

Blood Urea Nitrogen (BUN)

Biohacker Report

REPORT CATEGORY —



KIDNEY HEALTH

Sample Client

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Table of Contents

03 How this works

- 04 Impact
- 05 Evidence
- 06 Some things to keep in mind

07 Introduction

08 Your genetics

10 Your recommendations

32 Next Steps

- 32 Your Lab Results

DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

Personal information

NAME

Sample Client

SEX AT BIRTH

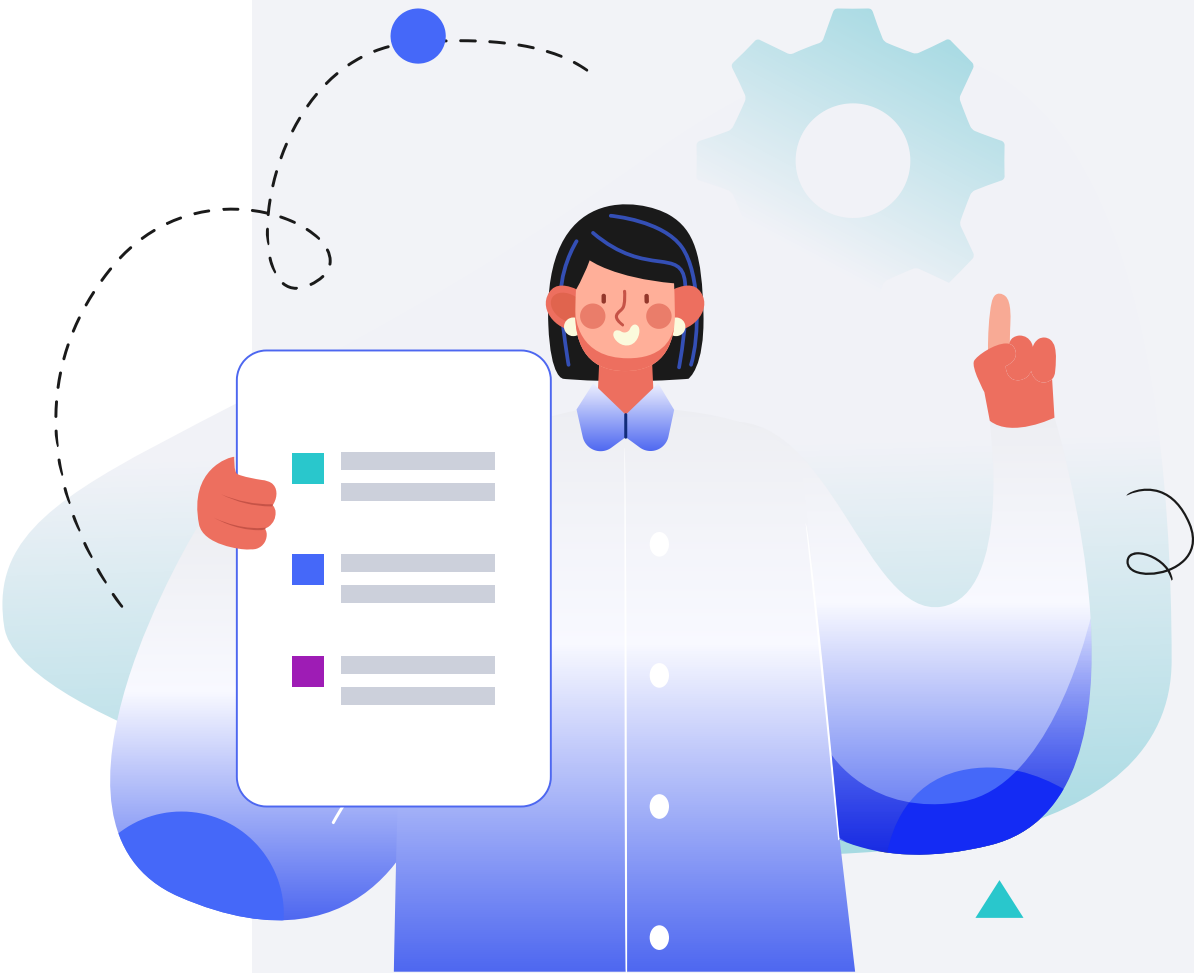
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg



How this works

Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



Similarly, our Trait Reports look at how your DNA influences your traits.



