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Carlyle

Welcome to the Organic MD podcast with Dr. Damon Miller. This is Carlyle Coash. How are you doing today, Dr. Miller?

Dr. Miller

I am doing pretty well during these tough times, by the grace of whatever. History will look back on this time, shake its head and wonder how we all got through it. I am grateful to be here because we are going to be talking about some important things. It is good to hear your voice, are you doing well?

Carlyle

I am holding up, as you said, by whoever is handing out grace. It seems to be helping to, at least, get through the day.

Dr. Miller

This is the seventh of eight talks that we are putting together about the eye work we do to help people who have chronic degenerative eye conditions, like macular and retinal dystrophies. Some of the specific names include macular degeneration, Stargardt's disease, retinitis pigmentosa, and cone rod dystrophy. We also help people who have severe glaucoma and separated retinas. Our eyes need a lot of support to be able to heal itself because it can.

Today, we will be talking about the genetics behind these diseases. Especially, the idea that your genes are not your destiny. Let me say it again, your genes are not your destiny.

Carlyle and I have been working with people for a couple decades now, and we see people in all different types of domains of their life. What we find of most people is they assume if it runs in their family; they will have and do the same thing their parents did.

Your genes are not your destiny.

Carlyle

Instead of medical hexing, like we have talked about, we can say it is like a family or gene hexing. As opposed to seeing the pattern and looking to change it.

Dr. Miller

I see people respond to it if we can put it in some familiar ways. Without getting into a significant talk about genetics and epigenetics, consider the most common of these eye problems. Take the most common form of macular degeneration, called age related macular degeneration or ARMD. As it says in the name, the degeneration shows up in people when they are in their 60s, 70s, or 80s. From the time they are kids to the time they retire, there are no problems with their eyes. All of a sudden, their eyes start to fall apart.

You need to be asking yourself if these diseases have a strong underpinning of some genetic predisposition, meaning you have a gene that predisposes you to the disease. We know that almost everybody who gets macular degeneration has some sort of abnormal gene. How is it that you can live to be 60, 70, or 80 years old, and have no idea that you have any kind of a genetic problem? You have had the gene from birth and your body has kept it suppressed. If it starts to rear its head, your body is able to fix things faster than they could break. This is true of many other diseases.

Another bit of data that is interesting are the genetic testing kits, which look for genetic abnormalities. It is so common now, for only $90 you can get an at-home test kit that shows you any tendencies you may have for all these different dispositions. I do not recommend these tests, for most people, because they will get scared to death of the results. It may show you have a gene for diabetes, breast cancer, colon cancer, etc., but a lot of people have these genes. It shows us people with macular degeneration, have some of the genes that predispose you to it.

There are tens of millions of people who have done this genetic testing and the gene is pretty common, yet the gene is much more common than the disease. Most people with the gene never get the disease. The same goes for people who have the gene for diabetes or breast cancer, most people will still not get them. Yes, there is a gene there, but the disease does not necessarily come with the gene. Well, what would make your gene get expressed then?

We are going to shift gears a little so we can understand the basics of genetics, specifically about your DNA. This is the six-foot long piece of double helix; the base pairs that defines how you put together, like what eye color you will have. This is your genetics, and is what the genetic tests look at. Sitting on top of your genetics are epigenetics, which are the things sitting on top of the genome of your genetic sequence. They are incredibly tiny, barely the width of a wavelength of light, and involve things like proteins and histones. Every cell in your body has a six-foot strand of DNA, along with the epigenetics, and are not thrown together, like a bowl of spaghetti. They are carefully packaged, wrapped, and folded together.

It is what is going into the folding up of the DNA that also controls the DNA. The reason you do not randomly start making tissue in your body is because the expression of the genes in your body are very tightly controlled. This is especially true when you are first forming as a fetus. Everything is very carefully controlled and orchestrated as you grow in the womb. Your neural tubes, ears, and everything else, can form at the right time.

We do hear people saying there will be a drug or technology someday that will affect this. We just saw this week, the announcement of the Nobel Prize winner in biology. It was shared by two women for their development of CRISPR, which is the ability to modify your DNA sequence. This is one way to affect your genetics, by modifying the gene itself, but nobody has found a way yet to sell you a kit to modify your epigenetics. There is no drug, surgery, or technology for it.

