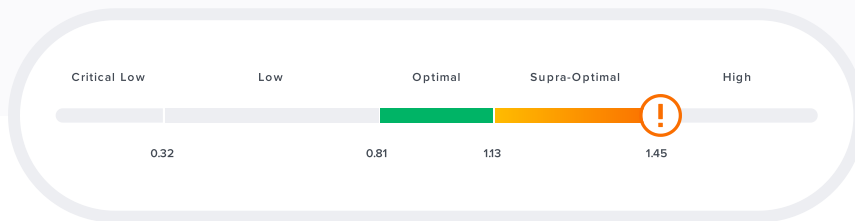
Phosphate

Lab Results Report

Your result **1.47 mmol/L**

Optimal range: 0.81 - 1.13 mmol/L

Date of test: 7 May 2021

Your levels are **high**

Based on your result

Critical Low	Low	Optimal	Supra-Optimal	High

0.32　　　　0.81　1.13　　1.45

Results Tracker

2021

Showing results in: mmol/L

2.26

1.95

1.64

1.33

1.02

0.71

2021

* Ranges for this lab marker depend on your age. The graph above is showing the ranges for the selected result.

About Phosphate

This test measures the amount of phosphate (phosphorus) in your blood [R].

Phosphorus is the second most abundant mineral in the human body, where it's mainly found in a form called phosphate, which is a phosphorus atom bound to four oxygen atoms [R, R].

Phosphorus makes up about 1 percent of an adult's body: 85% of it is found in the bone while the remaining 15% is distributed in cells and tissues throughout the body, where it is mainly used to store energy in the form of ATP [R, R].

Phosphorus is crucial for bone health, muscle and nerve function, cell and DNA structure, and blood acid-base (pH) balance [R].

Phosphorus levels are controlled by the gut, kidneys, and the hormones calcitriol (vitamin D), calcitonin, parathyroid hormone (PTH), and FGF23 [R, R].
Since phosphorus is abundant in the diet, deficiency due to low dietary intake is rare. However, it can occur during prolonged starvation or in certain gut conditions that cause malabsorption or diarrhea.

Also Called

- Phosphorus
- Phosphate (as Phosphorus)

There are many different health conditions that can decrease or increase phosphate levels. Your doctor will interpret your test, taking into account your medical history, symptoms, and other test results.

Remember that there is some lab-to-lab variability in ranges due to differences in equipment, techniques, and chemicals used. Don't panic if your result is slightly out of range in the app - as long as it's in the normal range based on the laboratory that did the testing, your value is normal.

High Phosphate Health Effects

Your phosphate levels are higher than normal.

A result that's higher than normal, doesn't necessarily mean that your have a health condition needing treatment. Your doctor will interpret your result, taking into account your medical history, symptoms, and other test results.

High blood phosphate can be caused by:

- Kidney disease/failure -- impaired kidney function is the most common cause of elevated blood phosphate levels [R]
- Too much vitamin D [R]
- Overdosing on calcium (milk-alkali syndrome) [R, R]
- Increased dietary intake of phosphorus-containing foods (soft drinks and pre-packaged foods) [R, R]
- Phosphate-containing laxatives and enemas [R, R]
- Prolonged exercise [R, R, R, R]
- Dehydration [R]
- Smoking [R, R]
- Rapid abnormal destruction of red blood cells (hemolysis) or muscle tissue (rhabdomyolysis) [R, R, R, R, R]
- Low parathyroid hormone levels (hypoparathyroidism) [R]
- Overactive thyroid gland (hyperthyroidism) [R]
- Diabetic ketoacidosis, a complication of diabetes in which the body produces too much ketones [R, R]
- Too much growth hormone (acromegaly) [R]
- Cancer and initiation of cancer treatment (tumor lysis syndrome) [R, R]

A high platelet count or high bilirubin seen in liver disease can interfere with phosphate measurement, resulting in falsely elevated levels [R, R].