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

In total, we analyze up to 83 million genetic variants.

When we give a risk score, the risk icon tells you if you are at a higher or lower risk compared to other people:



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs. The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

- 5 / 5
- Recommendations that are considered effective and generally recommended by experts and medical bodies.
-
- 4 / 5
- Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.
-
- 3 / 5
- Recommendations that are considered possibly effective and have many studies supporting them
-
- 2 / 5
- Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.
-
- 1 / 5
- Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.
-
- 0 / 5
- No evidence in humans.

Genotype-specific Evidence

- High-quality
- Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).
-
- Medium-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).
-
- Low-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).
-
- Indirect
- A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).
-
- In theory
- A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

Blood urea nitrogen (BUN) is a common lab test. It is usually measured as part of a basic metabolic panel (BMP). Urea levels in the blood give information about how well the kidneys are working [\[R\]](#).

Urea is a waste product made when the liver breaks down protein. Nitrogen from protein breakdown forms urea when it combines with other products in your bloodstream. Urea is excreted into the urine by the kidneys. If the kidneys aren’t able to filter blood properly, urea can build up in the blood [\[R\]](#), [\[R\]](#).

While the urea lab directly measures the amount of urea in the blood, BUN only measures the nitrogen found in this waste product. Roughly, the urea value is twice that of BUN.

Excessive urea levels can cause symptoms. This is called uremia. It usually happens to people with kidney disease. Symptoms include [\[R\]](#):

- Itching
- Nausea and vomiting
- Fatigue
- Low appetite or weight loss
- Muscle cramping

For people with a high urea level, switching to a kidney-friendly diet can help [\[R\]](#).

Other factors that can affect urea level besides kidney disease include [\[R\]](#), [\[R\]](#):

- Dehydration
- A high-protein diet
- Some medications
- **Genetics**

Genetics, Environment, and Urea

Urea is a waste product made when the liver breaks down protein. It is excreted into the urine by the kidneys. If the kidneys aren’t able to filter blood properly, urea can build up in the blood. While the urea lab directly measures the amount of urea in the blood, blood urea nitrogen (BUN) only measures the nitrogen found in this waste product. Roughly, the urea value is twice that of BUN [\[R\]](#), [\[R\]](#).

Up to 45% of differences in people’s urea level may be attributed to genetics. Genes involved in urea level may influence kidney function [\[R\]](#), [\[R\]](#).

Having high or low baseline urea levels due to genetics may affect your risk of other health issues! For example, some studies show that a lower urea level may reduce blood pressure [\[R\]](#).

While your genetics may partly determine your urea level and kidney function, your lifestyle and environment also play a role. To protect your kidneys and keep your urea levels low, consider the following advice [\[R\]](#):

- Keep a healthy blood pressure
- Eat a healthy diet with fruits and vegetables
- Cut down on salt and saturated fat
- Exercise regularly
- Do not smoke or use tobacco
- Talk to your doctor about other ways to help your kidney health

Genetically higher urea levels may be causally associated with depression. [\[R\]](#)



Predisposed to typical urea levels based on 7,934 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
PTGER4	rs2228058	CC
TTC33	rs79831708	TT
DAB2	rs111297126	TT
FBXO22	rs117392811	TT
DAB2	rs115634741	GG
LPP	rs16862782	CC
SLC14A2	rs1484873	GG
DAB2	rs79563968	GG
CCDC152	rs62370948	CC
ISL2	rs932046	TT
CCDC152	rs62370608	TT
LPP	rs79468737	GG
PLCXD3	rs115260650	TT
WNT9B	rs62071986	CC
ULK3	rs55973697	AA
MPPED2	rs55733296	GA
PRKAG2	rs7805747	GA
MECOM	rs1918970	GA
LPP	rs11710971	AC
MAN2C1	rs79604958	GC
SLC34A3	rs199690076	CC
SLC14A2	rs41301139	GG
RBM47	rs35529250	CC
HOXD10	rs187355703	CC
LPP	rs62279868	CC
SERPINA1	rs28929474	CC
STC1	rs17785813	AA
MSTO1	rs116698232	CC
DVL2	rs72839768	GG
SLC14A2	rs1462152	TT
LPP	rs62279150	GG
PRKAG2	rs117045205	CC

