

# TOP 10 LAB TESTS

Chronic Disease Prevention for your Optimal Health



*"Our bodies are wonderful at letting us know what's going on... we just need to ask them the right questions!"*

## Dr. Jason Loken

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# Have You Been Told that Your Labs Are “Fine” And That Everything Is “Normal?”

*Yet You Don't Feel Normal? You May Even Feel Terrible.*

## [It's Time To Take Back Your Health!](#)

Thank you for taking the time to download my top ten labs list. If you, like many have hit a wall in your health and are feeling frustrated, this is often the first step I take with my patients after their intake session. These ten labs, when out of kilter, can cause havoc in our body and create a myriad of symptoms.

### **Time and time again these test results reveal the presence of risk factors for many chronic diseases.**

With lab results, there is a very big difference between being in the “normal range” and being in the “optimal range”. I have seen countless patients over the years that have been told that they are fine and their labs are all normal, ***yet they know something is not right.***

The reference range for many lab tests can be huge. If you happen to fall closer to the far left or right of the normal range, you may very well be feeling the ill effects of this.

This information puts you back in the driver's seat of your own health. Medicine is all too often kept in the hands of a few. Most of the time when a patient comes in with their blood work they have no idea what any of it means. No one took the time to review it with them.

### **This is YOUR body. I want you to be able to make informed decisions about your health.**

I like to take this time to sit down with my patients and inform them about each element we are testing for. It always supports and magnifies their power to heal. Once we have established the meaning of the results, we can explore the many possibilities of correcting the challenges.

If this list makes sense to you and you want to get into the numbers and ranges and treatment options, you can purchase my ebook – [From Understanding To Knowing](#)- for \$9.99 which gets into the details of normal versus optimal ranges so you are fully equipped to discuss this with the GP or Naturopath of your choice.

[Buy the Book Now!](#)

If you would like to book a consultation with me we offer in person sessions out of my office in Brooklin Ontario, or online telemedicine sessions across Ontario.

[Book An Appointment](#)

I am so thrilled you are taking the time to invest in your health and empower yourself with information. I hope you enjoy this free PDF.



# “Top 10 Lab Tests”

## In this section...

Introduction: Informed, Involved, Inspired

23

**Vitamin D**

An estimated 85% of people in the U.S. are Vitamin D deficient and many scientists and researchers consider this an unrecognized global epidemic.

25

**Ferritin - Iron Assessment**

Iron deficiency is one of the most common deficiencies in the world. 1 in 5 women of childbearing age and 1/2 of pregnant women are iron deficient!

28

**Vitamin B12**

According to a recent study from Tufts University in Boston almost 40% of the U.S. population is deficient in vitamin B12 and the vast majority of them are completely unaware.

31

**hs-CRP High Sensitivity C-Reactive Protein**

**heart health**

High sensitivity CRP is a highly predictive test showing future risk of many imbalances and diseases. Individuals with elevated levels of hs-CRP have a risk about 2 to 3 times higher than the risk of those with low levels.

34

**Homocysteine**

**heart health**

Homocysteine has gradually become one of THE MOST IMPORTANT screening examinations for determining your risk of cardiovascular disease.

36

**Cholesterol Panel**

**heart health**

Health officials in the U.S. urge everyone over the age of 20 to have their cholesterol tested every 5 years!

# More Contents...

## “Top 10 Lab Tests”



39

### Fasting Blood Sugar

heart health

The rate of diabetes has increased by 700% over the past 5 decades!! Checking your fasting blood sugar is the best test for assessing both diabetes and your future risk of diabetes!

41

### Thyroid Panel

In the United States, more than 10 percent of the general population and 20 percent of women over the age of 60, have subclinical hypothyroidism. Thyroid hormones interacts with an array of other hormones and are intimately involved in every physiological process that goes on in your body, **if it is out of balance...everything is!**

45

### CBC Complete Blood Count

A CBC is a base line essential lab test that screens for a broad spectrum of disorders such as anemia, infection, and other diseases.

48

### pH of Urine

Acid / Base balance is one of the most tightly regulated systems in our body. Maintaining even a slightly acidic internal environment will create a breeding ground for disease and chronic illness.

51

### BONUS LAB TEST - RBC Magnesium

It is estimated that up to 85% of North Americans are deficient in Magnesium.



# Vitamin D

Lab Test

1

## In Conversation with Dr. Loken

*Given all the hype about vitamin D over the past several years, I decided to start testing people at my clinic to see if they are as insufficient in vitamin D as the research shows.*

*To my surprise, almost every single person I tested, including myself, was well below the optimal level of 125 nmol/L for 25-hydroxy vitamin D (this is the only blood test that should be done to assess vitamin D deficiency).*

*I remember one patient, a 16 year old boy who came into my clinic complaining of being fatigued all the time despite getting regular sleep; he was nodding off in class, feeling depressed, and suffered from colds and flus every month.*

*After running a panel of tests, we discovered that everything was within normal range except for his 25-hydroxy vitamin D, which was at a very low 41 nmol/L. After supplementing based on his current levels, we re-tested his 25-hydroxy vitamin D after three months.*

*His levels had risen to the optimal range and all of his symptoms had disappeared.*

An estimated 85% of people in the U.S. are Vitamin D deficient and many scientists and researchers consider this an unrecognized global epidemic.

## This Test is Critical for you When...

- If you live in North America
- If you are getting frequent colds and infections
- If you have darker skin
- If you avoid the sun or wear sunscreen
- If you want to prevent chronic diseases such as cancers, heart disease, depression and many more.



# Vitamin D

Lab Test

# 1

## Benefits & Prevention

Vitamin D has been coined the “nutrient of the decade” because of its association with a tremendous number of health benefits. It has long been recognized as an essential component in the prevention of Rickets and Osteomalacia, but growing research has shown this powerhouse nutrient to be linked to the prevention of many other ailments:

- At least 17 different cancers Heart disease
- Stroke
- Autoimmune diseases such as rheumatoid arthritis, inflammatory bowel disease, and multiple sclerosis
- Diabetes
- Depression
- Chronic pain
- Infection
- Osteoarthritis
- Osteoporosis
- Muscle
- Weakness
- Periodontal Disease
- Autism
- And many more...

Vitamin D is both a vitamin and a pre-hormone that has the ability to serve multiple gene-regulatory functions in your body. In fact, of the 30,000 genes you have in your body, Vitamin D is able to exert its influence on 2,000 of them. Vitamin D could literally have thousands of health benefits!