Causes shown here are commonly associated with high phosphate levels. Work with your doctor or another health care professional to get an accurate diagnosis.

Prioritized recommendations

For High Phosphate

1 ⓘ Work With Your Doctor

Info recommendation

Description

The most important thing is to work with your doctor to find out what's causing your high phosphate level and to treat any underlying conditions, such as infections or inflammation.

If you have uncontrolled diabetes, it is critical to bring blood sugar levels under control with diet, exercise, and medication. Diabetes can induce blood changes that lead to increased phosphorus levels [R].

The additional lifestyle changes listed below are other things you may want to discuss with your doctor. None of these strategies should ever be done in place of what your doctor recommends or prescribes!

2 Niacin

Supplement recommendation

Discuss supplementing with niacin (vitamin B3) with your doctor.

Description

Niacin (vitamin B3) is found in many foods. Your body needs it to support your nervous system, skin, gut, and more [R].

The daily recommended intake of niacin is **16 mg for men** and **14 mg for women**. That's roughly the amount available in [R]:

- 3 ounces of beef liver
- 5 ounces of chicken or turkey
- 6 ounces of canned tuna
- 3 cups of brown rice

Most people get enough niacin from their diets [R].

How Niacin Helps Reduce Phosphorus

Niacin supplementation can reduce phosphorus by reducing its intestinal absorption and increasing its urinary loss. For certain groups of people, like those with chronic kidney disease or on dialysis, niacin can effectively lower phosphorus levels. Niacin should be taken under the supervision of a doctor [R, R, R, R, R, R].

Remember, always speak to your doctor before taking any supplements, because they may interfere with your health condition or your treatment/medications!

Please note: *Niacin supplements have been linked to liver damage and strokes. They may also cause flushing, bruises, and bleeding. Talk to your doctor before supplementing* [R, R, R].
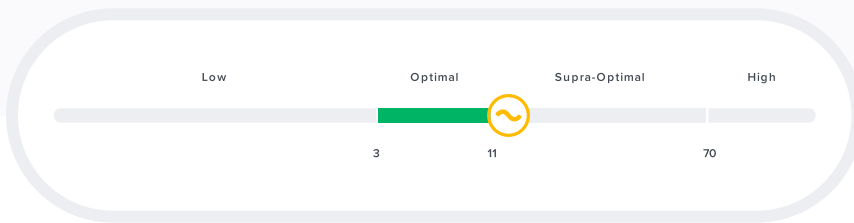
GGT

Lab Results Report

Your result **15 U/L**

Optimal range: 3 - 11 U/L

Date of test: 7 May 2021

Your levels are **supra-optimal**

Based on your result

Low	Optimal	Supra-Optimal	High
	3 11		70

Results Tracker

2021

Showing results in: U/L

86

69.28

52.56

35.84

19.12

2.4

2021

* Ranges for this lab marker depend on your age. The graph above is showing the ranges for the selected result.

About GGT

This test measures the amount of gamma-glutamyl transferase (GGT) in the blood.

Gamma-glutamyl transferase (GGT) is an enzyme mainly found in the liver, gallbladder, kidneys, and pancreas. This enzyme helps break down proteins and also breaks down glutathione, a major antioxidant [R, R].

GGT levels are usually elevated in conditions that cause damage to the liver or bile duct, and to a lesser degree, the kidney and pancreas. This blood test is therefore commonly used to help diagnose potential liver and bile-duct disease [R].

Apart from being a tool that can point to liver disorders and alcohol abuse, a growing body of evidence has established the link between higher GGT levels and inflammation and oxidative stress [R, R, R, R, R, R].

Research has linked higher GGT, even within the normal range, with an increased risk of diabetes, heart disease, kidney disease, and cancer [R, R, R, R]. However, genetic studies found that this relationship likely isn't causal, which means that GGT serves as an indicator that there are health issues in the body, but it's not directly causing them [R, R, R].

Also Called

- Gamma-glutamyl transferase
- Gamma Glutamyl Transferase (GGT)

Your GGT is within the normal range, but higher than optimal [R, R, R, R, R, R, R].