GENE	SNP	GENOTYPE
EPB41L5	rs28930677	CC
MTX2	rs72925159	AA
SPRYD4	rs117867773	GG
LRRC37A	rs117154502	TT
LRATD2	rs11989898	AA
LRATD2	rs17740564	AA
MAN2C1	rs62027653	AA
FUT2	rs1800027	CC

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You'll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE	
1	Limit Protein Intake	2	Drink at Least 8 Glasses of Water a Day
3	Aerobic Exercise (Cardio)	40 mg	4 Soy Isoflavones
150 mg	5 Resveratrol	30 billion CFU	6 Probiotics
500 mg	7 Astragalus	40 g	8 Resistant Starch
1000 mg	9 Berberine	500 mg	10 L-Carnitine
500 mg	11 Chinese Rhubarb		12 Avoid PAHs Exposure
20 mg	13 Saffron	250 mg	14 Quercetin
	15 Avoid Lead Exposure	500 mg	16 Histidine
600 mg	17 Celery Seed	1000 mg	18 Black Seed (Black Cumin)
	19 Sleep for 7+ Hours	1 g	20 Alpha-Ketoglutarate (AKG)
3 g	21 Hydroxymethylbutyrate (HMB)		22 Avoid Perchlorate
3 g	23 L-Citrulline	120 mg	24 Ashwagandha

1



Limit Protein Intake

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

Limit your daily protein intake to 0.8 grams per kilogram of your body weight. For example, if you weigh 70 kilograms (about 154 pounds), aim to consume no more than 56 grams of protein per day. Adjust this goal based on your activity level and health status, reducing intake further if advised by a healthcare professional.

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 protein from certain animal sources may increase the risk of bone, kidney, and metabolic issues in some people [\[R, R, R\]](#).

How it helps

High-protein diets, such as the keto diet, have gained popularity as a method for weight loss.

An increase in BUN has been shown in several groups of people with high-protein diets. Some trials have shown that even brief periods of high-protein diets result in significant increases in BUN [\[R, R, R\]](#).

While BUN levels may increase with high-protein diets, the effect on overall kidney health is unclear. High-protein diets are not recommended for people with kidney disease, or at risk for kidney disease. Several meta-analyses have shown that for people with normal kidney function, high-protein diets do not affect kidney function [\[R, R, R\]](#)
In people with CKD, very low-protein diets supplemented with nitrogen-free analogs may lower BUN (by 6.8 mg/dL) and improve other markers of kidney function [\[R, R\]](#).

2



Drink at Least 8 Glasses of Water a Day

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

Consume a total of at least 64 ounces (or approximately 1.9 liters) of water over the course of the day. This can be divided into 8 glasses, each containing 8 ounces of water. Aim to drink evenly throughout the day to avoid dehydration.

Description

Water is an essential nutrient for nearly every process in your body, helping to mainting brain and gut function, maintain a health weight, as well as energy and performance levels, among others.

Water is essential for life. It supports nearly every process in your body [\[R\]](#).

Water helps maintain [\[R\]](#):

- Energy and performance levels
- Brain function
- Gut function
- Healthy weight

Most experts recommend drinking **around 8 glasses (64 oz. or 2 L) of water daily**. You might need more or less than this, depending on how active you are, where you live, or what your overall health is like [\[R\]](#).

How it helps

Dehydration is a common cause of elevated BUN and people who drink more fluid per day tend to have lower BUN levels. Drinking water increases urination, which promotes BUN clearance [\[R, R, R\]](#).

Hydration may also decrease the progression of chronic kidney disease and keep BUN levels low over time [\[R\]](#).

3



Aerobic Exercise (Cardio)

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity each week. Distribute this time over at least 3 days per week, avoiding consecutive days of vigorous exercise to allow for recovery.

TYPICAL STARTING DOSE

1 hour

Description

Engaging in regular aerobic exercise, such as running, swimming, or cycling, offers numerous health benefits, including improved cardiovascular fitness, weight management, and mood enhancement. It supports overall physical and mental well-being while reducing the risk of chronic diseases.

Cardio, short for cardiovascular exercise, is any type of physical activity that temporarily increases your heart rate. Examples include **running, cycling, swimming, and brisk walking**.

Regular cardio exercise has many benefits for your overall health. It can help lower your risk of heart disease and diabetes, support weight loss, and improve your mood and energy levels. To get the most out of cardio, try to do it for at **least 30 minutes, 3-5 times a week**.