# Ferritin

Iron

Lab Test **2**

## In Conversation with Dr. Loken

*I check ferritin levels routinely on most of my female patients. More and more often are women coming into my clinic telling me that their iron was checked and they are “normal”.*

*Part of the problem with checking ferritin, the storage form of iron, is there is a huge reference range for what is considered “normal”!*

*For example, a woman can be considered to have adequate iron stores if her ferritin falls anywhere between 12-150 ng/ml or even 10-291ug/L. It doesn't really make sense that two people can both be within "normal" range when one has 29 times the iron level of the other.*

*This is a massive divide in value. I regularly find that the majority of women I see in my clinic have far from optimal levels of iron. I think iron is a greatly overlooked nutrient that can make a dramatic impact on people's lives, particularly on those who suffer from chronic fatigue or even just those who feel less than par.*

Iron deficiency is one of the most common deficiencies in the world. 1 in 5 women of childbearing age and 1/2 of pregnant women are iron deficient!

### *This Test is Critical for you When...*

- 💡 If you are a menstruating women
- 💡 If you are pregnant
- 💡 If you feel fatigued and lethargic most of the time
- 💡 If you get dizzy, weakness or headaches
- 💡 If you bruise easily



# Ferritin

Iron

Lab Test

2

## Benefits & Prevention

**Iron deficiency anemia is the most common form of anemia. It is primarily due to a diet low in iron, but it can also be due to inadequate iron absorption, blood loss (bleeding ulcer, menstrual bleeding, uterine fibroids, etc.), and from an increased need such as when pregnant or during growth spurts in the first year of life and in adolescence.**

When your iron levels are deficient, you are unable to produce hemoglobin rich blood that is capable of transporting oxygen to your cells, thus creating an iron deficiency anemia. Some of the other ways iron is used in your body include:

- The production of energy by playing a role in the production of ATP energy
- Proper development of the placenta during pregnancy - **up to 58% of pregnant women are iron deficient**
- The prevention of pre-term and low birth weight babies Proper
- brain growth for the first eight months of life; cognitive and developmental delays may result from iron deficiency
- Provision of optimal immune system function and reduction in the risk of infection
- Proper myelination of the spinal cord
- Cofactor in many enzymes involved in the production of neurotransmitters such as serotonin, dopamine, and noradrenalin – thus significantly affecting mood, motivation and drive, immunity, etc.
- DNA synthesis

continued next page...



# Ferritin Iron

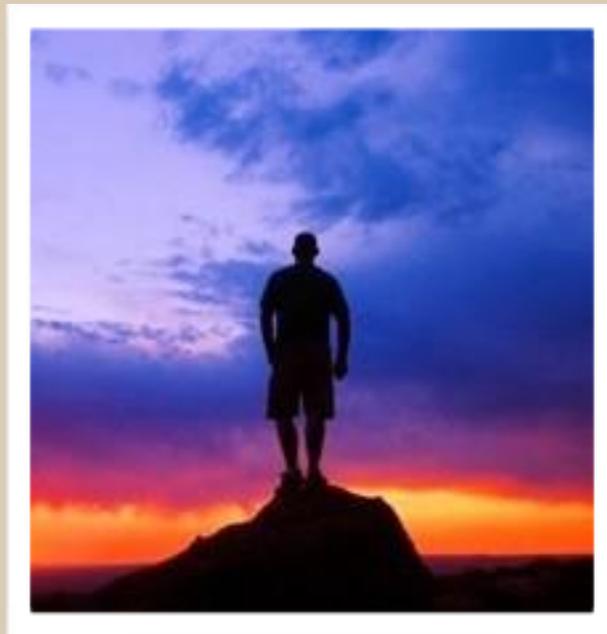
Lab Test **2**

## More Benefits & Prevention...

Often, people in the beginning stages of an iron deficiency may not show any symptoms at all, but as the deficiency progresses common symptoms such as low energy, apathy, dizziness, headaches and weakness may start to set in.

**Other symptoms of progressing iron deficiency anemia may include:**

- Brittle nails
- Cold hands and feet
- Cracks on the side of the mouth Swelling
- or soreness of the tongue Frequent
- infections
- Unusual cravings for non-food items such as paint, dirt, ice or others. This is called Pica
- Restless leg syndrome
- Shortness of breath
- Ringing in the ears
- Chest pain



## In Conversation with Dr. Loken

*I used to find this condition in vegetarians or patients over 50 years of age due to a lack of B12 in their diet or a gradual decrease in the production of hydrochloric acid in the stomach that is necessary for the release of B12.*

*Over the past few years, however, I have seen more and more people of all ages with low to low/normal levels of B12. Most of these people are chronically fatigued even with adequate sleep!*

*The answer to this isn't as simple as just eating more meat high in B12. It seems that people are simply having a harder time absorbing this essential vitamin. Whether the problem is due to a deficiency of stomach hydrochloric acid, poor intake of B12, an overload of "bad" bacteria in the gut, or something else, it is essential to get your levels back up in order to avoid an array of diseases and enjoy all the health benefits that B12 provides.*

According to a recent study from Tufts University in Boston almost **40% of the U.S. population is deficient in vitamin B12** and the vast majority of them are completely unaware.

### *This Test is Critical for you When...*

- If you are a vegetarian or a vegan
- If you are often feeling weak and tired or lightheaded
- If you have digestive problems such as lactose intolerance, food allergies, irritable bowel syndrome, Crohn's disease or celiac disease
- If you are experiencing numbness or tingling in your extremities
- If you are over 50 years of age



# Vitamin B12

Lab Test

3



# Vitamin B12

Lab Test

3

## More Medical Facts...

**Deficiency in B12 results from either insufficient intake or inadequate absorption.** B12 is only found naturally in animal sources such as meat, fish, poultry, dairy, and eggs. It is for this reason that complete vegetarians and their breast-fed babies are often insufficient. The other reason for deficiency is inadequate absorption.

### Poor absorption can be due to:

- Low stomach acid necessary to separate the B12 from the protein in meat
- Gastrointestinal problems such as food intolerances, celiac disease, bacterial overgrowth in the intestines and more;
- Anyone with less than optimal digestion likely needs to supplement with B12
- High amounts of H. pylori- the bacteria responsible for peptic ulcers- has been linked to pernicious anemia, an autoimmune disease that destroys stomach cells responsible for the absorption of B12
- Medications.
- Those who take antacids or anti-ulcer medications decrease their stomach acid and inhibit their ability to absorb B12
- Alcoholism
- AIDS

For the vast majority of people, deficiency can be easily avoided through the use of a B12 supplement, multivitamin with B12, or by increasing meats and even breakfast cereals fortified with B12.

If you have your B12 checked and it is suboptimal (below 400), and you are still experiencing symptoms, request a methylmalonic acid test or a homocysteine. Both of these tests are proving to be very reliable and more sensitive markers for assessing B12 levels.



