



Magnesium, a missing micromineral for diabetics?

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Introduction

With over 30 million diagnosed diabetics and pre-diabetics in our country today, diabetes has grown to epic proportions. It is estimated that one in five Americans either have been diagnosed, or are in early stages of what used to be called “adult onset diabetes”¹. Today, more and more young adolescents are being diagnosed. It should be alarming to all. If you’ve been diagnosed with either diabetes or pre-diabetes you’ve most likely been told to eat healthy, exercise, and if needed, take a few pounds off. Diabetes management and the control of blood glucose level goes deeper than that. We need to pay close attention to the macro and micro nutrients that we are ingesting and how our bodies are using these mother natures offered supplements.

Magnesium is one of those minerals, that for a lot of us has been forgotten. Here in this brief we will look at what magnesium is, where we can find it in our foods, its function in our bodies, and why diabetics should pay closer attention to this mineral. Type 2 diabetics typically have a condition where the insulin produced by our pancreas that is designed to sweep away blood sugar to our cells for storage, is not working quite up to snuff. This is known as insulin resistance, or some refer to it as reduced insulin sensitivity.

Its Function and role

By many in the nutritional circle, Magnesium, is known as one of the hardest working minerals that we have in our bodies. While there are only a few ounces in our body (less than .05% of body weight), it is responsible for assisting in several hundred enzymatic reactions in our body from production of energy to cardiovascular functions². Magnesium is a macro mineral that is essential to our bodies function. It is needed to digest and use protein, increase muscle health, nerve transmission and immune system health. A healthy adult male under 50 should be consuming approximately 420mg of magnesium daily, a female and adults over 50 slightly less at 320mg. While the bones contain 50-60% of the magnesium in our bodies, the level in our blood is considerably less, and well maintained. Our bodies excrete approximately 120mg’s of magnesium daily, with the balance in our systems tightly controlled by our kidneys³.

While magnesium plays a part on hundreds of enzymatic reactions, for the diabetic, it’s primary function is assisting in blood sugar control. Type 2 diabetics have either a reduced level of insulin, the hormone that carries glucose (sugar) out of our blood system and into cells, produced by beta cells in the pancreas, or an insulin that is less sensitive and efficient in unlocking the cell wall membrane to let glucose in. This is known as insulin resistance, or a reduced insulin sensitivity. Studies have shown that

¹ <https://www.cdc.gov/media/releases/2017/p0718-diabetes-report.html>, July 2017

² Staying Healthy with Nutrition, Dr. Elson Haas, et all, 2006, pg 162-163

³ <https://ods.od.nih.gov/factsheets/Magnesium-HealthProfessional/>

depleted, or lowered stores of Magnesium in our bodies is directly linked to this insulin resistance⁴. It is been shown that increasing intake of magnesium in diabetic patients has a direct correlation to reduction of insulin resistance⁵.

Deficiency & Excess

As noted above deficiency of magnesium can lead to increased levels of blood glucose level which has been shown to lead to chronic heart conditions. Systematic deficiencies in the normal population is uncommon due to the tight control of the kidneys in controlling levels in our bodies. However, one should watch for indications of loss of appetite, nausea, fatigue and weakness as early warning signs.

Excess is also rare due to the tight controls of the kidneys and excretion of excesses thru the urine⁶.

Food Sources

As stated previously, RDA's for this mineral for a healthy adult male is 420mg daily. Female and adults over 50 slightly less, at 320mg. The most prevalent source of magnesium in our food supply today is in the plant kingdom. Almonds, spinach, peanut butter and cashews all provide 14-25% of our daily needs. Animal products like chicken and salmon also provides an above normal amount of magnesium. Here are the foods with the highest concentrations in them⁵:

Table 2: Selected Food Sources of Magnesium [10]

Food	Milligrams (mg) per serving	Percent DV*
Almonds, dry roasted, 1 ounce	80	20
Spinach, boiled, ½ cup	78	20
Cashews, dry roasted, 1 ounce	74	19
Peanuts, oil roasted, ¼ cup	63	16
Rice, brown, cooked, ½ cup	42	11
Yogurt, plain, low fat, 8 ounces	42	11

Summary

Good diabetic health starts with eating fresh, whole foods, grown locally to ensure we are getting the macro and micro nutrients we need to fend off disease, and fuel our bodies. Magnesium is a critical component in our health as it is one of the hardest working minerals found in nature today. Helping and assisting in several hundred bodily functions every day. For diabetics it is critical to ensure our development of insulin and the effectiveness of it is kept running at its highest level. Magnesium levels have proven to assist in that function.

As always, it is important to eat as close to the earth as you possibly can, eat wholesome foods, and stay away from heavily processed and packages foods to ensure you are feeding your body with the best

⁴ <https://www.ncbi.nlm.nih.gov/pubmed/9589224>

⁵ <https://www.ncbi.nlm.nih.gov/pubmed/28526383>

⁶ <https://ods.od.nih.gov/factsheets/Magnesium-HealthProfessional/>



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possible fuel. Ensure that you communicate with your health professional if you think you might be deficient in the vital nutrients necessary for good health.

Eat fresh, eat colorfully, and enjoy the path you've chosen for your health and wellbeing. For further information on how you can incorporate easy, colorful plates into your diet please reach out to me at ray.orndorff@cookingandcolor.com.

Enjoy!