



Riordan  
Clinic

# Health Hunters

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Riordan Clinic is a not-for-profit 501(c)(3), nutrition-based health facility in Wichita, Kansas cofounded in 1975 by Olive W. Garvey and Hugh D. Riordan. We have integrated lifestyle and nutrition to help you find the underlying causes of your illness. Since our inception in 1975, the mission has been clear and unwavering to "...stimulate an epidemic of health."

## Nature's Anti-Aging Mineral: Sulfur

Minerals are all around us on the earth.

They are found in the soil and taken up by the roots of plants and concentrated. These micronutrient minerals are essential to our health. Some of the more talked about

minerals are ones like calcium, magnesium, sodium and zinc. This article will focus on one of the lesser known, but incredibly important, minerals – sulfur!



**AUTHOR**

*Dr. Anne Zauderer*

### The sulfur compound that we consume as part of our diet is called methylsulfonylmethane, or MSM.

This is the oxidized metabolite of dimethyl sulfoxide, or DMSO. Both of these provide biologically active sulfur, which is the fourth most plentiful mineral in the body (behind calcium, phosphorus, and potassium).

The sulfur cycle primarily begins in the ocean. Algae and phytoplankton release sulfur compounds that get converted into DMSO and MSM in the presence of ozone and ultraviolet light. These water soluble compounds fall to earth in rain and are taken up by plants, which concentrate them up to 100-fold<sup>1</sup>.

Sulfur is also found in high concentrations in the earth's core. Therefore, naturally occurring sulfur is present in large quantities around

areas of volcanic eruptions and hot springs. People travel long distances to bathe in these sulfur-containing baths to maintain a youthful appearance and treat a variety of skin conditions.

As a supplement, MSM is a very safe way to ingest the biologically active form of sulfur.

Virtually no adverse side effects have been reported in the research. Some people report mild digestive symptoms if they take too much. Because MSM helps promote detoxification in the liver, some people have also reported headaches or symptoms related to rapid detoxification.



### SULFUR IS REQUIRED FOR COLLAGEN SYNTHESIS AND REPAIR.

*Continued on page 2*

The list of benefits of getting additional sulfur through MSM is quite extensive. Conditions that have improved include:

- osteoarthritis
- joint pain
- rheumatoid arthritis
- chronic pain syndrome
- leaky gut
- muscle pain and spasm reduction
- better adaptation to stress
- scleroderma
- lupus
- interstitial cystitis
- fibromyalgia
- myasthenia gravis
- allergies and respiratory system issues
- improved hair growth

How is it that one compound can help with so many different conditions? The reason is that MSM is a very important repair molecule. It contains both sulfur and two methyl groups attached to it. Methyl groups are required components of a process in the body called “methylation”. This is very important for DNA replication and repair. Sulfur is required for collagen synthesis and repair. Collagen is an essential component of skin and joint cartilage.



## Osteoarthritis and Joint Pain

According to the CDC, over 30 million Americans suffer from osteoarthritis<sup>2</sup>. This is an inflammatory condition of the joints that creates breakdown and deformity of joints all over the body. One of the most well-known uses for MSM is for people who suffer from this painful, debilitating condition.

According to Dr. Stanley Jacob, “Joints are lined with cartilage,

which is composed of several types of connective tissue. Glycosaminoglycans (GAGs) are the fundamental building blocks of joint cartilage, and GAG molecules are linked together in chains by disulfide bonds. As the name implies, these bonds are between two sulfur molecules. The disulfide bridges reduce conformational flexibility of GAG chains, making cartilage firm and resilient. Cartilage integrity is thus a sulfur-dependent state.<sup>1”</sup>

In equine studies, it has been shown that the sulfur concentration of their cartilage is about one-third that of healthy, non-arthritic joints<sup>3</sup>. This suggests that the inflammatory and degenerative state of the joint may be linked, in part, to reduced sulfur content.

In addition to helping with collagen repair, MSM and its sulfur content also have been shown to be anti-inflammatory. Both ingested and applied topically, MSM has been shown, in vitro, to reduce potent inflammatory markers like NF-kB, prostaglandin E2, and interleukin 6.<sup>4</sup> MSM can also reduce pain, reduce muscle spasms around joints, decrease formation of scar tissue, and improve blood flow.