GGT can be increased by:

- Alcohol consumption [R, R]
- Smoking (in heavy drinkers) [R, R]
- High intake of dietary iron (fish and meat) [R]
- Obesity [R]
- Anorexia [R]
- Environmental pollutants/toxins [R]
- Liver diseases [R]
- Gallstones and bile duct obstruction [R]

Many drugs and supplements may increase GGT levels, including [R, R, R, R]:

- Nonsteroidal anti-inflammatory drugs, such as ibuprofen
- Heartburn relief medications
- Blood thinners
- Water pills (diuretics)
- Anti-seizure medications
- Black cohosh
- Kava

Your doctor will interpret your results, taking into account your medical history, symptoms, and other test results.

Research has linked GGT levels in this range with a potentially higher risk of:

- Metabolic syndrome (a cluster of 3 of the following conditions: high blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol or triglyceride levels) [R, R, R, R, R]
- Diabetes [R, R, R, R, R]
- Hardening of the arteries [R, R, R]
- Heart disease, including heart attack, heart failure, and stroke [R, R, R, R, R, R, R]
- Cancer [R, R, R, R]

Prioritized recommendations

For Supra-Optimal GGT

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① ⓘ | # Work With Your Doctor
Info recommendation

Description

Your doctor will interpret this test, taking into account your medical history and other test results. A result that is slightly high may not be of medical significance, as this test often varies from day to day and from person to person.

Some drugs or supplements can damage the liver, leading to high GGT levels. Have a doctor or pharmacist review your medications to see if any of them might be causing harm to your liver. Discuss alternative options with your doctor.

Focusing on decreasing your GGT levels may not improve your overall health because GGT is not causing your health issues. However, adopting a healthier lifestyle which will improve your overall health will likely also decrease your GGT levels.

The additional lifestyle changes listed below are other things you may want to discuss with your doctor. None of these strategies should ever be done in place of what your doctor recommends or prescribes!

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② | # Plant Based Diet
Dietary recommendation

Consider trying a plant-based diet.

Description

A plant-based diet is not necessarily vegetarian or vegan, but it focuses on eating mostly foods of plant origin [R].

It includes a variety of fruits and vegetables, grains, dairy, high-protein foods, and oils [R].

Following a plant-based diet may reduce the odds of [R, R, R, R]:

- Heart disease
- Diabetes
- Kidney disease

How A Plant-Based Diet Helps Decrease GGT

Eating more fruits and vegetables! Research has shown a link between a diet rich in plant-based foods and lower GGT levels, especially in men. Whole-grain products might also be beneficial [R, R, R].

According to one study, higher levels of body antioxidants may be predictive of lower GGT levels. Such levels of antioxidants were partially based on dietary vitamin C and beta-carotene intake [R].

However, if you're thinking about replacing fruits and veggies with supplements, you may want to think twice. One study showed that vitamin supplements were associated with higher GGT levels [R].

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③ 🌱 | # Reduce Meat Intake
Dietary recommendation

Consider eating less meat.

Description

Proteins, fats, and carbs are macronutrients. You need these nutrients in large ('macro') amounts. They provide your body with the energy it needs to function properly [R].

You should choose high-quality foods that give you the "best" version of each macronutrient. For example, too much saturated fat and protein from certain animal sources may increase the risk of heart disease and infertility [R, R, R].

Consider replacing red meat with other high-protein foods, such as [R, R]:

- Eggs
- Fish
- Soy
- Beans

How Reducing Meat Intake Helps Decrease GGT

Limiting your intake of red meat! Studies suggest a link between red meat intake and a slight but proportional increase in GGT. However, increases in GGT might be visible only upon long-standing red meat consumption. People eating red meat daily for 8 weeks did not experience GGT rises [R, R, R].

This negative impact on GGT levels might be caused by some red meat components that promote inflammation and oxidative stress [R].