# Vitamin B12

Lab Test

3

## Benefits & Prevention

**B12 has often been called the “energy” vitamin, but it does far more than just give you an energy boost.**

B12 offers the body a wide range of health benefits that extend to numerous systems of the body. Some of the benefits of B12 include:

- Helping your body utilize iron
- Helping folic acid regulate red blood cells
- Proper digestion and absorption
- Metabolism of fats and carbohydrates
- Optimal nerve conduction and communication
- Support male and female reproductive health
- Enhancing your immunity
- Production of adrenal (stress) hormones
- Making millions and millions of healthy red blood cells every day!
- Maintaining a healthy mood, memory, mental clarity and concentration
- Cardiovascular health through the conversion of homocysteine to methionine
- Beneficial sleep through it’s role in melatonin production

**B12 is involved in the metabolism of every cell in body and plays a vital role in the synthesis and regulation of both DNA and fatty acids. Like I said, it does much more than just give you energy!**





heart health

High Sensitivity C-Reactive Protein

hs-CRP

Lab Test

4

## In Conversation with Dr. Loken

*I have found Hs-CRP to be an invaluable test in helping me assess my patients' risk of cardiovascular disease. I was routinely running cholesterol panels on patients to get a picture of their overall heart health and risk of heart disease, but once I read about Hs-CRP and its benefits, I began to incorporate it as part of my screen.*

*This is one of the best tests to measure inflammation in the coronary arteries. To my surprise, I have found many patients with a healthy cholesterol profile to have elevated Hs-CRP. This puts them at risk for heart disease. I would have missed this if I had only looked at their cholesterol panel.*

*When I see a high Hs-CRP with low HDL "good cholesterol" and high LDL "bad" cholesterol, I know this patient is at significant risk for a heart attack or stroke, and I need to treat him much more aggressively.*

High sensitivity CRP is a highly predictive test showing future risk of heart attack, stroke, sudden cardiac death, and the development of peripheral arterial disease. Individuals with elevated levels of hs-CRP have a risk about 2 to 3 times higher than the risk of those with low levels.

### *This Test is Critical for you When...*

- If you have a family history of heart disease or stroke
- If you smoke
- If you are overweight
- If you have high blood pressure and/or high cholesterol
- If you live a very sedentary lifestyle



heart health

High Sensitivity C-Reactive Protein

hs-CRP

Lab Test

4

# Medical Facts

**C-reactive protein is a protein that is produced in the liver. It is very sensitive to acute reactions, such as inflammation, that occur in the body.**

Studies investigating the role of CRP as a risk factor for (Coronary Artery Disease) CAD have made use of a high-sensitivity CRP (hsCRP).

Hs-CRP detects levels of CRP that had been considered normal in the past but may indicate chronic low levels of inflammation.

**Quick reference guide to your optimal levels:**

TEST	Reference Range
<b>OPTIMAL</b> - Low risk for cardiovascular disease	<b>Under 1 mg/L of blood</b>
Intermediate risk for cardiovascular disease	Between 1-3 mg/L
High risk for heart cardiovascular disease	Greater than 3 mg/L

Whenever there is inflammation, CRP will be overproduced and levels will elevate. The inflammation can come about by physical trauma, burns, infection or blood vessel injury. The inflammatory process is a vital one for overall health and survival. The problem is that when inflammation becomes excessive and prolonged, it can damage the blood vessels that carry nutrients and oxygen to the entire body. An example of this damage is atherosclerosis, which is an inflammatory disorder of the blood vessels.

The specific link between elevated Hs-CRP and heart disease is a relatively new one, but it is quickly becoming more and more widespread as a powerful and essential predictor for heart health. We all have Hs-CRP, but depending on numerous factors, those levels can differ widely from person to person. Most of the things that we already associate with poor heart health will elevate Hs-CRP. Things such as smoking, lack of exercise, high blood pressure, and obesity all raise Hs-CRP. The hidden factor is a person's genetics. Almost half of the variation in Hs-CRP levels is a result of genetics, which is the specific information directly handed down to each person by his parents and grandparents.

Inflammation is a reality in every stage of heart disease from the initial stages of arterial plaque formation to the end stage of plaque rupture, which leads to heart attack or stroke. Hs-CRP is an easy, inexpensive test that when done in conjunction with other assessments such as a cholesterol panel and homocysteine can be **an extremely powerful indicator of your overall heart health and can predict potential risk.**



heart health

High Sensitivity C-Reactive Protein

hs-CRP

Lab Test

4

# Benefits & Prevention

**In the United States, approximately 1.5 million people have heart attacks and 600,000 have strokes every year.** We are well aware of the risk factors for these conditions, such as obesity, older age, smoking, diabetes, and high blood pressure, but did you know that almost half of these people are healthy with normal to low cholesterol levels? **Hs-CRP is an excellent test for assessing both your risk for heart disease and for preventing future clinical events.**

Generally speaking:

**Hs-CRP under 1 mg/L of blood = Low risk for cardiovascular disease**

**CRP 1-3 mg/L = Intermediate risk for cardiovascular disease**

**Hs-CRP greater than 3 mg/L = High risk for cardiovascular disease**

The higher your levels of Hs-CRP, the higher your risk of heart disease. It has long been thought that just running a cholesterol panel is the best way to assess your heart health, but it is now being shown that cholesterol is only a part of the heart health picture. Both Hs-CRP and a cholesterol panel can predict risk, but one will not tell you about the other. Running both tests can give you a comprehensive picture of your potential risk. Individuals with the highest risk are those with elevated LDL or “bad” cholesterol and elevated Hs- CRP.

It has been shown that individuals with a high Hs-CRP and a low LDL actually have a greater risk of heart disease than those with low Hs-CRP and high LDL.

This example shows that by running only a cholesterol panel without a Hs- CRP, a valuable piece of the puzzle would be missing, which could cause one’s potential risk to go unnoticed. In conjunction with a cholesterol panel, Hs-CRP can be an extremely powerful predictive tool for health or disease.

Hs-CRP can also tell you about your potential risk for developing Type II diabetes and metabolic syndrome. Your risk for diabetes increases 4-6 times when your Hs-CRP levels are greater than 3 mg/L. All the components of metabolic syndrome: low HDL cholesterol, central obesity, high triglycerides, increased blood sugar levels, and high blood pressure, increase inflammation in the body. Since Hs-CRP and CRP tests measure the same molecule, people with chronic inflammation, such as those with arthritis, should not have hs- CRP levels measured. Their CRP levels will often be too high due to the arthritis to be measured or meaningful using this test. If your hs-CRP level is very high, above 10mg/L, you should have the test repeated after 2-3 weeks, as the high hs-CRP level may reflect an acute infection that you are experiencing at the time. You should therefore have your hs-CRP evaluated only when feeling well. If upon repeat testing your hs-CRP level remains high, then you are most probably in the higher cardiovascular risk group.

