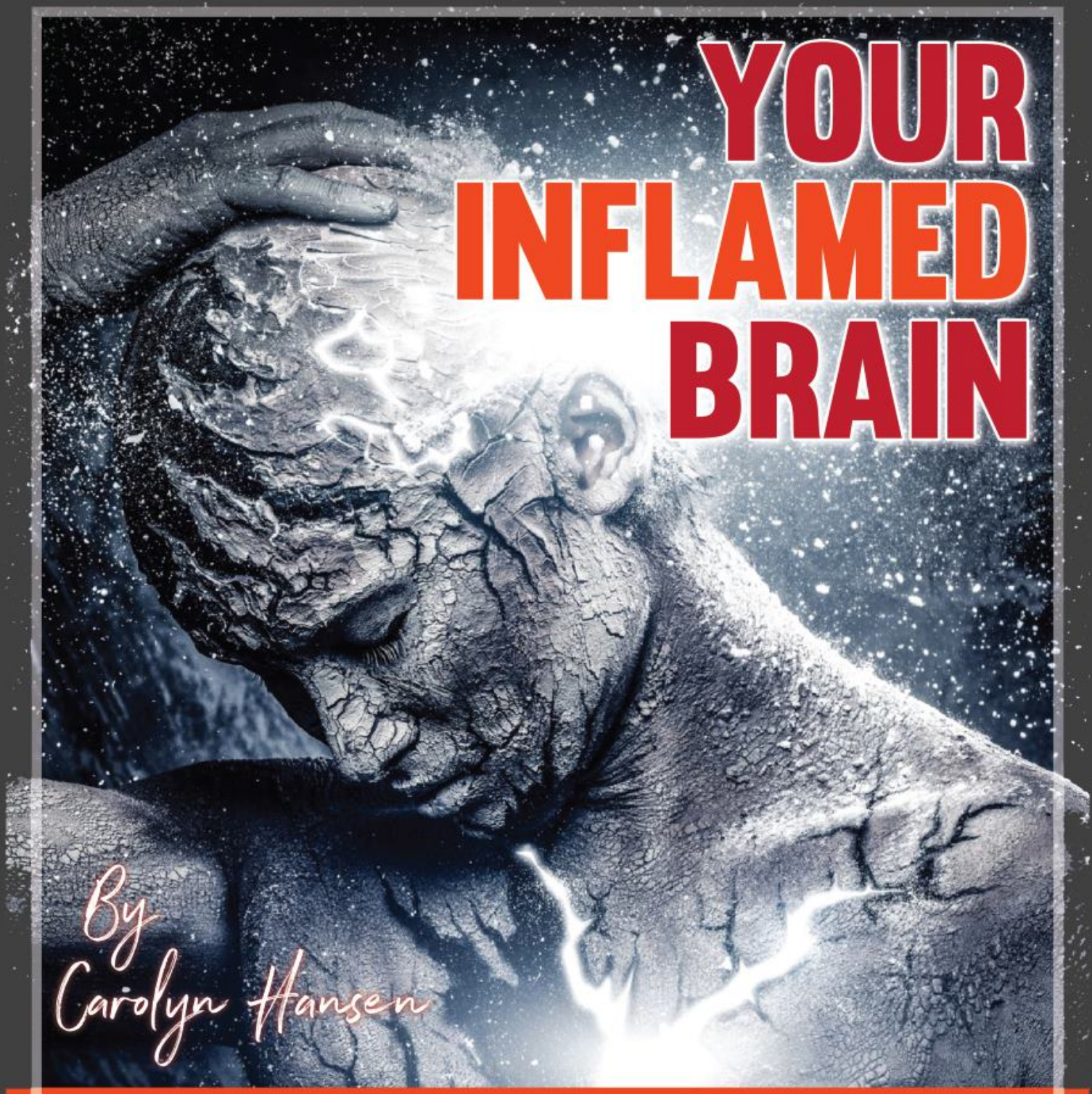

YOUR INFLAMED BRAIN

By Carolyn Hansen

THE TRUTH ABOUT THE IMPENDING STORM BREWING IN YOUR HEAD

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The Brewing Storm In Your Brain

What if I told you that right now there is a storm brewing inside you, and that the prolonged effect of this storm that stirs in intensity as the years roll by could be real hardship?

And not just mental anguish and fear as you watch your life slowly spiral out of control...

But real resentment at having seemingly drawn the short straw in life.

I expect you would want to know more about that, right?

Especially if there was a way to avoid it, which there is.

My name is Carolyn Hansen, and while I have spent decades devoting myself to the improvement of my physical fitness and general well-being (and spending much of that time helping others do the same), for several years now I have focused more closely on brain health.

You will understand my motivation for making this change of direction shortly, after I have related to you my personal story.

But first, allow me to explain the exact purpose of this short report.

It is to clarify why it is that the lives of roughly one third of the population will be derailed by the time they reach 85 years of age, and how in every case the arc of this disruption can be traced back to a single starting point.

One that can be characterized as brain inflammation.

