

Healing Acne From Within

How to Diagnose and Cure Acne Caused by Fluoride Exposure

PREFACE

Have you tried every treatment you can think of, but your acne is still a mystery?

Do you wonder, "Why am I acne-prone while others are not, even though I am meticulous with my skincare?"

Perhaps you are scared of the drugs commonly prescribed to treat cystic acne, or you already experienced unwanted side effects.

This guide explains how to diagnose and heal fluoroderma, a common yet little-known skin condition caused by fluoride exposure.

It is a response to the many questions I receive on my blog asking for more details about how I cured my cystic acne without medication, special treatments, or particular skincare products.

Fluoroderma is not yet well-understood by the medical community. My hope in writing this free, online guide is that it will help raise awareness of this neglected condition and, in the meantime, provide you with all the information you need to help your body heal itself.

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The author has made every effort to ensure the accuracy of the information herein. However, the information in this guide is offered without warranty, either express or implied.

To all who accept
answers not because they are easy
but because they are true

TESTIMONIALS

"I'm speechless. It all makes sense now. Your face is my face. The ONLY things that control my acne are a meticulous organic diet, a water filter, and yoga... I can't believe I've never heard of this before."

-[Lauren Kovar](#) from Plano, TX

"I've been avoiding fluoride for a few weeks now based on reading your blog. It's amazing how quickly my acne has disappeared in response! I can't thank you enough for this! In the past 3 or 4 weeks, I've had two flare-ups, both occurring after I'd gone out to lunch for work where I drank fluoridated water."

-[Anonymous](#)

"Yup you've got this figured out. GENIUS! ... Thank you for the amazing, amazing work here. THIS SITE HELPED ME!"

-[Perry](#) from Chicago, IL

"I feel like I have been hitting my head against a brick wall. It totally makes sense... Whenever I go on vacation my acne goes away every time. Then when I get home, it comes right back. And it's not little pimples, either. They are big, painful and embarrassing. Thank you so much for writing about this."

-[Stacey](#) from Canton, IL

"Since my husband and I started avoiding fluoride, we've both been markedly more alert and my acne has completely disappeared... The research is there. It is not a conspiracy. Thank you for maintaining this website!"

-[E.](#) from Gainesville, FL

"Stumbling across your blog was a light bulb moment. I have not had any tests to confirm that my acne is caused by fluoride, but it is the most likely explanation I have encountered in 13 years of searching for answers."

-[Erin](#) from Little Rock, AK

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INTRODUCTION

My Fluoroderma Story

Your skin is naturally clear and beautiful. Any blemishes are caused by interference with your skin's natural state. Remove the source of the interference, and your skin will return to full health. This e-book explains how.

I am not a dermatologist, aesthetician, or any other type of certified skincare expert. The information contained in this guide was garnered through publicly available research and my own

observation and experience. Before I tell you about fluoroderma, I would like to share the brief story of my path to healing.

MY HISTORY WITH ACNE

Like many other people, I first developed acne as a teenager in high school. Yet instead of improving after adolescence as it did for many of my peers, the state of my skin continued to decline.

"Cure" Number One: Accutane

The first time I consulted a dermatologist was the summer before my junior year at college.

I recall the authority in his voice as he spoke into his handheld audio recorder, casually describing the placement and appearance of my blemishes. These were deep, cystic outbreaks concentrated around my mouth and down my neck. It was painful just to listen.

Before leaving the room, he handed me prescriptions for Accutane and a topical treatment

along with some cursory instructions. That was the last I saw of him.

A few weeks later, I traveled to Senegal, West Africa for a year-long study abroad program. There on the edge of the Sahara, it became increasingly difficult to avoid sun exposure which was recommended by the warning label on the medication. Since my skin cleared up shortly after arriving in Africa, I decided to discontinue the treatment.

My skin was free of breakouts for the rest of the year. I thought, "Wow, Accutane is amazing!"

"Cure" Number Two: Proactiv, Etc.

When I returned to the United States for my final year of college, my skin quickly returned to its old ways. Instead of another visit to the dermatologist, I decided to try Proactiv.

Proactiv is a four-step regimen that includes a cleanser, toner, spot treatment, and moisturizer. I diligently followed the treatment process and my skin showed marked improvement. It was enough to keep me satisfied, at least for a while.

After graduation, I moved to Newport, Rhode Island to start my career as a Naval Officer. Living in Newport, my skin broke out worse than ever. I tried more expensive brands of skincare products, including Murad and Dermalogica, but nothing seemed to help.

The change in my skin was so sudden and dramatic that I suspected it was directly related to the move to Rhode Island. The house I was living in was over 150 years old. I started to wonder if the acne was caused by something in the water. Perhaps the quality or construction of the pipes?

Throughout the next ten years, I continued to move to a new state or country on a regular basis. In some towns, I was able to maintain relatively clear skin with minimal effort while others caused my skin to break out within days.

In the most extreme cases, certain water supplies seemed to leave an unhealthy sheen across my troubled skin, even immediately after I washed it. I made a habit of using bottled water to wash my face when traveling. I didn't know what was causing my acne at the time, but it was clear to me the culprit was in the water.

“Cure” Number Three: Benzoyl Peroxide

Between the bottled water and regular facials, I was able to keep my acne under control. I tried a variety of other skincare products, and eventually settled on a common cleanser that offers a hefty dose of benzoyl peroxide.

This particular product bleached the heck out of my washcloths, but it kept my skin clean and clear. I used it religiously twice a day for the next few years.

When it came time for graduate school, I returned to Africa for a summer study abroad program. This time I was not wise enough to discontinue my acne treatment. After a few weeks under the hot Tunisian sun, the pigmentation on a patch of skin above my upper lip mysteriously began to darken, an embarrassing condition known as melasma.

Reading online forums, I discovered that other women also developed melasma after using acne products with benzoyl peroxide. I immediately purged all such products from my routine.

The melasma scared me more than acne ever did. At least acne was a common problem; there is

comfort in knowing that individual breakouts will eventually heal. I feared the melasma would be permanent.

Despite my hasty abandon of acne treatment products, my face remained effortlessly clear for the rest of my time in Tunisia. It stayed relatively blemish-free all the next year, too, which I spent as a Fulbright scholar in Scotland.

It wasn't until I returned to the U.S. that those familiar cystic outbreaks started brimming to the surface again.

ENTER THE CELLULITE INVESTIGATION

As some of you may know, it was during my year in Scotland that I first launched my now global investigation into the causes and cures for cellulite.

[Because of my experience researching cellulite,](#) my approach to treating cystic acne was considerably different this time around.

A New Approach to Treating Acne: Healing from Within

Once again, my skin broke out within days of returning to the U.S. My new home was in Delray Beach, Florida and unfortunately it was one of *those* places. My skin was as bad as it used to be when I lived in Newport, Rhode Island almost ten years earlier.

But this time, instead of turning to another medication, I was determined to heal the condition at its root cause.

Thanks to [The Cellulite Investigation](#), I now understood the importance of [the lymphatic system](#) in healing certain chronic conditions. The lymphatic system is thought of as the sewage drainage system for the body. One of its main purposes is to remove waste from our cells.

I continued the practices I was pursuing as part of the cellulite investigation, including dietary changes, daily yoga and other forms of exercise uniquely designed to increase lymphatic flow.

Yet in spite of all I had learned about lymphatic health, my cystic acne did not improve.

Lymph Drainage Therapy for Acne

Frustrated with my lack of progress, I consulted a Lymph Drainage Therapist to help alleviate the condition. I was fortunate to live near The Upledger Institute, one of the preeminent facilities for this type of treatment.

The Upledger Institute is one of the premier research and education centers for Lymph Drainage Therapy (LDT), a light-touch therapy created by [Dr. Bruno Chikly](#). The therapist I saw at Upledger, Mya Breman (LCSW, LMT, CST-D), was one of Dr. Chikly's direct protégées.

I noticed improvement after each session with Mya. The redness and swelling decreased overnight. Existing blemishes healed at an astounding rate.

But the results I saw from Lymph Drainage Therapy were fleeting. Within 2-3 days, my skin would return to its normal distressed state.

Psychotherapy in Action

Finally, after a few weeks of treatment, Mya suggested I take a break from our sessions until I

could figure out what was causing the outbreaks in the first place. At our last session, she decided to make use of her licensed psychotherapy skills to help me get to the root of the problem.

"If your acne was a cartoon character," Mya asked, "what would it look like?"

I thought the question was silly, but I followed her instructions and said the first thing that came to mind.

"If my acne was a cartoon character, it would be an oil drop."

"When did this oil drop form?" she asked.

I responded automatically, "Seventh grade."

"No, I think it's been around longer than that," Mya replied.

In true psychotherapy style, I was soon answering questions about my deepest childhood fears. I continued to respond with the first thing that popped into my mind. I was *most* afraid of the dentist.

It seemed laughable at first, but then I realized how real the fear actually felt as a child, especially the time I had four of my baby teeth extracted. I could still hear the sound of each tooth cracking as it loosened from my jaw. I was petrified for weeks leading up to the appointment, but my mom said I didn't even cry.

I continued to ponder this unearthed childhood fear over the next few days. I thought of all the other things I hated about going to the dentist. The smell of latex. The uncontrollable drooling. The fluoride trays.

My dentist also told me to take fluoride pills, which I later learned are the reason my teeth are slightly discolored. It's a condition called [dental fluorosis](#) and a common indicator of fluoride toxicity.¹

One night after my last session with Mya, I had a dream about going to the dentist. I was a small child again in the dentist's chair. I had one of those unpleasant fluoride trays in my mouth but this time the tray was made of glass. When the dentist tried to remove it, the tray shattered into a thousand pieces, embedding small shards of glass deep in my gums.

My subconscious was trying to tell me something.

The "A-ha"

A few days later, I visited family in central Florida for Thanksgiving. I was explaining my frustration with acne to one of my family members who is a general physician. I was holding a glass of tap water in my hand, about to take a sip, when the thought first crossed my mind.

Maybe my cystic acne was caused by fluoride.

A quick Google search revealed that fluoroderma, or acne caused by fluoride ingestion, is in fact a recognized medical condition.²

According to the Physician's Desk Reference:

In hypersensitive individuals, fluorides occasionally cause skin eruptions such as atopic dermatitis... These hypersensitivity reactions usually disappear promptly after discontinuation of the fluoride.³

It was clear that fluoride could cause acne through topical contact,^{4,5} but I washed with bottled water and used non-fluoridated

toothpaste. The idea did not occur to me that cystic acne could be caused by fluoride that is ingested.

Multiple case studies indicate that fluoride ingestion may cause skin conditions such as dermatitis, eczema, and hives.^{6,7,8}

Looking back, I am surprised I did not put the clues together earlier; hindsight bias is extremely difficult to overcome once the outset of an event is fully established. Not a single physician, dermatologist, aesthetician, or any other specialist I consulted over the years ever suggested cystic acne could be caused by fluoride ingestion. Why should I have thought otherwise?

