August 2024, VOLUME 9 | Issue 85

Natural Health Response
WITH DR. RICHARD GERHAUSER M.D.

Harness the Cancer-Fighting Power of WHEY Protein

How it Helps Prevent and *Treat* Cancer

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Everyone has their "why" that inspires them to make an effort—and frankly, spend the money—to maintain their health and vitality.

I've always focused on my health for my wife, Rhina, and our three (now grown) sons.

But last year, I met an entirely *new* reason to prioritize my health so that I can stick around for a while:

My first grandchild, *Lucia*.

In fact, it was Lucia who inspired me to write this article. It's about a new way to fight one of the leading causes of death in the US...

Cancer.

It's a cost-effective, readily available, and easy-to-implement approach for preventing and treating cancer that I make *myself* regularly.

WHAT'S INSIDE

Most people who consume whey regularly do so because it's packed with protein, making it great for muscle building and weight loss

A New Whey to Fight Cancer

Can you *drink* your way to cancer prevention? If you're drinking a **whey** protein shake, the surprising answer is "yes."

Most people who consume whey regularly do so because it's packed with protein, making it great for muscle building and weight loss.

But there's an even BETTER reason to eat whey: *It has powerful* ***anti-cancer*** *properties*.

Whey protein contains **lactoferrin**, which inhibits cancer cell growth, induces cancer cell death, and hinders the formation of new blood vessels that support tumor growth.[1]

During the hydrolysis phase of producing whey protein peptides that target cellular pathways associated with cancer progression are released. Two of these are:

- Inhibiting **mTOR signaling** (the dysregulation of which is linked to cancer)
- Modulating **NF-B** (which is vital for regulating inflammation and immunity)[2]

Whey increases IGF-1 (insulin-like growth factor), which helps regulate cell growth, division, and proliferation.

Whey can also decrease the absorption of iron. This is critical since too much iron increases cancer risk.

Whey stimulates apoptosis, or programmed cell death, in cancer cells.

And eating whey increases glutathione, the body's master antioxidant. That's because it contains cysteine and methionine, which are sulfur-containing amino acids that are the precursors of glutathione.

Glutathione essentially SUPERCHARGES the immune system's ability to fight off cancer cells.[3]

It also detoxifies carcinogens and protects cells from oxidative damage.

ALL of these represent some of the body's most **powerful** ways of battling cancer—and I'm sure we're just scratching the surface of what whey can do.

Other potential anticancer mechanisms have been found in both in vitro and in vivo studies of whey protein, and researchers continue to discover more all the time.

Docs Should Consider Whey for Cancer Patients

As you've seen, whey has impressive **cancer-fighting** benefits.

But whey's amino acid profile, impressive nutrient content, and easy absorption make it especially beneficial for people who *already* have cancer.

Many cancer patients develop a condition called **cachexia**. Sometimes called *wasting syndrome*, this side effect of cancer causes substantial weight and muscle loss.

It also significantly decreases your chance of survival.

What Is Whey, Anyway?

Whey is the liquid portion of milk that separates from the curds in the cheese-making process.

It contains all nine amino acids (the building blocks of protein) and tends to be low in lactose, making it a good protein source for some folks with lactose intolerance.

Since whey is derived from milk, you might be asking, *why don't I just drink milk?*

The difference is that the amino acids, peptides, and proteins of whey are much different than the protein composition of milk.

The proteins in whey comprise only about 20 percent of the total protein content of milk.

To get the same level of active components in whey you'd need to drink multiple gallons of milk daily.

Whey contains abundant branched-chain amino acids, particularly leucine, which is crucial for muscle protein synthesis. This is helpful for cancer patients experiencing cachexia.