Interval training is a type of cardio that combines periods of high-intensity training with brief rest periods.

How it helps

In hemodialysis patients, aerobic exercise (both alone and combined with strength training) may increase urea clearance [\[R\]](#), [\[R\]](#).

Exercise may also lower blood urea in kidney transplant recipients [\[R\]](#).

Aerobic exercise may help by improving kidney function.

4



Soy Isoflavones

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Take a soy isoflavone supplement containing 40 to 80 milligrams daily, ideally with food to improve absorption. This dosage can be continued on a daily basis for several months, but it's recommended to reevaluate its effectiveness and any potential side effects with a healthcare provider periodically.

TYPICAL STARTING DOSE

40 mg

Description

Soy isoflavones are natural compounds found in soybeans and soy products. They are phytoestrogens, which means they can mimic the effects of estrogen in the body and are associated with potential health benefits like menopausal symptom relief and improved heart health.

Soy is a common food in many cuisines around the world, especially Asian cuisines [\[R\]](#).

It's a great source of [\[R\]](#), [\[R\]](#):

- Plant-based protein
- Fiber
- Omega-3 fats
- Antioxidants (isoflavones)

Soy-based foods include [\[R\]](#):

- Tofu
- Tempeh
- Edamame
- Miso
- Natto

Soy protein and soy isoflavones are also available as supplements.

How it helps

In patients with diabetic nephropathy or CKD, supplementation with soy isoflavones may lower BUN and improve other markers of kidney function [\[R\]](#), [\[R\]](#).

5



Resveratrol

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Take 150-500 mg of resveratrol as a supplement daily, preferably with meals to enhance absorption. This dosage range is based on studies for various health benefits, and it's advised to not exceed 500 mg per day without medical supervision.

TYPICAL STARTING DOSE

150 mg

Description

Resveratrol is a natural compound found in red grapes, red wine, and some berries. It is known for its potential antioxidant properties and its role in promoting heart health.

[Resveratrol](#) is an antioxidant found mainly in [\[R\]](#):

- Berries
- Red grapes
- Red wine
- Peanuts

It’s purported to have anti-inflammatory and antioxidant effects [\[R, R, R\]](#).

How it helps

A meta-analysis of 32 studies concluded that supplementation with resveratrol lowers BUN (by 0.84 mg/dL) and creatinine (by 1.90 μmol/L) while increasing eGFR (by 7.58 mL/min/1.73 m2) in the general population. While changes in BUN were observed in studies shorter than 12 weeks using doses below 500 mg/day, higher doses were required to change creatinine levels [\[R\]](#).

In people with acute kidney injury, supplementation with resveratrol may also lower BUN. Resveratrol may be most effective at doses below 20 mg/kg/day [\[R\]](#).

6



Probiotics

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Take a probiotic supplement containing 10 billion or more live cultures once daily, preferably with a meal or as directed by the packaging or a healthcare provider.

TYPICAL STARTING DOSE

30 billion CFU

Description

Probiotics are live beneficial bacteria and yeasts that can support gut health and digestive function when consumed as supplements or found in fermented foods like yogurt and sauerkraut. They may be beneficial to gut health, immune function, blood sugar, and mood.

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

Prebiotics are certain types of fiber and other complex carbs that serve as food for gut bacteria. **They support gut health by helping boost the activity and growth of “good” bacteria** [\[R\]](#), [\[R\]](#).

Prebiotics are also added to foods and supplements. Common prebiotic ingredients are [\[R\]](#), [\[R\]](#):

- Oligo-fructose
- Oligo-galactose
- [Inulin](#)

Mixtures of probiotics and prebiotics are known as **synbiotics** [\[R\]](#).

How it helps

Research suggests that imbalances in gut bacteria may be involved in the development of chronic kidney disease. Probiotics are felt to change the gut microbiome, which may influence the development of kidney disease.

Supplementation with probiotics or synbiotics may improve kidney function, including BUN levels, in both the general population and patients with CKD. However, its effects in diabetic patients are mixed [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

7



Astragalus

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a 500 mg astragalus supplement once daily with a meal. Continue this regimen for at least 4 to 6 weeks to evaluate its effectiveness on your overall health.