## Anti-Aging Effects

The original patented use of MSM was authorized for the improvement of skin quality and texture because it donates sulfur to keratin<sup>5</sup>. This, combined with its anti-inflammatory properties, makes it a great treatment option for skin issues such as rosacea, skin discoloration, slow wound healing, and burn healing. In addition, because MSM donates sulfur to keratin and promotes collagen production, it is an important catalyst for repair of fine lines, wrinkles, dark pigmentation, sun damage, and scar formation.

## Cellular Detoxification

The sulfur and methyl groups in MSM are also important components for building the master antioxidant and detoxification molecule in the body called glutathione. Production of glutathione gets upregulated in the body when we get exposed to environmental toxins such as heavy metals, herbicides and pesticides, and inhaled pollutants. MSM also works at the cellular level, improving permeability of our cell membrane. An unhealthy cell membrane will trap waste material inside the cell (such as calcium) and not allow adequate quantities of

## MSM Supplements

Available in-store  
and online at [store.  
riordanclinic.org](http://store.riordanclinic.org)



**Magnesium Lotion  
with OptiMSM**



**MSM Plus with  
Glucosamine**



**MSM Powder  
2lbs.**

nutrients or water inside the cell. MSM stabilizes the cell membrane and improves our cellular antioxidant systems<sup>6</sup>.

## Immune Function

Sulfur containing compounds, such as MSM, play an important role in supporting our innate immune response. The modulating effect of MSM, on both the antioxidant and inflammatory systems in the body, makes it an important immune support.

In addition, MSM is an important modulator of stress. Chronic stress can have a suppressive effect on the immune system. Pure MSM is found in the adrenal cortex, which produces important hormones in the body such as cortisol (regulates stress and blood sugar) and aldosterone (regulates blood pressure). Chronic stress of the adrenal glands could easily deplete MSM.

In vitro studies have shown the effect of MSM on certain cancer cells. MSM has found to induce apoptosis (cell death) in gastrointestinal cancer cells, hepatic cancer cells, and colon cancer cells<sup>5</sup>. In addition, there is promising research for MSM inhibiting cell growth or proliferation in other cancer cell lines such as breast, esophagus, stomach, liver, bladder, and skin cancers<sup>7</sup>.



## Best Sources of MSM

MSM is found in highest concentrations in fruits and vegetables (leafy green vegetables, alfalfa sprouts, tomatoes, apples and raspberries). You can also find it in some beverages like coffee, beer, tea and raw milk. However, to reach therapeutic benefits of MSM, supplementation is most likely necessary. Most people can safely work up to a dose of 4000mg. It is best to

take MSM in divided doses throughout the day because it has a short half-life in the body. The powdered form of MSM can easily be added to water and sipped throughout the day for best absorption. MSM can also be found in creams and lotions that can be applied topically to reduce joint pain and for anti-aging effects on the skin.

For those who require additional sulfur for healing of joints and skin and reducing inflammation, MSM is a great option. Due to its safety profile, MSM can be used by most people with very few side effects. It is worth trying if you have chronic inflammatory issues, or if you just want to get rid of a few wrinkles and look a bit younger!

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# Congratulations!

# Women who Lead

**Awarded through the Wichita  
Business Journal**



**Donna Kramme**  
*CEO, Riordan Clinic*

The foundation of any great organization is rooted in service. It is the nurturing force that fuels all growth.

Thank you, Donna, for your dedication and passion to the patients and staff of the Riordan Clinic.





# Metabolism Boost Injection

New Service for Riordan Clinic Patients *(Wichita Location Only)*

This unique combination of vitamins and amino acids is designed to:

- Help Improve Energy
- Control Appetite
- Regulate Blood Sugar

\$35

**Thiamine (Vitamin B1):** helps the body cells convert carbohydrates into energy and stabilizes appetite.

**Riboflavin (Vitamin B2):** plays a key role in energy metabolism and the metabolism of fats, carbohydrates, ketone bodies (a vital source of energy during fasting), and proteins.

**Niacinamide (Vitamin B3):** assists in the functioning of the digestive system, skin, and nerves.

**Pyridoxine (Vitamin B6):** is needed for protein and red blood cell metabolism, and helps convert stored blood sugar into glucose to fuel the brain.

## **Methionine, Inositol, and Choline (M.I.C.)**

- **Methionine** acts as a lipotropic agent to prevent excess fat buildup in the liver and the body.
- **Inositol** aids in the metabolism of fats and helps reduce blood cholesterol. It also participates in balancing serotonin and dopamine levels.
- **Choline** supports the health of the liver and is required for the transport and metabolism of fats and cholesterol within the body, which is important for the healthy support of the endocrine, cardiovascular, and hepatic system.