Epigenetics raises some interesting questions, like how does our body decide when a gene should get expressed and not? There are things that can change if you modify your stress level, diet, and lifestyle. These have a profound effect on whether or not an abnormal gene gets expressed. I know you have seen this in all the work you have done with people.

Carlyle

I certainly have. It also struck me when you mentioned how so many people are testing their genetics for all sorts of things. I hear more and more people doing preventative surgery, only because there is a chance the abnormal gene will turn into a disease. This is an odd term to use, but it is very “hot” right now to do these preventative surgeries to remove the issue before it starts. Yes, you can do this, but it is a very extreme measure of prevention. The focus goes to getting rid of the thing that might be a problem. If you know you have a propensity for macular degeneration, are not going to remove your eyes ahead of time?

With this notion of epigenetics and its ability to affect an aspect by managing your stress, diet, all of the things we have talked about in the last few podcasts. There is a way we are committing to our resilience by building our resilience. As we have talked before, when it is flu season we find ourselves taking more vitamin C, D, and A, we make sure to eat healthy foods, and we are managing our stress. The core of your immunity is stronger, helping you to get through any flu or COVID season, whatever may be happening at the time.

The same is true here because you have this gene, but it does not mean it will ever manifest ever. There are things you can do to improve your situation, so why not try them first, as opposed to a dramatic surgery that may not be needed. Surgery puts a lot of trauma and stress on your body, but it is a crazy choice people are making. We are living in a very interesting time right now, but we need to build our resilience.

We must look not only at our physical health and the things we do to support our immune systems, but also how we manage our stress. We have all fallen into the assumption that nothing ever changes, that we will go on in life because everyone is going to live forever, and no loss will be experienced. Sometimes people think they will never have any stress, will have any job that makes endless amounts of money, and nothing is ever going to happen to the economy. If this is true for you, great, but if you have been on the earth for any length of time,

you know that is not true. Things will always happen, there will always be change, and these things are unpredictable.

We can have things in place for ourselves that will manage our stress on a daily level. You will be able to stay pretty full of physical, emotional, and spiritual nourishment, using the tools we have when outside circumstances shift and change. Let's take for example losing your job, or there is an illness or death in the family, or you have relationship stress. Whatever it may be, you will have the tools because you have worked on your own self.

In terms of stress, being able to relieve and nourish those moments can help you manage it long-term. You will have the work you have done and use it as an ally, where we can rely and draw from it. The road in front of us can be bumpy with uphill climbs and steep downhill falls or can be smooth sailing; sometimes it is all of the above. I think many of us assume that by continuing to make the choices we do in everyday life, will somehow work out. I really hope it does, but why not try something beneficial if it does not require a lot of extra time.

Dr. Miller

What you are talking about, Carlyle, is not just a good idea, it is something that has been proven. You can change whether or not an abnormal gene gets expressed by doing the very things you are talking about; it is an idea with proof behind it. You can see hundreds of references and a more detailed description of the science of epigenetics and what is known about it, by reading the book we wrote, *Stem Cells Heal Your Eyes*. You can find a cheap copy of it on our website, BetterEyeHealth.com.

Also, as you were talking early about people doing preventative surgeries, like having a bilateral mastectomy before being diagnosed with cancer. Nothing in medicine, or your body, is black and white. The gene that predisposes you to an aggressive form of breast cancer, is also very much related to ovarian, uterine, and pancreatic cancer. Are you going to start removing everything? Breast cancer may be the most common disease from the particular gene, and people think of these things a little too mechanistically. Science may be an exact study of the body, but it misses the fact that the genes do not exactly correlate with it.

These abnormal genes cover many issues, and this is certainly true with eye diseases. The genes that are labeled to predispose you to macular degeneration, are also found in people who have been diagnosed with retinitis pigmentosa and Stargardt's disease. The geneticists still do not understand why these diseases all have such an overlap, in terms of the genetics, but it is well documented. Epigenetic is the real story, and is something you can affect with tools that are available to you, without seeing a doctor or having a genetic test done.

In our next, and final, talk of the series we are going to go over taking care of your overall health, having a global view of healing, and dealing with the mind, body, and spirit. Know that these things will help you, and even if you have the abnormal gene, you will be able to avoid disease or have the ability to heal it.

Keep an eye out for our eighth podcast, where we will continue and wrap our discussion up.

Thank you, Carlyle.

Carlyle

Thank you, Dr. Miller.