**Hs-CRP levels rise in response to inflammation; thus, they provide you with excellent prognostic information on your future risk.**



heart health

# Homocysteine

Lab Test

5

## In Conversation with Dr. Loken

***Since cardiovascular disease is our nation's number one killer, I am extremely pleased to be able to use any test that helps me see its potential risk factors in patients.***

*Homocysteine has proven to be a great test for this purpose. If a patient is high normal or above his reference range, I immediately put him on a plan to support his heart health and increase key nutrients that are usually deficient when homocysteine is high.*

*I have also started screening my female patients who want to get pregnant because high homocysteine levels have been correlated with miscarriage and birth defects.*

*Once we see the bigger picture and discover what is out of balance, we can put together a plan to correct it. By checking your homocysteine levels in conjunction with a couple of other tests from this package, you will have one of the most complete pictures of your overall risk for cardiovascular disease!*

Homocysteine has gradually become one of THE MOST IMPORTANT screening examinations for determining your risk of cardiovascular disease

### *This Test is Critical for you When...*

- You have a family history of heart disease or stroke?
- You are overweight, a smoker, or have high blood pressure?
- You have elevated cholesterol and/or high blood sugar
- You are pregnant?
- You a vegetarian or vegan?



heart health

# Homocysteine

Lab Test

5

## Benefits & Prevention

For many years, elevated homocysteine levels have been linked to an increased risk of cardiovascular disease. This relationship has been proven over and over again, but more recently, homocysteine has also been associated with a number of other conditions:

- Heart attack
- Stroke
- Peripheral vascular disease
- Miscarriages, birth defects, pregnancy-induced hypertension
- Alzheimer's disease, Parkinson's disease
- Dementia
- Rheumatoid arthritis
- Diabetes
- Chronic fatigue syndrome
- Deficiency of B12, folic acid, B6

The adult reference range for homocysteine is 6.3-15 umol/L. It has been shown that levels of 15 umol/L or higher increase a person's chances of a heart attack three times as compared to individuals with normal levels. Even at 12 umol/L, there is a doubled chance of a coronary problem. One study even suggested that for every 5 uM (micrometer) increase in homocysteine there is an increased risk of coronary disease 60% in men and 80% in women. Therefore it is best to keep your levels as close to the bottom of the reference range as possible.

**Homocysteine is intimately tied to our levels of B12, folic acid, and B6.** These key nutrients are essential for the proper function of enzymes that process and break down homocysteine. If these vitamins are deficient, you aren't able to break down homocysteine and your risks start to increase. In fact, homocysteine is often ordered to check for a B12 and folic acid deficiency because homocysteine may be elevated before a B12 or folic acid test shows abnormal.

**This is especially important for those who are strict vegetarians or vegans.** It has been shown that homocysteine levels are more than 50% higher in vegans and 30% in vegetarians as B12 can only be derived from animal sources. In the same study, serum B12 levels were found to be 37% lower in vegetarians and 59% lower in vegans as compared to the omnivorous group.

Another factor associated with elevated homocysteine is high insulin levels. It has been found that overweight children with high levels of insulin have high levels of homocysteine as well. Insulin appears to inhibit enzymes involved in homocysteine metabolism. This is a significant finding considering that elevated insulin levels are more or less synonymous with obesity and up to 74% of adults and 25% of children in North America are either overweight or obese.

**That said, the findings also imply that homocysteine levels may be improved by reducing cardiovascular risk factors such as body fat and insulin through diet and exercise.**



heart health

# Cholesterol Panel

Lab Test

6

## In Conversation with Dr. Loken

*A cholesterol panel is a fairly standard test physicians run on their patients.*

*The panel has the potential to provide a lot of information about your cardiovascular health and risk factors for a number of diseases including heart disease and stroke; however, the panel has several components and all of them must be used in order to get the whole picture. For example, simply testing your total cholesterol doesn't tell us anything unless the patient's level is extremely high: greater than 330 mg/dl. My own total cholesterol level is a little elevated, but it is because I have a high amount of "good" HDL cholesterol, which is actually cardio-protective.*

*I have also seen several patients with low total cholesterol who are actually at a higher risk for cardiovascular disease than my other patients with high total cholesterol. It really comes down to a couple of factors: whether or not your ratio of "good" and "bad" cholesterol is off and whether your body has excess inflammation. These two factors together will put you at a high risk for cardiovascular disease.*

*Cholesterol in general has been given a bad rap over the years.*

Health officials in the U.S. urge everyone over the age of 20 to have their cholesterol tested every 5 years!

## This Test is Critical for you When...

- If you are over 20 years of age
- If you have a family history of high cholesterol and/or heart disease
- If you have high blood pressure
- If you are overweight, smoke, or live a sedentary lifestyle
- If you have elevated markers for inflammation

uch as a hs-CRP

S



heart health

# Cholesterol Panel

Lab Test

6

## Even More Medical Facts...

Clearly there is much more to this test than a simple number. For years, we have been told that cholesterol is “bad” and it causes heart disease. We are now learning that this statement isn’t entirely true. Cholesterol itself is both an essential part of life and at the same time, if damaged due to inflammation or falls out of proportion, it can increase the risk of disease.

In order to achieve any value from our tests, we need to see the whole picture. TC and LDL levels do not tell us enough by themselves. We need to focus less on just LDL levels and more on our ratios of TC/HDL and TG/HDL. Both of these measurements are better predictors of heart disease. We also need to request our Lp(a) levels since this test is seldom done, and it is an extremely valuable tool for both risk and prevention.

When we combine our cholesterol panel with markers for inflammation like a Hs-CRP and cardiovascular tests like homocysteine, **we decrease our challenges with battling heart disease, the number one killer in North America, as we have within our reach one of the most thorough ways of assessing our risk.**





heart health

# Cholesterol Panel

Lab Test

6

## Benefits & Prevention

Cholesterol exists in every cell in our bodies. It plays a role in the absorption of dietary nutrients, production of cell membranes, reproduction, hormone production such as estrogen, progesterone and testosterone, stress response, calcium metabolism, vitamin D production, nerve conduction and salt and water balance. In fact, any time a cell is damaged, cholesterol will show up in order to replace the damaged cell. We cannot exist without it.