If you are already thinking this does not sound like it applies to you, you may well be correct.

You might *not* end up being the unlucky one in every three people who go down this road.

So to see whether you might be right about that... allow me to ask you a question.

This will help us determine whether you might be at the other end of the spectrum - in the safe zone.

Here's my question to you: Are you entirely happy with the performance of your brain and your outlook on life?

Or have you ever wondered why it is that some people, often many years, even decades, senior to you seem to be able present themselves with unbridled levels of enthusiasm and energy, and a degree of clarity of thought that just leaves you feeling dumbfounded?

You know the kind.

Somehow these people seem to have it all figured out.

It is like they are plugged into an endless source of energy and vitality.

So how do they manage it?

How can they look and sound like a million bucks while the rest of us will often struggle just to make it through to the end of the day without collapsing into a jumbled mess?

And am I really going to tell you that what it may boil down to in the end is nothing more than the possibility that while you might be saddled with an inflamed brain and all the complications that go with it, they are not?

Yes - that is exactly what I am going to suggest!

And the reason I am prepared to hazard this guess is because inflamed brains are a shockingly common (but hidden) part of our everyday

experience.

They just do not get a whole lot attention because we interpret the consequences and the symptoms of an inflamed brain in ways that seem acceptable and inevitable. We interpret the inflamed brain as just a part of the normal aging experience when in fact it is anything but that!

Let me show you what I mean.

Consider for a moment the following symptoms of a brain that no longer feels as though it is performing at its prime.

Perhaps because it is "aging" and necessarily subject to the diminishments of time.

At any rate, you often:

• *Feel fatigued, with the kind of weariness that sleep does not fix*

• *Feel "sick" but with no clear symptoms you can point to*

• *Feel lethargic even when you feel otherwise perfectly fine*

• *Feel depressed or anxious even though circumstances have not changed*

• *Have little interest in socializing (though it wasn't always that way)*

• *Feel irritable, without good cause*

• *Have trouble remembering recent events ("Did I do that, or did I just think about doing it?")*

• *Have trouble memorizing things you are going to need to know later on*

- *Experience episodes of increased pain sensitivity*

- *Cannot muster interest in sex*

- *Have trouble sleeping*

Most people will reach middle age and begin experiencing at least some of these symptoms. When they do they will often assume they are experiencing the first signs of "old age". I am going to show you why this assumption is often wrong, and that what is really going on is largely "in your head".

You will notice that this list of ours is quite long.

Sufficiently long, in fact, that if you do not spot a single symptom on the list that seems to apply to you then you may well NOT need to read another word of this book.

You may have exactly the kind of brain the rest of us secretly longs for.

The tireless, sharp-as-a-tack brain. The brain which impresses with a steel-trap memory that gets compliments each time it is able to call someone out by name even though it might only ever have encountered that person once before in its lifetime.

But if the "feel like a million bucks" brain does not accurately describe what YOUR brain often feels like, then I encourage you to keep reading. I will show you what it is that might be putting a dampener on things. More importantly, I might also be able to show you how to change that.

Now, about that list. If you have noticed the contents seem to comport rather closely to symptoms you might experience if you were to fall physically ill, I can confirm that this is indeed no coincidence.

That is because these symptoms - symptoms we often assume are natural markers of "old age" - are the same ones we would expect if our brain was literally under attack by microbial invaders. Or if it was responding to the marshaling of our body's immune system in response to an attack outside of our skull (for example, in the liver, the intestinal tract, the lungs...)

The end result in either case, as we will see later, is an inflamed brain. A brain with a significantly reduced capacity to function the way we would like it to function.

The Self-Feeding Storm

OK, so I have suggested there might be an issue with neuroinflammation and that it could spell trouble for you down the road.

But how much trouble are we talking about? Why should you care enough to finish reading this report?

To give you an extreme example of the kind of threat I have in mind, let's consider for a moment the case of my mother.

For years she managed to hide the severity of what was happening to her mind. In part because she lived on her own away from the world. But also I suspect, because of her general incuriosity about anything relating to her own health and well-being.

She thought it was I who had a screw loose because of the time I spent fixated on my physical fitness pursuits.

So while I puffed and grunted under the weight of loaded iron plates at the gym she far preferred the relaxed pace of her solitary gardening

activities.

So as her condition worsened out of sight of the rest of the family, very likely even she managed to remain ignorant of the changes going on inside her.

Then the day came when finally none of us could deny any longer that she had stepped across the line that marks the limit of self-awareness and mental competence, and we understood to our horror that she was never coming back.

I talk more about what happened to my mother on the home page for my Ageless Brain protocol.

In her case what appeared to be a sudden transition was likely what brain scientists might call a cascade effect. Her brain had become primed for a kind of chain-reacting mental dissolution that only required the right trigger to get it underway.

This is one of the perils associated with extreme brain inflammation.

When my mother tripped and broke her wrist she endured the same mild trauma that anyone might who suddenly found themselves whisked away for prompt medical treatment. But for her this was more than her brain

was prepared to handle, and within a span of 24 hours I was looking into the eyes of someone who had no idea who I was.