Ironically, the family I was visiting at the time of my "a-ha" moment live in Polk County, Florida. Polk was the site of an infamous fluoride-related tragedy in the 1950s, when pollution from multiple phosphate plants caused the mass poisoning of local cattle.

According to the former President of the Polk County Cattleman's Association:

Around 1953 we noticed a change in our cattle... We watched our cattle become gaunt

and starved, their legs became deformed; they lost their teeth. Reproduction fell off and when a cow did have a calf, it was also affected by this malady or was a stillborn.⁹

If this is what fluoride poisoning can do to a herd of cattle, what other damage might a lifetime of fluoride ingestion be causing in my own body?

MY RECOVERY FROM FLUORODERMA

A co-worker recently complimented me on my complexion and asked to know what I was doing to make my skin look so nice. She asked *me*, the woman who once had a well-meaning doctor knock on her door to offer a free prescription for acne medication.

As I write this, two and a half years have passed since I first suspected fluoride as the cause of my acne. During that time, I figured out how to limit my fluoride exposure, how to heal fluoride-induced outbreaks, and how to recover from fluoroderma. I've done so without any medication, expensive skincare products, or salon treatments.

This informational guide is designed to share all that I learned about fluoroderma with other people who believe their acne might be fluoride-related.

Since I started posting articles on my blog about my experience with fluoroderma, I've heard from both women and men who are confronted with this same condition. I suspect fluoroderma is not as rare as we are apt to believe—rather, it is the *diagnosis* of fluoroderma that is all too scarce.

Because of the multitude of fluoride sources in our modern society, fluoroderma can be exceedingly difficult to pin down. This guide will help you figure out if your cystic acne is indeed caused by fluoride ingestion. You will also learn how to treat existing outbreaks and prevent future ones from occurring.

But before we talk diagnosis, there are a few things you should know about this darling of the dental industry.

CHAPTER ONE

The Fluoride Controversy

It can be difficult to accept the idea that a substance deliberately added to the public water supply for the past sixty years could be anything but beneficial. Wouldn't we have noticed any negative side effects by now?

Those who take the time to investigate the subject of fluoride beyond the conventional wisdom quickly discover that the story behind this

controversial chemical is not as simple as it seems.

THE CASE FOR FLUORIDE

The prevalence of fluoride in our society is largely a result of the belief that fluoride helps fight cavities. To better understand its effect on the body, we will begin by exploring the history of public water fluoridation.

The Dental Endorsement

The connection between fluoride and dental health was first established in 1931 with the discovery that children who consume water high in fluoride will develop mottled brown teeth, a condition known as dental fluorosis.¹⁰

(It is worth noting that in a report to the Surgeon General in 1932, local physicians in areas high in naturally occurring fluoride also reported "an unusually large amount of skin disorders among those using the city water supply."¹¹)

Less than twenty years after the connection between fluoride and teeth was discovered, dental

authorities concluded that daily ingestion of fluoride is effective at preventing cavities and completely safe for lifetime consumption regardless of age or any other qualifying factor.

In June 1950, the U.S. Public Health Service (PHS) “strongly encouraged” communities to start fluoridating their public water supply.

The PHS based this endorsement on a study conducted in Grand Rapids, Michigan, the first community to start fluoridating its public water supply in 1945.¹²

The Grand Rapids study was riddled with statistical errors. The control group was abandoned before the study was complete. The sample data was cherry-picked. Disconfirming evidence was ignored.

When a firm of professional statisticians was hired to study the data, they concluded:

... the lack of sophistication shown in selecting the sample leads to complete bewilderment as to the precise effects or the extent of the effect of fluoridation.¹³

Even if the five years worth of research in Grand Rapids was valid, how could the American Dental Association have fully accounted for the effects of *lifetime* fluoride consumption on every system of the human body in the less than twenty years since the connection between fluoride and dental health was first discovered?

The truth is, they didn't.

Red Flags in Fluoridation Research

The original research used by the dental community to justify fluoridation was anything but rigorous. The medical literature of the day was rife with reports of fluoride's negative effect on the body, reports that were readily dismissed by the dental community.

Researchers around the world were documenting studies showing a causal relationship between fluoride consumption and brittle bones (and what is now referred to as skeletal fluorosis).^{14,15}

From 1920 to 1950, doctors in Europe were using sodium fluoride to depress thyroid activity in patients with hyperthyroidism.¹⁶

Researchers elsewhere noted a correlation between high fluoride levels and goiter, even in regions with adequate amounts of iodine.¹⁷

These studies and others like them should have guided the research of those evaluating the prospect of adding fluoride to the public water supply. Instead, excited at the thought of curing the country of rampant tooth decay, the dental community largely ignored this damning evidence in its assessment of the safety of fluoridation.*

Industrial Interest: An Added Case for Fluoride

Have you ever wondered where the fluoride that is added to the public water supply comes from?

Fluoride is a naturally occurring element. As such, some of us like to assume the fluoride added to our water comes from a fluoride mine

* To learn more about the history of fluoridation, see [The Case Against Fluoride: How Hazardous Waste Ended Up in Our Drinking Supply and the Bad Science and Powerful Politics That Keep It There](#) by Paul Connett, James Beck, and H.S. Micklem.

buried deep in America's heartland. This is not the case.

In 90 percent of fluoridated communities, the fluoride added to the public water supply is not sodium fluoride but hexafluorosilicic acid – a byproduct of the phosphate fertilizer industry.[†]

Fertilizer plants and other industrial factories, such as those that produce aluminum, emit fluoride gases during the production process. Prior to fluoridation of the water supply, this gas was commonly released into the environment (as was the case in Polk County in the 1950s, mentioned on page 10).

Thanks to EPA regulation, the phosphate industry is now required to scrub their smokestacks for fluoride byproducts before emissions are released into the atmosphere. The resulting solution is then shipped, untreated, to our public water facilities where it is added directly to the water supply.¹⁸

[†] For those of you who find this information difficult to believe, you can find the following blunt description on many local water reports describing the source of fluoride additives: “Discharge from fertilizer and aluminum factories.” For an example, see <http://www.jupiter.fl.us/water/>.

This industrial interest helps keep the antiquated practice of public water fluoridation in widespread use.

Ending fluoridation would sever a lucrative market for the fertilizer industry. It would also force them to spend significant resources to properly dispose of their hazardous waste instead of selling it for a profit to taxpayers.*

THE CASE AGAINST FLUORIDE

Seemingly unbeknownst to many in the dental community as well as in government, medical researchers have continued investigating the damaging effects of fluoride for the past sixty years.

This body of research is too voluminous to cover in depth in this guide, but I will attempt to summarize the most salient points.†

* To learn more about the industrial interest behind public water fluoridation, see [The Fluoride Deception](#) by Christopher Bryson, Seven Stories Press, 2006.

† For a more comprehensive summary of the scientific research on fluoride's effect on the body, see [The Case Against](#)

Beyond Teeth: Fluoride's Effect on Bones, the Brain, and Beyond

Most of the studies involving public water fluoridation have focused on the dental perspective, but it is well established that fifty percent of ingested fluoride accumulates not in teeth, but in bones.¹⁹

The amount of fluoride added to the public water supply is low enough not to cause severe skeletal fluorosis, a condition commonly seen in parts of India and elsewhere where naturally occurring fluoride levels are excessively high.²⁰ But what about less extreme symptoms of bone damage?

In a 2007 study published by the Mayo Clinic, researchers identified multiple patients suffering from bone-related symptoms caused by fluoride toxicity. They concluded that clinicians easily overlook the role of fluoride even though its side effects can be progressive and crippling.²¹

The subject of fluoride's influence on the endocrine system is equally lacking in fluoridation studies. In addition to accumulating in bones and

[Fluoride](#), Part IV, The Evidence of Harm, by Paul Connett et al.

teeth, fluoride affects other tissue throughout the body, including glands that control hormone production.

One example is the pineal gland, a small endocrine gland in the middle of the brain. The pineal gland is responsible for the production of serotonin and melatonin, hormones that help regulate sleeping patterns and seasonal functions.

Analysis of human pineal glands reveal fluoride levels as high as 21,000 part per million (ppm).²² To put that number in perspective, bones indicative of severe skeletal fluorosis are measured at 9,000 ppm.²³

Fluoride's effect on brain development is another critical subject widely neglected by fluoridation studies, even though troubling research suggests there could be a dangerous connection.

In a study published in 1995 by the chairperson of the first toxicology department at a U.S. dental school, researchers proved that, contrary to current belief, fluoride does accumulate in the

brains of animals.²⁴ The study also showed that exposure before birth results in hyperactivity.*

While these findings are worthy of attention from the scientific community, particularly in an era of rampant Attention Deficit Disorder and other behavioral problems among youth, there has been practically no research into this issue in fluoridated countries.²⁵

Other countries have arrived at different conclusions when it comes to the controversial issue of public water fluoridation.

THE INTERNATIONAL PERSPECTIVE

Some Americans are surprised to learn that fluoridation of the public water supply is primarily a U.S. endeavor. The majority of countries in Western Europe reject fluoridation.

* After publishing this study, the lead researcher was fired and told her work "was no longer relevant to dentistry," as mentioned in a personal communication between the researcher and Dr. Paul Connett of the [Fluoride Action Network](#).

Interestingly, these countries still experienced the same decline in tooth decay as countries with fluoridated water supplies.*

Careful Consideration in Sweden

In 1952, Norrköping, Sweden became one of the first cities in Europe to fluoridate its water supply. By 1971, water fluoridation was officially prohibited by the Swedish parliament.

A commission of experts was formed to reevaluate the prospect of fluoridation in the early 1980s. The commission concluded that the long-term effects of fluoridation are still unknown, especially on infants and children. In its place, they recommended other methods to improve oral health such as nutritional improvements and oral hygiene habits.²⁶

The commission's final report published in 1981 convinced the Swedish parliament to uphold its ban on fluoride first instituted twenty years earlier.

* For a list of the scientific literature comparing the rate of dental cavities in fluoridated and nonfluoridated regions, see <http://www.fluoridealert.org/health/teeth/caries/who-dmft.html>.

Other European Countries Reject Fluoride

The addition of fluoride to public drinking water is prohibited in Germany where authorities cite "the problematic nature of compulsion medication."²⁷

Authorities in Belgium verify fluoride has never been added to the water there "and never will be (we hope so) into the future."²⁸

Europeans consciously reject water fluoridation in Denmark, the Netherlands, Norway, Finland, France, Scotland, Austria and elsewhere.[†]

Pro-Fluoridation Countries

Most of the countries that practice public water fluoridation are English-speaking and have strong ties to the United States. Precise figures on the current practice of water fluoridation efforts around the world are difficult to track down.[‡]

[†] For a list of countries that reject fluoridation and their documented reasons for doing so, see <http://www.fluoridealert.org/govt-statements.htm>.

[‡] These statistics are even difficult for professional agencies to gather. See <http://www.fluoridealert.org/RFW-nations.htm>.

In Canada, the decision to fluoridate lies with local governments. As of 2007, approximately 45 percent of the Canadian population has access to fluoridated water.²⁹ Water fluoridation is also common in Ireland, Australia, and New Zealand.

