Brain Fog Is Not Inevitable: The Hormone–Brain Connection with Dr. Christin Glorioso Transcript

(Transcripts are generated by AI and may contain errors)

Intro to Brain Health and Hormones

With just 25 extra minutes of exercise a week, you can increase your brain volume on MRI. You can literally grow your brain back. That's because exercise helps release a factor called PDNF, which is like plant foods for your brain.

Do you feel like your hormones have turned against you? Trust us, you're not alone. We're Dr. Serena and Dr. Heidi, and on Hormone Heroines, we explore all the root causes that are behind hormone imbalances, and we teach you how to thrive through them.

Join us for real talk, expert tips, and even a few laughs. Hello and welcome back to Hormone Heroines. Today we're talking to Dr. Kristin Glorioso and we're just going to dive right in.

She knows a lot about the brain, so we want to pick her brain about the brain. So our first question today is, is perimenopause a brain transition as much as a reproductive one?

It is. So a lot of women experience brain symptoms around perimenopause, so brain fog, a lack of sharpness, changes in mood, as well as sometimes depression or heightened anxiety, and all of those changes can be attributed to hormones.

So on that note, Do you know what's actually happening in the brain when women experience like the brain fog or those mood changes or any of those symptoms that are associated with perimenopause?

Yeah, so one thing we know is that as you enter perimenopause, your levels of estrogen and progesterone steadily decline.

Perimenopause and Brain Fog

And estrogen is a hormone that not only is useful for fertility but also is a mood lifter. It helps keep you clean. Basically, our progesterone has anxiolytic properties, so it helps with anxiety, which is part of why when people take progesterone as HRT, they experience alleviation of that anxiety or even a mild sedation that helps with sleep.

So our female hormones are doing more than just aiding in reproduction. They're also keeping us sharp and keeping us mentally together. Yeah, we see it a lot.

We do a lot of hormone therapy and we definitely see it a lot. The changes I've even noticed for myself is like, you know, since I started hormone therapy, I can find words again.

There would be times where I was just like, it is on the tip of my tongue and it was a very common word and I just could not even fathom what I was thinking at the moment.

That has been a lot better and like walking into a room and like, why did I walk in here? you know, let me retrace my steps again, you know, that kind of stuff.

And definitely hormones have helped. And I think maybe a lot of it, we do have a lot of receptors in the brain, as you know, for progesterone and estrogen and testosterone.

And I think also inflammation is a huge thing with not having enough estrogen, especially because estrogen is very anti-inflammatory. So I think that kind of has a lot to do with it too.

Speaking of estrogen and progesterone and testosterone, Do you know how they kind of influence memory, mood, and cognition? Yeah, so estrogen is a mood lifter.

It is also a hormone that keeps you sharper. So even some people are recommending that even people before perimenopause time taking a test when their estrogen is highest, because you are actually in your sharpest state.

So if you imagine that level where you're sharpest in your cycle when estrogen is highest, now that's declining all the time. So that's part of why we end up feeling foggy.

And progesterone, we would have known that when we were in med school. That would have been nice. Excuse me, I can't take my test today. My estrogen is too low.

And then what about progesterone? We talked about it a little bit as an anxiolytic, but can you elaborate on that? Yeah, so progesterone is a hormone that also affects the brain and it makes us feel calmer.

So a lot of physicians will prescribe it as a micronized pill that you take at night because it helps with sleep. And also the part of the cycle where you have the highest levels of progesterone are also when you'll feel the calmest.

We know that that lack of progesterone that happens during perimenopause and menopause can lead to anxiety conversely. And any comments on testosterone as well and how it influences the brain?

Is that one less study? I think there's less information on that one. We know that declines as well for women and testosterone is more related to drive and I think to motivation than it is really to mood or clarity.

Hormones, Memory, and Cognition

So some women benefit from replacing testosterone for those reasons. So on that note, obviously not all cognitive changes are related to hormones and there's lots of things that can be happening.

So how could you tell the difference between normal cognitive shifts or like things that we would attribute to our declining hormones as well as what is signs of true cognitive decline?

A good way to figure out whether the brain fog or word finding troubles that you're having are related to estrogen or progesterone declining or to something that's actual cognitive decline is to take some cognitive testing.

So you should still be able to score pretty well on standard Alzheimer's related testing like an MMSC or a MOCA test that would be done in your doctor's office.

You can also do some of the testing online at NeuroAge. So we have more rigorous testing that can tell you how you're doing in younger people that are precognitive decline, tests of memory and reaction speed.