To this day I feel a certain measure of guilt because I never properly cottoned on to what was happening to her. I accepted that she was a little "eccentric". I never suspected she might truly be sick.

But I also know now that brain inflammation gets underway LONG before anyone suspects it might be doing them harm or they begin exhibiting symptoms of its progression.

Indeed, unless you know what to look for you would never suspect it is taking place. You will mistake the symptoms (some of which are found in our list) for general malaise, the stresses of life, anything but what it actually is.

Because who ever sits you down and explains that your brain might be on fire?

As we will see in the following pages, dementia is typically preceded by years, even decades of inflammation. And for the entire time that it is happening, your brain is marshaling an immune response against itself in a vain attempt to put out a fire it cannot possibly succeed in quenching.

In fact, the auto-immune response of the brain to inflammation only serves to make the problem worse.

We will see how that happens shortly, resulting in a kind of snowballing of damage in the brain that eventually begins to take on the characteristics we recognize as indicative of real cognitive decline: worsening memory, mood swings, bad decision-making, poor performance in almost every skill that requires clarity in thinking and concerted effect to achieve a goal.

This self-perpetuating accumulation of damage in the brain due to

inflammation is worrisome enough. But it turns out there is reason to believe the damage doesn't just stop at the boundaries of our own brains...

In a sense, dementia has a kind of contagious component to it - an ability to pass its malign essence on to other brains in the vicinity of the already irreversibly damaged brain.

This "caretaker effect" should be a concern for anybody who finds themselves duty bound to provide care for someone diagnosed with dementia.

Or anyone who suspects they could well end up on the wrong side of this patient / care giver relationship and become a dangerous influence on the minds of their own children.

Not only can you break the bank account of a loved one when you end up involuntarily recruiting them to aid in your day to day survival, but you run the very real risk of exacerbating inflammation in THEIR brains and contributing to a self-perpetuating crisis in mental health.

The Seeds Of Inflammation

It is hard to imagine how stubbing your toe or catching a cold might ignite a long-running disadvantageous change in the way your mind works.

On the other hand it is not difficult to see how these scenarios can set up permanent changes in the brain that improve the odds you will not have to endure repeat episodes in the future.

For example, there is the laying down of a memory about the location of that raised pavement where your toe came into contact with it. You solidify a notion to avoid it the next time you pass that way.

Likewise, the unpleasant memories of blocked sinuses and labored breathing underscore a renewed understanding of the dangers associated with getting too close to those who might be showing symptoms of

infection with an airborne contagion.

These kinds of changes to the way our brains function - involving new memories and learned behaviors - are beneficial. They serve to protect us over the long term.

But there are other kinds of changes which, if they stick around longer than they are meant to do, will do just the opposite. They will end up putting us in danger over the long term.

Whenever some part of our body comes under attack by foreign invaders, or we injure ourselves, our immune system springs into action.

Of all the myriad biochemical responses that take place when this happens I only want to draw your attention to one kind because of its direct influence on the behavior of your brain.

Activated immune cells - the white blood cells in your body - generate pro-inflammatory (inflammation-causing) substances known as cytokines. These cytokines can travel as far as the brain and cross the blood-brain barrier.

Locally these cytokines coordinate repair and defense operations at the site of infection and damage. But in the brain their presence is responsible for "sickness" behavior.

Have another glimpse at that list of symptoms associated with a "poorly performing" brain.

Those symptoms also happen to describe the brain of a physically sick individual, and for good reason. When your body is putting all its resources into defense and repair it cannot afford to have you attempt to compete with it for those same resources. This could put your health or your life in danger.

So the shutting-down response of the sick individual is a temporary condition regulated by the brain in response to cytokine signaling.

Examples of cytokines stimulated in response to inflammation are interleukin-1 beta (IL-1ß), tumor necrosis factor-alpha (TNF-a), and interleukin-6 (IL-6).

Not all cytokines contribute to behavioral response. For example, 1L-6 seems to control fever response. IL-1ß and TNF-a on the other hand will keep you from wanting to get out of bed and interact with the world.

They are the "go away and leave me alone" behavior-signaling molecules.

When these messengers of inflammation are flowing you find yourself reluctant to move, you shun your friends, you turn away from food and drink and all you want to do is curl up into a ball and go to sleep. You are not able to muster the mental energy to figure out what day it is, let

alone balance your check book. Your brain is essentially fried for the short term.

None of this need be alarming. Because in general sickness passes. We get back up out of bed and go on with our lives.

But to understand how the process can go awry, with the signaling getting stuck in the "on" mode, and the slowly snowballing consequences of that, in the next section we will dig just a little bit deeper...

For moment it is worth keeping in mind that the source of the epidemic of brain inflammation we are seeing today has its roots in a whole slew of diseases for which the brain is NOT the primary target.

Examples include diabetes, cardiovascular disease, cancer, hepatitis, fibromyalgia and autoimmune disorders like rheumatoid arthritis and lupus. These last two conditions involve your immune system mistakenly attacking your own body rather than targeting legitimate threats like potentially harmful bacteria and viruses.