TYPICAL STARTING DOSE

500 mg

Description

Astragalus is an herb used in traditional Chinese medicine. It is believed to have immune-boosting properties and may help reduce stress and support overall vitality.

[Astragalus](#) (*Astragalus membranaceus*) is an herb used in traditional Chinese medicine. It is commonly used for “tonifying Qi” or fatigue. It may help [\[R\]](#), [\[R\]](#):

- Reduce inflammation
- Fight [oxidative stress](#)

Astragalus root is a staple of traditional Chinese medicine, where it is also known as *Huang Qi*.

How it helps

A meta-analysis of 25 trials including 1,804 people with diabetic nephropathy found that astragalus injection improved BUN and other markers of kidney function [\[R\]](#).

8



Resistant Starch

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Incorporate 40g of Jo's resistant starch into your daily diet. This can be done by adding it to smoothies, yogurt, or baked goods. Ensure to spread the intake throughout the day for better tolerance.

TYPICAL STARTING DOSE

40 g

Description

Resistant starch is a type of starch that resists digestion in the small intestine, making it a prebiotic fiber that can benefit gut health. It can be found in foods like green bananas, legumes, and certain grains.

[Resistant starch](#) is starch that doesn't get digested in the small intestine [\[R\]](#), [\[R\]](#).

Some types of resistant starch include [\[R\]](#):

- **Type 1** occurs naturally in foods such as whole grains
- **Type 2** can be isolated from foods such as corn and green banana
- **Type 3** is created during the cooking and cooling process of starchy foods like potatoes

Resistant starch doesn't increase blood sugar like typical digestible starches do [\[R\]](#), [\[R\]](#).

Instead, it feeds good bacteria in the colon that [\[R\]](#), [\[R\]](#):

- Support healthy gut function
- Support immunity
- Reduce inflammation

How it helps

Supplementation with resistant starch type 2 may lower BUN in patients with end-stage kidney disease [\[R\]](#).

9



Berberine

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take 500 mg of berberine two times a day before meals. Continue this regimen for up to three months, then evaluate its effects with your healthcare provider.

TYPICAL STARTING DOSE

1000 mg

Description

Berberine is a compound found in certain plants, known for its potential to support blood sugar control and heart health.

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

- European barberry
- Oregon grape
- Goldenseal
- Chinese goldthread
- Tree turmeric

Berberine is also available as a supplement. People use it to help with [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Diabetes
- High cholesterol
- High blood pressure
- PCOS

How it helps

In patients with diabetic nephropathy, supplementation with berberine may lower BUN and improve other markers of kidney function [\[R\]](#).

10



L-Carnitine

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take 500 mg of L-carnitine supplement daily with a glass of water, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

500 mg

Description

L-carnitine is an amino acid-like compound that plays a role in energy metabolism and helps prevent toxic substances from building up in cells. It is often used in dietary supplements for its potential to support muscle recovery, reduce fatigue, and enhance athletic performance.

[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 [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Heart problems
- Overactive thyroid
- Fertility problems
- Blood sugar control
- Weight control

How it helps

In patients with hepatic encephalopathy, supplementation with L-carnitine may lower BUN and improve other kidney function markers [\[R\]](#).

L-carnitine may help by converting fat into energy, thus reducing the strain on the kidneys and decreasing BUN levels.

11



Chinese Rhubarb

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a supplement containing Chinese rhubarb extract, typically available in tablet or capsule form. The common dosage ranges from 500 to 1,000 mg per day, taken with water. It is advised to consult with a healthcare provider for the exact dosage based on individual health needs. Use this supplement daily for a period as recommended by the healthcare provider, usually not exceeding 8 weeks without medical advice.

TYPICAL STARTING DOSE

500 mg

Description

Chinese rhubarb is another traditional Chinese herbal remedy known for its potential to support digestive health and relieve constipation. It contains compounds that may have mild laxative effects.

[Rhubarb](#) (also named *Rhei* or *Dahuang*) is one of the most ancient herbs in traditional Chinese medicine. Rhubarb includes approximately 60 species of plants of the genus *Rheum* L. [\[R\]](#), [\[R\]](#).

The rhubarb rhizome is considered a top medicinal plant in Chinese medicine. It is used for [\[R\]](#), [\[R\]](#):

- Constipation
- Kidney disease
- Herpes
- Gum disease

It may help due to its antibacterial and anti-inflammatory effects [\[R\]](#).

