



Cell Danger Response

The New Science That
Connects Environmental
Health with Mitochondria
and the Rising Tide
of Chronic Illness

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About the Authors



Eric Gordon, MD

Eric Gordon, MD, Clinical Director at Gordon Medical Associates, specializes in complex chronic illness. In addition to clinical practice (40+ years), Dr. Gordon is the President of Gordon Medical Research Center. He has focused on bringing together leading international medical researchers and cutting-edge clinicians focusing on ME/CFS, Lyme disease, and autoimmune diseases. He combined forces with Dr. Robert Naviaux and his research into metabolomics, mitochondrial function, and chronic inflammatory disease.

Dr. Gordon also has co-authored with Dr. Naviaux a groundbreaking study, "**Metabolic Features of Chronic Fatigue Syndrome**," published in the Proceedings of the National Academy of Science (PNAS). Gordon Medical Associates is also a collection site for the Lyme Disease Biobank, providing patient samples to researchers worldwide.



Nafysa Parpia, ND

Nafysa Parpia, ND, is a board-certified naturopathic doctor and the Director of Naturopathic Medicine at Gordon Medical Associates.

Throughout her career in holistic medicine, she has focused on treating patients with complex chronic illnesses. She specializes in tick-borne illness/Lyme disease, environmentally acquired illness, mold/mycotoxin illness, autoimmunity, fibromyalgia, Long COVID, ME/CFS (chronic fatigue syndrome) and MCAS (mast cell activation syndrome).

Dr. Parpia's extensive knowledge has helped people worldwide overcome difficult-to-treat medical conditions. She uses cutting-edge laboratory tests and deep intuition applied to the full range of scientific data to create comprehensive treatment plans that are highly personalized.

Her targeted system of care includes a synergistic blend of allopathic and functional medicine diagnoses paired with treatment that includes regenerative medicine, micronutrient therapies, peptide therapies, bioidentical hormone therapy, botanical medicine, pharmaceuticals and psychoemotional support.



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The Healing Cycle:

A New Approach to Chronic Illness

Modern medicine is an incredible resource. It excels at treating acute illnesses and injuries—things like broken bones, heart attacks, and short-term infections. If your body receives a sudden insult, doctors have a straightforward way to fix the problem. Most of the time you return to full function. Healing is completed.

When the healing process is NOT fully completed, however, your body continues to struggle. The result may be minor aches—but, sometimes, the seeds of chronic illness are sowed.

Our Current Medical Model has a Major Blind Spot: **Chronic Illness**

With chronic illness, you don't have a straightforward problem to address. You have a pattern of dysfunction, often with a variety of symptoms and multiple causes.

Our current medical model doesn't work for addressing chronic illness. The proof is in the numbers: more than 40% of Americans have chronic illness that impacts their day-to-day life.

Most of the time, doctors treat chronic health issues as if they were acute ones. They try to fix the problem short-term, instead of taking a bigger picture look at your health.

If you have chronic illness, you know how this plays out. You may see some improvement in your symptoms at first, but over time, they reappear. New symptoms may pop up. You never quite feel healthy, or if you do, it doesn't last. You're in pain, you're tired, and as time goes on, your chronic health issues begin to take over your life.



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With chronic illness, you need a different approach. That's where the healing cycle comes in.

At Gordon Medical, we have more than 40 years of clinical experience in treating chronic illness.

Over the course of four decades, we've learned to take a different approach to treating chronic health problems: giving your body the support it needs to repair itself.

Your body has a built-in healing cycle that it moves through in response to dysfunction. Normally, the process works well—but in some cases, the healing cycle gets stuck at one phase and can't reach completion. The result is chronic illness.

D We help your body complete its natural healing cycle—restoring function across your whole system.

We believe treating chronic illness starts with a well-informed patient. In the pages to follow, we want to help you understand how the healing cycle works—and how we can work together, as doctor and patient, to help you feel whole again.