**According to Dr. Malcom Kendrick in the *Great Cholesterol Myth*, "It is a fact that after the age of 50, the lower your cholesterol level is, the lower your life expectancy."** Above all, we must be aware that demonizing cholesterol completely is a mistake; the issue isn't as simple as lowering LDL and total cholesterol to lower one's risk for heart disease. The main problem is when you don't produce enough of HDL, and the LDL you are overproducing becomes oxidized due to chronic inflammation. Inflammation is showing up more and more as a cause of chronic disease. How it relates to cholesterol and heart disease is when the arterial wall gets damaged, the inflammatory process creates a plaque and constricts the blood vessel. This process can increase your risk for high blood pressure and heart attacks.

Cholesterol shows up as a byproduct of the damage that was created by the inflammation. Remember that cholesterol is essential in replacing damaged cells. According to Sally Fallon, the president of the Weston A. Price Foundation, and Mary Enig, PhD, an expert in lipid biochemistry, "If you have increased levels of cholesterol, it is at least in part because of the increased inflammation in the body – this is to help the body heal and repair."

**So the big question is: why do we only focus on lowering cholesterol and not on lowering inflammation?**

Running your cholesterol panel will highlight certain risk factors for heart disease. When these results are combined with other markers for inflammation, they can provide some very valuable information. At the same time, **if you are currently on cholesterol-lowering medication, it is also valuable to get checked to see if your levels are too low.**

When your cholesterol is too low, you may increase your risk of:

- Depressive symptoms
- Suicide
- Violent behavior and aggression
- Cancer
- Parkinson's disease & Dementia

Cholesterol is an essential component of every cell in the body. If the level drops too low, negative issues can arise.



heart health

# Fasting Blood Sugar

Lab Test



## In Conversation with Dr. Loken

*This test is excellent. It is one of the simplest, most inexpensive and powerful tests that we have at our disposal.*

*Over the past several years, I have seen a tremendous increase in the number of diabetic or pre-diabetic patients. Some experts are calling diabetes an epidemic of epic proportions.*

*Type II diabetes is a destructive disease when left uncontrolled. By simply checking your fasting blood sugar in-office or by yourself at home with a skin prick, we are able to assess both your current risk and predict your future risk for diabetes up to 10 years into the future.*

*It doesn't make sense to wait to have this test done. Knowing your levels enables you to take any necessary steps toward prevention!*

The rate of diabetes has increased by 700% over the past 5 decades!! Checking your fasting blood sugar is the best test for assessing both diabetes and your future risk of diabetes!

## This Test is Critical for you When...

- If you have a family history of Diabetes
- If you eat a diet with many refined grains, carbohydrates and sugars
- If you are feeling weak and fatigued most of the time
- If you find yourself thirsty and hungry all the time
- If you have high blood pressure, high cholesterol and/or are overweight



heart health

# Fasting Blood Sugar

Lab Test



## Benefits & Prevention

**1 in 4 Americans has diabetes or prediabetes; it has been estimated that more than 50% of Type II diabetics are not even aware that they have diabetes.**

Diabetes is a progressively destructive disease that affects your eyes, nerves, kidneys, and your heart and blood vessels. It can increase your risk in developing heart disease, stroke, peripheral vascular disease, high blood pressure, cancer, obesity, and possibly increase your risk for many other chronic diseases.

Type II diabetes is one of the most avoidable chronic diseases. Not only is Type II diabetes preventable, it can literally be reversed with some simple lifestyle modifications.

Once we assess your fasting blood sugar, we know the degree to which you are at risk for any of the above problems. If you are at risk, it is crucial that you find out sooner rather than later to ensure **you take control of your health and live your healthiest life possible.**



# In Conversation with Dr. Loken

*I can't begin to tell you the number of people that come in to the clinic wondering if they have thyroid issues when their blood work is "Normal."*

*The good news is that many people are more informed than ever about thyroid symptoms...the bad news is how many of them actually have suboptimal thyroid function. The challenge with your thyroid is that it gets messed up as soon as you have troubles with other hormones. The primary culprits that will throw off your thyroid are stress hormones, sex hormones, and insulin. Now think about the amount of stress most people are under, the typical North American diet, and the sea of estrogen that we seem to be living in due to birth control pills, hormone replacement, and plastics, and it becomes pretty easy to see how your thyroid may be taking a beating. By this point most people end up with a myriad of symptoms representing the slight dysfunction in all four hormones.*

*In order to get to the bottom of it, we need to first know the degree to which your thyroid is being affected, this is accomplished by running a thorough panel of thyroid hormones... not just a TSH.*

In the United States, more than 10 percent of the general population and 20 percent of women over the age of 60, have subclinical hypothyroidism. Thyroid hormones interact with an array of other hormones and are intimately involved in every physiological process that goes on in your body, **if it is out of balance...everything is!!**

## This Test is Critical for you When...

- If you have a family history of thyroid problems
- If you are feeling tired, lethargic and/or cold most of the time
- If you have unexpected weight gain or have trouble losing weight despite dietary and exercise interventions.
- If you have elevated cholesterol
- If you are going through perimenopause or menopause



# Thyroid Panel

Lab Test **∞**



# Thyroid Panel

Lab Test



## More Medical Facts...

- TSH:** Thyroid-stimulating hormone is the standard test for thyroid function and probably the most important, but make sure you look at your values. The reference range is often between 0.5-5.0. This range is much too large, so it is important to remember that if you are above 2.0, you probably have an underactive thyroid.
- Free T3 and Free T4:** reference ranges for free T4 are 0.8-1.8 ng/dl and for free T3 are 2.3-4.2 pg/ml. I like to see people in the mid/ upper ranges for these hormones. It is not unusual to see elevated TSH and low/normal free T3/T4. In this case, you would be suffering from an underactive thyroid.
- Thyroid antibodies:** Thyroid peroxidase (TPO) antibody tests for antibodies attacking the thyroid hormone producing enzyme thyroid peroxidase. This is often positive in autoimmune disorders such as Hashimoto's disease. Anti- thyroglobulin antibodies attack the thyroid gland itself and are positive after thyroid gland injury or inflammation and can indicate autoimmune diseases similar to TPO antibodies. Normally both of these antibodies should be negative. Both antibodies are essential to rule **out an autoimmune thyroid condition that can show up well before any changes in TSH are noticed.**
- Reverse T3 (rT3):** As mentioned above, more research still needs to be done for us to fully understand rT3 and its connection with hypothyroidism. Essentially rT3 is an inactive form of T3, a "mirror image" molecule of T3 that is not bioactive. This in and of itself is not a problem; the problem happens when it is present in excess. rT3 can bind T3 receptors and block the action of T3 on the body. This means your body doesn't receive the necessary amounts of T3, which can lead to hypothyroid symptoms despite a normal TSH, T3 and T4 levels in the blood. This is what we refer to as "Tissue Resistance to Thyroid Hormone." It has been shown that increased stress can lead to a decrease in the conversion of T4 to T3 and increase the conversion of T4 to rT3 leading to subclinical hypothyroidism, known as Wilson's Reverse T3 Dominance Syndrome.