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④ 💗 | # Limit Alcohol Intake
Lifestyle recommendation

Consider drinking less alcohol.

Description

Many people drink alcohol in their free time. They like it because it temporarily improves their mood and mental state [R].

Experts agree that having 1-2 drinks per day likely won't cause harm. However, heavy drinking is bad for your health [R].

How Limiting Alcohol Intake Helps Decrease GGT

GGT is an indicator of alcohol intake because its levels can rise immediately and in direct proportion to alcohol consumption [R, R, R, R, R].

Consumption of alcohol could lead to such changes in GGT because alcohol directly damages liver cells and causes or worsens existing liver conditions [R, R, R].

Additionally, alcohol consumption in people with high GGT may increase the risk of heart disease. This occurs even if the high GGT levels are not alcohol-related. Avoid drinking alcohol or refrain from it altogether until your GGT returns to the normal range [R].

5 # Maintain A Healthy Body Weight

Lifestyle recommendation

Description

People have a healthy weight when they don't have too much or too little body fat [R].

Body mass index (BMI) can help determine body fat levels. Your BMI is your mass (in kg) divided by the square of your height (in meters) [R].

In general [R]:

- People with a BMI **between 18.5 and 25** tend to have a **healthy weight**
- People with a BMI **between 25 and 30** tend to be **overweight**
- People with a BMI **over 30** tend to be **obese**

People who are overweight or obese are more likely to have [R, R]:

- High blood pressure
- Type 2 diabetes
- Heart disease
- Joint problems
- Sleep problems

The best ways to lose weight are to consume fewer calories and exercise regularly [R].

How Maintaining a Healthy Weight Helps Decrease GGT

GGT levels are associated with your weight!

Several studies show that people with high BMI have high GGT levels. According to one study, high levels of body pro-oxidants, which were partially based on body weight, are strongly associated with high GGT, especially in women [R, R, R, R, R].

If you are overweight, losing weight may help reduce GGT.

(6) Exercise

Lifestyle recommendation

Try to exercise regularly.

Description

Exercise can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [R].

There are many ways you can be active. You can walk, run, swim, dance, or play team sports. **Everything counts, and it's never too late to start!**

Try getting a mix of cardio (at least 150 min/week) and strength training (2 times/week) [R].

How Exercising Helps Decrease GGT

Physical inactivity is associated with high GGT levels [R].

However, exercise can decrease abnormally high GGT levels in sedentary people, regardless of whether they do endurance or strength exercises [R, R].

Indeed, according to one study, higher levels of body antioxidants may be associated with lower GGT levels. Such levels of antioxidants were partially based on physical activity [R].

(7) Coffee

Lifestyle recommendation

Try to drink a moderate amount of coffee.

Description

People drink coffee for an energy and mood boost. Caffeine is the main ingredient responsible for these effects [R, R].

Drinking moderate amounts of coffee may also [R, R, R]:

- Improve heart health
- Improve mood
- Help reduce blood sugar

Please note: *Too much caffeine (over 400 mg per day) may lead to sleep problems, high blood pressure and cholesterol, fast heart rate, and dependence. If you're pregnant, try to limit caffeine to 200 mg per day* [R, R].

How Coffee Helps Decrease GGT

Studies have found a link between drinking coffee (or caffeinated beverages) and lower GGT. Indeed, one study found that drinking more than 3 cups of coffee per day reduced the odds of abnormally elevated GGT levels [R, R, R, R, R, R].

The beneficial effect of coffee on GGT and other liver enzymes might be due to its content of diterpenes and antioxidants. These substances reduce inflammation and improve the liver detoxification capacity [R, R, R].

Research suggests that drinking moderate amounts of coffee on a regular basis may benefit liver health in general and lower liver enzymes in the blood, such as GGT. Discuss your coffee intake with your doctor [R, R].

⑧ **Avoid Cigarette Smoke**

Description

You already know that tobacco is not great for your health. **Smoking affects your entire body.** It can damage your brain, heart, lungs, and more [R].