Other countries that fluoridate all or part of their water supply include Hong Kong, Singapore, Chile, and Brazil. Small pockets of fluoridation continue in Spain and the United Kingdom.³⁰

THE CURRENT ANTI FLUORIDATION CAMPAIGN

In the early days of fluoridation, thoughtful opponents were overshadowed by conspiracy theorists who claimed the practice was part of a government program or communist effort to make the American public dumb and docile.

Now that the Cold War has come and gone, scientists are just beginning to take center stage in the fluoridation debate.

Arguments such as those made by Nobel-winning scientist, Dr. Arvid Carlsson, are more difficult for fluoridation proponents to discredit.

One of the most influential participants in the 1981 Sweden commission, Dr. Carlsson is still ardently opposed to fluoridation. The issue is no longer a matter of debate in Sweden, but Dr. Carlsson is outspoken in his belief that continued water fluoridation is an obsolete practice that goes against science.³¹

Dr. Hardy Limeback is another notable opponent of fluoridation. A former president of the Canadian Association of Dental Research, Dr. Limeback was once a primary advocate of fluoridation in Canada, even publishing studies promoting fluoride dental therapies.³² He changed his position based on "new evidence for potential serious harm from long-term fluoride ingestion." *

In June 2000, the vice-president of the EPA's Headquarters Union, Dr. J. William Hirzy, testified before the U.S. Senate about the dangers of fluoride to public health. The Union, which represents approximately 1,500 EPA workers,

* Read Dr. Limeback's letter entitled "Why I Am Now Officially Opposed to Adding Fluoride to Drinking Water" at <http://www.slweb.org/limeback.html>.

called for an immediate moratorium on public water fluoridation.*

the change is a long-awaited step in the right direction.

Thanks in large part to the Internet, organizations such as [Second Look](#) and the [Fluoride Action Network](#) are increasingly effective mediums for facilitating public and scientific examination of the fluoridation controversy. Their efforts are slowly starting to produce results.

In January 2011, the Department of Health and Human Services announced its intention to lower the “optimal” level of fluoridation to 0.7 ppm. Prior to this change, the optimal fluoride level in drinking water could be as high as 1.2 ppm.

This was the first instance since 1962 that government authorities proposed a change to water fluoridation levels in the United States.

Drinking water that is fluoridated at 0.7 ppm is still too much fluoride for someone with fluoroderma to ingest on a daily basis. However,

* See a video of Dr. Hirzy’s testimony at <http://www.celluliteinvestigation.com/2009/10/senior-vp-of-epa-headquarters-union.html>.

CHAPTER TWO

Diagnosing Fluoroderma

In the eighteen months since I started blogging about fluoroderma, I've only heard from one reader who says her dermatologist suggested fluoride as the cause of her acne.

Even this dermatologist was unaware that acne can be the result of fluoride *ingestion*. He suggested fluoridated toothpaste was to blame.*

* The toothpaste theory “didn’t sound right” to our savvy reader. She googled her way to The Cellulite Investigation and

Until dermatologists gain a better understanding of fluoride’s role in causing acne, we must rely on our own abilities to make this crucial diagnosis.

VISUAL INDICATORS OF FLUORODERMA

There are a number of visual indicators to be aware of when trying to determine if your cystic acne is fluoride-related.

These indicators are not enough to make an official diagnosis, but they can be helpful in piecing together the supporting evidence.

Location of Fluoroderma Breakouts

We know that fluoride contained in drinking water can eventually end up in the teeth and/or saliva. That fact is not under dispute. This same fluoride also tends to make its way to the skin around the mouth where fluoroderma breakouts are most

figured out the acne was caused by all the tea she was drinking. Read her original comment [here](#).

common. Dermatologists often diagnose these breakouts as *perioral dermatitis*.

In truth, perioral dermatitis is not an informative diagnosis—it's simply a restatement of the symptoms. Peri- is from Greek, meaning *around*. Oral, of course, means *pertaining to the mouth*. Dermatitis is a general term for *inflammation of the skin*.

When a dermatologist says you have perioral dermatitis, he's really saying you have inflamed skin around your mouth. You probably already knew that which is why you made the appointment with the dermatologist in the first place.*

Besides inflammation around the mouth, fluoroderma breakouts can progress down the neck (front, back, and sides) and even onto the chest and back. They also tend to appear on areas of the face where there is not a lot of

* According to [the WebMD entry on perioral dermatitis](#), the cause is unknown, it is less common in developing countries, and it is known to follow use of fluorinated steroid creams.

separation between the bone and the skin, such as the forehead and nose.†

During the most extreme flare-ups, people with fluoroderma can also develop tender lumps in and around the earlobe.

Travel-Related Fluoroderma Breakouts

Other visual indicators of fluoroderma are distinct bouts of acne that come and go when traveling between fluoridated and non-fluoridated locations.

As I described earlier, this was one of the main indicators that led me to the initial conclusion that my acne was caused by something in the water.

Years later, when I finally started to suspect fluoride, I researched the water treatment practices of the towns I had lived in when my skin was at its worst. All of them, without exception, add fluoride to the public water supply.

Online research revealed that in Delray Beach, Florida, the water was fluoridated to 1 ppm. That

† To view photographs of my fluoroderma when it was at its worst, see [This Is What Fluoroderma Looks Like](#).

is over 40 percent above the recently proposed “optimal” level.

My suspicion about fluoride was further validated when researching the fluoride status in Newport, Rhode Island—another location that caused a severe reaction in my skin.

Aside from verifying that Newport fluoridates its water supply, I noticed that the Department of Utilities homepage happened to be featuring a warning advisory stating that the EPA’s Secondary Maximum Contaminant Level for fluoride had been violated. The Newport plant was releasing water fluoridated above 2.0 ppm.*

I was not able to confirm the fluoride level from when I lived in Newport nearly ten years earlier, but the severity of my acne from that time period makes me wonder if this was not their first violation.

It is not difficult to research the fluoride level of any public water supply. Simply conduct an Internet search for terms such as “water

* See the original violation notice at the [Newport Department of Utilities website](#) or in a blog post [here](#).

treatment plant” or “water utilities” combined with the name of the city, county, or township.†

Public water systems are required to provide annual water quality reports (also known as consumer confidence reports) to their customers. These reports are often available online or you can call your water company directly to order a copy by mail.

Dental Fluorosis

Other signs of fluoride toxicity are not based on the breakouts directly, but observing these indicators can help determine if you are a likely candidate for fluoroderma.

Dental fluorosis is another symptom of fluoride toxicity. When children are exposed to excessive amounts of fluoride while their permanent teeth are still developing, their teeth will grow in with a distinct discoloration.

† You can also research fluoridation status in a CDC online database at <http://apps.nccd.cdc.gov/MWF/Index.asp> (although the information is not always accurate).

As you recall from Chapter One, this is the phenomenon that initially prompted dentists to study the connection between fluoride and dental health in the 1930s.

My dental fluorosis appears as bright [white spots](#) and an opaque quality around the edges of some of my teeth. During my routine checkups, several dentists have also pointed out pitting and deep crevices, likely caused by the fluoride pills prescribed by my childhood dentist.

More severe forms of dental fluorosis can manifest as [brown or black stains](#) along with porous enamel and extensive chipping.

The dental community claims that dental fluorosis is a harmless cosmetic condition. Nobel-prize winning pharmacologist Dr. Arvid Carlsson points out that dental fluorosis can be both a cosmetic effect and a toxic effect, “–the two are not mutually exclusive.”³³

Dental fluorosis is a clear sign of fluoride toxicity. If you have dental fluorosis, you experienced excess fluoride exposure at an early age. This exposure makes you a likely candidate for fluoroderma, as well.

Other Signs of Fluoride Toxicity

Fluoride is a member of the halide family, a series of non-metal elements that all have seven electrons in their outer shell. This composition makes them highly reactive to other elements.

Chemists call this property electronegativity, the ability of an atom to attract electrons towards itself. Fluorine is the most electronegative, and therefore the most reactive, of all the elements.³⁴

It is possible that the reactive nature of fluorine causes people who suffer from fluoroderma to also exhibit increased sensitivity to other chemicals, which is a condition known as Multiple Chemical Sensitivity (MCS).

For as long as I can remember, I have been allergic to a variety of personal care products including detergents, fabric softeners, lotions, body washes, deodorants, and shaving creams.

An ant bite once swelled my hand to twice its size. A case of poison ivy caused a stranger to ask if I had been in a fire. Looking back, I wonder if these reactions were aggravated by the presence of fluoride that had accumulated in my body.

Another common sign of fluoride toxicity is bone and joint pain similar to arthritis.³⁵ Research suggests these pains are commonly misdiagnosed as rheumatoid arthritis or osteoarthritis.^{36,37,38}

In the “alternative” healthcare community, some people claim fibromyalgia is also related to fluoride poisoning.³⁹ Symptoms include chronic muscle pain, severe lethargy, headaches, and abdominal pain.*

TESTING FOR FLUORODERMA

A variety of tests are available to help gauge fluoride levels in the body.

It is not common for healthcare practitioners to test for fluoride, but the following information will help you understand the available options.

Blood Tests to Measure Fluoride Toxicity

* For a more comprehensive list of fibromyalgia symptoms, see <http://www.webmd.com/fibromyalgia/understanding-fibromyalgia-symptoms>.

I did not learn about fluoride-related blood tests until recently, so this is not a subject I can attest to from personal experience.

According to my online research, there are two blood tests your doctor can order to measure fluoride toxicity. One is called a serum sialic acid to GAG (glycosaminoglycans) ratio.^{†40}

The other blood test is called a serum sialic acid to serum seromuroid ratio. A ratio less than three in either test suggests fluoride poisoning.⁴¹

These tests are more commonly used in India where fluorosis is a major health problem in several regions that have elevated fluoride levels.⁴²

Since fluoride blood tests are less well-known in the United States, you may have to work with a doctor who is willing to venture into unfamiliar territory if you want to pursue this option for fluoride testing.

† This test provided a major clue in our investigation on cellulite. See, [A Breakthrough: How Fluoride Causes Cellulite](#).

Iodine Loading Tests

I learned about the iodine loading test from a book entitled *Iodine: Why You Need It, Why You Can't Live Without It* by Dr. David Brownstein.⁴³

Iodine and fluorine are both halogens; they have a similar chemical makeup. As such, Dr. Brownstein claims they compete for the same receptors in the body.*

Iodine is best known for its critical role in the production of thyroid hormone. Fluoride, on the other hand, has no known natural function in the human body.

Dr. Brownstein recommends an iodine loading test is one way to gauge fluoride levels. The subject takes a 50mg tablet of iodine in the morning and then collects a urine sample over the next 24 hour period. The iodine from the tablet displaces stored fluoride from the body, which is then excreted in the urine.⁴⁴ The test measures the fluoride content of the urine.

* Bromine is another halogen that competes for iodine receptors. Dr. Brownstein urges patients to avoid sources of bromine, including soft drinks and bromated flour.