Through our healing cycle approach, we've treated a variety of chronic illnesses, including:

- Tick-borne illness
- Lyme disease
- Chronic Fatigue Syndrome (CFS)
- Fibromyalgia
- Mold/mycotoxin exposure
- Autoimmune disorders (Hashimoto's, hypothyroidism, Grave's disease)
- Polycystic Ovary Syndrome (PCOS)
- Endometriosis
- Heavy metal exposure and other toxin burden in your body



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What Is Chronic Illness?

Chronic illness is any medical condition that lasts for six months or longer. It often includes long-lasting symptoms that can affect your ability to function in everyday life.

Some chronic illnesses don't yet have a cure. Others do, but are difficult to diagnose and treat. In addition to specific main symptoms, chronic illness can often cause more general secondary symptoms like:

- Fatigue
- Trouble focusing
- Mood swings
- Anxiety
- Pain
- Inability to work
- Depression

With standard medical care, plenty of people can control the main symptoms of their chronic illness.

But in many cases, doctors miss broader symptoms like the ones above. Those symptoms can linger, degrading your quality of life—and when doctors dismiss them or don't know how to address them, it's easy to lose hope.

Chronic health issues can be exhausting. They tax your body and mind, leaving you frustrated, fatigued, stressed, and possibly in pain. The burden of a long-term condition can wear you down over time, to the point where you feel like it dominates your life.

 We understand how devastating chronic illness can be.

Our approach to chronic illness takes the above symptoms into account. We don't just address the main cause of chronic illness; we aim to bring the entire body back into balance.



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The Healing Cycle:

Your Body's 3-Phase Approach to Recovering from Illness

The healing cycle is your body's built-in way to restore function to damaged systems. When something goes wrong—an injury or infection, for example—the healing cycle turns on in any affected cells. Your mitochondria activate something called **Cell Danger Response (CDR)**.

Cell Danger Response: Your body's built-in, 3-step process to deal with damage or illness and restore healthy function in your cells. CDR is split into three distinct phases: CDR1, CDR2, and CDR3.

CDR1

Containing
Damage &
Removing
Threats

During CDR1, the first phase of the healing cycle, your cells detect a problem in your body—like injury, dysfunction, or an infectious pathogen.

CDR2

Growing &
Repairing

During CDR2, your body begins to rebuild itself. You may send stem cells to a damaged area to grow into replacement cells you've lost.

CDR3

Recovery &
Reconstruction

The third stage, CDR3, is the final stage of the healing cycle which completes the recovery process.





The Healing Cycle:

A New Approach to Chronic Illness

CDR1: Containing Damage & Removing Threats

During the first phase of the healing cycle, your cells detect a problem in your body—like injury, dysfunction, or an infectious pathogen.

In response to the threat, your cells spring into action. First, they contain any damage—stopping bleeding from a wound, for example, or trapping invading bacteria in a small area.

Next, your cells mount an attack to address the source of the danger. This is often when your immune system kicks in, triggering massive inflammation that destroys threats and begins the healing process. For example, you may send a rush of white blood cells to kill foreign bacteria and keep a wound from getting infected.

Your mitochondria (the power plants of your cells) may also slow down energy production, increasing the oxygen concentration in the rest of the cell. Higher oxygen levels lead to oxidative stress, your body's natural defense mechanism. It creates a hostile environment that destroys pathogenic invaders, like viruses and bacteria.

However, oxidative stress also hurts your own cells, which is why it's important to progress past this phase. If you get stuck in it, your cells are under constant oxidative stress, which causes chronic inflammation and gradually destroys their function over time. Once your cells have contained damage and removed threats, they continue into phase two of the healing cycle.





The Healing Cycle:

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CDR2: Growing & Repairing

During CDR2, your body begins to rebuild itself. You may send stem cells to a damaged area to grow into replacement cells you've lost. You may also activate autophagy, cleaning out damaged or dysfunctional cells so that they can return to normal function.

Alternatively, your body may destroy cells that are beyond repair so they don't continue dysfunction, then send replacement material to build new cells in their place.