And even if you're not a smoker, **secondhand smoke can cause health issues similar to smoking** [R, R].

But, there's good news: **avoiding cigarette smoke can reverse many of its negative effects**. It's a great way to dramatically improve your health [R].

How Avoiding Cigarette Smoke Helps Decrease GGT

Cigarette smoke is associated with elevated GGT, especially if there is concomitant alcohol intake [R, R, R, R, R, R].
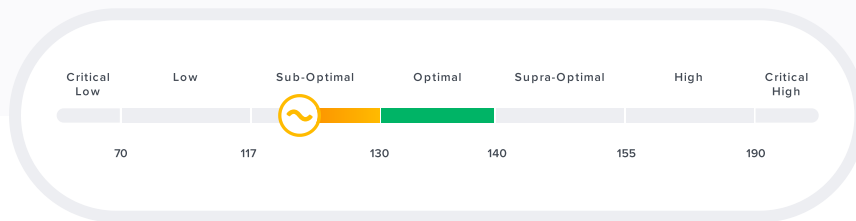
Hemoglobin

Lab Results Report

Your result **122 g/L**

Optimal range: 130 - 140 g/L
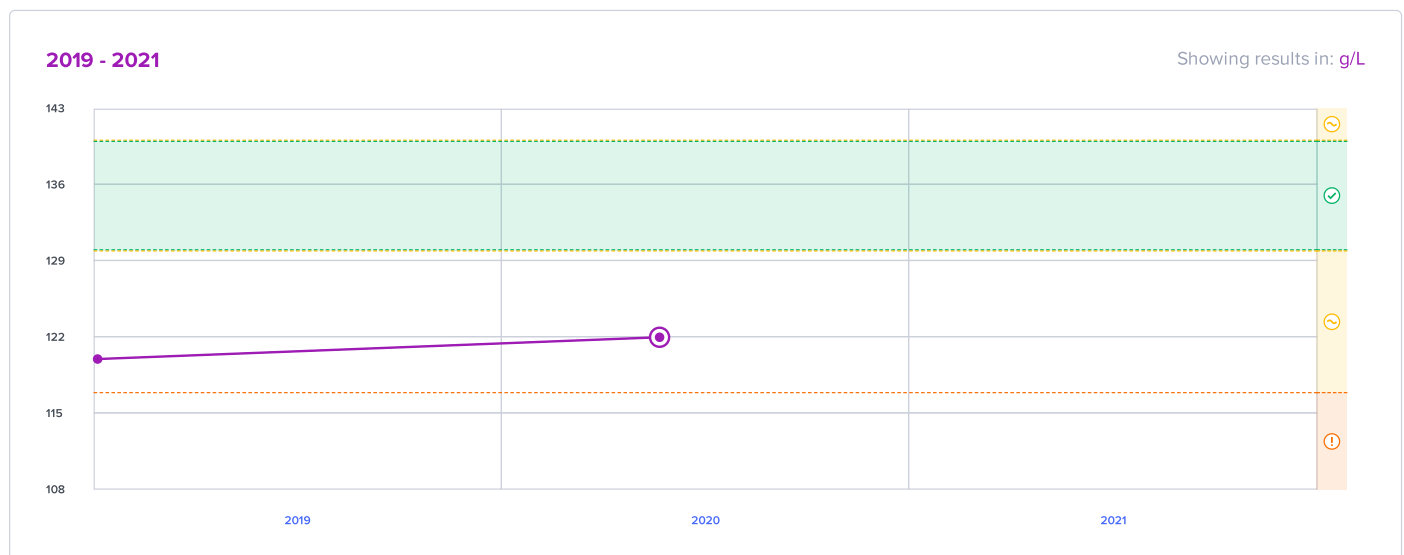
Date of test: 7 May 2021

Your levels are **sub-optimal**

Based on your result

Critical Low	Low	Sub-Optimal	Optimal	Supra-Optimal	High	Critical High
70	117	130	140	155	190	

Results Tracker

2019 - 2021

Showing results in: g/L

143
136
129
122
115
108

2019   2020   2021

About Hemoglobin

This test measures the amount of hemoglobin in your blood.