By running this complete thyroid panel and understanding the optimal reference ranges, you will have an excellent picture of your overall thyroid function. Subclinical thyroid issues are very common yet are often under diagnosed. If left untreated, these issues will trigger or aggravate other autoimmune conditions and chronic diseases. If you are experiencing any of the symptoms above, I highly suggest that you see your primary health care physician and check your levels to see where you stand.

**This is a condition that can be treated very effectively with complementary medicine, diet, and lifestyle. Get checked and then get on track!**



# Thyroid Panel

Lab Test 

## Benefits & Prevention

There are many people walking around with subclinical hypothyroidism who have no idea they have it. It has been estimated in fact that half of all people with hypothyroidism are never diagnosed and thus never receive treatment.

This is due in large part to inadequate testing. It is standard to have your TSH (Thyroid stimulating hormone) checked if your physician suspects a low functioning thyroid. The problem is that the reference range for “normal” is much too large. The reference range is 0.5-5.0, which will only catch the most obvious cases of hypothyroidism.

It is now suggested by many physicians who focus on thyroid health that any value above 1.5 is indicative of an underactive thyroid. *In my experience values below 2.0 are acceptable.* Those most at risk are women and the elderly. Women are up to 8 times more likely to be diagnosed with hypothyroidism than men.

A possible reason for this may be due to the interaction between estrogen and thyroid hormones. After the age of 60, up to 9% of men are diagnosed with hypothyroidism and up to 17% of women. Low thyroid functioning can lead to a vast number of symptoms and susceptibilities such as:

- 
- Dry skin
- Weight gain and difficulty losing weight
- Cold hands and feet and general feeling of cold
- Course hair and nails, hair loss
- Constipation
- Fatigue and lethargy, poor stamina
- Low libido
- Infertility
- High cholesterol
- Irregular menstruation
- Poor memory
- Water retention
- Skin problems such as acne, eczema
- Diabetes
- Arthritis Anemia

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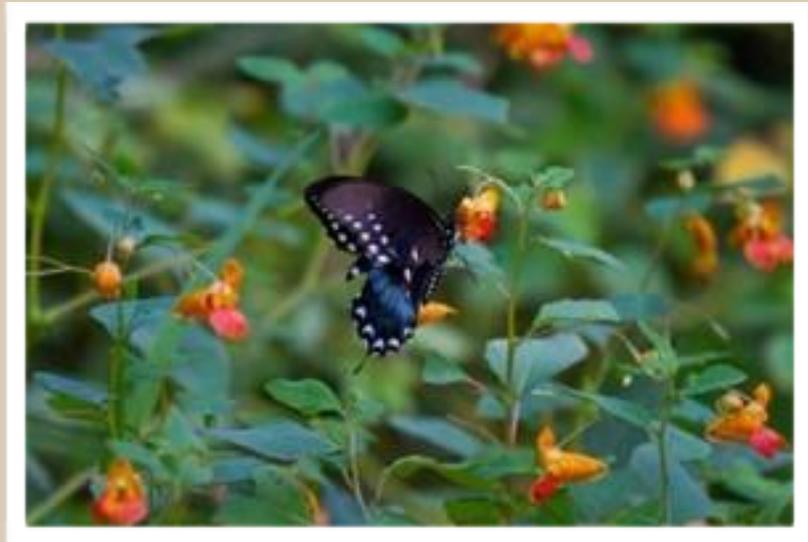
# Thyroid Panel

## More Benefits & Prevention...

Factors that increase your risk for subclinical hypothyroidism are autoimmune thyroid disease, infectious, silent, or postpartum thyroiditis and various medications.

Other factors that you may not normally think of are stress, processed foods and sugars, toxins from the environment, iodine deficiency, obesity, gluten sensitivity, food allergies, menopause and poor exercise. These can cause alterations in our stress hormones, sex hormones, and insulin levels.

**Thyroid dysfunction is not solely about the thyroid, but more importantly, it is about finding balance within the whole body.**





complete blood count

CBC

Lab Test

9

## In Conversation with Dr. Loken

*Recently, I came across a book called **Blood Doesn't Lie**. I couldn't agree with the title more; for this reason, I provide my patients with information regarding the **CBC test**. I know this test helps provide a huge puzzle piece in the picture of their overall health.*

*I run a CBC as a standard evaluation of a patient's health. When a CBC comes back normal, it helps me rule out a great number of potential causes for my patient's symptoms.*

*When a CBC comes back positive, showing certain cell populations as high or low, it helps me make sense of my patient's symptoms as it reveals underlying problems that need to be addressed.*

*These results can be a great support for me when I fine tune my choices for further testing, which can best reveal underlying causes and lead the way to total wellness.*

A CBC is a base line essential lab test that screens for a broad spectrum of disorders such as anemia, infection, and other diseases.

### *This Test is Critical for you When...*

- If you are feeling weak and fatigued most of the time
- If you bruise or bleed easily
- If you are getting frequent colds and infections
- If you have inflammation
- If you are seeing your doctor for a routine check up this test should be done



complete blood count

CBC

Lab Test

9

# Benefits & Prevention

The CBC is a common test that is ordered to assess a patient's general health status. Often when a patient is healthy and his CBC reveals normal cell populations and sizes, it is not usually necessary to run another one until the patient's health changes or his primary health care practitioner deems it necessary.

A CBC helps us diagnose the cause of many different symptoms such as fatigue, weakness, inflammation, bruising, bleeding, or if the patient has an infection. It also suggests to us when we need to order further testing to identify the underlying cause. For example, changes in the number or size of your RBC, WBC (red or white blood cells) or platelets- all of which can be seen on a CBC- can cause significant problems to your health. A decrease in the number of RBCs would indicate an anemia, and by evaluating the size and shape of the RBC, we can determine the reason for the anemia.

An increase or a decrease in WBC may help us to determine that an infection or a host of other potential pathologies is present.

Platelets will give us information around the causes for excessive bleeding or clotting and bone marrow disorders such as leukemia.

There can be many different reasons for fluctuations in the number or size of these cells.

**CBC is our key to unlocking relevant information that helps us take essential steps toward total wellness.**

**A CBC helps us to diagnose the cause of many different symptoms such as:**

- Fatigue
- Weakness
- Inflammation
- Bruising
- Bleeding
- Infection

**continued next page...**



complete blood count

CBC

Lab Test

9

## More Benefits & Prevention...

The CBC also suggests to us when we need to order further testing to identify the underlying cause. For example:

- A decrease in the number of RBC would indicate an anemia. By evaluating the size and shape of the RBC, we would be able to determine whether the anemia is due to an increased loss, an increased destruction, or a decreased production of RBC.
- An increase or a decrease in WBC may help us to determine that an infection or a host of other potential pathologies is present.
- Platelets will give us information about the causes for excessive bleeding or clotting and bone marrow disorders such as leukemia.