[Hakala Research Laboratory](#) specializes in urinary iodine testing. When I told them about my experience with fluoroderma, they agreed to test my fluoride levels for The Cellulite Investigation.

The results were not what I was expecting. My urinary fluoride levels were some of the lowest they had seen (.36 mg). In a way, this made sense since I had been avoiding fluoride for almost two years at that point. But wasn't the iodine pill supposed to release stored fluoride from my system? Why was my fluoride level so low even after I took the iodine supplement?

The answer appeared on my face two days later in the form of familiar cystic outbreaks. I did not eat any foods or beverage known to contain significant amounts of fluoride, yet I experienced a fluoroderma flare-up.

I asked Charles Hakala, one of the founders of Hakala Research, if it was possible the 24 hour urine test was not long enough to accurately measure the amount of fluoride released by the iodine supplement. He said this is entirely possible; since fluoride is stored in the bone, it

could take more time for it to be released into circulation.*

Hakala Research is now experimenting with different durations for their iodine loading test to more accurately measure iodine's effect on fluoride excretion.

At-Home Test for Fluoroderma

Ironically (or not), the most effective test for diagnosing fluoroderma is also the simplest. This is the test I relied on for my fluoroderma diagnosis. It is easy to perform at home and virtually free.

In a fourteen-year study conducted in the mid-1900s, Dr. Reuben Feltman set out to determine the effects of fluoride on pregnant women and young children. The participants ingested a 1 mg pill of sodium fluoride, a dose equivalent to one liter of "optimally" fluoridated water.

* To read the full details of our conversation, including another case that led Charles to a similar conclusion, see [Results of My Iodine Loading Test from Hakala Research](#).

In 1961, Dr. Feltman published the results of the study in the *Journal of Dental Medicine*.

One percent of our cases reacted adversely to the fluoride (1 mg/day tablets). By the use of placebos, it was definitely established that the fluoride and not the binder was the causative agent. These reactions... occurred with the use of fluoride and disappeared upon the use of placebo tablets, only to recur when the fluoride tablet was, unknowingly to the patient, given again. When adverse reactions occur, the therapy can be readily discontinued and the patient or parent advised of the fact that sensitivity exists and the element is to be avoided as much as possible.^{†45}

For our purposes, it is not necessary to take fluoride pills to test for fluoroderma in this manner. Instead, I relied on common food items that contain exceptionally high amounts of fluoride to verify my sensitivity level.

† The adverse reactions noted in the study include eczema, atopic dermatitis, urticaria, epigastric distress, emesis, and headache.

Every time I consumed a food or beverage high in fluoride, my skin reacted with a new set of breakouts. This reaction occurred every time, without exception. When I avoided foods that are high in fluoride, my skin cleared completely.

You will not find fluoride on the list of ingredients for any food product. Nor will you find it on the nutritional label next to a percentage of Recommended Daily Allowance. And yet, as you will learn in the following chapter, significant doses of fluoride are present in a surprising variety of food sources.

CHAPTER THREE

Sources of Fluoride Exposure

In [a recent survey](#) conducted by the U.S. Department of Health and Human Services, researchers found that over 40 percent of survey participants between the ages of 12 to 15 have dental fluorosis. This is an *80 percent* increase compared with the same age children in 1986 and 1987.⁴⁶

The skyrocketing statistics on dental fluorosis show that Americans are exposed to fluoride at an increasing rate. Public health officials claim the rise in dental fluorosis stems from the greater availability of fluoridated toothpastes and fluoride supplements.⁴⁷ They seem to be completely unaware of non-dental sources of fluoride.

If you suffer from fluoroderma, you will be able to prevent future outbreaks by avoiding these common sources of fluoride exposure.

BEVERAGES WITH FLUORIDE

Drinking non-fluoridated water is an obvious way to limit your daily fluoride intake. Reverse osmosis filters can remove approximately 95 percent of fluoride.

During my recovery from fluoroderma, I chose to consume bottled water until I was able to move to a non-fluoridated neighborhood. You can verify the fluoride content of bottled water by contacting the manufacturer.*

* The International Bottled Water Association provides links to several water analysis reports at bottledwater.org/fluoride.

But water isn't the only beverage that contains fluoride. Several other common drinks can include fluoride in amounts significantly higher than the water from your tap.

Fluoride Content of Tea

Tea leaves accumulate more fluoride than any other edible plant.^{48,49,50}

The amount of fluoride present in a single cup of tea can vary drastically depending on the age of the plant, the chemical characteristics of the growing region, and the length of steeping time.^{51,52}

In a 2005 study published in *The American Journal of Medicine*, researchers found that some regular preparations of tea contained fluoride at 6.5 ppm.⁵³ The maximum level allowed for drinking water is 4 ppm. International studies show that tea can be the primary source of both dental and skeletal fluorosis.⁵⁴⁻⁶²

Black, green, and even white tea can contain fluoride. White tea contains the least because the leaves are picked when they are young. Some sources claim the fluoride content of organic tea is

significantly lower than non-organic tea because the plants are not grown in fluoride-based fertilizers and pesticides. However, it is unclear the degree to which organic fertilizers can also contribute to the fluoride content of the soil.*

Instant tea can also be high in fluoride. In the same 2005 study, Arizona lemon iced tea mix measured at 2.2 ppm while Luzianne iced tea bags topped the charts at a mean of 3.5 ppm.†

Fluoride Content of Wine

Wine is another potential source of fluoride. California grape growers use cryolite, a fluoride-based pesticide, to control two insects endemic to the area that can devastate crops.

In a five-year study conducted by California State University in Fresno, researchers found that the application of cryolite during the growing season

* For our discussion on this fluoride mystery, see [Fluoride Content of Organic vs. Non-Organic Tea](#).

† See the full chart of fluoride levels in instant tea at http://poisonfluoride.com/pfpc/html/tea_usa.html.

significantly increased the fluoride content of wine.⁶³

Fluoride levels in Zinfandel, Chardonnay, Cabernet Sauvignon, and several other types of wine ranged from 3 to 6 ppm. At 6 ppm, one glass of wine would provide the same amount of fluoride as a liter of “optimally” fluoridated water. Wine made from grapes not treated with cryolite ranged from 0.1 to 1.6 ppm of fluoride.

The European community upholds stricter regulations on the fluoride content of wine. To minimize fluoride exposure, it is best to select either imported wines or wines that are certified organic. Wines from U.S. vineyards that export to European markets are also likely to contain less fluoride.

Fluoride in Other Beverages

Other common beverages contain fluoride either because they were made with fluoridated water, are high in pesticide residue, or both.

In a study published in the Journal of the American Dental Association, researchers measured the fluoride concentrations of 332 soft

drinks. Over 70 percent had fluoride levels above 0.6 ppm.⁶⁴ Results varied substantially by production site, even within the same company and for the same product.

As with soft drinks, the amount of fluoride in beer is dependent on the fluoride content of the water used in the manufacturing process.⁶⁵

Fluoridated beer was one of the indicators that proved useful to me when I was first trying to diagnose my fluoroderma. My skin was showing improvement after my efforts to avoid fluoride, but I was not yet convinced that acne could be caused by fluoride ingestion.

I had begun ordering European beer because it is less likely to be made with fluoridated water. On one occasion, I ordered a Newcastle at a friend's wedding reception. By the end of the evening, I could feel a cystic outbreak forming on my chin.

That night, I confirmed through online research what my skin had already told me: Newcastle is one of the few cities in Europe that fluoridates its public water supply.⁶⁶ For fluoride-free beer, choose brands that are exclusively brewed in non-fluoridated countries such as Belgium.

Fruit juice can also be a significant source of fluoride. In a study published in the *Journal of Clinical Pediatric Dentistry*, researchers measured the fluoride content of 43 common fruit juice products. Almost half of the samples had more than 1 ppm of fluoride.⁶⁷

Additionally, the study determined that “pure” fruit juices, particularly grape juices, contained high concentrations of fluoride. Gerber’s white grape juice contained the most fluoride at 6.8 ppm. Juice made from grapes separated from the skin did not contain any fluoride.

To avoid fluoride in fruit juice, it is best to select an organic option that does not contain fluoridated water.

FOODS WITH FLUORIDE

The presence of fluoride in our modern food supply is even more insidious.

It took approximately two years of research, trial and error, and careful observation before I figured out which foods I must avoid to limit my fluoride consumption enough to heal my cystic acne. Here is what I learned.

Fluoride Content of Chicken

In all of my observations regarding fluoride-induced acne, chicken products caused the most severe outbreaks I experienced.

Formal studies on how fluoride affects animals are rare. As with humans, fluoride accumulates in their bones and skin. The primary source of fluoride exposure for chickens is their feed.

According to the final ruling from the EPA, dated July 15, 2005, the legal limit for fluoride residue on animal feed is 130 ppm.⁶⁸ That is 185 times greater than the proposed “optimal” level for humans, even though poultry are much smaller and therefore likely to be *less* tolerant of fluoride.

The legal limit for the meat produced on this feed is significantly less than what is allowed on the feed itself,^{*} but the EPA does not regulate the fluoride content of chicken bones or fat—the part of the animal where fluoride is known to accumulate.

* The same document sets the legal limit for beef meat at 40 ppm. It does not state the acceptable limit for chicken meat.

Chicken broth contains excessive amounts of fluoride when made in the traditional manner (from slow-simmered bones). A single bowl of wonton soup was enough to cause cystic welts down the front and back of my neck within hours.

Mechanically de-boned chicken is often high in fluoride because of traces of bone that end up in the finished product. This includes chicken nuggets, canned chicken, ground chicken, chicken hot dogs, and lunchmeat.*

A study published in the Journal of Agricultural Food Chemistry found that a single serving of chicken sticks would provide half of a child's upper safe limit for fluoride.⁶⁹

Organic chicken contains less fluoride than non-organic chicken, although I still developed breakouts from poultry labeled "organic." One fluoride researcher explained this to me by referencing an investigation by a Canadian news agency that found organic chickens are often

* Chicken products made for infants are especially dangerous because 1) they are mechanically de-boned and pureed, and 2) infants cannot tolerate the same amount of fluoride as adults. See, [Fluoride concentration of infant foods](#) by J.R. Heilman published in the Journal of the American Dental Association.

hatchlings from non-organic chickens. They contain less fluoride, but are not organic from the outset.⁷⁰

[My experience last Thanksgiving](#) confirms that turkey bones and skin can be a significant source of fluoride, as well.

Fluoride in Other Animal Products

Besides poultry, fluoride accumulates in the bones and fat of other animals in the food supply.⁷¹ Formal studies comparing the fluoride content of organic and non-organic animal products have not been conducted, so I was forced to rely on my built-in fluoride meter to determine which animal products to include in my diet.

From the information we covered about fluoride so far, it makes sense that the amount of fluoride in animal products depends on the age and metabolism of the animal combined with the level of fluoride exposure from feed and environmental sources.