But also the treatments for some of these conditions can be the cause of significant inflammation, such as surgery and cancer chemotherapy.

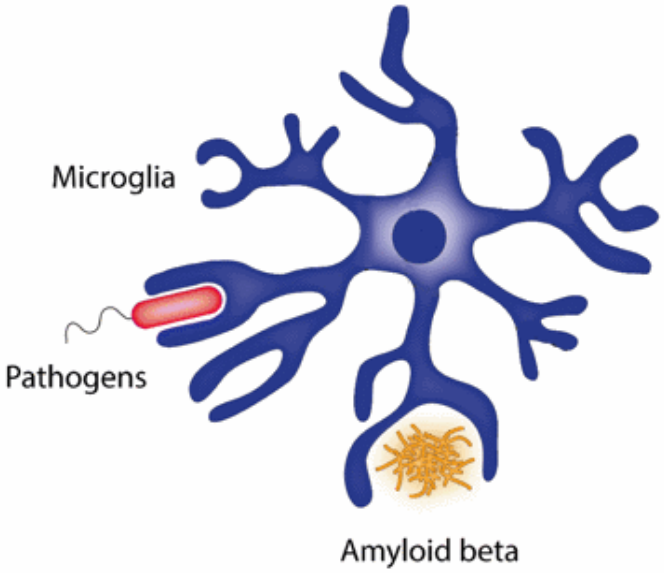
Also: Obesity, bone loss, chronic inflammatory bowel diseases, and exposure to low levels of industrial chemicals or other irritants can be added to a long list of conditions and scenarios that can kick off a long-running bout of inflammation in the body.

Inside Your Inflammed Brain

To recap: cytokines are released from white blood cells generated elsewhere in your body in response to infection or injury. Some of them then find their way to your brain where they begin interacting with its standalone immune system.

This is composed in large part of a collection of cells known as microglia.

The microglia stand ready to spring into action. You can picture them as microscopic Pac Man-type cells whose goal once activated is to attempt to engulf any foreign invaders that manage to make their way into the brain, or neutralize dysfunctional proteins that might impair normal brain chemistry (like amyloid-beta fragments).



In this sense the microglia play the same role as the "pathogen eating" macrophages that operate elsewhere in your body outside the brain.

The microglia also produce their own cytokines as a way of signaling to the rest of the brain that it is time to get on board with a sweeping defense and repair campaign. Once this process gets underway we are dealing with neuroinflammation - an entirely separate inflammatory process from the one that got started elsewhere in the body.

What is particularly noteworthy about the microglia is that in their normal state they are almost entirely dormant. This may be because once they get going they can be rather destructive. Not just to foreign invaders, but destructive to the surrounding legitimate structures of the brain.

It is as though the microglia represent a last-ditch strategy for the containment of a threat that might otherwise prove to be catastrophic.

For example, think of encephalitis which is brain inflammation that carries the risk of death from runaway swelling. Activated microglia might be able to get the source of the infection under control, but it comes at a cost, with lots of damage caused by the destructive capacities of microglia in full combat mode.

So we benefit from having microglia present in our brains.

But we really do not want to wake them. Not unless we are dealing with a full on emergency where it's time to break the glass and use whatever tools we can to put out the fire.

Even then the role of the microglia is meant to be limited. They are supposed to go to war on our behalf for just as long as is necessary to extinguish the threat. Then they are supposed to go back to sleep and allow our brain to recover.

The trouble begins when we inadvertently activate microglia for reasons that have nothing to do with true threats to the brain, and the false trigger essentially maintains its switched on state permanently.

In effect, this new inflammatory state can take on a life of its own. We'll see shortly how this can happen and why it has become such an exceedingly common occurrence today.

An Aged Brain Is An Inflammed Brain

A temporarily inflamed brain is not necessarily anything to worry about.

Every time we get sick we end up dealing with at least some degree of neuroinflammation before our brain settles back down.

But settling down becomes harder as time goes on. That is because our brains are extraordinarily metabolically active. Your brain weighs in at about 2 percent of overall body weight but consumes in the neighborhood of 20 percent of your body's power requirements. This has consequences.

Energy producing biochemistry pumps out byproducts that are actually harmful to the brain. Reactive oxygen species, for example. These are mopped up, or neutralized by your brain as quickly as possible. But not always before damage is done to neurons, and not before your brain becomes just a little more inflamed as a consequence of that (this is part of the overall cellular repair or cellular elimination process).

The result is that damage to the brain accrues over time, even in the healthiest of individuals, and inflammation slowly ratchets up.

At the microscopic scale this means more and more microglia become primed for activation, or sensitized to perceived threats to the brain. Studies have shown that "old" brains are ripe for microglia activation and liable to prolonged and exaggerated threat responses [Ref. Sparkman].

So, if you are going to break your hip and set off an inflammation response, doing it in your 60s will be a lot less traumatic to your brain than doing it in your 80s when the microglia are far more likely to "go bananas" on you (I will have more to say about this shortly).