For example, in a study of malnourished cancer patients undergoing chemotherapy, three months of supplementation with whey protein isolate improved body composition, muscle strength, and body weight—and even reduced chemotherapy toxicity.[4]

Another study of cancer patients receiving chemotherapy found that 40 grams of whey protein isolate (plus zinc and selenium) for 12 weeks improved nutritional status and immunity and increased levels of the super antioxidant glutathione.[5]

In a study of gynecological cancer patients, those who received preoperative whey protein-infused carbohydrates (and early postoperative oral feeding) experienced numerous benefits, including reduced weight loss, preserved muscle mass, better handgrip strength, and shorter postoperative hospital stays.[6]

There are plenty more studies like these, but you get the picture.

Whey protein is a simple, fast, and affordable way to help support the health and vitality of cancer patients.

Whey Isn't for Everyone

Even though whey protein is considered safe, certain things should be considered before taking a whey protein supplement.

First, you should avoid it if you have a milk allergy. Whey is made from a milk byproduct, so consuming it could trigger an allergic reaction.

Second, even though the lactose levels in whey are lower than in milk, this could be a problem for someone with lactose intolerance.

Whey supplements can sometimes cause digestive issues such as bloating, gas, or loose stools,

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This is published monthly for US $99 per year by NewMarket Health, L.L.C., P.O. Box 913, Frederick, MD 21705-0913

especially in people with milk or lactose intolerance.

There are three different forms of whey on the market: whey protein concentrate, whey protein isolate, and whey protein hydrolysates.

Whey protein concentrate has the highest amount of lactose, whey protein isolate contains significantly less, and the hydrolysate form contains even less.

Third, when using protein supplements, it's essential to monitor how much you're taking. Too much protein can strain the kidneys, especially if you have a pre-existing kidney condition.

Ideally, you should aim for 45 grams daily for women or 55 grams for men.

My final suggestion is to look for a whey product that's USDA organic certified.

Organic certification requires that animals are raised in living conditions accommodating their natural behavior, like being able to graze on pasture, that they are fed 100 percent organic feed and forage, and that they have not been given any antibiotics or hormones.

Dr. G's Homemade Whey Recipe

I've been making my own whey from raw milk for years, and it couldn't be easier.

Step 1: Pour raw milk into a large glass jar and let it sour at room temperature until it separates into curds and liquid (the liquid part is the whey). This usually takes one to four days.

Step 2: Cover a large strainer with cloth and place it over a large bowl.

Step 3: Pour the curds and whey into the strainer and allow the liquid to drain through the cloth.

When the process is completed, you have cream cheese in the strainer and whey in the bowl. You can place both into glass containers and refrigerate. (After eating my own cream cheese, I will never go back to the industrial stuff.)

The additional benefit of homemade whey is that it can also function as a probiotic, giving it another benefit you won't get from a commercial whey protein supplement.

You can use the whey in just about any recipe that calls for water... as a base for soups, smoothies, baked goods, soaking beans or grains, or marinades.

Be aware, though, that homemade whey will have **less protein** than a powdered whey protein supplement, which specifically isolates the protein content from whey.

To get the same level of active components in whey you'd need to drink multiple gallons of milk daily.

My Inspiration

I told you earlier that it was Lucia who inspired this article.

One day, she looked at me with her penetrating blue eyes that seemed to say, "Put on a show, Grandpa."

That's when an old nursery rhyme popped into my head: Little Miss Muffet who sat on a tuffet, eating her curds and *whey*…

I left out the part about the spider—and I was rewarded with her big, bold smile in reaction to the rhyme.

That's the stuff that makes life worth living.

By regularly consuming whey, I hope to experience it for a long time to come.

A *Radical* Approach to Losing Weight and Boosting Metabolism

(No Diet or Exercise Necessary!)

Nature is your biggest ally when it comes to your health.

Yet nature's most **beneficial** elements tend to be the ones we *avoid* the most.

The sun is a prime example. Another one is exposure to COLD.

Most people I know avoid the **cold** by staying indoors or by layering up like the Michelin Man as soon as there's a chill in the air.

But in reality, cold exposure is GREAT for your health. It can strengthen your immune system, clear toxins from your body, reduce pain, *and* boost energy.