Fish products such as sardines or canned salmon (where the bones are eaten along with the rest of

the fish) can contain fluoride in amounts over 4 ppm, or possibly much higher.^{72,73}

To confirm this information, I ordered the [“fantasy anchovy platter”](#) as an appetizer on a recent trip to Italy. My fluoroderma confirmed that fish bones are indeed a significant source of fluoride. I am able to eat wild-caught salmon without incident, although I do not consume the bones.

During my recovery from fluoroderma, I switched from the usual factory-farmed meat to animal products that are raised organically and on pasture. Such foods can be significantly more expensive than their industrial counterparts, but the health benefits (and the taste) were convincing enough for me to adjust my budget accordingly.*

Fluoride Content of Cereal

Dry breakfast cereals can be a significant source of fluoride, particularly if they are processed using fluoridated water.

* For a state-by-state directory of pasture-based farms, see <http://www.eatwild.com/products/index.html>.

Most cereals are produced through a process called extrusion. Grains are mixed with water, processed in a slurry, and placed in a revolving drum to dry. When the water from the slurry evaporates, any fluoride from the water remains in the cereal in concentrated amounts.⁷⁴

I do not eat cereal so I cannot attest to the fluoride content of various brands. According to NutritionData.com, oats contain the highest amount of fluoride (regular, quick, and instant) at .72 ppm. Raisin bran is listed second at .65 ppm.†

Even when the recommended serving size is exceeded, the typical American does not consume enough cereal on a daily basis to surpass the established safety limit.

Nevertheless, the fluoride in cereal contributes to harmful levels of exposure when combined with other common food sources.

† See the full ranking of breakfast cereals by fluoride content at NutritionData.com.

Other Fluoridated Foods

Because of the regular use of fluoride-based pesticides, many other foods can contain high amounts of fluoride.

Cryolite, the pesticide mentioned earlier as the cause of the high fluoride content of California wine, is also used on crops that produce potatoes, broccoli, squash, berries, lettuce, tomatoes, citrus fruits and several other common fruits and vegetables.*

The maximum contaminant level set by the EPA for most produce is 7 ppm (except for kiwifruit which has a residue tolerance of 15 ppm).

To limit your intake of this prevalent fluoride source, choose produce that is organically grown, especially for crops that are the most heavily sprayed with cryolite such as grapes and potatoes.

Another fluoride-based pesticide is sulfuryl fluoride, a toxic gas used since 2004 to fumigate

* For more details on cryolite and other fluoride-based pesticides, see [The Fluoride Action Network Pesticide Project](#), the only online database for fluoride and fluorinated pesticides.

food processing plants and food storage facilities. Because companies are not required to remove the food from the premises before fumigating, exceptionally high amounts of fluoride residue can be found on any food product that happens to be in the facility at the time of fumigation.[†]

Fortunately for those of us who suffer from fluoroderma, a persistent group of individuals from the [Fluoride Action Network](#), in conjunction with the [Environmental Working Group](#) and [Beyond Pesticides](#), have been working for nine years to discontinue the use of sulfuryl fluoride as a food fumigant.

In January 2011, the EPA announced its intention to phase-out the use of sulfuryl fluoride over the next three years. They cited the aggregate fluoride exposure to infants and young children as their primary reason for the change in policy.[‡]

Dining Out with Fluoroderma

[†] For a full list of foods that can be fumigated with sulfuryl fluoride, see [the sulfuryl fluoride page at fluoridealert.org](#).

[‡] For more details, see <http://www.epa.gov/pesticides/sulfuryl-fluoride/evaluations.html>.

The prevalence of fluoride in the U.S. food supply can make it difficult to limit your fluoride intake, especially when eating away from home.

In the early days of dealing with fluoroderma, I knew to avoid chicken soup and iced tea at a restaurant, but I often made the mistake of not recognizing the potential fluoride content of foods that require water for their preparation. Pasta and rice are obvious examples. Even mashed potatoes, tomato sauce, or steamed vegetables can contain enough fluoride to cause a fluoroderma reaction.

I now know to research a restaurant beforehand to determine if it uses fluoridated water so I can make my menu selections accordingly. Sometimes it is a simple matter of finding the local water quality report online. Other times, I've had to call the restaurant directly to ask which municipality provides their water supply.

Even if a restaurant is fluoridated, it is usually possible to find a menu item that is either grilled, roasted, or sautéed, therefore minimizing the level of fluoride in the meal. Salad is another option that is often relatively fluoride-free.

Once you start to familiarize yourself with the fluoridation status of the communities in your surrounding area, it will become easier to find a meal that satisfies your appetite without contributing to another fluoroderma flare-up.

NON-FOOD SOURCES OF FLUORIDE

In addition to dietary sources, it is important to be aware of the following potential sources of fluoride exposure when trying to prevent fluoride-induced acne.

Fluorinated Pharmaceuticals

Fluorinated drugs represent a different category of fluorine compounds than the fluorides used in dental products and the public water supply.

According to the [Fluoride Toxicity Research Collaborative](#), it is unclear to what extent, if any, fluorinated drugs increase the body burden of inorganic fluoride. Research from the relevant pharmaceutical companies is lacking in this area. However, fluorinated steroid creams applied to the face are known to cause acne around the mouth and chin.⁷⁵

Some of the common pharmaceuticals that contain fluorine compounds are anesthetics, antibiotics (fluoroquinolones), antidepressants (including Prozac and Paxil), antacids, steroids, anti-inflammatory agents, and several more.*

Non-Stick Cookware, Etc.

Fluoropolymers are produced from a synthetic fluoride-based compound that is not found in nature. They are used in the manufacturing of non-stick cookware and other common products, such as Scotchgard and Gore-Tex.⁷⁶

Teflon is the DuPont brand name for polytetrafluoroethylene. It is best known for its use as a non-stick coating in pans and other cookware.

In a study published in the Journal of Dental Research, researchers found that water boiled in a non-stick pot contained three times the amount of fluoride when compared with water from the same source boiled in stainless steel, pyrex, or aluminum vessels.⁷⁷

* For a more comprehensive list of fluorinated pharmaceuticals, see <http://www.slweb.org/ftrcfluorinatedpharm.html>.

Pest Control Solutions

Because of its toxic properties, fluoride is a common ingredient in many pest control products.

Sulfuryl fluoride is used to destroy several types of insect infestations, from termite colonies to bed bugs.[†]

Organic pest control options are increasing as homeowners become aware of the dangers associated with the promiscuous use of pesticides. Even in South Florida where insect problems are rampant, I was able to find a pest control specialist who is fastidious in using products that are safe for pets and humans.

Dental Products and Treatments

This one might be obvious but it should not be overlooked. Some people experience relief from fluoroderma simply by switching to a non-fluoridated toothpaste.⁷⁸

† For a comprehensive list of brand name products that contain sodium fluoride, see http://scorecard.goodguide.com/chemical-profiles/pesticides.tcl?edf_substance_id=7681-49-4.

Besides fluoridated toothpaste, other dental sources of fluoride include certain mouthwashes and in-office fluoride treatments. These treatments are usually considered optional for adults, but it is a good idea to call ahead to inform your dentist of your condition and to request a fluoride-free appointment.

To download a Fluoroderma Fact Sheet designed to help inform your dentist or other healthcare professional about fluoroderma, see [Fluoroderma Fact Sheet for Healthcare Providers](#).

With a little research, it is possible to find a dentist in your area who already understands the dangers of fluoride.

[FluorideFreeDentists.com](#) offers a directory of dental professionals “who are familiar with fluoride issues involving dentistry and oral healthcare.” Most holistic dentists, biological dentists, and mercury-free dentists are also understanding of fluoride concerns. Several online directories exist for those specialties, as well.

Fluoride Exposure in the Shower

I often receive questions about the amount of fluoride absorbed through the skin while bathing.

This is a subject that researchers have not formally studied, so again I am forced to rely on personal accounts of fluoroderma (including my own) to answer this question.

Soon after I began to suspect fluoride as the cause of my cystic acne, I installed a carbon shower filter to see if it would have an effect on my skin. I noticed an immediate improvement but it was not enough to heal my skin completely. I also noticed an increase in acne when the filter needed to be replaced.

Through my blog, I’ve heard from several other people with fluoroderma who experienced the same effect using shower filters. However, carbon shower filters are not certified to remove fluoride. It is possible the effect was from the removal of chlorination byproducts that were further irritating the skin.

Although I was avoiding every other source of fluoride described in this book, my acne did not heal completely until I moved to a non-fluoridated

residence. This could be because my body simply needed time to heal or because of the limits of the filtration systems I relied on to remove fluoride. Another possibility is that my body was absorbing fluoride through the skin.

The argument for fluoridated toothpaste is based on the body's ability to absorb topical applications of fluoride on the teeth. Yet research is lacking on the amount of fluoride absorbed through the skin.

If fluorinated steroid creams are able to cause acne when applied topically, is it possible that fluoridated water absorbed through the skin on a daily basis could do the same?

If you do not have the luxury of moving to a non-fluoridated home, another option is to have a plumber insert a fluoride-removing filter into your bathroom plumbing line. Activated alumina filters are said to remove fluoride although I have not tested this claim personally. Whole-house alumina filters are also available.

The long-term solution is to contact your local government and ask them to end the practice of public water fluoridation in your town. A template letter, written from the perspective of someone

who suffers from fluoroderma, can be downloaded at CelluliteInvestigation.com/fluoride-acne.^{*}

^{*} There are many other avenues you can pursue to support anti-fluoridation efforts in your community. See <http://www.fluoridealert.org/action.htm> for more details.

CHAPTER FOUR

Treating Fluoroderma Breakouts

The best treatment for fluoroderma is prevention. By avoiding the sources of fluoride described in Chapter Three, you will be able to prevent future breakouts from occurring.

But how does this information about fluoroderma affect how we should treat existing breakouts?

Fluoride-related acne will heal when fluoride exposure is adequately reduced, but the following treatment options will help speed the healing process along.

IMPROVING LYMPHATIC CIRCULATION

Any treatment that increases lymphatic circulation will improve the body's ability to heal acne.

In Western medicine, the lymphatic system is often described as "the secondary circulatory system." Like the cardiovascular system, the lymphatic system is connected to every organ in the human body through a network of capillaries, vessels, and ducts. Although it has a variety of functions, an important one is to remove waste from our cells.

Acne is a symptom of impaired lymphatic circulation.* If the lymphatic system was able to process all ingested fluoride through normal lymph channels, it would not be forced to send it

* Here is where the cellulite connection comes into play. As with acne, cellulite is also a sign of impaired lymphatic circulation. See [What Causes Cellulite](#) for more information.

out through the skin, a secondary pathway for detoxification.

So the question becomes, how can I improve lymphatic circulation?

Movement and Breath

The lymphatic system does not include a pump to circulate lymph throughout the body. Instead, lymph circulates as a result of a pressure gradient within lymphatic vessels. A series of one-way valves forces the lymph to flow in the appropriate direction.