And so it's good to just get a baseline and see how you're doing. And even if you feel foggy and you're forgetting your keys more, forgetting words, that won't be to the degree that you would actually be diagnosed with something.

And you can pretty easily tease those things apart. Okay. Okay. Yeah. Cause I know we get that question a lot. I've, I've had a lot of people and I've done, we have the mocha cause it's the easiest one, you know, in office and we've used that before because we have a lot of women who are either perimenopause or postmenopause that are having a lot of these issues.

But. We see it as, I see it, it's probably mostly hormone stuff, you know, obviously we'll tease it out just to make sure, but it's such a weird shift that people are like, I used to be this sharp and now I am just, I think I'm getting dementia.

You know, my great grandma had Alzheimer's or something like that. And then, so we do the testing, but then we, you know, get them on hormones and they're usually okay.

Most of the time we do have some patients that are not obviously, But especially with women, we see a lot that it seems to be that women are at a higher risk for Alzheimer's and other dementias.

Why do you think that is? Yeah. So the honest answer is that as scientists, we're still just have hypotheses about this. So no one knows the actual answer to this question, but we do know a few things.

So one thing we know, there's this dramatic shift in hormones. So that could be playing a role and some more rigorous recent studies have shown that replacing hormones can actually be helpful for dementia prevention.

especially if started early enough. That lends itself well to saying there is at least a role for hormones. We also know that dementia is more common also in people that have more adverse life events.

If you look at an ACE score, which is the Adverse Childhood Experiences score, women have double the number of adverse childhood experiences than men.

So that may also be contributing is just this burden of life stress. So those would be two things that I would point to. But it's a bit of a mystery because men are twice as at risk for Parkinson's disease than women.

And so why is there this dimorphism between who gets which disease?

Cognitive Testing vs True Decline

And I think we're still trying to understand that. Just because I'm curious, is there any research that is, I mean, you said we don't really know at this point, but is there any research that is suggesting why men are more prone to Parkinson's versus women, even though it's more of a theory at this point?

Yeah, well, one thing we know is that Parkinson's has a larger environmental component than Alzheimer's and environmental components such as exposure to pesticides, for instance.

So there's actually a Parkinson's belt in the United States where you can see these pockets of people that have Parkinson's that live near farms or live near golf courses.

There's actually a paper last year about proximity to golf courses and likelihood of having Parkinson's disease. And so the theory that I favor is that men are more either exposed to farms or exposed to golf courses than women.

And so they're getting this higher exposure to pesticides and other environmental toxins. That would be my best guess as to what's going on. But there are some pretty easy fixes for that.

So one is just filter your water. A lot of basic water filters can filter out those pesticides. Wash your produce. Gotcha. Okay. I wonder, I don't know if the research was on everywhere, but I'm wondering if in other countries where they don't allow the certain type of pesticides that America allows, if they have as high of incidences of Parkinson's.

You know, I've heard that because I think the UK has some regulations that are more strict than we do here. On the note of environmental factors and how our lifestyle can contribute to that or, like you said, adverse childhood events, how does sleep disruption, stress, blood sugar instability impact midlife and long-term brain health?

Yeah, so you hit on three large pillars that are related to better brain health. So, you know, at NeuroAge, we talk about the nine pillars of healthy brain aging and that's diet, exercise, sleep, staying mentally active, mental health, stress reduction, general health, which includes metabolism and cardiometabolic health.

avoiding those environmental toxins. So these are the pillars and people that score better in all of these areas tend to have younger-looking brains. And so sleep is huge.

It's top three, I would say, for the brain. So we know that people that get less than five hours of sleep have three

times the dementia risk. So that's a really, really big risk factor that's modifiable.

And of course, perimenopause and menopause is disruptive to sleep. That's one of the main symptoms. Yes. So that's a big one. It's also disruptive to your metabolism.

And if you're not sleeping as well, you're not going to exercise as well. And if you're not exercising as well, your metabolic health is not going to be as good.

You know, all of these things are very important. And, um, you know, there's especially cardiac factors are a huge thing for the brain. The biggest Alzheimer's risk gene is APOE4.

About 25% of people have this risk allele. I actually have one myself. Alzheimer's runs in my family. Um, it puts you at two to three times the risk as the general population.

Why Women Face Higher Dementia Risk

And that genetic mutation is related to cholesterol transport. So you deal with lipids worse. when you have this genetic mutation. So people end up with higher cholesterol and it's hard to bring it down without just with lifestyle alone.

