The Magnesium Miracle:

A Special Interview with Carolyn Dean

GP: Gaea Powell

CD: Carolyn Dean

Introduction:

GP: Hi, thank you so much for joining us and for being willing to come and share your important message with our audience. We greatly appreciate it.

CD: Thank you very much. My name is Carolyn Dean. I'm a medical and naturopathic doctor. I want to thank Dr. Mercola for the opportunity to update everybody on magnesium. It seems like a simple topic, but I've been working with magnesium for about 15 years now. I wrote the book *The Magnesium Miracle*. I'm working on my third edition of this book because the research is overwhelming about this very simple mineral that 80 percent of the population is missing on.

What I want to convey today is the importance of magnesium, how you can get it, how you can know how much you require in your body, and the incredible benefits from using this simple mineral.

Magnesium is the most important mineral in the body. It may not be the mineral that there's the most of, but it is the most important. It's a mineral that activates the muscles and the nerves. It's a mineral that attaches to adenosine triphosphate (ATP) to create the energy in the body. Without magnesium, you don't have energy. It helps to digest proteins, carbohydrates, and fats. It actually is a building block for RNA and DNA. It's a precursor for neurotransmitters like serotonin. It does so much in the body, but we haven't heard much about it.

It's not a drug. It's not a medication. It's not something I learned about in medical school. Being a naturopath, I learned more about it in my naturopathic training. But then when Random House asked me to write a book on magnesium back in the late '90s, I was astounded that I was very deficient in magnesium as evidenced by heart palpitations and terrible charley horse leg cramps. I was deficient. I needed magnesium, and I wanted to learn more.

What I found out in the past five years about magnesium is that hardly anybody is really getting enough. What happens is we tend to get the laxative effect with magnesium before we get the therapeutic effect. Let me explain: when you take magnesium, say, a full-day's dose, you can actually get the laxative effect if you take it all at once. That's a fail-safe for magnesium. That's a good thing.

The fail-safe is kind of evolutionary. Humans grew up around the oceans. In the ocean, there's three times the amount of magnesium as there is calcium, its kind of sister mineral. When you're

eating seaweed, lots of fish, and whatever else is coming from the sea, you're getting lots of magnesium. If you get too much, the fail-safe is you'll get the laxative effect or diarrhea if there's too much magnesium onboard.

But calcium, where are you getting your calcium? There's no dairy cow. There's no yogurt. There are no cheeses. You have to get your calcium from bones of fish. Calcium was required obviously for the bones. But because there was little in the food people were eating, there was this grabbing effect of vitamin D holding on to calcium in the body.

Now, moving to thousands and centuries later, we've had a turning of the tables, where we're getting lots of calcium, too much calcium. People are being told to take lots of calcium supplements, and they're not told anything about magnesium. When you look at blood tests, something called the chem-screen, you'll see the electrolytes – calcium, potassium, chloride, and sodium – measured, but not even a measure of magnesium.

Calcium is being overutilized and taken in high quantities, and magnesium isn't being taken at all. What's been happening is, as I mentioned earlier, the muscle and nerve function that magnesium is responsible for is diminished. If you don't have enough magnesium, your muscles go into spasm. Calcium causes muscle to contract. If you had a balance, the muscles would do their thing. They'd relax, contract, and create their activity.

With too much calcium, you get intense spasming and contraction of muscles, which can lead to a heart attack. Thus, we say magnesium is very important for the heart. The highest amount of magnesium in the whole body is in the heart, specifically in the left ventricle. People who have heart attacks and who die of a sudden heart attack after an athletic event, they can be expressing a severe magnesium deficiency. The calcium that remains causes the muscles to go into sustained contraction, and thus a heart attack. The heart pump just stops functioning.

We have this incredible importance of the balancing of calcium and magnesium. What's happened over the past 30 years is we've been told to take 1,200 or 1,500 milligrams of calcium, mostly women, to avoid osteoporosis. Well, what's happened in the past three decades is we've got more and more osteoporosis. I've heard statistics like a 700 percent rise in osteoporosis in a 10-year period even while taking all this calcium.

What we seem to think, the myth that's been created about calcium, is that we need twice as much calcium as we do magnesium. Most of the supplements reflect this. We've got a situation where, as I mentioned, people are taking 1,200 to 1,500 milligrams of calcium and maybe a few hundred milligrams of magnesium.

The 2:1 ratio, that was a mistake, a mistaken translation from French researcher Jean Durlach, who said never ever go beyond 2 parts calcium to 1 part magnesium in your food, water, or supplement intake. That got mistranslated into, "Oh, that must be the amount that we require: 2 parts calcium to 1 part magnesium." In the U.K., the calcium RDA is 700 milligrams. For the World Health Organization, it's 500 to 700 milligrams.