Being cold also triggers a process that can rev up your metabolism SO POWERFULLY that it can even help you **lose weight** and **reduce insulin resistance**—*without diet or exercise!*

Keep reading to discover how to *safely* use cold therapy so that you can start **burning** fat instead of *storing* it.

How Cold Therapy Nearly Killed Me

Biohacking has always been a way of life for me. In scientific terms, the number of subjects being

experimented on is "N." The idea of biohacking is to see what works for *yourself*, an N=1 experiment.

I've been experimenting with **cold adaptation** for about 40 years.

My first experience was back in the mid-1980s when I was preparing to climb Cho Oyu in Nepal, which in Tibetan means Turquoise Goddess.

It is the 6th highest peak in the world at 26,864 feet in elevation.

To prepare for the Himalayas' frigid temperatures and low oxygen, I would climb Peavine Peak (8,266 feet) near my home in Reno, sometimes in blinding blizzards.

I remember getting so cold that I couldn't speak or tie my shoes because of the intense shivering. I would head straight to the health club, where the hot tub and sauna awaited.

But as time passed, I noticed I wasn't adapting to the brutal cold. It was like my body knew if it *just held out* long enough, it would be rescued by the hot tub. I began to dread the thought of climbing the Turquoise Goddess.

No hot tubs.

How would I survive?

Once in Nepal, I went on a two-week trek to the base of the mountain. The climate wasn't frigid, but it was chilly, with frosty mornings.

After five days on the trek—and no hot tubs available—I adapted to the climate and never felt cold in the entire two months on the mountain.

My body quickly learned that it *had* to adapt, and it made the trip an exciting adventure.

So, the lesson learned (N=1 experiment) that I've used for the past 40 years is that exposing myself to cold has the distinct advantage of allowing me to have excellent cold tolerance and enjoy winter.

As I've gotten older, I've started practicing cold adaptation for a *different* reason: It can help counteract the sluggish metabolism that can make us gain weight with age.

Make Your Fat Work FOR You

A common term for cold exposure is **cold thermogenesis**, and it has gained considerable attention for its impressive health benefits.

You're likely already familiar with the benefits of cold for soft tissue injuries. Ice is probably the first thing you reach for when you sprain your ankle or if your elbow is sore from playing tennis.

In the same way an ice pack helps with a localized problem, cold thermogenesis can help your entire body.

In the same way an ice pack helps with a *localized* problem, cold thermogenesis can help your **entire body**.

That's because cold thermogenesis triggers processes that help maintain your core body temperature.

On the outside, you can experience goosebumps and shivering… but there's even *more* happening on the *inside*.

See, when your body starts working harder to regulate your temperature, you burn more calories to produce heat.

One way it does this is by stimulating the production **of brown adipose tissue** or brown fat.

Brown fat contains the cell powerhouses called mitochondria. White fat—the kind most adults have—has no mitochondria.

White fat STORES energy, while brown fat BURNS energy.

When you're born, brown fat makes up as much as 5 percent of your body weight. But by the time you become an adult, there's hardly any left!

That is… *unless you practice cold therapy*.

Studies show that regular exposure to cold increases brown adipose tissue, which then uncouples mitochondrial adenosine triphosphate (ATP) production.[1] Instead of producing ATP, this directly produces heat.

In fact, just **10 days of cold acclimation** is all it takes to measurably increase the mass and activity of brown fat.[2]

The Best FAT for Weight Loss

Brown fat burns fat and sugar instead of storing them, which can help you lose weight, balance your blood sugar levels, and reduce your risk of type 2 diabetes.

Studies show that brown fat helps alleviate dyslipidemia, impaired insulin secretion, and insulin resistance in type 2 diabetics.[3]

In fact, 10 days of cold acclimation is all it takes to enhance peripheral insulin sensitivity by about 43 percent in type 2 diabetics.[4]

Active brown adipose tissue is also inversely correlated with body mass index. In other words, the more brown fat you have the *lower* your BMI and the *more* calories you burn.