So people more likely need statins, need to do better with their diet and with avoiding saturated fat. So there's this huge lipid transport problem that is related, heavily related to Alzheimer's and it's really important for people to make sure that their blood pressure and lipid profile and cholesterol and everything and hemoglobin A1c are all perfectly perfectly titrated.

Since we're talking about neuro age and the fact that you have the nine pillars for that, do you want to tell us a little bit about neuro age and how it evaluates cognitive function as well as the suggestions that you guys can do for maintaining that as long as possible?

Yeah, of course. So I've been studying normal brain aging and how it contributes to dementia for my entire career. So I was studying it at MIT and before that as an MD PhD student in Pittsburgh.

And what we showed was that people that have younger looking brains, so people who are 85 but have brains that look like 80 year olds, five years younger, are six times less likely to have Alzheimer's in the future than people of the normal biological age compared to their chronological age.

And so this is a huge pot of risk that is untapped. So we know about apple leaf foreign genetics. We know chronological age is a risk factor, but people are just learning that biological brain age is also this huge risk factor.

And so what we do at NeuroAge is we give people a biological brain age, and we do that by combining brain MRI, so your brain actually shrinks with age, with cognitive testing online using our software, and blood biomarkers.

So this is a brain aging signature that we can measure from the blood from RNA transcripts. And then we combine those together using AI and give people a brain age.

And then we give them personalized recommendations to slow down or reverse their brain aging. So it really is possible to make your brain younger, which I think is pretty remarkable.

So there have been randomized control studies to show that with just 25 extra minutes of exercise a week, you can increase your brain volume on MRI. So you can literally grow your brain back.

Um, and that's not just, um, not just, uh, that's not new neurons, probably. That's, um, your current neurons are becoming fluffier. They're like a scradly plant that becomes, uh, vibrant again.

And that's because exercise helps release a factor called PDNF, which is like plant foods for your brain.

Environmental Risks and Parkinson's

And that's released when you do really high intensity exercise. So, you know, we've also seen people that now there's a bunch of studies coming out to show people that have amyloid building up in their brain.

So we know that even 30 years ahead of time, people are starting to show amyloid and tau, which are these toxic proteins that build up in your brain. We're seeing that on blood tests and on PET scans.

And people have with dramatic lifestyle improvement been able to reverse those changes as well and then test negative, which I think is super hopeful because it makes brain aging and dementia back into the realm that cardiovascular health isn't, right?

You can have high cholesterol or high glucose and then you can, you know, go to your nephropathic doctor and work together and fix it and fix your lifestyle, right?

And come back and, you know, maybe you don't need that drug to lower your cholesterol because you've done all the things right with lifestyle or maybe you need a combination of things.

I think that's where the world is moving to this brain health prevention in the same way we have for other diseases. Yeah, I think that's super exciting actually because I feel like a lot of people are feeling a little bit disenfranchised when it comes to brain health because they're like, I think the message has been consistently that like, well, it is what it is.

We don't really know how it happens. So, you know, there's nothing to do beforehand, but this research that you just shared with us and all, all the things that you're doing is really changing that story and making it feel a lot more attainable to control and modify.

If that's something you are nervous about because of family history or whatever it may be. Yeah, absolutely, absolutely. So we know that for most people, there are some rare forms of Alzheimer's disease that, you know, happen, you know, rarely in people and they get early onset forms and it runs through their family, but that's…

The vast majority of people that have Alzheimer's don't have that type of it. And for those vast majority of people, avoiding Alzheimer's is entirely possible.

Even if you have an Apple E4 allele or two Apple E4 alleles, we know that it's about 40 to 60% due to lifestyle. So there's this huge actionable piece that people can do something about.

And so I think it's a worthy goal for us all to be cognitively sharp for our whole lives. And, you know, I think people can do that. Well, I mean, everybody wants independence, right?

I mean, I don't think there's many people that just want to have to rely on everybody. And if you're not sharp, you're going to have to rely on people.

And I also think that, I mean, we preach it all the time. We're not the best at it, but definitely stress reduction. But people don't realize how much sleep impacts the brain because when you're sleeping is when your brain is actually detoxing.

Sleep, Stress, and Brain Aging

If you're not detoxing your brain and you're not setting the memories and doing all those things in your sleep, then it really does affect. Of course, it piles on and piles on through the years, but it's never too late to try to get some really good sleep to help detox the brain.

Sometimes it's one of the more simple ones to actually do if you're the one keeping yourself up. Yeah, absolutely. So about 15 years ago, the glymphatic system was discovered.

So this is like your brain's plumbing that washes out all the toxins that build up during the day. And one of those is actually amyloid, which is the Alzheimer's protein that builds up in the brain.