Aging, of course, is inevitable. That means neuroinflammation is inevitable.

But how much neuroinflammation you end up dealing with over time is going to depend on how much inflammation you are willing to tolerate in the rest of your body.

For example, if you suffer from joint pain and you are willing to endure a certain amount of discomfort because you are not willing to substantially change your diet, then you are also by default willing to endure some degree of neuroinflammation, even if you are unaware of its presence.

So what is the danger of doing that? What are you risking by increasing the odds of free-roaming microglia being bumped to their activated state?

The Dementia Connection

Researchers at the Department of Psychology and Neuroscience at the University of Colorado, Boulder describe the outward manifestations of long-term microglia activation:

"If these responses become exaggerated or prolonged, the outcomes may well become established, leading to cognitive impairment instead of brief memory disruption, depression instead of reduced mood, fatigue instead of inactivity, and chronic pain instead of acute pain. That is, physiology can become pathology when a set of processes designed to be relatively brief becomes prolonged." [Ref. Maier]

What they are saying is that by tolerating chronic neuroinflammation there will eventually be consequences: worsening memory, depression, fatigue, pain.

Of course, not knowing any better, you may chalk up these responses to the "natural" progression of an aging brain. You may end up doing your best to ignore them. But all the while, down at the level of the cell, chaos is brewing...

One of the consequences of microglia-generated cytokines in the brain is that they are believed to interfere with normal cellular processes like membrane repair and construction.

These processes are critical for brain cell survival and for the generation of new brain cells (neurogenesis).

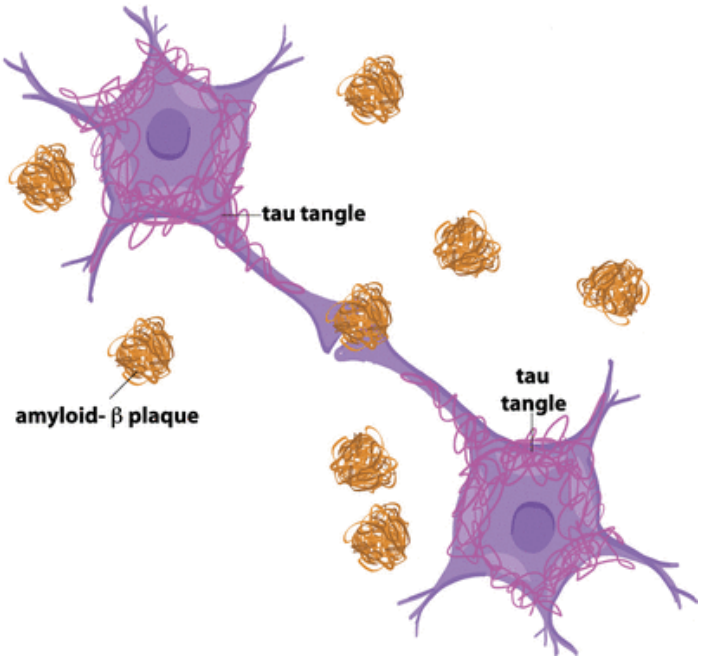
An important but toxic byproduct of this process is the production of the protein amyloid-beta which appears to be overproduced in the presence

of cytokines.

Where this becomes a problem is if cytokine generation does not eventually tail off in response to an eliminated infection (or injury repair) elsewhere in the body.

This is because amyloid-beta is also a trigger for microglia activation. So the potential for a vicious feed-forward process arises where activated microglia set the stage for more microglia activation.

Amyloid-beta happens to be one of the proteins implicated in Alzheimer's disease. Clusters of the protein form outside neurons and provide a nucleus for sustained microglia action that can destroy surrounding structures including whole neurons.



And if this side effect of "zealous" microglia was not worrisome enough on its own, the other main protein implicated in Alzheimer's disease also undergoes a leveling-up in the presence of activated microglia.

This protein is known as tau, and forms the basis of the "tau tangles" that clog the inside of neurons and degrade cell-to-cell communication.

Between the amyloid-beta "plaques" and the tau tangles the stage is set for long-term neural damage that might be the cause of much of the cognitive decline that affects today's aging population.

Certainly the link between neuroinflammation and neurological disease has received a great deal of attention by brain scientists in recent years.

If brain inflammation is not the primary cause of dementia it definitely appears to be a strong contributor.

So far though, all I have done is tell you about the "traditional" threat associated with an inflamed brain - the slow but ever-worsening internal state that shows up on brain scans as reduced brain volume.

This is the result of your brain slowly shrinking over the years, the inevitable consequence of eliminated brain cell connections and even the brain cells themselves.

Now I'm going to tell you about an even more frightening type of brain damage.

It is the same one I believe took the life of my mother.

The Threat Of Acutely Triggered Dementia

Above: An image of my mother, Meryl McCullough, many years before Alzheimer's disease claimed her life.

We all have our own limited understanding of what we think dementia is and how it progresses. Partly this is due to it being an extraordinarily complex biological process for which science has yet to provide anything close to a full picture.