In one interesting study of animals on a high-fat diet, simply transplanting brown fat into their bodies—with no other changes—*reduced* body weight and fat tissue inflammation and *increased* glucose tolerance and insulin sensitivity.[5]

All those factors were reversed when brown fat was removed, leading to weight gain, inflammation, and insulin resistance.

Active brown adipose tissue is also inversely correlated with body mass index. In other words, the more brown fat you have the lower your BMI and the more calories you burn.

Rev Up Your Metabolism

Increased brown fat is just ONE powerful way that cold exposure boosts your metabolism.

Another way cold exposure burns through calories is through muscle thermogenesis and shivering, both of which increase your metabolic rate by burning fat and sugar.

Cold exposure also influences hormonal pathways, including those involving *adiponectin* and *irisin*. Both are associated with fat metabolism and glucose regulation.

Adiponectin is a hormone that helps with insulin sensitivity and inflammation.

Irisin (which is also released during exercise) has the remarkable ability to transform white fat into brown. It also helps regulate glucose and lipid homeostasis.

I've counseled many patients to consider doing their own N=1 biohack with cold thermogenesis over the years. So, I've seen firsthand just how many people experience the benefits demonstrated in these studies.

However, it's important to note that this process doesn't work for everyone. (See the sidebar below for more information.)

Slow and Steady Cold Exposure

The good news is that you don't have to climb mountains in the dead of winter—or go to Nepal—to achieve the beneficial effects of cold therapy.

However, if you want your body to produce beneficial brown fat, you'll need to stimulate the sympathetic nervous system with **regular, extended** cold exposure.

The best way I know of to accomplish this is through immersion in cold water. Nothing beats the efficiency of cold-water immersion, as it conducts the cold to your body over **20 times faster** than air.

The temperature needed to maximally stimulate the sympathetic nervous system is **50 to 55°F**,

Is Cold Therapy for You?

There's evidence that certain genetic variations may impact whether or not someone responds well to cold thermogenesis.

This involves the study of **mitochondrial haplotypes**, which are genetic variations in mitochondrial DNA that affect energy metabolism.[1]

The two primary types are coupled and uncoupled.

Coupled haplotypes tend to be found in people whose origins were closer to the equator and whose bodies didn't need to generate as much heat.

These haplogroups have tightly coupled mitochondrial ATP production that cannot uncouple to generate heat. This can be an advantage for endurance athletic performance, as coupled haplotypes respond better to aerobic endurance training.

Uncoupled haplotypes can be found in those whose origins are farther away from the equator, where there was a greater need to generate heat.

Looking back on my patients, having a coupled haplotype (those of equatorial origin) was often an indication that cold therapy might not be as beneficial.

I can see with this pattern why cold exposure is more beneficial for some groups than others.

which is much less dangerous than getting into near-freezing water.

Start slow and easy. Over time, you can increase the length of exposure, while decreasing the temperature you can tolerate.

This is vital for both tolerance and safety. When poorly adapted people jump into cold water, it can trigger a cold shock response, which can potentially be fatal.

You can practice cold thermogenesis in the shower or tub. Or better yet, find a natural cold-water source like a lake, ocean, or river, like I do near my house.

Whatever approach you decide to take, **beginning the practice under medical supervision is essential**, especially since everyone responds differently to cold exposure.

Are Pesticides Making You Sick?

Steps to Reduce Exposure and Safeguard Your Health

In June, the grapes on the vines in my backyard begin to ripen. I look forward to this tasty harvest, but other members of the environment—namely insects and birds—want their share, too.

I go out daily into my small vineyard and "smash caterpillars." You might think this is cruel, but one year I tried not doing that, and after ONE week, there wasn't a *single* leaf remaining on the vines.

So, to keep my share of the crop, I spend hours assassinating caterpillars.

Unfortunately, "searching and squishing" isn't an option in Big Agriculture.