**L-Carnitine:** a naturally occurring amino acid, which functions as a transporter of fatty acids into the mitochondria, the metabolic furnace of the cell.

**Hydroxocobalamin B12:** is among the most important of all the B-complex vitamins. In addition to being an energy booster, it aids in the formation of red blood cells, the maintenance of a healthy nervous system, the metabolism of fats/carbohydrates, and the growth of healthy blood cells, nerve cells and proteins.

**Chromium Picolinate:** is a nutritional supplement to treat type 2 diabetes and promote weight loss. Derived from chromium(III) and picolinic acid, it transports sugar into cells where it can be converted into energy.

The Metabolism Boost Injection is the most beneficial when combined with healthy nutrition choices and an active lifestyle. This injection will maximize the benefits achieved in our HCG, Lifestyle Rx, and Lifestyle 180 programs.



# My Introduction to Integrative Medicine



AUTHOR

Yoko Masuda, MD

*Dr. Yoko is a Japanese doctor who is dedicating 18 months of her medical career, beginning in 2018, to learning about integrative and orthomolecular medicine at the Riordan Clinic. Below is her experience at the Riordan Clinic to date.*

In October 2009, my uncle was diagnosed with Stage IV esophageal cancer. At the time I was a fourth year medical student. I remember thinking how sad I was that my uncle would not be able to live long. His doctor had told him that there was no treatment, wished him well, and sent him home. His esophageal cancer reoccurred twice, becoming laryngeal cancer and stomach cancer as well. He almost died several times.

My uncle is still living and doing very well. When I come his house, he says, with a smile, "Hey Yoko, how are you? How is your job?" He visits the hospital once a year to have an endoscopic examination only. He takes several nutritional supplements, traditional Chinese medicine, and IVC (currently only when he feels like it because he is not a methodical person). His hands are numb as a side effect of radiation and chemotherapy; however, for about 10 years he has lived fairly well as a survivor from esophageal cancer Stage IV.

This is not a miracle. It is a result of my uncle's and our family's fight for his life. This experience completely changed my concept of cancer treatment. Traditional medical treatment guidelines are not the only way for cancer patients. The doctor supporting the patient, without giving up, should be the standard of medical care.

## PATIENTS ARE NOT EXPECTED TO BE TREATED PASSIVELY, BUT AS CO-LEARNERS.

Most acute diseases, such as myocardial infarction, tuberculosis, pneumonia and appendicitis, can be managed with modern medicine. What about chronic diseases like cancer, diabetes, and arteriosclerosis? Although thousands around the world have been researching for decades, spending a huge amount of money on their research, cancer statistics are not decreasing at all. In fact, they are increasing in Japan. Integrated, holistic medicine and high-dose vitamin C therapy can be successful against these chronic diseases, and also prevent them. I'm so convinced that I'm learning at Riordan Clinic.

## Introduction of Riordan Clinic

In Wichita, Kansas, Riordan Clinic is in the land of the Wizard of Oz. Riordan Clinic has three clinics in the State of Kansas, and about 50 staff members and volunteers who work in clinical and research

departments. They have administered more than 90,000 high-dose vitamin C infusions since its founding in 1975. The IVC protocol we know well in Japan was developed at this research department.



The Riordan Clinic in Wichita at which I am training is 37 hectares (about 90 acres) with eight central domes, a pyramid for meditation and yoga lessons, a nature preserve, and a pond. The domes include clinic, research department, examination departments, supplement and book store, library, conference rooms, and cooking room. You can also regularly see wild deer and turkey in the nature preserve.

## Patient is Co-learner

The patients who visit the clinic are from 47 countries around the world and almost every state in the United States. About 70% of Riordan patients have cancer. Many patients have high-dose vitamin C infusions every day, as well as ozone injections and chelation therapy. There is also counseling on preventing disease, weight loss, and pediatric health.

Patients are not expected to be treated passively, but as co-learners. They are expected to learn how to recover their own health with the help from Riordan Clinic, and to be actively involved and responsible for their own treatment. Riordan Clinic hosts many lectures, publishes a free monthly Health Hunters magazine, has a library open to the public, and over 100 past lectures available on YouTube for free! The lecturers are fabulous. Don't miss them.