How it helps

In patients with chronic kidney failure, supplementation with Chinese rhubarb as an add-on to anti-hypertensive medication may lower BUN levels (by 10.61 mmol/L). Long-term administration may be more effective. However, it may not be more effective than captopril [\[R\]](#), [\[R\]](#).

12



Avoid PAHs Exposure

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Minimize your exposure to Polycyclic Aromatic Hydrocarbons (PAHs) by avoiding or reducing consumption of charred, grilled, or smoked foods, not smoking or avoiding secondhand smoke, and limiting time spent in areas with heavy traffic or industrial fumes. Use exhaust fans in kitchens and ensure proper ventilation when cooking at high temperatures to reduce indoor levels of PAHs.

Description

PAHs or Polycyclic Aromatic Hydrocarbons are harmful substances found in smoke and grilled foods. Try to limit exposure to them for better health. For example, avoid inhaling smoke from cigarettes or barbeques and choose alternative cooking techniques over grilling. Minimizing PAHs can reduce the risk of several health issues, particularly lung and skin diseases.

How it helps

Gas station workers may have higher BUN levels [\[R\]](#).

13



Saffron

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take 20 mg of saffron supplement daily. This can be taken at any time of the day, with or without food.

TYPICAL STARTING DOSE

20 mg

Description

Saffron is a spice derived from the stigma of the saffron crocus flower, and is native to the Mediterranean and Asia. Its main compounds include crocin, picrocrocin, and safranal, which may contribute to its antioxidant properties and potential mood-enhancing effects.

[Saffron](#) is a yellow spice praised for its color, taste, and potential health benefits [\[R\]](#).

Saffron is rich in antioxidants such as *crocin*. Researchers are looking into its potential benefits for [\[R, R, R, R\]](#):

- Gut conditions
- Heart health
- Mental health

How it helps

A meta-analysis of 11 trials concluded that supplementation with saffron lowers BUN (by 0.69 mg/dL) [\[R\]](#).

14



Quercetin

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take 250-1000 mg of quercetin supplement daily with a glass of water, preferably with a meal to aid in its absorption.

TYPICAL STARTING DOSE
250 mg

Description

Quercetin is a natural plant flavonoid found in various foods, particularly in fruits and vegetables like apples, onions, and broccoli. It is used as a dietary supplement and is valued for its potential antioxidant and anti-inflammatory properties.

[Quercetin](#) is a **plant-based antioxidant**. It supports the immune system and helps lower inflammation [\[R\]](#), [\[R\]](#).

Good sources of quercetin include [\[R\]](#):

- Apples
- Onions
- Tea

People mainly use quercetin supplements to relieve allergies [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

A meta-analysis of 18 studies found that supplementation with quercetin improves BUN and other kidney function markers [\[R\]](#).

Please note: *quercetin may inhibit the production of the thyroid hormone T4 (thyroxine). Individuals with thyroid disorders, particularly hypothyroidism or low T4 levels, should exercise caution when using quercetin and always consult with a healthcare provider before taking this supplement* [\[R\]](#).

Please note: *quercetin may interfere with iron absorption due to its iron-chelating properties, potentially exacerbating anemia or making it harder to manage. If you have anemia, consult your healthcare provider before using quercetin supplements* [\[R\]](#).

15



Avoid Lead Exposure

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Prevent lead exposure by using cold water for drinking and cooking, regularly cleaning dust from windowsills and floors, and ensuring that your home's paint is not chipping if it was built before 1978. For occupations involving potential lead exposure, use protective gear and follow safety protocols. Test your home for lead if it's old or you're concerned about contamination.

Description

Lead is a heavy metal. It is naturally found in the environment in small amounts [\[R\]](#), [\[R\]](#).

Exposure to lead can cause it to build up in the body. A buildup of lead can contribute to oxidative stress and cell damage. This is called **lead poisoning** [\[R\]](#), [\[R\]](#).

Lead is no longer used in the manufacturing of some products like gasoline and paint. However, it can still be found in some pipes, batteries, and the wall paint of older homes [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

In a meta-analysis of 43 articles, the mean BUN and mean creatinine in lead-exposed participants were higher than those in non-exposed controls [\[R\]](#).