This phase is all about rebuilding: delivering the materials your body needs to get you back to pristine condition, the way you were before the original damage happened.

If you have had a cut that you have observed in its healing process, you've seen CDR2 in action. Your cut develops a scab, underneath which you have all the materials you need to create new skin and repair the damage you've taken on.

CDR3: Recovery & Reconstruction

The third and final stage of the healing cycle completes the recovery process. Your body takes the replacement materials distributed in CDR2 and synthesizes them into upgraded new versions of the cells you've damaged or lost.

CDR3 is when your function starts to return. Your body rebuilds specific cells, puts them in place, and turns them back on, restoring communication with surrounding areas.

To continue with the cut example: CDR3 is when your skin regrows, covering up your cut and getting the wound area back to normal. By the time CDR3 is finished, the skin is physically healed and is transmitting sensations normally back to your brain.

CDR3 is also a learning phase. In the case of infection, your immune system builds antibodies to protect against the threat—that way, if the infection returns, your immune cells will recognize it and can kill it immediately, before it does damage.



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The Return to Health

Once your body has gone through all three phases of the healing cycle, you're back to good health. Your body will be in homeostasis—a state of sustainable balance.

An Incomplete Healing Cycle: The Root Cause of Chronic Disease

Chronic disease happens when your body gets stuck in one phase of the healing cycle and can't move forward.

For example, if your cells get stuck on CDR1—containing damage and removing threats—they may overreact to a perceived threat, causing a continuous inflammation response that creates symptoms. An example would be allergies. Or your cells may fail to fully contain and remove a threat, causing chronic inflammation that keeps coming back and never quite healing.

If your cells get stuck on CDR2—growing and repairing—they may send too many repair materials and cause excess growth. Cancer, for example, happens when your cells multiply out of control, forming a tumor that can spread to other parts of the body.

If your cells get stuck on CDR3—recovery and reconstruction—they may fail to create proper connections with surrounding cells, which can cause signaling between the cells to fail and create chronic pain.

The healing cycle is the unifying thread in all of the above chronic health conditions. When your cells can't complete the healing cycle, dysfunction sets in. It won't go away until you successfully progress past the stage at which you're stuck. Completing the cycle will allow you to return to a state of health.



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Our Doctors are Leading Experts in the Cell Danger Response and the Healing Cycle

We've been involved in the groundbreaking research of Dr. Robert Naviaux, the largest contributor to the field of Cell Danger Response. You can read some of our research [here](#).

Completing the Healing Cycle: Our Philosophy for Treating Chronic Illness

In most cases, medical practices focus on treating the symptoms of chronic illness. Doctors prescribe medications that manage pain, depression, fatigue, trouble focusing, and so on. We believe in treating symptoms as well—but we also believe in giving your body the tools it needs to heal the continuing cause of chronic illness. Our goal is to help your body complete the healing cycle, freeing you from ongoing struggle and allowing your system to return to good health.

At Gordon Medical, we take a functional, whole-body approach to medicine. If you struggle with chronic illness, we don't believe you're broken, or that you're destined for a lifetime defined by your illness. You simply have patterns of dysfunction, and you need doctors who can look at the big picture and figure out how to get you back to health.

Together, our team has more than 100 collective years of clinical experience in treating chronic disease. Your body has the tools to heal; we want to help it remember how.

If you're struggling with chronic illness, we would love to talk to you. [Schedule a discovery call with us today to tell us about your needs and learn more about our treatment approach.](#)

Together, we can work toward a brighter, healthier future for you.

At Gordon Medical Associates, our patients come not only from the Northern California Bay area and the greater San Francisco area, but the entire country and around the globe for individualized help with a wide range of problems, from Mold/Mycotoxin illness, Lyme and tick-borne diseases, auto-immunity, ME/CFS, fibromyalgia, chronic GI diseases, Mast Cell Activation Syndrome, Environmentally Acquired Illnesses, and unfortunately we are now treating many with long COVID and vaccine related syndromes.

Learn more at: www.GordonMedical.com

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