Hemoglobin is a protein found in red blood cells that transports oxygen from the lungs to the rest of the body. It contains the mineral iron, which helps it carry oxygen. After the oxygen is used, hemoglobin also carries carbon dioxide back to the lungs where it is exhaled [R].

Hemoglobin levels are used to help diagnose anemia (decreased amount of red blood cells) and polycythemia (increased production of red blood cells).

Both low and high hemoglobin levels can impact your health. They both decrease the oxygen supply to the tissues, although by different mechanisms. High hemoglobin is further associated with an increased risk of high blood pressure and blood clots [R, R, R, R, R, R].

A hemoglobin test is usually done as a part of a complete blood count (CBC), that also looks at other properties of your red blood cells. Your doctor will interpret a rise or drop in hemoglobin together with other tests, such as RBC, hematocrit, and red blood cell indices.

Remember that there is some lab-to-lab variability in ranges due to differences in equipment, techniques, and chemicals used. Don't panic if your result is slightly out of range in the app - as long as it's in the normal range based on the laboratory that did the testing, your value is normal.

Also Called

- HGB
- Hemoglobin

Your hemoglobin levels are in the normal range, but lower than optimal.

Hemoglobin levels normally decrease with red blood cell levels.

These can decrease hemoglobin levels:

- Not consuming enough iron or vitamins (e.g. B12, folate) through your diet [R, R]
- Diets high in phytate (found in grains, nuts, and seeds) and polyphenols (found in nuts, tea, and coffee) [R]
- Conditions that impair nutrient absorption, such as celiac disease, inflammatory bowel disease (IBD), autoimmune gastritis (a disease that destroy the cells that produce stomach acid), and *Helicobacter pylori* infection [R, R, R, R, R]
- Endurance exercise (sports anemia) [R]
- Obesity [R]
- Infection [R]
- Inflammation [R]
- Hypothyroidism [R]
- Heavy metals and toxins [R, R, R]
- Aging [R]

Drugs that may decrease hemoglobin levels include:

- Nonsteroidal anti-inflammatory drugs, such as ibuprofen [R]
- Drugs used to lower blood pressure [R]

Hemoglobin in this range is associated with less optimal health [R].

Prioritized recommendations

For Sub-Optimal Hemoglobin

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① ⓘ | Work With Your Doctor

Info recommendation

Description

Work with your doctor to treat any underlying conditions. The additional lifestyle changes listed below are other things you may want to discuss with your doctor. Your doctor may choose to simply re-measure your hemoglobin in a few months.

② ⓘ | Check Your Iron Levels

Info recommendation

Description

Iron (Fe) is an essential mineral closely tied to red blood cell production and function. It is an essential component of hemoglobin, a protein that carries oxygen to cells. In this way, iron **increases energy** and supports **brain and immune system function** [R, R, R].

Why You Should Check Your Iron Level if your Hemoglobin is Low

If your hemoglobin is low, your doctor will likely check your iron level. Red blood cells require hemoglobin, and iron is required to make hemoglobin. Without enough iron in the body, your overall hemoglobin level drops. Dietary iron, either through a supplement, or iron-rich foods, is important for increasing hemoglobin in many people [R, R].

Check your thyroid hormone levels

Info recommendation

Description

Thyroid hormones play major roles in almost every part of the body, including the brain, heart, and liver. They control your metabolism, heart health, mood, and so much more [R].

Why Should You Check Your Thyroid Hormone Levels

If your hemoglobin is low, your physician will likely check your thyroid hormone levels. Thyroid hormone affects your hemoglobin because it is involved in the production of red blood cells, which produce hemoglobin. Thyroid hormone stimulates a substance called erythropoietin (EPO), which is involved in red blood cell creation. Thyroid hormone, when deficient, causes a decrease in red blood cell production and a decrease in hemoglobin. Treating a deficiency in thyroid hormone has been shown to increase hemoglobin [R, R].