There can be many different reasons for fluctuations in the number or size of these cells. Cancer, medications, radiation, infections, and nutritional deficiencies can all be underlying factors.



# In Conversation with Dr. Loken

**Only a few cents a day would pay for this important test. Acid / Base or acid/alkaline balance is a cornerstone for optimal health.**

*Tracking urine pH with inexpensive hydrion (pH indicator) paper is a part of my patients' home care. Having patients track their first morning urine pH is a great way for them to stay on track, make adjustments when necessary, and validate their progress. It is seldom that a patient's pH doesn't move towards a healthier balance once she makes the appropriate diet, lifestyle and/or supplemental changes. Primarily due to our North American diet and lifestyle, the vast majority of people is far too acidic and as a consequence the people are setting themselves up for a number of chronic diseases.*

**Tracking your pH could be one of the cheapest and simplest ways for you to start making what could possibly be the most profound impact on your overall health.**

Acid / Base balance is one of the most tightly regulated systems in our body. Maintaining even a slightly acidic internal environment will create a breeding ground for disease and chronic illness.

## This Test is Critical for...

### **EVERYONE!**

Everyone should get their pH checked regularly. It is extremely inexpensive and will provide you with a phenomenal tool to dramatically improve your health.



pH of Urine

Lab Test **10**



# pH of Urine

Lab Test **10**

## Benefits & Prevention

Our body has specific ranges inside which it likes to live and function. As soon as we fall outside of those optimal ranges, our bodies make every effort possible to restore that balance.

Unfortunately if we stay in these suboptimal ranges for a prolonged period of time, the consequences can be devastating to our long-term health. pH is one of these ranges that our bodies likes to keep tight to, much like internal temperature. Normal temperature ranges from 36.4-37.1 C (97.5-98.8 F); if it shifts even by one point Celsius, we feel the effects significantly. pH is very similar to this.

Our normal blood pH ranges between a slightly alkaline 7.365 to 7.45. A shift on either end of this range will result in significant disease or even death. For the most part, you have control over your pH by addressing the smaller, subtle changes in pH that come from an acidic or an alkaline diet. These smaller diet and lifestyle-induced shifts in pH will not alter your blood pH enough to kill you, but they will definitely move you out of your optimal range. Over time, they make you much more susceptible to ill health and chronic disease.

Our body naturally likes to be in a more alkaline environment as this is where it functions optimally. When we over-consume acidic foods such as sugars, refined carbohydrates, alcohol, coffee, meats, sodas, fried foods, etc., we create an overly acidic environment in the body. In an acidic environment, our body has a much more difficult time distributing oxygen and nutrients to our cells and removing waste products from our cells. This gradual decrease of oxygen and nutrition and build up of waste material at a cellular level is the reason for all of the devastating effects that result from a long term low grade acidic environment, also known as a low grade metabolic acidosis.

**continued next page...**



# pH of Urine

Lab Test **10**

## Benefits & Prevention

**By testing your pH regularly and keeping yourself in an optimal range you will be protecting yourself from this laundry list of potential health problems related to an acidic state:**

- Fatigue – impaired production of ATP
- Osteoporosis
- Arthritis,
- Hypertension
- Inflammation and pain
- Urinary track infections Multi-hormone dysfunction
- Premature aging
- Poor immunity
- Increased free radical damage
- Bacterial overgrowth – many bacteria and viruses, and yeast prefer an acidic environment to live
- Water retention
- Weight gain and difficulty losing weight
- Kidney stones
- Dental decay
- Mild hypothyroidism
- Impaired liver detoxification
- Muscle weakness and decreased exercise intensity and performance





# Bonus - RBC Magnesium

BONUS

## In Conversation with Dr. Loken

*For the past decade or more, I have seen many patients benefit significantly from the oral or transdermal (topical) supplementation of magnesium. It has become a mainstay supplement in my tool belt to improve the overall health of my patients. The vast majority of these prescriptions, however, have been solely based on my patient's symptoms. I would routinely find complaints such as: constipation, anxiety, hypertension, PMS and many others improve substantially by simply increasing one's magnesium levels. The good news is that there is a specific test called Red Blood Cell Magnesium or RBC magnesium that allows us to get a fairly accurate measurement of the magnesium levels inside our actual cells...and this, as you will soon learn...is where all the magic happens.*

*"It is estimated that up to 85% of North Americans are deficient in magnesium."*

### This Test is Critical...

- 💡 If you suffer from constipation
- 💡 If you have high blood pressure
- 💡 If you suffer from anxiety, restlessness or depression
- 💡 If you have trouble sleeping
- 💡 If your energy levels are lower than you feel they should be
- 💡 If you suffer from headaches, muscle pains or fibro myalgia



# Bonus - RBC Magnesium

BONUS

## Benefits & Prevention

Over the past several years, magnesium has gained considerable attention as a powerhouse mineral that can improve a myriad of health concerns. It is actually quite difficult to find a condition that magnesium, in some way, will not help...or that a deficiency of it will not exacerbate. Magnesium is involved in a large number of basic body processes and functions including:

- Activation of amino acids
- Cofactor for over 300 different body enzymes
- Immune function interactions with many different nutrients including (potassium, calcium, B6, and boron)
- Oxidation of fatty acids
- Neurotransmission
- Synthesis and breakdown of DNA

**The short list of ailments that magnesium has been shown to aid includes:**

- ADHD and hyperactivity
- Anxiety/depression & panic attacks
- Alzheimer's and memory loss
- Asthma
- Constipation
- Diabetes
- Fibromyalgia and chronic fatigue syndrome
- High cholesterol and high blood pressure, palpitations
- Heart disease
- Infertility
- Kidney stones
- Migraine headaches
- Muscle cramps and spasm
- Obesity
- Osteoporosis
- PMS
- Polycystic Ovary Syndrome (PCOS). One study showed that women with low magnesium were 19 times more likely to have PCOS.