Lead may contribute to elevated BUN by causing damage to the kidneys.

16



Histidine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500-1000 mg of histidine supplement per day, ideally with a meal. It is best to start with a lower dose, such as 500 mg, to assess tolerance and then adjust as needed up to 1000 mg. Consistent daily intake for at least 4 to 8 weeks may be necessary to notice benefits.

TYPICAL STARTING DOSE

500 mg

Description

Histidine is an essential amino acid that plays a role in protein synthesis and the formation of histamine. It is important for overall health and is found in various protein-rich foods.

A histidine supplement of up to 14 mg/kg/d can be taken to meet the needs not achieved through diet.

You can also increase your dietary histidine intake. Histidine is found in protein-rich foods such as meat, chicken, fish, beans, oats, and wheat. It's especially high in the Japanese food ingredient dashi or dried bonito, often used for soup stock [R].

How it helps

In a non-placebo-controlled trial of 6 young men, supplementing a diet that contained 6.3 g/day nitrogen with histidine for 1 week lowered BUN levels [R].

17



Celery Seed

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a celery seed supplement capsule of 600-1000 mg daily with a glass of water, preferably with a meal to aid absorption and minimize potential stomach discomfort. Continue this regimen for at least 4-6 weeks to evaluate its effects on your condition.

TYPICAL STARTING DOSE

600 mg

Description

Celery seed extract is a natural supplement derived from the seeds of the celery plant, known scientifically as *Apium graveolens*. This extract is rich in various bioactive compounds, including flavonoids, linoleic acid, and volatile oils like limonene and selinene. These compounds contribute to its potential health benefits, which may include anti-inflammatory properties, support for joint health (often used in treating conditions like arthritis), and assistance in managing blood pressure levels. Celery seed extract is available in various forms, including capsules, tablets, and tinctures, and is often used in traditional medicine for its diuretic and antispasmodic effects.

How it helps

In a placebo-controlled trial of 51 patients with hypertension, supplementation with celery seed extract (1.34 g/day) for 4 weeks reduced BUN by 3.43 mg/dL [R].

18



Black Seed (Black Cumin)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 1000 mg of black seed (black cumin) supplement daily, preferably split into two doses of 500 mg each, one in the morning and one in the evening.

TYPICAL STARTING DOSE

1000 mg

Description

Black seed, also known as black cumin or *Nigella sativa*, has been used for its potential health benefits in traditional medicine. It is believed to have anti-inflammatory, antioxidant, and immune-boosting properties.

[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 it helps

Supplementation with black seed may lower BUN in the general population. However, doses above 2000 mg/day may increase it [\[R\]](#).

19



Sleep for 7+ Hours

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Ensure you allocate enough time in your schedule to achieve a minimum of 7 hours of sleep each night. This might involve going to bed earlier or adjusting your evening routine to promote relaxation and make it easier to fall asleep.

Description

Optimizing sleep involves adopting healthy sleep habits and creating a sleep-conducive environment to ensure restorative and sufficient sleep duration. It supports cognitive function, mood stability, and overall physical health. Most experts recommend getting **at least 7 hours of good-quality sleep each night**.

[Sleep](#) supports your body and mind [\[R\]](#) [\[R\]](#). More precisely, sleep 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 it helps

A study of 237 diabetic nephropathy patients associated short sleep (below 6 hours) with increased BUN levels [\[R\]](#).

20



Alpha-Ketoglutarate (AKG)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take alpha-ketoglutarate (AKG) as a dietary supplement in a dose of approximately 1-2g per day, preferably with meals to aid in its absorption. The exact dosage may vary based on the specific product and individual health needs, so it's important to follow the label instructions or consult a healthcare provider for personalized advice. This supplementation can be ongoing, with periodic evaluations to assess its effects on your health.

TYPICAL STARTING DOSE

1 g

Description

Alpha-ketoglutarate (AKG) is a key molecule in the Krebs cycle, crucial for energy production in cells. It plays a role in amino acid synthesis and nitrogen transport. In supplement form, it's claimed to improve athletic performance and support recovery, but the scientific evidence for these benefits is limited.

How it helps

Combining alpha-ketoglutarate with calcium carbonate over one year improved amino acid metabolism and lowered BUN levels in a study of hemodialysis patients [\[R\]](#).