The way most magnesium experts think now is we probably need a 1:1 ratio.

However, that doesn't have to be entirely supplementation. Because if you look at today's diet, you can be getting enough calcium, you can be getting your 700 milligrams, from dairy sources,

nuts and seeds, and deep green leafy vegetables (you just have to look at food lists and add it up). Whereas with magnesium, magnesium is farmed out of the soil much more than calcium. A hundred years ago, we would get maybe 500 milligrams in an ordinary diet, 500 milligrams of magnesium. Now we're lucky to get 200 milligrams. People do need to supplement with magnesium.

The forms of magnesium vary. This is where we come back to what I started in, about the laxative effect of magnesium. The cheapest sources of magnesium are magnesium oxide supplements. These supplements are only four percent absorbed. That absorption is into the bloodstream, where the test is a serum magnesium test. Four percent absorption into the blood, and 96 percent goes through the intestines and causes the laxative effect.

Now, that may be fine for people who have constipation and who want to use magnesium as a laxative. However, they're not really getting therapeutic levels of magnesium.

The other form is magnesium citrate, especially a magnesium citrate powder that you mix in water. You can sip that through the day, and that can be less laxative. But even so, the citrates, the chelates, even the glycinates, they may be only about 20 percent absorbed. Personally, I've had to research this because I get the laxative effect immediately with most pills and powders of magnesium, except for forms in a picometer size.

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You can research "picometer-sized magnesium" and see what I'm talking about. This form is 100 percent absorbed at the cellular level and allows people to get a therapeutic amount without the laxative effect. Otherwise, forms like Epsom salts in a bath or a foot bath. Epsom salt is a magnesium sulfate. That can be a transdermal, you know, through-the-skin form of absorption. Magnesium oil can be used. You spray it on the skin and it's absorbed through the skin. There are other non-laxative forms that you can take.

But my point about magnesium, as I've studied it over these past 15 years, is I don't think everybody's getting the best therapeutic amount of magnesium. I have in my book 100 factors that help you decide whether or not you need magnesium. I have blogs called "Gauging Magnesium Deficiency Symptoms," trying to leave it up to the person to take enough to take away your symptoms.

But I finally realized people needed a good measurement. The blood test I mentioned earlier, the serum magnesium test, it's not accurate enough. Only one percent of the total body magnesium is found in the bloodstream. If you put your dip stick into the bloodstream, you're only measuring that one percent, which is guarded very carefully by feedback mechanisms in the body, because it's the magnesium that's used for the heart.

If the blood magnesium goes low, if that one percent goes low, then the body immediately pulls magnesium out of the bones and muscles to keep the blood magnesium looking normal. Every time a doctor in a hospital setting does a serum magnesium test, they probably find a normal range because the body makes it so. But what is happening is the body is constantly losing storage form of magnesium. You don't have anything to fall back on.

One of the reasons why magnesium is becoming so important is we keep on draining our magnesium. One of the huge ways is our prescription drugs. The scenario that I like to talk about is very basic. You will recognize it immediately in either yourself or your family members. You go to your doctor. You're under massive stress. Massive stress means you're losing magnesium. You're burning magnesium out of your body, because it helps support your adrenal glands. It helps keep you away from anxiety and depression. It helps relax your muscles.

If you're all tight and stressed, your magnesium is being lost. What happens to the muscles of your blood vessels is they go tight. That tightness is going to cause increased blood pressure. Your doctor does your blood pressure or the nurse will do your blood pressure. It's elevated because you're under stress. The doctor is under stress, too. The doctor doesn't have time to even ask you if you're under stress but will say, "Oh, your blood pressure is elevated. We'll give you a diuretic."

A diuretic is to drop the fluid level in your body to take the pressure off your blood vessels, so your blood pressure will drop. But what else a diuretic does is drain off your magnesium. They know it'll drain off your potassium, so your doctor may say, "Eat a banana or an orange every day when you're on this." But they don't say anything about your magnesium and they don't do your magnesium blood test. You go away. A month later you come back, and the doctor finds your blood pressure's even more elevated. Yes, because you've just lost more magnesium.

Your doctor will put you on a calcium channel blocker. Now, they have that part right. They know that without magnesium, your calcium is going to become elevated and will tighten up your blood vessels, so they try to block calcium. But they don't know that magnesium is a natural calcium channel blocker. They'll also put you on an angiotensin-converting-enzyme (ACE) inhibitor, another blood pressure drug. I've come to find out some research study just showed that people on ACE inhibitors have a higher risk of cancer. So, you go away with three drugs now.