For more information on the numerous conditions and supportive research showing the benefits of magnesium, please visit the nonprofit Nutritional Magnesium Association (NMA) at [www.nutritionalmagnesium.org](http://www.nutritionalmagnesium.org)



# Bonus - RBC Magnesium

BONUS

## Benefits & Prevention

### Stress, anxiety, depression...

Magnesium can help all of these conditions because it is a cofactor in the smooth running of countless enzymatic reactions that are taking place in your body every second. **If magnesium levels are LOW the reactions that require it to run smoothly...DON'T run as smoothly.** For example: if you look at how it relates to anxiety and depression, it makes sense once you understand that magnesium is necessary to make both serotonin (our “feel good” hormone) and support our adrenal glands which regulate our fight or flight response. If we cannot make adequate serotonin, we simply will not feel very good. This is the premise for the use of the vast majority of antidepressant medications on the market right now. Every time we get stressed, we use up magnesium. Increases in adrenalin lead to decreases in magnesium. This is a scary thought when you consider the amount of chronic stress in most people’s lives.

Anti-anxiety, anti-depressant, and anti-hypertensive medications are among the most prescribed medications in North America. It would be interesting to see how many people taking these medications are suffering from an underlying magnesium deficiency. In-fact in one study by Drs. Cox and Shealy, found that of the 500 depressed participants in their study, the majority were all magnesium deficient. In the book *No Child Left Different*, Dr. Olfman states that over 10 million children and adolescents are on anti-depressants and 5 million on ADHD medications, such as Ritalin. All of these symptoms may be attributed to magnesium deficiency.

**Cardiovascular health, weight management and diabetes...** Magnesium has long been a big player in cardiovascular health. If you recall, almost ½ of your body’s magnesium stores are in soft tissue, including skeletal and smooth muscle. Magnesium is responsible for muscle relaxation. As your levels deplete, you become more prone to muscle spasm and cramping...not only in the muscles that you can feel like your feet and calves but also in the smooth muscle walls of your arteries. Increasing the TENSION in your arteries leads to “hypertension” aka high blood pressure and increases your risk for cardiovascular disease. This relaxation of the smooth muscle is also why magnesium can be helpful in patients with asthma, along with countless other conditions.

Magnesium continues to support heart health and overall wellbeing by improving insulin sensitivity; insulin secretion; glucose homeostasis; decreasing central obesity; increasing beneficial HDL and lowering C- reactive protein, an excellent marker for inflammation. These benefits are HUGE when it comes to cardiovascular health, not to mention all chronic illness (see cardiovascular health sections of this book and related chapters). Other studies measuring magnesium intake and risk of type II diabetes in men and women found that there was a significant inverse association between magnesium intake and diabetes risk. The authors recommended the increased consumption of magnesium rich foods such as whole grains, nuts, and green leafy vegetables.



# Bonus - RBC Magnesium

BONUS

## Benefits & Prevention

### Alzheimer Disease, memory loss & brain health...

Magnesium supplementation has shown promising results in both memory and learning. Researchers at the Massachusetts Institute of Technology found that magnesium played a key role in the regulation of several enzymes within brain cells that control memory functions and the release of various neurotransmitters. They proposed that maintaining optimal levels of magnesium in the cerebrospinal fluid was essential for the maintenance of synaptic plasticity, a key feature for the brain's ability to change itself allowing us to deal with changing environments, cope with stress, and recover from trauma. In a study from China, Guosong Liu, director of the Center for Learning and Memory at Tsinghua University in Beijing, found that higher brain magnesium levels improved brain health through synaptic plasticity. The researchers of this study concluded that increasing ones magnesium may prove to be a beneficial strategy for enhancing cognitive abilities. This may also contribute to reductions or prevention in age-dependent memory decline.

### PMS, PCOS, Infertility

I have seen many patients find relief from their PMS symptoms, including cramping, anxiety, mood swings, headaches, and breast tenderness simply through the oral supplementation of magnesium. Studies have shown that for many women RBC magnesium levels drop significantly the week before menses commences. In a 1995 study posted in the *Townsend Letter for Doctors* oral magnesium supplementation of 400mg/day was found to ease many symptoms of PMS including headaches, breast tenderness, weight gain and nervous tension. It appears that magnesium has an inverse relationship to the female hormones estrogen and progesterone. Increases in the concentration of estrogen and progesterone lead to decreases in magnesium. Dr. Carolyn Dean, author of *The Magnesium Miracle*, suggests that this depletion may cause a reduction in cerebral blood flow via spasm of the cerebral vessels, which in turn may lead to PMS and migraine headaches.

A gynecological endocrinology study done in 2012, stated that women with magnesium deficiency were 19 times more at risk for developing Polycystic Ovary Syndrome (PCOS) than those with normal magnesium levels. The mechanism for this is not completely clear as normally PCOS is closely related to insulin resistance yet this study did not find any specific correlation between magnesium deficiency, insulin resistance and PCOS. More studies are still needed in this area.

# Benefits & Prevention

When it comes to fertility, both men and women can benefit from increasing their magnesium levels. Low levels of magnesium may be responsible for smooth muscle spasms in the fallopian tubes. This could lead to infertility, in much the same way that spasms in arteries of the brain may lead to migraines. For men, zinc is not the only nutrient good for fertility. One study shows that infertile men, as well as those with chronic prostatitis, have much lower levels of magnesium than those without these conditions.

As you can see, magnesium plays a significant role in overall health and wellness. Given the percentage of people that are likely suboptimal or outright deficient in this vital nutrient, it is time to stop guessing and find out for sure where you stand. Get your RBC magnesium levels checked and start getting back on track.



**Bonus - RBC Magnesium**

**BONUS**

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With Gratitude

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# Dr. Jason Loken

Dr. Jason Loken graduated from the Canadian College of Naturopathic Medicine (CCNM), as a Naturopathic Doctor in May of 2002. He holds his designation as an Osteopathic Manual Practitioner from the Canadian College of Osteopathy with a Diploma in Osteopathic Manual Practice (2012). Dr. Loken has also been a Registered Massage Therapist since 1995 and is currently completing his Ph.D in Integrative Medicine. He is a member in good standing with the Canadian Association of Naturopathic Doctors, the Ontario Association of Naturopathic Doctors, and the Ontario Association of Osteopathic Manual Practitioners.



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Dr. Loken combines naturopathic medicine, osteopathic manual therapy, Integrative medicine and applied kinesiology in order to best support his patients by removing the obstacles that are preventing optimal health . He believes strongly in the integration of all aspects of health : physical, mental, and emotional, in order to live a happy, balanced life.

In his expanding efforts to bring care and ease into peoples lives and ultimately this world Dr. Loken co-created "personal shifts" and "Global Shifts". He is the author of two books including the inspirational book, "Letters that Move the World; intentional acts of gratitude". The vision of this book is to create a focused moment for positive change in our world. His most recent book, the "From Understanding to Knowing" assists individuals back into the drivers seat of their own health and offers practical solutions to a myriad of health problems. You don't have to settle for "normal" when optimal is an option. To learn more about Dr. Loken and these essential publications please join us at:

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