Despite its importance, researchers are not clear on the exact dynamics of lymph propulsion.⁷⁹ Studies show that skeletal movement increases lymphatic circulation even when there is no correlating increase in heartbeat or blood flow.⁸⁰ Respiration is also known to increase lymphatic circulation.⁸¹

For these reasons and more, some experts in Traditional Chinese Medicine (TCM) and other Eastern healthcare traditions believe ancient movement practices, such as yoga and tai chi,

were specifically designed to increase the flow of lymph.*

Regular yoga, light walking, and deep breathing are some of the best exercises for improving lymphatic circulation.

Massage and Lymph Drainage Therapy

The network of lymph vessels in the head and face drain into a collection of lymph nodes in the neck.[†] Certain types of massage, especially around the neck and shoulders, can hasten the body's recovery from acne.

As I mentioned in the introduction, I witnessed immediate improvement with my acne when I received regular Lymph Drainage Therapy (LDT) treatments.

* The role of the breath in lymphatic circulation explains why the lungs are said to regulate the “water passages” in Traditional Chinese Medicine.

† These are the same glands that become swollen when the body is fighting an infection. This explains why fluoroderma can cause lumps in the earlobes and, in severe cases, acne down the front and back of the neck.

Lymph Drainage Therapists are trained to manually identify the pathway of lymphatic flow and then enhance lymph circulation through light, pulsing movements on the skin.*

Regular LDT sessions can be expensive. If you are lucky, your LDT practitioner will also provide some tips on how to perform lymphatic massage at home.

Other forms of light massage are likely to have a positive affect on acne, as well. The key is to be gentle (deep tissue massage can harm lymph circulation⁸²) and to always move in the direction of lymphatic flow.

Dry Skin Brushing

At The Cellulite Investigation, the first treatment I recommend for improving lymphatic flow is dry skin brushing.

Dry skin brushing is the simple practice of sweeping a natural-bristle brush across the skin in the direction of lymphatic flow. Over 70 percent

* Manual Lymph Drainage (MLD) is a related form of lymphatic massage developed in the 1930s.

of lymphatic flow is superficial, meaning it takes place near, or just under, the skin.⁸³ This flow is not directly stimulated by exercise.⁸⁴

Lymph capillaries are fragile vessels just one cell thick.⁸⁵ The gentle action of the brush against the skin stimulates the flow of lymph through these vessels.

My experience with dry skin brushing is what ignited my initial curiosity in finding a natural cure for cellulite (and consequently, acne). I knew it was working when, after just a few days of dry brushing, I developed an itchy rash on my legs and an enormous canker sore in my mouth. It seemed as if an irritant trapped under the skin was released to the surface. My fellow cellulite investigators have reported similar experiences with dry brushing.[†]

Lymphatic Flow and Rebounding

Some lymphatic specialists claim that bouncing on a mini-trampoline is an effective way to improve lymphatic circulation.

[†] For more information about dry skin brushing, see [How To Dry Brush Cellulite](#).

In a study published in the Journal of Applied Physiology, NASA scientists conclude that jumping on a trampoline produces a “biomechanical stimuli” up to 68 percent greater than running on a treadmill.⁸⁶ The difference is attributed to the g-force generated by the change in gravity at the height of each jump.

Few studies have been conducted to measure the precise affect of rebounding on lymphatic flow, but the anecdotal evidence from community forums on lymphedema is significant.*

REDUCING LYMPHATIC LOAD

Besides limiting fluoride exposure, there are other ways to reduce the load on the lymphatic system.

Enhancing Detox Through the Skin

Fluoroderma is the body's way of protecting against further accumulation of toxic amounts of fluoride in the teeth, skin, and bones. When

* For example, see this forum about lymphedema at <http://community.breastcancer.org/topic/64/conversation/681580>

lymphatic congestion prevents fluoride from being eliminated through the lymphatic pathways, it is released through the skin instead.

Besides Lymph Drainage Therapy, the fastest method I experienced for healing existing breakouts was through the use of a facial steamer.[†]

Saunas, hot Epsom salt baths, or any activity that causes you to work up a good sweat will also aid the skin in its detoxification efforts, thereby decreasing the strain on the lymphatic system.

I saw major improvements by steaming my face for twenty minutes a day a few times a week, although I did it more often if I had an important event approaching, such as a job interview, etc.

It is important to limit your fluoride exposure as much as possible when using a facial steamer. Otherwise, the excess fluoride could fuel a constant series of breakouts as the steam brings the additional fluoride to the surface.

[†] I use [this \\$30 facial steamer](#) from Conair (link to Amazon).

Eliminating Food Allergens and Trans Fats from the Diet

According to Dr. Thomas Cowan, author of [The Fourfold Path to Healing](#), anything that is not properly digested can end up in lymphatic fluid.*

Eliminating toxic additives, preservatives, and other hard-to-digest materials from your diet will help lymph flow more freely. Many women see their acne disappear when they avoid foods that contain gluten or other common food allergens, such as dairy or soy.

Dr. Cowan identifies one food that is particularly damaging to lymphatic health: trans fats. Trans fats are created in an industrial process that adds hydrogen to liquid vegetable oils to make them more solid. They are particularly detrimental to lymphatic health because of the critical role lymph plays in fat digestion.

Fat digestion begins in the small intestine where bile acids and enzymes break down dietary fat into smaller elements. These fatty elements are

* Read The Cellulite Investigation's interview with Dr. Cowan at [Announcing "Love Your Lymph" Month: Interview with Dr. Thomas Cowan on Lymphatic Health](#).

then absorbed through the intestine wall and carried into the body, not through the bloodstream (as with smaller food particles) but through the lymph.

Common sources of trans fats include fried foods, baked goods, coffee creamers, and butter substitutes. Avoid products with the terms "shortening" or "hydrogenated" on the ingredient label.

Even small amounts of trans fats should be avoided, especially if the product is consumed on a regular basis. Products can be advertised as "trans-fat free" if they contain less than half a gram of trans fat per suggested serving.

Reducing Exposure to Synthetic Chemicals

Mainstream physicians such as Dr. Oz are shining the spotlight on the toxic solutions found in household cleaners, cosmetics, personal care items, and other common chemical products.

It is unclear how much of an effect reducing my exposure to these chemicals had on my recovery from fluoroderma. But as I became more aware of how an unseen chemical like fluoride can affect

my body, it was only natural to wonder what effect other chemicals were having on my lymphatic system and overall health.

Over the course of my fluoroderma recovery, I changed almost every cleaning product or personal care item in my routine.

Health food stores and online retailers such as Vitacost.com are replete with more “conscious” alternatives to the heavily-marketed products offered at other stores.

NUTRITIONAL SUPPORT FOR LYMPHATIC HEALTH

Besides limiting fluoride exposure, there are other ways to reduce the load on the lymphatic system.

Colon cleanses and fasting are extreme ways to help the body detoxify. They are best conducted under the guidance of a knowledgeable healthcare provider.

For our purposes, such extremes are unnecessary and can even be harmful. It is more effective to make dietary changes that enhance the body's

natural detoxification capabilities in small ways on a daily basis.

Fermented Foods to Enhance Digestion

Holistic healthcare practitioners believe that nearly all disease begins in the gut.

According to traditional foods expert Dr. Thomas Cowan, the cornerstone of every natural treatment for acne begins by restoring healthy bowel flora to the digestive tract.⁸⁷ This means supplying the body with an abundance of healthy bacteria that line the intestinal walls.

Naturally-fermented foods and beverages are an important part of most traditional diets. They provide a source of the complete spectrum of probiotics currently lacking in the modern food supply.

Even familiar favorites such as ketchup, mustard, and relish were traditionally prepared as fermented foods for this same purpose.*

* For the history of America's favorite condiment, see [The Most Wanted List: Real Ketchup](#) at The Cellulite Investigation.

Dr. Cowan recommends ¼ to ½ cup of unpasteurized sauerkraut each day as a traditional source of probiotics.* In addition to the healthy bacteria in naturally-fermented sauerkraut, the high sulfur content of cabbage is especially beneficial for cleansing the skin.⁸⁸

If you are not fond of sauerkraut, a host of other fermented foods can help repopulate the bacteria in the gut, from salsa or fermented salad dressing to raw cheeses or kimchi.

In her revolutionary cookbook, [Nourishing Traditions](#), Sally Fallon includes an entire chapter devoted to lacto-fermented recipes. [Wild Fermentation](#) by Sandor Katz is another resource for preparing fermented foods at home.

Fat-Soluble Nutrients

When we consume water-soluble nutrients, they are absorbed directly into the bloodstream. Fat-soluble vitamins (vitamins A, D, E, and K) and

* Whole Foods sells two brands of unpasteurized sauerkraut, [Bubbies](#) and [Cortland Valley Organic](#).

essential fatty acids are absorbed through the lymphatic system.

Because conventional wisdom claims that dietary fat causes obesity and heart disease, many people are hesitant to include fats of any kind in their diet, except for limited amounts of the unsaturated fats found in olive oil or nuts. This reasoning has led to an epidemic deficiency in critical fat-soluble nutrients and essential fatty acids.^{89,90,91,92}

The richest source of these nutrients are foods that are high in fat—even saturated fat. By avoiding such foods, we deprive the lymphatic system of one of its primary functions: the absorption of fat-soluble nutrients for delivery to the bloodstream.

A growing body of research indicates that saturated fats do not contribute to heart disease or obesity as is commonly believed; rather, saturated fats offer a dense source of fat-soluble nutrients currently missing from the modern diet.[†]

[†] For a scientific rebuttal of the “lipid-hypothesis” of heart disease and obesity see [The Cholesterol Myths](#) by Dr. Uffe Ravnskov or [Good Calories, Bad Calories](#) by Gary Taubes.

Non-industrialized societies went to great lengths to eat abundant amounts of saturated fats from a variety of sources, including coconut oil, dairy products, butter, ghee, seafood, beef tallow, and even lard.*

Instead of suffering from staggering rates of heart disease and obesity, these conditions were virtually unheard of in non-industrialized societies until they started eating “the foods of modern commerce,” such as sugar, flour, vegetable oil, and canned goods.

Researchers have yet to identify all the ways fat-soluble vitamins are used by the body.

Common acne medications such as Accutane and Retin-A are derivative forms of vitamin A, a fat-soluble nutrient. Including ample amounts of fat-soluble vitamins in the diet is a more natural way to improve skin health without risking the harsh side effects of most acne medications.

* Dr. Weston A. Price provides a fascinating firsthand account of non-industrialized diets in [Nutrition and Physical Degeneration](#), published after a decade of travel in the early 1900s.

For his acne patients, Dr. Cowan recommends plenty of organic butter (preferably raw) from grass-fed cows, in addition to cod liver oil. Cod liver oil contains more vitamin A and D per unit weight than any other common food, and its nutritional benefits have been recognized in history as far back as Roman times.^{93,†}

If you are hesitant to add saturated fat to your diet, virgin coconut oil is a good place to start. It is composed primarily of medium chain fatty acids that makes it easier to digest.[‡]

The Lymphatic Herbs

Several herbs are designated as “lymphatic herbs” because of their ability to promote healthy lymph circulation.