## Dr. Ron Hunninghake

The Chief Medical Officer of Riordan Clinic, Dr. Hunninghake, is very popular with patients because of his immense knowledge about medicine and nutrition as well as his friendly, humble and polished manner. At the first visit, he takes one and a half hours to talk with patients, completes a thorough examination,

and orders appropriate lab testing. Treatments mainly focus on nutrition therapy with infusion and supplements, as well as lifestyle changes such as diet, sleep and exercise. Every Monday, he provides free telephone consultations, so patients can know what the clinic can do for patients before they visit.

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## THE EFFECT OF LIFESTYLE CHANGE ON CANCER IS SCIENTIFICALLY PROVEN. I AM CONVINCED THAT THIS METHOD WILL BE THE RAY OF HOPE FOR CANCER TREATMENT.

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One of the wonderful things about Dr. Ron is that he does not criticize conventional medicine at all. He is patient with co-learners who find it difficult to improve their lifestyle. I think it is because he understands that it is sometimes very difficult to change their lifestyle all at once. It is natural that we sometimes want to eat sweet things, drink alcohol, or skip exercise. We need to admit such feelings to make improvements in our lifestyle. I have learned his way of bringing patients to a good direction gradually.



### Dr. Nina Mikirova

In the clinic's research department, Dr. Nina Mikirova conducts research about vitamin C and continues to publish articles. She originally specialized in physics, mathematics and statistics. She has been doing medical research since she came to Riordan Clinic, and she is one of the leaders in vitamin C

research, and she is in close contact with other researchers of vitamin C worldwide.



## RECNAAC Project - New Vitamin C Infusion Research

It has been mentioned that the IVC protocol, well known in Japan, was developed at Riordan Clinic. The research is 'RECNAAC project', named after reading the word 'cancer' backwards. The plan of RECNAAC3 is currently underway, and the outline is introduced here.

Although a high concentration of vitamin C has the effect of killing cancer cells, there may

be cancer cells that are revived as blood concentration decreases with the passage of time following the IVC. It can be thought of as a cause recurrence. For this reason, the main concept of RECNAAC3 is to maintain vitamin C concentration in the blood by using continuous infusion.

The point of RECNAAC3 is not just a continuous infusion, but a combination of continuous IVC, lifestyle change, and nutritional supplementation. Patients spend two weeks thoroughly learning about lifestyle improvements. The effect of lifestyle change on cancer is scientifically proven. I am convinced that this method will be the ray of hope for cancer treatment. It is scheduled to start this summer.

## Recent Topics of IVC

First, high dose vitamin C has an anti-cancer effect, not only by generating hydrogen peroxide, but also by making epigenetic

## Upcoming Events

For more information or to register for any of these events, please visit [RiordanClinic.org/events](http://RiordanClinic.org/events) or call 316.682.3100

### Food Additives to Avoid

Wednesday, July 10th\*

11:30am – 1:00 pm @ Wichita Campus

Anne Zauderer, DC

Cost: FREE

Have you ever looked at the ingredients list on a packaged food and not recognized half of them? Are all of those ingredients harmful? As food has become more of a science, new ingredients are invented and used every year. In addition, herbicides and pesticides are being sprayed on our food at an ever-increasing rate. This class will delve into the additives that the food industry has developed in an effort to market and sell more processed food to us.

### Lunchtime Lecture: MSM: The Mineral Essential for Health

Wednesday, July 31st

Noon – 1:00 pm @ Wichita Campus 

Dr. Ron Hunninghake & Dr. Anne Zauderer

Cost: FREE

MSM, or methylsulfonylmethane, is an abundant source of organic sulfur, a critically important mineral in the body. Half of the body's sulfur is found in skin, muscles and bones, making it essential for healing of these tissues in conditions such as arthritis, muscle recovery, skin wound healing, anti-aging, and much more! Supplemental MSM can help with all of these conditions and is therefore known as the "miracle supplement"! Come hear Dr. Ron and Dr. Anne talk about how to properly use MSM as part your health journey.

\* NOTE: The July Food as Medicine class will be the second Wednesday due to the 4th of July holiday.



changes, as has become clear in recent years. I will explain simply, one of the causes of cancer is a change in gene expression, but vitamin C has the effect of suppressing the change of gene expression to prevent cancer development, and repairing DNA.

Second, the vitamin C article on septic shock in 2017 has attracted the attention of clinicians worldwide. The Randomized Control Trial (RCT) in a multicenter study is run mainly by the NIH. As the vitamin C group gets better and better, nurses working there can recognize whether the patients are vitamin C group or placebo, even though the study is double blind. It is a study in which participants absolutely do not want to be assigned to the placebo group.