But if asked to suggest one word to describe the progression, odds are you might say that it is *slow*.

Dementia creeps up on you.

And this is true. As the disease takes hold it does so incrementally,

quietly chipping away at brain volume until a point is reached when the damage is forced to reveal itself. Memories become harder to recall. Names of people we know well begin to elude us. Tasks that once were simple to complete seem to grow ever more challenging...

Yet at the same time that the internal scaffolding of our minds may be withering, something else is also taking place. An ominous development that is not going to be recognized until calamity strikes.

In more clinical terms it is a mind that is able to get by unassisted, transformed overnight into one that cannot. Not incremental change, but sudden and substantial.

I have already touched on this possibility when discussing the primed state of microglia in an aged brain.

But what happens when the aged brain has also been plagued with neuroinflammation for years, if not for decades?

What happens when this brain is suddenly subjected to a significant and disruptive challenge?

The trigger for such an event could be an intense psychological stressor (the receipt of very bad news), a surgery, a severe bacterial infection... Anything that abruptly challenges the biochemical status quo of the brain to cause a neuroinflammatory flood of cytokines and a disproportionate change in the way the brain responds.

In the otherwise healthy brain this flood might cause impaired long-term memory formation or learning, or the ability to add new brain cells to replace those lost to normal age-related attrition.

But in the unhealthy brain, the brain that has been physically whittled down over time by a state of chronic inflammation, the consequences can

be much more severe.

Even life threatening.

Aging alone seems to be cause enough for the microglia of the brain to work themselves into a highly sensitized state that, once triggered, can cause a cascading storm of neuronal changes that results in an altered state of mind that can last for days if not longer [Ref. Barrientos].

But in the diseased brain the disruption is more likely to be that much more profound and the damage irreversible.

If this "brain storm" engulfs the hippocampus which is the center of memory and learning in the brain, it is easy to see how an individual's entire world view could be altered as their ability to recall who they are and how they fit into the world is washed away.

This is exactly what I think happened to my own mother.

One day she was connected to the world and the next she no longer recognized family members.

It was a startling development and to the best of my knowledge a direct result of having to endure urgent care for nothing more serious than a broken wrist.

No one in our family saw it coming.

But then none of us had the foresight to download a book on brain inflammation and familiarize ourselves with the issue.

So let me congratulate you for doing so. It puts you well ahead of almost everyone else!

But Where's The Pain?

Chronic inflammation elsewhere in the body is often accompanied by pain.

Think of stiffened joints. Lower back and neck discomfort. Intestinal distress.

Pain is the body's way of letting us know there's a potentially serious problem with it that needs to be remedied else the pain will continue, or get worse.

Pain can be constant, or it can be throbbing, pulsating, stabbing, or pinching. But it is always unpleasant and virtually impossible to ignore (which is the whole point of it). Your distressed body parts let you know the problem exists.

But with your brain that is typically not the case. Low-level chronic brain inflammation goes unnoticed because the damage takes place away from

pain-sensitive bundles of nerves and regions of high mobility and flexibility where body tissues are stretched or compressed or rubbed against one another.

In your brain, the damage is more akin to the melting of an ice cube. It happens incrementally and involves no sudden changes capable of capturing your attention.

Moreover, as the damage accrues in one area of your brain the rest of your brain tries to accommodate for the dropped connections and deleted brain cells until such time is reached when it simply runs out of redundancies to work with.

At that point the symptoms of mild cognitive impairment and ultimately dementia make themselves increasingly known.

So you will not be warned about the ongoing damage as inflammation takes its toll on your brain. It will carry out its insidious dismantling of your neural paths in complete secrecy.

The real pain associated with brain inflammation comes much later, well after the point where the symptoms of memory loss and declining executive function become apparent to everyone who has to continue interacting with the damaged brain, including its owner.

Nor is the pain of a damaged brain localized to its owner. It spreads throughout the entire family of the affected individual. You need only sit for a half hour on the grounds of an assisted memory facility to be convinced of the agony that inevitably ripples through the visiting family members.

The moral of the story is that if you are planning on waiting until you can no longer ignore the symptoms of an inflamed brain before you are willing to act on it, you will have waited until much of the damage has

already been done and cannot be undone.

As far as preventing the worst outcome, which for example might be a diagnosis of Alzheimer's disease, the earlier you take preventative measures to protect your brain, the easier it will be to affect the outcome you are hoping for.

If the goal is for your brain to remain sharp and productive for the rest of your days - as it should be - the time to begin taking action is now, and not when you first begin noticing issues (by which time a lot of the damage has already taken place).

Triggers For Inflammation

If I have managed to convince you brain inflammation is an issue worth taking seriously I am surely going to offer you suggestions about how to guard against it, right?

Yes. That is exactly what I will address in this section.

However, because it is a topic deserving of a lot more attention than I have space for here I am only going to offer you a broad-strokes solution. For a fuller account, and a plan that you can follow over a realistic time span see the following sections.

Unfortunately none of us can avoid the primary trigger for inflammation in the brain, which is aging.