Alpha-ketoglutarate helps detoxify ammonia by aiding its conversion into non-toxic substances like glutamate and promoting nitrogen incorporation into amino acids. This helps improve nitrogen balance and reduce serum urea levels.

21



Hydroxymethylbutyrate (HMB)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take hydroxymethylbutyrate (HMB) as a supplement in a dose of 3 grams per day. This can be split into three 1-gram servings taken with meals throughout the day to help with muscle strength and body composition. Continuation typically ranges from weeks to months, depending on fitness goals and personal response.

TYPICAL STARTING DOSE

3 g

Description

HMB is a metabolite of the amino acid leucine. It is often used as a dietary supplement to support muscle recovery and reduce muscle breakdown during intense physical training.

HMB, or beta-hydroxy-beta-methylbutyrate, is a compound naturally produced in the body and available as a supplement. It helps build muscle tissue.

Athletes use HMB to support muscle growth, reduce muscle damage, and enhance recovery.

How it helps

In one study, HMB supplementation (3 g/day for 3 weeks) decreased BUN and plasma urea, suggesting a nitrogen-sparing effect [\[R\]](#).

22



Avoid Perchlorate

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To avoid perchlorate, check water quality reports for your area to ensure your drinking water does not contain high levels of perchlorate. Also, limit consumption of foods known to have higher perchlorate levels, such as leafy green vegetables, dairy products, and fruits, or opt for organic versions of these foods as organic farming standards restrict certain chemicals.

Description

Perchlorate is a chemical that can interfere with the thyroid gland's ability to produce thyroid hormone. This can lead to a variety of health problems, including hypothyroidism, developmental delays, and cancer. Avoiding perchlorate can help to protect your health.

How it helps

A study of 7,028 participants associated high urinary perchlorate with higher BUN and lower iron levels in pregnant women [\[R\]](#).

Perchlorate can disrupt the thyroid's ability to use iodine. When this gland isn't functioning properly, it can impair the kidneys, leading to increased BUN levels.

23



L-Citrulline

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 1.5 to 5 grams of L-citrulline supplements per day, orally, with or without food. This dosage can be taken all at once or divided into two to three smaller doses throughout the day. It's generally recommended to start at the lower end of the dosage range and adjust based on your body's response.

TYPICAL STARTING DOSE

3 g

Description

L-citrulline is an amino acid that may help improve blood flow and reduce muscle soreness, making it a popular supplement for athletes and individuals with certain cardiovascular conditions. Its potential to enhance nitric oxide production supports vascular health and overall circulation.

[Citrulline](#) is an amino acid (protein building block). Citrulline can be found in foods like [R](#), [R](#), [R](#), [R](#), [R](#):

- Watermelon
- Pumpkins
- Cucumber
- Bitter melon

The body uses L-citrulline to produce nitric oxide, a compound that helps widen blood vessels. It is important for heart and sexual health [R](#), [R](#), [R](#).

L-citrulline is commonly used as supplement to support [R](#):

- Blood vessel health
- Muscle health
- Metabolic health
- Sexual health

How it helps

Animal studies show that citrulline injection protects kidney function, as measured in lower increments of BUN and creatinine levels in response to both cyclosporine and glycerol [R](#), [R](#).

24



Ashwagandha

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 250-600 mg of ashwagandha supplement daily. It can be consumed with water or a meal, depending on your preference or as advised by a healthcare provider.

TYPICAL STARTING DOSE
120 mg

Description

[Ashwagandha](#) (*Withania somnifera*) is an herb used in traditional Indian medicine. This herb is known as an *adaptogen* because it helps people adapt to stress. This herb is known as an *adaptogen* because it helps people adapt to stress [\[R\]](#), [\[R\]](#).

How it helps

In an uncontrolled trial of 18 healthy volunteers, supplementation with ashwagandha extract (750-1250 mg/day) for 10 days lowered BUN levels [\[R\]](#).

Next Steps

Remember, your genes only tell one important part of your health story!

Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

Your lab results

Your lab results are impacted by the combined effect of your genes, environment and lifestyle.

Lab tests will give you the best picture of your current health status, while your genes provide insight into your health predispositions and which recommendations are best for you.

	Urea	30.5 mg/dL		9 Nov 2025
	BUN/Creatinine Ratio	13 x100%		9 Nov 2025
	BUN	14 mg/dL		9 Nov 2025