## Future Medical Care

By working with Dr. Hunninghake and Dr. Mikirova for about eleven months I have learned that intravenous vitamin C is one of the most powerful tools for patients, but it is not enough to solve all problems.

Many chronic diseases are lifestyle-related diseases. A variety of causes build up and cause chronic disease, and it takes a long time. We may have had too much alcohol or lack of exercise. We probably eat vegetables every day that have a lot of pesticides used on them. Our favorite fish may contain a high concentration of mercury. Toothpaste is fluoride-containing. Water is sold in plastic bottles that leak phthalate ester. It is unrealistic to think we can solve chronic diseases that have complex causes, with a single magic drug or surgery. Even though vitamins and minerals are important for various metabolic processes in the body, it would still be difficult to cope with all causes by using only one vitamin or mineral.

So how should we treat chronic disease? Address each and every root cause or problem from a functional perspective. At first, it is important to diagnose the condition carefully by interview and examination, and then address the problems that are found. This method applies to patients with any condition. Of course it's ideal to start early, but it is never too late to begin. At that time, IVC will be a helpful option. I originally loved vitamin C, but I came to Riordan Clinic and that love has grown even more!



## Contact the Editor

Please send any comments or suggestions to  
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**Dr. Anne Zauderer**  
Editor

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For more information or to register for any of these events, please  
visit [RiordanClinic.org/events](https://RiordanClinic.org/events) or call 316.682.3100

## Upcoming Events

### Vitamins and Nutrients in Food

Wednesday, August 7th

11:30am – 1:00 pm @ Wichita Campus

Anne Zauderer, DC

**Cost: FREE**

Most people have heard the term “superfood.” This is a food that has great nutritional value. What makes these foods so great? What types of nutrients are in these foods and what do those nutrients do for our bodies? In addition, there are foods like sugar that, in addition to making us gain fat and dysregulating our blood sugar, actually rob the body of these essential nutrients. In this class we will discuss the best foods to eat for the maximum nutritional value.

### Food as Medicine

Wednesday, September 4th

11:30am – 1:00 pm @ Wichita Campus

Dr. Ron Hunninghake & Dr. Anne Zauderer

**Cost: FREE**

This in-depth course will connect all of the classes in the series and address some fundamental questions behind how our diet impacts our health and well-being and how it contributes to the progression of chronic disease.

All previously recorded lectures are available at the Riordan Clinic YouTube page: [youtube.com/user/healthhunter1](https://youtube.com/user/healthhunter1)



# #ichooserealhealth

RIORDANCLINIC.ORG/REAL-HEALTH

EVIE ZAUDERER, 5TH GRADE

## What Real Health Means to Me



My mom has always had us eat healthy. For a long time I did not understand why it was such a big deal. The older I've gotten the more I understand. Health to me is about eating and doing what is best for your body rather than doing it just because you have to.

I always see my friends eating foods like Doritos®, Cheetos®, and Fruit Roll-Ups®. I am always tempted to have these things, but I end up remembering what my mom says. These things can usually make your body *more* hungry. There are foods that fuel your body with nutrients and help you grow, and these are not some of them.

I usually use the color of foods to see how healthy they are. For instance, vegetables that are green have a lot more nutrients than others. But all vegetables are still healthier than snack foods high in sugar. Another good step to being healthy is to exercise, which can be fun. I love to exercise.

Most of the time my mom says, "No, you can't have dessert," but I think that is because we didn't fill up on enough healthy foods that day. We should look back on what we have eaten in that day and see what was healthy, and if we didn't have enough, eat those foods instead of dessert.

So in conclusion, health is eating nutritious foods and exercising because it is what is best for your body.

## Learn with Us

FREE LUNCHTIME LECTURE

### MSM: The Mineral Essential for Health

Wednesday, July 31st

Noon – 1:00 pm

Wichita Campus

Learn about methylsulfonylmethane (MSM) and how this critically important mineral helps heal our bodies.

RSVP at [RiordanClinic.org/events](https://riordanclinic.org/events), or call 316.682.3100



## IVC ACADEMY

October 3-5, 2019  
Riordan Clinic @ Wichita, KS

VISIT [IVCANDCANCER.ORG](https://ivcandcancer.org) FOR MORE INFORMATION

The Riordan Clinic will be closed on July 4th for the holiday. We hope everyone has a fantastic 4th of July!