Check Your B Vitamin Levels

Info recommendation

Description

B vitamins help the body function properly. Two examples are **vitamin B9** (**folate**) and **vitamin B12**. They play essential roles in [R, R, R, R]:

- DNA formation
- Metabolism
- Energy production

Why You Should Check Your B-Vitamin Levels if Your Hemoglobin is Low

If your hemoglobin is low, your doctor will likely check your B vitamin levels. B vitamins like folate and Vitamin B12 are crucial for synthesizing DNA. Creating new DNA is important for creating new cells. Deficiencies in B vitamins are most apparent in rapidly dividing cells, such as red blood cells. A lack of B vitamins can result in decreased production of red blood cells, and this is detected as a lower hemoglobin [R].

Papaya

Consider adding papaya into your diet.

Description

Papaya (*Carica papaya*) is a widely available tropical fruit common to many cultures. Papaya is native to American and Mexican regions but is now grown in warm tropical areas all around the world. The papaya fruit is a source of iron and calcium; a good source of vitamins A, B and Riboflavin and an excellent source of vitamin C. Various components of the papaya plant have been used in medicinal applications in a variety of cultures [R, R].

How Papaya Improves Low Hemoglobin

Supplementing your diet with papaya has been shown to increase hemoglobin in certain groups of patients. One study showed that 110 grams of papaya a day for 14 days was shown to increase hemoglobin levels in pregnant patients. Papaya preparations may also have some benefit to red blood cell integrity in sickle-cell anemia [R, R, R].
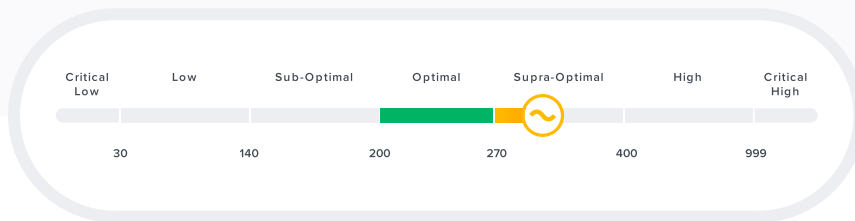
Platelets

Lab Results Report

Your result **318 10^9/L**

Optimal range: 200 - 270 10^9/L
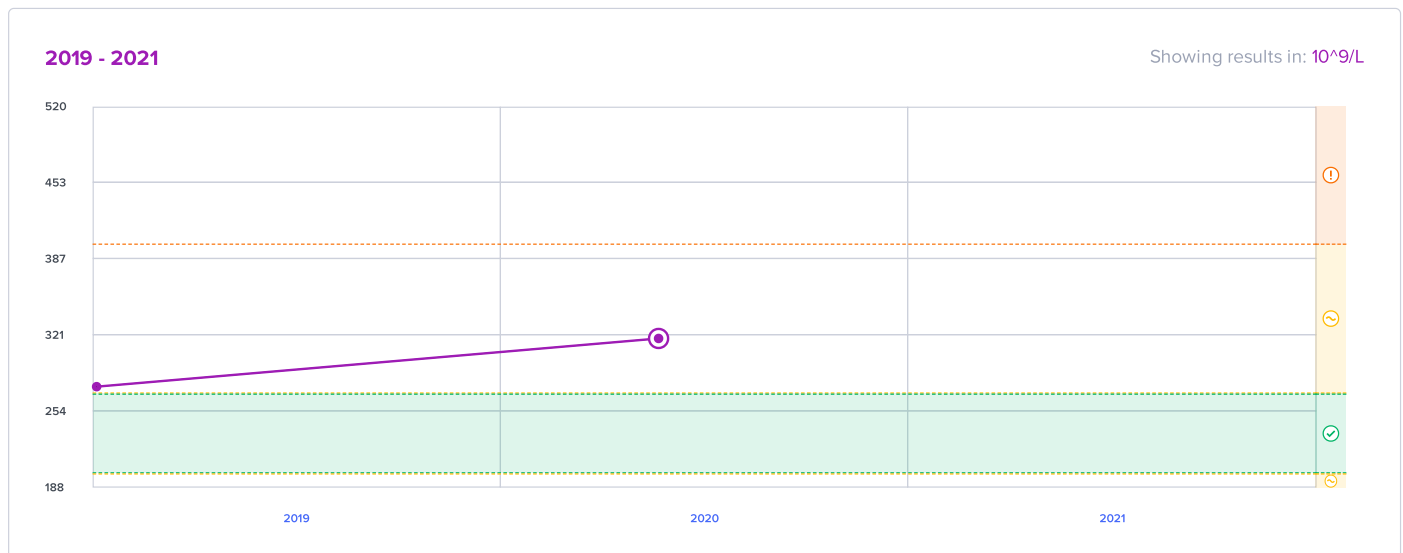
Date of test: 7 May 2021