The underlying problem here is that it is a problem of design.

We did not evolve to live significantly beyond a life span of a few decades. So we are not equipped with the biochemistry to accommodate

brain resilience well into our 70s, 80s, and beyond.

In order to counter the built-in cognitive decline that goes with this limitation of design we need to adopt habits that put the "brakes" on these natural disintegrations of the fine structure of the brain (again, see the following sections for more ideas on how this can be implemented with an action plan).

But before we have any chance of "improving" our brain chemistry, so as to slow the damage, we need to be sure we are not actively worsening it through behaviors that favor inflammation in the body.

Diet plays a big part in this. Much of the food we usually consider staple elements of our diet is inflammatory.

The following is a list of foods known to aggravate inflammation in the body, and which you should aim to reduce in your diet or eliminate altogether:

• *Vegetable and seed oils*

• *Dairy*

• *Refined carbohydrates, including refined sugar, white bread and pastry*

• *Fried foods, including French fries*

• *Soda and sugary drinks*

• *Conventional, processed meats like sausage, bacon, ham, smoked meat and beef jerky*

• *Margarine and lard*

There are exceptions to these rules. Personally I like goat's milk, or cow milk from the A2 Company (which raises cows that do not express the inflammatory A1 protein in their milk).

Other strong contributors to inflammation are chronic pain due to injury, and stress.

For pain you will usually seek medical attention. Stress on the other hand may be almost impossible to avoid.

Stress generates several of the same cytokines that we previously saw were responsible for inflammation in the brain.

But prolonged stress is also believed to reduce the ability of your body to produce the hormone cortisol which works to lower inflammation in the body [Ref. Cohen].

So you do not just open yourself up to the possibility that increased levels of daily stress will raise your risk profile for heart disease and infectious disease (e.g. colds and flu).

You also increase your risk of neuroinflammation, depression, and all the other cognitive deficits that eventually result from it.

Investing in a stress ball or a yoga class might not provide perfect relief from the constant pressures of your life, but it might be a good start.

Find yourself a habit that feels as though it is providing a calming effect and practice it regularly!

How To Remain Mentally Sharp Your Entire Life

Thanks for making the effort to read this far!

That you did suggests to me you have a serious interest in making sure your mental faculties remain fully intact as you journey through the second half of your life.

This is a goal I share with you.

In truth, it is not an easy one.

To have the best possible chance of avoiding the fate which catches up with so many of us as we advance into our 60s, 70s, and beyond you will need to implement a long program of consistently brain-friendly actions.

In my opinion any willingness to simply kick back, roll the dice, and deal with the consequences if there happens to be any is just reckless.

Even if you do not buy into the idea (despite doing my best to persuade you) that an inflamed brain predisposes you to increased incidence of memory loss, anxiety, diminished intellectual capacity, possible Alzheimer's dementia, and even catastrophic abrupt amnestic dementia, there is still the issue of whether or not your brain is performing at its peak right now.

I would suggest that if it is inflamed then it probably is not.

But it is the risk to your long-term mental well-being, your sanity even, that I really want to impress on you here.

I am thinking about dementia in particular because it took my mother's life. But age-related cognitive decline can also pose serious challenges to your quality of life once you get a few years behind you.

I mean, it is not as if there will not be other non-brain-related health issues to deal with along the way, right? And you are going to need every ounce of mental fortitude you can muster to deal with them as they arise.

It is because of these challenges that I believe the only sensible approach to lasting brain health is to go at it with a "whole body" mentality. To treat the brain as just one element of the larger whole and plan accordingly.

This, in essence, was the motivation behind my *Ageless Brain protocol*, which is a unique science-based approach to immunizing one's brain against the ravages of time.

It came out of taking the result of a year of researching the science of

brain health and combining it with the hard lessons I learned while watching my mother go through her brain health struggles.

Ageless Brain focuses on how to take a preventative approach to Alzheimer's disease, less devastating dementias, small vessel disease of the brain, and related neurodegenerative conditions.

But it turns out the *remedies* for treating disease and non-disease initiating cognitive impairments, like the more easily correctable state of neuroinflammation discussed in this guide, have a great deal in common.

That means what works to help prevent one condition also works to help prevent the others.

In the case of an inflamed brain, probably the number one strategy for combatting it is to overhaul your diet.

I have already pointed out some of the most inflammatory foods you should consider avoiding. Just putting them aside could make a huge difference to the way you feel both physically and mentally in a relatively short period of time.

In Ageless Brain I provide you with much more detailed information about what foods and spices are non-inflammatory, and even de-inflammatory (e.g. blueberries, curcumin, green tea).



You will also learn about the best way to add a regimen of inflammation-quashing exercise to your schedule. But let me give you a quick example, my favorite weight training movement.

It is the dead lift (pictured below), which I have been doing for more than 30 years.

This involves pulling a weighted bar from the floor up to the mid thigh area while keeping you back straight, then lowering the bar back to the floor.

I could not guess how many thousand dead lifts I have performed over the years. It has been quite a few!