† Until the nineteenth century, cod liver oil was traditionally prepared as a fermented food. The only brand of cod liver oil I know of that is produced using the traditional method is Blue Ice Fermented Cod Liver Oil available at GreenPastures.org.

‡ For more information about the health benefits of coconut oil, see [Eat Fat, Lose Fat](#) by Sally Fallon and Dr. Mary Enig or [Coconut Cures](#) by Dr. Bruce Fife.

Burdock root is a lymphatic herb that has been used in traditional medicine for thousands of years. Herbalists recommend it for acute skin conditions, taken either internally as a tea or applied externally as a wash.⁹⁴

Cleavers, poke root, and red root are other examples of herbs that have a reputation for enhancing lymphatic function.⁹⁵

Since herbs can have potent medicinal effects, it is best to seek the guidance of an experienced herbalist before attempting to use herbal remedies to treat any medical condition.

SKINCARE ROUTINE FOR FLUORODERMA

Perhaps some would find it strange that an informational guide to treating acne scarcely mentions skincare products.

For those who suffer from fluoroderma, the products you choose to wash, tone, treat, and moisturize your skin are not a significant factor in healing your acne. Chances are, they are aggravating the problem.

As Kat James explains in [The Truth About Beauty](#), even expensive skincare products usually contain a small amount of the advertised ingredient inside a “toxic soup” of questionable chemicals.*

When I realized the true cause of my acne, I was finally free from the obsessive 5-step treatment regimens advocated by the multi-billion dollar skincare industry. My skin continued to improve as long as I avoided fluoride, regardless of which products I applied topically.

I eventually abandoned all brand-name skincare products. There are many natural and more effective alternatives for cleansing the skin.

For those of you who are curious, I will describe the two regimens I have come to rely on in my skincare routine. These are not the only natural methods out there, but they might give you an idea of where to start if you are eager to break your reliance on the bloated skincare industry.

* For an excellent resource on locating healthier personal care products, see the sixty-page [Living Beauty Resource Guide](#) in the back of Kat’s book.

The Oil Cleansing Method

It sounds counter-intuitive to cleanse acne-prone skin with oil, but once you understand the true cause of acne, it makes perfect sense.

A common mantra in the skincare industry is that acne is caused by excess oil that blocks the pores.* This is analogous to the claim that drunkenness is caused by excess alcohol in the bloodstream. These explanations are true, but hardly satisfying because they do not address the root cause of the problem.

Once we understand that excess oil is the body's way of increasing detoxification through the skin, cleansing the skin with oil becomes a logical option.

The oil cleansing method is based on the scientific principle that "like dissolves like."[†] The oil used to cleanse the skin will dissolve the oil that is

* For examples, see the FAQ sections at Proactiv.com, Murad.com, Dermalogica.com, etc.

† For those of us who are not scientifically minded, see a further explanation at HumanTouchofChemistry.com.

blocking the pores without stripping the skin of its natural moisturizing agents.

Many different types of oil can be used for oil cleansing. The most common instructions call for a mixture of no more than 30 percent castor oil mixed in olive oil, almond oil, or another lighter oil base.

Before going to bed, a generous amount of oil is massaged into the face. When the pores are sufficiently saturated, a hot washcloth is held against the skin to "steam" the face and help remove oil from the pores. Then the washcloth is used to gently wipe the oil from the skin.[‡]

The "steaming" process can be repeated a few times until the oil is removed from the skin. If your skin feels like it needs a moisturizer afterward, you can rub a drop or two of oil directly into the skin.

My skin responded well to oil cleansing but some people report a sensitivity to certain oils. It is best to start slow, especially if you are using castor oil, a potent anti-inflammatory.

‡ For more detailed instructions for oil cleansing, see TheOilCleansingMethod.com.

Discontinue oil cleansing if any negative side effects develop.

Now that my skin is no longer prone to acne, I still use the oil cleansing method but only on occasion.

I use an adapted method when traveling in a fluoridated city. Instead of steaming my face with a hot washcloth, I gently remove the oil using a cloth moistened with bottled water. This method is effective for removing makeup (even waterproof mascara) and prevents me from having to use fluoridated water to wash my face.

My Current Skincare Routine

After reading [Absolute Beauty](#) by Pratima Raichur, I decided to adapt my skincare routine to use some of the ayurvedic techniques described in her book.*

Dr. Raichur does not shy away from using oil on the face. Yet instead of recommending it as a

* Ayurveda is an ancient healthcare tradition from India.

cleanser, she suggests it as a “nourishing” step afterward. To cleanse sensitive skin, she recommends goat milk powder mixed with almond meal and ground orange peel.

Grinding orange peels sounded complicated, so I started by cleansing my face with dried goat milk and chickpea flour (chickpea flour is cheaper than almond meal and recommended elsewhere in the book). The flour irritated my eyes so I ended up washing my face with goat milk powder alone.

My favorite toner is diluted apple cider vinegar. It helps remove any residual dirt or makeup although, truth be told, I regularly skip this step without consequence.

After cleansing, Dr. Raichur recommends different oil blends for various skin types. Some recipes include expensive ingredients such as sandalwood or rose oil, but others are more affordable. My favorite moisturizer is a few drops of plain coconut oil massaged into the skin each night.

Approximately twice a week, I exfoliate my skin in the shower using my ExfolAway, a simple

instrument based on the design of a common bath tool used in ancient Greece and Rome.*

If I am feeling indulgent, I will apply an egg yolk mask, sometimes mixed with raw honey.

According to Kat James, author of [The Truth About Beauty](#), the phospholipids in egg yolks are ideal for rebuilding the hydrolipid barrier in the skin.†

These minimalist methods works well for my skin and I continue to use them today—further proof that healing fluoroderma is not a function of topical skincare.

* See [A Modern Strigil: ExfolAway from QVC](#).

† See [Kat James on Bringing Back Your 'Virgin' Skin](#).

CHAPTER FIVE

True Healing from Fluoroderma

The information presented thus far is enough to heal fluoride-induced acne and prevent future breakouts from occurring. But is this the extent of healing we can expect with fluoroderma?

After the evidence of fluoroderma disappeared from my face, I wondered if there was a way to

eliminate the unseen evidence of fluoride accumulation from other parts of my body.

There is a dearth of scientific research on fluoride detoxification. Internet searches reveal untested claims for a variety of methods, from cilantro and saunas to liver cleanses and borax.

Identifying a scientific basis for any fluoride detox method is a challenge.

IODINE AND FLUORIDE DISPLACEMENT

Because the medical community in general does not recognize fluoride's potential health risks, few studies have been conducted about the body's ability to release fluoride. The exception is found in a specific volume of research surrounding the relationship between fluoride and iodine.

"Orthiodosupplementation"

Most studies on the interaction of fluoride and iodine come from a small group of researchers participating in what is known as "The Iodine

Project." Started in 1997, this research effort is led by Dr. Guy E. Abraham, a former professor of obstetrics, gynecology, and endocrinology at UCLA School of Medicine.*

By measuring urinary excretion of fluoride following iodine ingestion, members of The Iodine Project make the argument that iodine is able to displace fluoride from the body.^{96,97} They recommend iodine supplements (i.e. orthoiodo-supplementation) in doses far higher than the rest of the medical community.

Dr. Abraham and his colleagues believe the human requirement for iodine is 1,500 mcg per day. This is ten times greater than the accepted Recommended Daily Allowance of 150 mcg.

Furthermore, they argue that most people now require daily amounts from 5,000 to 50,000 mcg because of widespread bromide and fluoride exposure that counteracts the effects of iodine.

* Read the published articles from The Iodine Project at http://www.optimox.com/pics/Iodine/opt_Research_I.shtml.

My Experience with Iodine Supplements

The arguments put forth by researchers in The Iodine Project are controversial. Some doctors warn that high doses of iodine can lead to fatal heart failure. Details of the scientific debate surrounding iodine supplementation are available online.†

Rather than explaining the nuances of the controversy over iodine supplementation, I will simply tell you about my experience with iodine supplements, including how I chose which supplement to use and how my body reacted to them.

By this point, my research into nutrition for The Cellulite Investigation made me a firm believer in the healing capacity of nutrient-dense foods and food-based supplements.

The daily amount of iodine recommended by Dr. Abraham went against this principle. Such high levels of iodine are not possible without supplementation with an iodine solution such as

† For details of the debate over iodine supplementation, see http://www.iodine4health.com/ortho/debate_ortho.htm.

Lugol's or Iodoral.⁹⁸ Even seaweed cannot provide iodine in these amounts.

Instead of taking large daily doses of iodine as recommended by Dr. Abraham, I decided to start by increasing my consumption of iodine-rich foods, such as sea vegetables and shellfish. I also began taking kelp capsules. I did not notice any signs that my body was displacing fluoride at this time.

I then started taking Iodomere, an iodine supplement from Standard Process. The single daily tablet provides 200 mcg of iodine derived from conch, a type of shellfish. This is slightly more than the Recommended Daily Allowance but drastically less than the amount recommended by the doctors in The Iodine Project.

Within days of taking the supplement, I developed a pronounced area of fluid retention around my upper abdomen. A single glass of water or piece of fruit caused my stomach to swell like a balloon.

Reading through online forums about iodine supplementation, I learned that fluid retention in the upper GI tract is a common side effect. It continued for the next several weeks until I stopped taking the iodine supplement.

On multiple occasions, I also noticed heart palpitations which I only experienced while taking the supplement. This was one of the main reasons I stopped taking the iodine tablets.

Persistent breakouts on my chin and forehead were another side effect of the iodine supplement. My face cleared completely when I discontinued the treatment.

The doctors involved with The Iodine Project claim these types of side effects are less common with the type of iodine used in their studies. The specialist at Hakala Research Laboratories suggested that the fluid retention I experienced was caused by trace amounts of corn in the supplement I was using. This explanation, however, did not resonate with me. I never noticed a sensitivity to corn products before.

It was unclear whether or not the iodine was displacing fluoride from my body, but I was certain it was doing *something*.

AN ALTERNATIVE THEORY FOR FLUORIDE DISPLACEMENT

I was puzzled by my body's reaction to the iodine supplement. I contemplated switching to the type of iodine recommended by Dr. Abraham but the large doses were concerning.

That is when Charles Hakala, the research specialists at Hakala Labs and co-author with Dr. Abraham of multiple papers for The Iodine Project, mentioned a small piece of information that altered my approach to fluoride detox.

He told me boron might be even more effective than iodine at displacing fluoride from the body.

Boron does not receive much attention in the nutrition world. This was the first I had heard of it in relation to fluoride.

Hakala was planning to gather a small test group to research the theory further. The method would be similar to the urinary iodine loading test except subjects would be given a boron supplement in place of the iodine tablet.

Given my strong belief in the healing properties of nutrient-dense foods —and because I did not want to wait decades for the medical community to reach a consensus —I decided to conduct a research experiment of my own.

Boron and Fluoride Detox

My first step was to find evidence of the boron/fluoride connection. The research was sparse.