Instead, they dump TONS of **insecticides** to preserve their crops—*3.5 million metric tons* in 2021 alone. This skyrocketed *96 percent since 2000*.

This is great for production—but it's TERRIBLE for your body.

These toxins have been linked to **neurodevelopmental disorders**, **reproductive problems**, **thyroid problems**, **hormone imbalance**, and even **cancer**.

> "Insecticides have been linked to neurodevelopmental disorders, reproductive problems, thyroid problems, hormone imbalance, and even cancer."

Studies consistently show that most Americans have detectable levels of multiple pesticides in their bodies. Exposure comes from the foods you eat, the water you drink, and the environment itself.

And unless you're intentionally taking steps to avoid them, *they're pouring into your body every day.*

Let's explore how to reduce exposure and protect your health from these chemical killers.

Nerve Agents… on Your *Food?!*

It's not like you're spraying pesticides on **your body**… *so what's the big deal?*

The Big Deal is that studies consistently show that most Americans have detectable levels of multiple pesticides in their bodies.[1] Exposure comes from the foods you eat, the water you drink, and the environment itself.

A study published in *Environmental Health Perspectives* reported detectable levels of pesticides in over 90 percent of urine samples from children and adults, with **organophosphate** and **pyrethroids** topping the list.[2]

Organophosphates are common insecticides that kill bugs by disrupting their brains and nervous systems.

But they're just as bad for YOUR brain and nervous system.

These chemicals inhibit a key enzyme in the nervous system

called acetylcholinesterase. This can result in an overload of the neurotransmitter acetylcholine, affecting your central nervous system.[3]

The government KNOWS this because these organophosphates are used as nerve agents in chemical warfare!

The Problem with Pesticides

Once the pesticides are in your system, they wreak *havoc*.

The health risks associated with pesticides depend on the type and amount used and the duration of exposure.

In general, some of the most significant risks include neurodevelopmental effects.

Prenatal and early childhood exposure to organophosphate pesticides has been linked to neurodevelopmental disorders, including lower IQ and developmental delays.[4]

One of the most commonly used pesticides, glyphosate (better known as Roundup®) poses the most *significant* health risks.

Glyphosate has been classified as a **probable human carcinogen** by the International Agency for Research on Cancer.[5]

One meta-analysis of six studies, including more than 65,000 people, showed that exposure to glyphosate increases the risk of non-Hodgkin's lymphoma by **41 percent**![6]

Another study showed that people exposed to glyphosate have increased biomarkers in their urine that are linked to cancer development and other health issues.[7]

Yet the Environmental Protection Agency (EPA) stubbornly maintains that there's no evidence that glyphosate causes cancer in humans.

Longitudinal studies on populations with high pesticide exposure, such as agricultural workers, reveal persistent changes in the gut microbiota that correlate with increased risks of gastrointestinal disorders and other health issues.

Glyphosate has also been linked to endocrine disruptions, which can lead to reproductive issues, thyroid problems, and other hormonal imbalances.[8]

Here are a handful of other common pesticides and herbicides—all with their own list of reasons to stay as far away from them as possible…

- **Atrazine** is an herbicide associated with endocrine disruption and reproductive issues.
- **Chlorpyrifos** is an insecticide linked to neurodevelopmental problems and potential endocrine disruption. It has been banned in Europe but is still used in the USA.
- **Paraquat** is an herbicide associated with respiratory issues and increased risk of Parkinson's disease.
- **Neonicotinoids** are insecticides linked to neurodevelopmental and reproductive effects.

Listen to Your Gut

I often discuss how a diverse microbiome correlates to better health. On the other side, gut dysbiosis (an imbalanced microbiome) can cause digestive issues, skin problems, mental health concerns, cancer, obesity, cardiovascular disease, and more.

Another BIG reason why pesticides are so harmful is because they **destroy** your gut microbiome.