After two or three months, you come back and have blood taken to make sure that drugs aren't hurting your liver or whatever. All of a sudden, your cholesterol is elevated. All of a sudden, your blood sugar is elevated. What does the doctor say? "Oh, we caught your cholesterol. We just caught your blood sugar. We can put you on medications." They didn't catch them; they caused them. Because the more you reduce your magnesium, the more your cholesterol will get out of control, because magnesium is important to balance out the enzyme that creates cholesterol in the body and helps to balance your cholesterol.

The statin drugs kill the enzyme that the magnesium balances. Blood sugar does the same thing. If you look up in the signs and symptoms of diabetes in any allopathic medical book, you'll find that one of the signs of diabetes is low magnesium. Here you are, after four months of magnesium deficiency-induced high blood pressure, still with high blood pressure, high cholesterol, and diabetes. Now you're on five or six medications, and all those medications will lower your magnesium levels.

We've got an increasingly difficult problem in allopathic prescriptive medicine. When I went to medical school in the mid '70s, the average cholesterol was 250. Now doctors are trying to get you to hammer it down below 200. This is a ploy to get people on statin drugs.

I believe it, because we need our cholesterol. Our body makes 80 percent of the cholesterol we use. Cholesterol is an antioxidant. If you're toxic, your cholesterol will be elevated. Cholesterol is a precursor to all the hormones in your body. If you're a man and you're on a statin drug that kills your cholesterol, you're going to need Viagra because your hormones are so beaten down.

Every drug that is prescribed, I think, probably decreases your magnesium levels.

What's interesting is a doctor friend, Mildred Seelig, who was a magnesium expert, I interviewed her before she died while I was writing my magnesium book.

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She said her job straight out of medical school when she was hired by a pharmaceutical company was to measure the levels of vitamins and minerals in subjects when they took medication. What she found was astounding and led to her next career. What she found was that every drug that was prescribed would lower the levels of some nutrients but elevate magnesium. So, magnesium would come to the rescue. When you took a drug that the liver had to detoxify and that stimulated the body in certain ways, magnesium was shot out of the storage sites, as I said, to come to the rescue.

What was fascinating and what Dr. Seelig speculated at the time was that magnesium may be what's causing the drugs to look good. The benefits of the drugs for the first six to eight weeks could be from magnesium elevation. She told her bosses; they weren't really interested. She left the field to research magnesium for the rest of her life.

What she said was maybe after those six to eight weeks, the magnesium stores are so low that the drug side effects start coming out. We know that most drug trials are six to eight weeks before the side effects really implode on a person. I mean, I thought that was incredible information, and it stayed with me. I'm always looking at drugs, their side effects, and their interaction with magnesium.

One of the most recent is in the past number of years the drug companies have been putting fluoride into drug formulas. Maybe up to 50 percent of drugs now have fluoride attached to the formula. You've got drugs like fluoroquinolone antibiotics – Cipro. Everybody knows Cipro. That was supposed to be the Anthrax drug. A lot of people took it prophylactically.

That showed a lot of side effects. One major side effect, one end point of Cipro toxicity, is tendon rupture. But up to that point, it's muscle pain, muscle tightness, muscle spasm. What that means to me is magnesium deficiency.

What happens with fluoride when it's around magnesium? They bind. There's a molecule formed called magnesium fluoride, and that effectively eliminates magnesium from the body. You've got people taking cholesterol drugs, anti-anxiety drugs, and painkillers for arthritis. A dozen different types of drugs have fluoride molecules. When you take them, they bind your magnesium, making you deficient, and causing side effects that most doctors, they'll just say, "Well, maybe you need more drugs."

When I wrote the paper "Death by Medicine" and the book *Death By Modern Medicine*, I found a couple of studies that said doctors are so reluctant to believe that they're harming their patients, that they only recognize drug side effects four percent of the time. So, 96 percent of the time, your drug side effects go unrecognized. As I said, these symptoms you come back with the doctor will say, "Oh, maybe you need more of this drug. We'll add another drug," adding to the cocktail of abuse and the magnesium deficiency.

One amazing thing that happens with all this drug intake is a lot of inflammation. Inflammation is a big byword now. As much as we're still using statins, a lot of drug companies are looking more at inflammation as being the cause of heart disease. What we know about inflammation is that calcium is a huge precursor of inflammatory effects in the body, and magnesium is the best anti-inflammatory.

What happened with calcium supplementation in these past few decades – I alluded to it earlier, but coming back to it now – when women have been told to take 1,500 and even 2,000 milligrams of calcium a day, they are actually creating inflammation in the body. That has caused an increase in heart disease.