Of course, the question of how best to reduce neuroinflammation in a safe and effective way is deserving of a much larger discussion than I can attempt here.

But I will take a moment to remind you of the key points you have

learned today relating to the influence of sources of chronic inflammation on the health of your brain.

In particular, I want to remind you about its influence on age-related cognitive decline which, from what we have seen, would appear to be quite reversible.

Here's what we have learned:

• *When your immune system is chronically primed for action (e.g. your joints, arteries, gut, liver, bone or other tissue have become inflamed) it continually pumps out "defend and repair" signaling molecules known as pro-inflammatory cytokines.*

• *Some of these cytokines travel to the brain where they cause it to produce its own cytokines and become inflamed itself.*

• *An inflamed brain marshals powerful garbage-collecting, pathogen-zapping immune cells known as microglia.*

• *The microglia are designed to "switch on" for short periods of time and take care of business, eliminating potential threats to the brain but not without causing some degree of undesired damage in the process.*

• *When your brain becomes chronically inflamed the microglia fail to fully "switch off". This can lead to a build up of anomalous protein accumulations in the brain (amyloid-beta "plaques" and tau "tangles") which have been implicated in the progression of Alzheimer's disease.*

• *Even in the complete absence of peripheral (outside the brain) inflammation in the body, the normal aging process results in gradually increasing inflammation in the brain. Chronic inflammation elsewhere in the body just "speeds along" regular brain aging.*

• *The short-term effects of chronic brain inflammation are scarcely likely to be detectable, but may include altered mood and perception.*

• *The medium-term effects of chronic brain inflammation are noticeable. They may be mistaken for age-related cognitive decline, including memory loss, increased bouts of anxiety, and impaired learning ability.*

• *The long-term effects of chronic brain inflammation may be gradual or sudden (challenge-induced) dementia, or even stroke.*

• *Brain inflammation is likely to begin around mid life and, unless actions are taken to de-escalate its influence, persist as a slow-burning source of cumulative brain damage for as long as inflammation flourishes elsewhere in the body.*

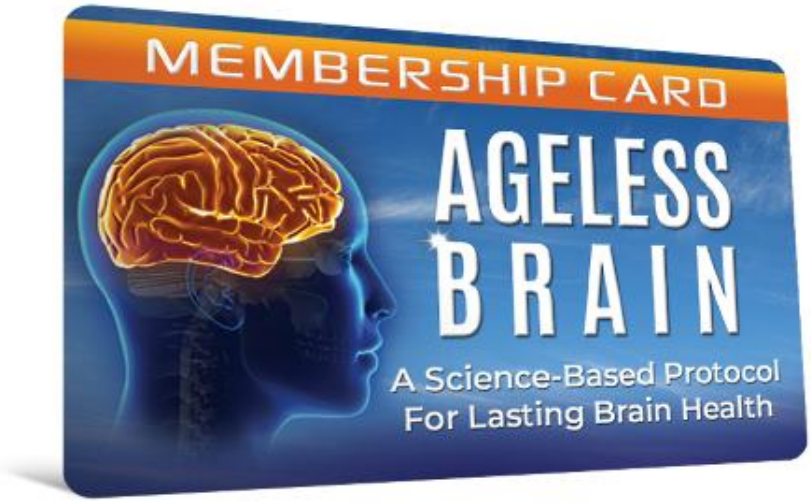
• *Fortunately, getting inflammation under control in the brain and the rest of the body is usually straight-forward (auto-immune disease being an obvious exception, but also often manageable).*

• *The best techniques for tackling brain inflammation will usually involve smart choices of food and exercise.*

Yes, I have exposed you to a lot of potentially new information about the way your brain works.

All of it, in my opinion, is essential information. Certainly if your goal, like mine, is to preserve the state of your gray matter for as long as you possibly can!

Next Steps: Other Things You Can Do To Protect Your Brain



I have mentioned that I recently created a program to help people who are concerned about the long-term health of their brain. The goal is to teach them how to make the kinds of adjustments to their lives which are likely to lead to significantly lowered risk of cognitive decline as they head into the second half of their lives.

I hope you will consider joining me in this goal and taking advantage of everything I have learned on this hugely important subject.

Members of my **Ageless Brain** program enjoy a cutting edge brain improvement protocol that spans a period of 24 weeks (six full months). This allows for ample opportunity to put into effect techniques designed to provide a lifetime of protective benefits for your brain.

The *Ageless Brain* emphasis is on getting you into the habit of performing actions which have a proven scientific basis for reducing your risk profile

for brain disease, especially dementia and the increasingly common variant of it which we all dread, Alzheimer's disease.

So, if you would like to become proactive on matters relating to the health of your brain...

If you share my goal of maintaining sharpness of thinking, superior recall, and the degree of motor skill sufficiency which will allow you to remain physically independent of others for the remainder of your days, click on the following link to learn more about how you might get started with the *Ageless Brain* protocol:

Discover The Ageless Brain Protocol

To the lasting health of your brain,

Carolyn Hansen

https://theagelessbrain.com

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