A study conducted at the University of Washington found that participants with higher pesticide exposure had *less* diversity in their gut microbiomes and a higher prevalence of bacteria associated with inflammation and metabolic disorders.

Longitudinal studies on populations with high pesticide exposure, such as agricultural workers, reveal persistent changes in the gut microbiota that correlate with increased risks of gastrointestinal disorders and other health issues.[9]

Glyphosate, in particular, decreases beneficial bacteria such as *lactobacillus* and *Bifidobacterium* while allowing pathogenic bacteria like *Clostridium* to flourish.[10]

Exposure to organophosphate pesticides is associated with reduced microbial diversity and beneficial bacteria, affecting gut health and overall immune function.

These pesticides are also linked to inflammatory cytokine production, which can damage the gut lining and alter microbial populations.

Pyrethroid chemicals used in insecticides also reduce beneficial

bacteria and potentially contribute to inflammatory bowel conditions.

Pesticides are disruptive to your microbiome because many of them have *antibiotic-like effects*, which means they indiscriminately kill both harmful and beneficial bacteria in the gut.

Forever Chemicals

Are you getting the picture? This stuff is BAD NEWS. But I'm not done yet.

A more recent issue we've become aware of is substances called **per- and polyfluoroalkyl substances**, or PFAS.

These are better known as "forever chemicals" because they can take hundreds of years to break down in the environment.

They all include fluoride, which is not used by living things because (in my opinion) it can disrupt the electric current that keeps us alive.

Research confirms that exposure to certain PFAS levels in the environment can lead to a range of health issues, including cancer, heart and liver problems, and immune and developmental damage in infants and children.

These chemicals are used in stain and water-repellents for carpets, upholstery, clothing, and other fabrics. They're in cleaning products, non-stick cookware, paints, varnishes, sealants, fast food packaging, shampoo, dental floss, cosmetics, and more.

An article published in *Scientific American* reported that 70 percent of all pesticides introduced into the global market from 2015 to 2020 contained these chemicals or compounds related to them.

The problem is that the surge in their use has come **without fully understanding their potential impact on the environment and human health**.

In fact, the CDC has even acknowledged that there are over 9,000 different PFAS-like compounds—*and that most have not been studied.*

It's the "innocent until proven guilty" approach… but **you're** the one paying the price while these toxins—and the companies using them—get a free pass.

It's time to prioritize your *health* over Big Agriculture's profit margin.

Ditch the Dirty Dozen

Quite frankly, this topic can be discouraging to write about because there are no easy answers. It's hard to avoid chemicals that are literally everywhere and that last practically forever.

Per- and polyfluoroalkyl substances (PFAS) are better known as "forever chemicals" because they can take hundreds of years to break down in the environment.

But you CAN take steps to reduce your exposure and protect your health.

First, *don't* put these pesticides on your lawn or garden. Choose natural, environmentally safe options instead.

Second—and this is a big one—buy organic food whenever possible.

A meta-analysis found that people who eat organic foods have significantly lower levels of synthetic pesticides in their urine than those who consume conventionally grown foods.[11]

It doesn't take long to make a difference.

A study published in *Environmental Research* found that people who switch to an organic diet for just ONE WEEK experienced a dramatic decrease in pesticide metabolites in their urine.[12]

The reduction was particularly notable for organophosphate and neonicotinoid compounds.

The biggest complaint about organic foods is that they're too expensive. If that's a limitation for you (especially with grocery prices skyrocketing lately), I recommend starting with the foods with the highest pesticide residues.

The Environmental Working Group (EWG) is a nonprofit organization that regularly tests pesticide levels in food.

They publish a list called the "Dirty Dozen," which includes the 12 foods with the **highest** pesticide residues in their latest testing, as well as the "Clean 15," which includes the 15 fruits and vegetables with the *lowest* pesticide residues.

With this information, you can prioritize which organic foods to buy.

The EWG also has a list of companies that have pledged to remove PFAS chemicals from their products.

To learn more, go to www.ewg.org.