We've got three studies now in the *British Medical Journal*. It was a research facility out of New Zealand that showed that women who simply take calcium supplements are at a much higher risk for heart disease. Nothing is said about magnesium. People were just sort of left up in the air. Some doctors are saying, "Yeah, don't take calcium anymore." Nobody's talking about magnesium as being the balance point.

What I say about calcium and magnesium, as I mentioned earlier, [take] 700 milligrams of each and try to get your calcium from dietary sources. You can use bone broth. I mean, boiling up some bones. Remember, our grandmothers used to do that? You can get a lot of calcium out of bones and increase your dietary intake. Calcium from food is what our body wants to absorb. With magnesium, as I mentioned earlier, you're lucky if you get 200 milligrams of magnesium from your diet, so you do want a supplement.

I should mention a little more about that. Some people feel that "Well, I eat organic. I should be getting enough magnesium." However, if your organic farmer does not use rock salt, rock powder, or rock dust (I think it's called rock dust), if they don't use magnesium fertilizer, the soil is not going to have magnesium in it for the plants to take up and create the magnesium you need in your diet. This is the state we're at right now – a person should try to get their calcium from the diet and take magnesium supplements.

One thing that I want to mention that's happening in allopathic medicine is some recognition of magnesium. I received an award last year, in 2012. Now, I hope I can remember the name of it. It's a crazy long name. It was the Arrhythmia Alliance Outstanding Medical Contribution to Cardiac Rhythm Management Services Award 2012. It was given by the Heart Rhythm Society of the UK. It's a huge organization, a huge allopathic organization. When I blogged about it, one of my readers said, "You should've just called it 'The Making Miserable People Happy Award.'"

Because what had been happening with my *Magnesium Miracle* book and my blogs was that a lot of people began taking magnesium for their atrial fibrillation, for their heart palpitation, and

for their fast heartbeat. They were finding that magnesium alone was calming down their heart rate.

What happens when the heart is kind of beating spastically, shall we say, when different areas of the heart are contracting and other areas are relaxing when there's not a good balance, sometimes an alternate pacemaker of the heart, a natural pacemaker, can be triggered. If there's a spasm around the pacemaker, it can be triggered. It'll just start thumping away, creating atrial fibrillation.

But when you take magnesium – magnesium relaxes the heart muscles and allows the calcium to gently contract the heart muscles – and you have a balance, then the heart arrhythmia goes away. This is one of the areas, as I said, where allopathic medicine is giving some recognition.

But at the same time, I'm seeing on medical health websites, allopathic websites, headers or headlines that say, "Is Magnesium Dangerous?" and "What Are the Side Effects of Magnesium?" You see, what they've been doing is treating magnesium as if it's a drug, because doctors in medical schools don't learn about magnesium as a food, as a nutrient, as cofactor in all the metabolic processes in the body. Because they don't learn that, they just look upon it as another medication, and they're afraid of it. They'll sort of back off. They think the laxative effect is a side effect, whereas it's a fail-safe. They've got it backwards.

I'm constantly having to write blogs like "Magnesium Is Not Dangerous," "Magnesium is Safe," or, "Take Your Magnesium." People have to research this. What I've done to help educate this is I have my blogs. I'm on the medical board of the Nutritional Magnesium Association, and it's a non-profit where you can get free information about magnesium.

I belong to a Facebook page called The Magnesium Advocacy Group (MAG), and we call her Maggie. People can go on that site. I think we've got about 3,000 members now. People can ask questions and get information about magnesium because it is so deficient, it so necessary, and doctors aren't going to tell you about it.

In my most recent negative report about magnesium, one doctor actually said to a patient who had just had a heart attack, "Well, you have to take these five drugs." They're like the drugs I mentioned earlier: three for high blood pressure, one for cholesterol, and one for blood sugar. Even if you don't have high blood pressure, cholesterol, or blood sugar, you will be put on these drugs. They're in a blister pack. The patient said, "Well, can I keep taking my magnesium?" The doctor said, "No, that'll interfere with the drugs."

We've got an uphill battle now, where doctors know less and less about less and less. What they'll say about the drugs is yes, they'll interfere. Yes, they'll interfere with the blood pressure drug because they'll help your blood pressure go down. So, you don't need the drug. They'll interfere with the cholesterol drug because they'll lower your cholesterol – and with your blood sugar drugs.

So, keep taking magnesium. Take it in the various sources: the picometer-sized magnesium, Epsom salts, and the magnesium citrates. Take an oxide if you're constipated. Sixty percent of the population is constipated anyway. You may need the magnesium oxide, but take the other ones as well. My message is take magnesium. It is your new best friend.

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