A study conducted in 1942 on insects and rats concluded that boron binds with fluoride and “has some value as an antidote” to fluorine.⁹⁹

Research conducted on rabbits led to the same conclusion. “The high fluoride content in bone... decreases with the addition of boron.”^{100,101}

Eventually, I came across a study performed by medical researchers in China who used borax to treat 31 human patients with skeletal fluorosis. By observing symptoms and monitoring urinary excretion of fluoride, the researchers concluded that boron effectively counteracts symptoms of fluoride toxicity in humans.¹⁰²

Other studies indicate that daily boron supplementation is an effective treatment for osteoporosis and arthritis by preventing calcium loss and bone demineralization.^{103,104}

The research was not overwhelming, but it was enough to keep me intrigued by the theory.

Food Sources of Boron

A few alternative healthcare sources, such as the popular [Earth Clinic](#) site, recommend borax as a folk remedy for displacing fluoride from the body. Borax is a compound form of boron with oxygen and sodium attached. It is commonly found next to baking soda in the laundry aisle (under the brand name "[20 Mule](#)").

To detox fluoride, Earth Clinic recommends drinking a liter of water with a pinch of added borax a few times a week. Forum participants reported strong detox reactions and the clearing of fluoride-related symptoms.

I was skeptical of the borax remedy. I did not know if it was safe to consume a substance I currently used to clean my toilet. Instead of resorting to borax, I decided to see what would happen if I increased the amount of boron in my diet.

The list of common foods that are rich in boron includes grapes, raisins, prunes, dates, pears,

nuts, peas, and beans. Most sources claim meat and fish are poor sources of boron.*

Having studied the subject of "traditional diets" for The Cellulite Investigation, I knew most non-industrialized societies relied on slow-simmered bone broths as their primary source of minerals.. Back when chicken soup was known as a healing food, it was made by simmering chicken bones, connective tissue, and other leftover parts for several hours in a large stock pot.

At this time, I was just beginning to realize the potential anti-cellulite properties of homemade broth (it contains collagen, glucosamine, and other micronutrients needed for healthy connective tissue).[†] Could bone broth be the ultimate cure for fluoroderma, too?

Homemade bone broth is said to contain all the trace minerals needed to maintain healthy bones, but I could not find any nutritional data on its boron content.

* For a typical nutrition data sheet for boron, see http://www.lef.org/abstracts/codex/boron_index.htm.

[†] See [Glucosamine-Rich Foods as a Cellulite Treatment](#).

Studies conducted on chickens show that dietary boron significantly increases bone health by improving bone development.^{105,106,107} Does this mean boron accumulates in chicken bones and could end up in bone broth?

None of the nutritional data sheets I found for boron mention the boron content of chicken soup. Most focus on ground meat or milk and then use this data to conclude that animal products are not a significant source of boron.

After much digging, I came across the boron data sheet written by the International Programme on Chemical Safety (IPCS), an international group of scientists sponsored by the World Health Organization.¹⁰⁸ This document contains ample information about the bioaccumulation of boron in a variety of species.

Oysters, salmon, rats, and humans were just a few of the species shown to absorb boron from dietary sources, especially in bone tissue. Studies show boron remained in bone for several weeks after the source of dietary boron was removed.

Based on this information, I was confident that homemade broth would contain boron if it was made from animal bones that contain boron. I

decided to buy the highest quality animal bones I could find and test the theory for myself.

Why Not Take a Boron Supplement?

Taking a boron supplement would be simpler than making homemade broth every week, but I chose to start with the latter because it fit with my overall food philosophy.

Researchers are just starting to recognize boron as an effective way to displace fluoride. Perhaps other minerals in the broth could play a role in the process, as well.

Toxicology textbooks identify calcium and magnesium as antidotes for fluoride poisoning because they bind with fluoride and minimize further absorption.¹⁰⁹ Homemade bone broth also contains these minerals and more.

Since my intention was to heal bone and connective tissue (the parts of the body where fluoride tends to accumulate), it made sense to treat these areas by consuming foods made from bones and connective tissue. Perhaps they would provide the raw material my body needed to heal itself.

MY EXPERIENCE USING BORON TO DETOX FLUORIDE

One of the most challenging aspects of testing the boron theory was finding quality animal bones with which to make the broth.

For my first attempt at homemade broth, I used poultry bones to make old-fashioned chicken soup. Yet even the chicken labeled “organic” contained enough fluoride to cause my skin to breakout. Turkey bones had the same effect.

I decided to try beef stock, instead. Cows are ruminants. They eat mostly grass, as opposed to chickens that frequently subsist on pesticide-laden feed.

For this reason, I wanted to only use bones from pastured animals, meaning they spend their lives outside eating grass. Ideally, the grass they eat would not be treated with pesticides or phosphate fertilizers and the cows would not drink fluoridated water, either.

To find quality soup bones, consult your local butcher or farmer who raises cattle. You can also

order them online from companies such as U.S. Wellness Meats.*

Early Symptoms of Fluoride Detox

I used both lamb and beef bones to test my theory that homemade broth will displace fluoride from the body. I started by consuming the broth three to four times per week.

It did not take long before I started noticing symptoms of fluoride detox. It started with persistent headaches that lingered for days at a time. My throat was intermittently sore, which could have been caused by the lymph glands in my neck reacting with the displaced fluoride.

I also noticed a pronounced ache in my bones and joints. It was most distinct in my hands and elbows but I felt it elsewhere, too. All of these symptoms subsided immediately when I stopped drinking the broth.

After I drank the stock for a few days, my skin started to breakout so I took take a few days off

* Their slogan is “our animals eat right so you can too.” See, www.grasslandbeef.com for product and ordering information.

to let my body eliminate any displaced fluoride. It is possible that these side effects were caused by the presence of fluoride in the broth. Cows can accumulate fluoride in their bones, too.

Nevertheless, I made a conscious decision to increase the intensity of the experiment and carefully monitor any side effects. I began consuming broth every day for breakfast. If it was successfully displacing fluoride, the detox symptoms would eventually subside.

Boron, Fluoride Detox, and Acute Fluoride Poisoning

In addition to consuming bone broth every day, I also decided to increase my boron intake by taking a mineral supplement. I chose Dr. Ron's Cal-Mag mineral supplement because it is made from raw bones of pastured cattle.

Microcrystalline hydroxyapatite concentrate (MCHC) is a highly absorptive source of calcium and contains the full spectrum of trace minerals that comprise healthy bone. Six capsules of Dr. Ron's mineral supplement contain a milligram of boron in addition to calcium, phosphorous, magnesium, manganese and other nutrients.

I began by taking one or two capsules twice a day. I wanted to observe any possible side effects before working up to the recommended dosage of six capsules per day.

Within days, I developed the same symptoms I experienced from the iodine supplement: fluid retention and acne. I stopped taking the supplement for a few days and the symptoms went away.

The bloating returned immediately when I resumed taking the supplement. It seemed like a harmless side effect so I decided to continue the experiment.

One morning, instead of taking two capsules I increased the amount to three. By lunchtime, the fluid retention around my stomach was at its worst since I started the detox. A few hours later, I started experiencing cramps and nausea.

By the next morning, it felt as if I had full-blown food poisoning. I knew something was seriously wrong when I had to rush outside just to escape the smell of bacon.

I had all the classic symptoms of acute fluoride poisoning: abdominal cramping, nausea,

weakness, dizziness, and diarrhea. When water authorities accidentally add too much fluoride to the water supply, these are the first symptoms people report.*

Is it possible that the boron in the mineral supplement displaced enough fluoride to cause acute fluoride poisoning? Perhaps it was food poisoning, after all. The only way to know for sure was to see if it happened again.

The thought of returning to such a sickened state did not appeal to me, but I had to know if the minerals could have caused such a potent reaction.

First, I waited for the symptoms to clear. They lasted approximately 24 hours, although I was not able to eat anything for nearly two days. When I felt like I was back to full health, I resumed the experiment. I decided I would take just one or two pills a day, and then wait for the weekend to add more so I would not be sick for work.

* For news coverage of such incidents, see <http://www.fluoridealert.org/health/accidents/>.

I took two pills on Wednesday evening and by the next morning, all the symptoms of acute fluoride poisoning had returned.

This time, the symptoms lasted less than 24 hours. I was able to eat a small meal by the evening and returned to work the following day.

I repeated the experiment one more time that weekend. I started with two pills on Friday night, then three more on Saturday morning. The fluid retention returned but it was not as severe as it was before, so I took two more pills on Saturday night. Before I went to bed, I felt the same extreme bloating I previously felt prior to the onset of symptoms.

Instead of waking up feeling nauseous, this time I awoke with a severe headache. It went away after I drank a large glass of water. I was surprised how quickly it dissipated, considering how strong it felt when I first woke up.

These three instances were enough to convince me that *something* in the supplement was triggering a strong reaction in my body. Whether it was caused by boron or another element is yet to be known.

The Fluoride Detox Continues

Following my experience with the mineral supplement, I halted my fluoride detox experiment for several weeks to give my body a chance to heal.

I made use of the time off to reassess my detox strategy. It was nearly impossible to know if the reactions from the bone broth were caused by boron displacing fluoride from my body, or by the presence of fluoride itself in the broth. Was I healing my fluoroderma or making it worse?

In my current round of fluoride detox efforts, I am still using food sources of boron but I decided to rely on ones that are unlikely to contain fluoride.

Prunes and dates are particularly high in boron. Prunes contain approximately 2.7 mg of boron per 100 grams (or .22 mg per prune). Dates contain about one third that amount.

Research indicates that prunes significantly improve bone health. As mentioned previously, bone disease is another symptom of fluoride toxicity).¹¹⁰ Is it a coincidence that prunes are a

national treasure in France* where the rate of rheumatoid arthritis is lower than in the United States, Japan, or any other country in Europe?¹¹¹

Prunes are enjoyable to snack on and the amount of boron in each one makes it easy to control the dosage. I started by eating a single prune per day. Even that small amount was enough to cause a skin reaction the first few times. Eventually, I increased the amount to 2-3 prunes per day without seeing a reaction. I am currently working on building up to a full serving.[†]

Raisins are also high in boron, but I continue to avoid them as a precaution because of their potentially high fluoride content.

My skin remains effortlessly clear of acne as long as I don't push my detox efforts too far, but I suspect it will take awhile for my body to release the fluoride it slowly accumulated over the past thirty years.

* See [Prunes: Better than the Chocolates in Paris](#) at LaTimes.com

† To read more about my latest adventures in fluoride detox, visit [The Cellulite Investigation Blog](#).

I could stop being concerned with fluoride now that I have my acne figured out, but it is important to me that I fully complete the healing process. It would be naïve to assume the skin on my face is the only part of my body negatively affected by fluoride. What other side effects have been developing *underneath the surface*?

Fluoride is such a prevalent (yet unnatural) element in our food supply that many of the symptoms we think of as “normal” could more accurately be classified as “normal for people who regularly consume excess amounts of fluoride.”

There is a reason my interest in fluoride began as part of an investigation on cellulite, but that is a story for another book.

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