Your levels are **supra-optimal**

Based on your result

Critical Low	Low	Sub-Optimal	Optimal	Supra-Optimal	High	Critical High
30	140	200		270	400	999

Results Tracker

2019 - 2021

Showing results in: 10^9/L

520 · 453 · 387 · 321 · 254 · 188

2019 · 2020 · 2021

About Platelets

This test measures the amount of platelets in your blood.

A platelet, also called a thrombocyte, is a type of cell that helps blood to clot. Clotting slows down and stops bleeding and helps wounds heal [R, R].

Platelets are made in the bone marrow. They survive in the circulation for about 8-10 days which is why the bone marrow needs to continually make new ones, to replace old, used ones or those lost through bleeding [R, R].

Apart from wound healing, platelets are also involved in immune system defenses and inflammation [R, R].

Impaired platelet function can cause issues with blood clots or prevent proper wound healing [R].

A platelet count can be used to:

- Help diagnose various issues such as bleeding or clotting disorders or bone marrow disease
- Monitor a known underlying health condition
- Monitor a treatment with drugs known to affect platelets

Also Called

- PLT
- Thrombocytes
- Platelet Count

Remember that there is some lab-to-lab variability in ranges due to differences in equipment, techniques, and chemicals used. Don't panic if your result is slightly out of range in the app - as long as it's in the normal range based on the laboratory that did the testing, your value is normal.

Supra-Optimal Platelets Health Effects

Your platelet count is within the normal range, but it's higher than ideal.

These can increase platelet count:

- Infections [R]
- Inflammation [R, R, R]
- Exercise [R, R]
- Iron-deficiency anemia [R]
- Excess alcohol consumption [R]
- Birth control pills (oral contraceptives) or estrogen therapy [R, R]

Values in this range are associated with less than optimal health [R, R, R, R, R, R].

Prioritized recommendations

For Supra-Optimal Platelets

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① ⓘ Work With Your Doctor

Info recommendation

Description

Your platelets are in the normal range, but slightly above optimal. Your doctor will interpret this test, taking into account your medical history and other test results. A result that is slightly high may not be of medical significance, as this test often varies from day to day and from person to person.

② ⓘ Check Your Iron Levels

Info recommendation

Description

Iron (Fe) is an essential mineral. It helps make hemoglobin, a protein that carries oxygen to cells. In this way, iron **increases energy** and supports **brain and immune system function** [R, R, R].

Foods rich in iron include [R]:

- Oysters
- White beans
- Beef
- Chocolate
- Spinach
- Fortified cereals

Groups at risk of iron deficiency include [R]:

- Women
- Children
- Vegetarians
- Routine blood donors

How Does Iron Affect Platelet Count?

Iron-deficiency anemia is associated with an increase in platelet levels. Studies have shown that people with decreased iron levels or iron-deficiency anemia have an increase in their platelet levels. If you have iron deficiency, make sure your diet is balanced and contains iron-rich foods [R, R].