And that system works much better at night when you're sleeping. So if you don't have enough sleep, you're actually not able to clear those amyloid flax as efficiently.

There was some cool research that actually just a couple of months ago from a lab at MIT that was fascinating. They looked at when people, you know, during the day, especially if you've been working really hard and you're tired and maybe you got a poor night's sleep the night before, you start to lose focus and your attention kind of drifts.

So they did a brain imaging study looking at what's happening with the glymphatic system. And when that happens, when you lose focus at the exact same time, your brain shuts down and starts cleaning itself with the glymphatic system.

So it looks like sleep. So your brain is trading your attention and focus for cleaning. Like it's like a mini sleep state. Yeah, nice. That is super cool.

So when I'm telling you at the end of the day that my brain is dead, it's literally cleaning itself. Yeah, it's just, it's just, it's give it a moment, okay?

Just let me go. I think that is super fascinating actually that I think that'll explain a lot for a lot of people why they're like, yeah, I can't focus anymore.

And it's because their brain is self-cleaning time. I did want to dive in a little bit to stress because, you know, I feel like we talk a lot about how stress impacts hormones because of its impact in the brain with like the hypothalamic pituitary access and all those types of things.

So if there's anything you could add to that on how it impacts brain and cognitive decline, I'd love to hear your thoughts. Yeah. So I call this the executive phenotype.

So I'd say about half of neural ages clients are doing so well on exercise and so well on diet. And, and then you look at sleep and stress and it's like terrible.

Um, so that's pretty much once that I chat with people about all the time. So stress releases cortisol, which is the stress hormone. And if you put cortisol on neurons in a dish, it actually makes them shrink and shrivel up.

There's some levels of stress that are good and can be motivating, but you overdo it in a continuous way. It's actually toxic for your brain. So it's really important for people to make time to de-stress, be that.

you know, a little bit of meditation or being in nature or journaling or deep breathing or sauna or whatever it is that is helpful to people. It's a worthwhile investment for sure.

Yeah, we know. Sounds like you have a pattern there. The different people that come in. We would be that last person. But that is motivating. Motivating to try to work on it more.

I can't believe it shrinks your neurons. That's crazy. Yeah. I mean, I know cortisol does a lot, but geez, I didn't know that.

NeuroAge and Biological Brain Age

The more you know about cortisol. Yeah. I don't know what you've seen for sleep. Has that been helpful for your clients? Because I know HRT has basically changed my sleep for the better overnight.

It was like night and day when I started HRT. It was dramatic. the way we explain it to like when we start them on

like, you know, progesterone like your get to sleep horm it makes you like nice an just kind of drift off to And then estrogen is kind of your stay asleep hormone.

So that's one of the ways that we can see what hormone needs to get dose change on. Because if they're having trouble falling asleep, it's usually progesterone.

If they're having trouble staying asleep, it's usually estrogen. I know my sleep has changed tremendously. Since I got on hormones, I've always been a bad sleeper.

My dad is the same way. Like even as a kid, I didn't really nap or I didn't really sleep longer than like six or like seven, eight hours at most, even when I was a teenager.

It was really weird. I've always kind of been a bad sleeper, but it definitely changed when I started going through perimenopause and it was way worse because it was like all the time I was awake and I would be awake for hours.

I couldn't get back to sleep. But then when I did hormones, definitely was able to get to sleep and stay asleep. Well, and also a pattern that we've seen for people who have the aura rings and the whoops and all the sleep monitors, if they've started testosterone, it seems like they get deeper sleep.

So that's something we've just noticed clinically. We haven't done a lot of research on it or anything, but it's something that's come up. So it's interesting.

Yeah. Yeah. You know, my late thirties, I started waking up at three o'clock in the morning and it just kind of got worse. And I thought, oh, well, I lead a stressful life.

You know, I have two companies, I'm a CEO, of course I'm like, you know, stressing out. And then, you know, I started, I can't believe it because. They don't teach you this in medical school.

It didn't even occur to me that this was a hormone shift until I really did some digging into the science behind it. And it was amazing. I went from waking up at three o'clock in the morning three times a week to like, now it only happens once a month.

It's like night and day. Yeah. And I'm so much nicer when I get my sleep. Yeah. And it makes you sharper and it makes you able to exercise. It just fixes everything else as well.

Yeah. Yeah. What are some of the other things that people, you know, like our audience can see on your website? Yeah, so if you go to our website, you can for free play the reaction time game.

So reaction time is actually one of the best predictors of future dementia risk and also how you're doing with your brain aging. And the good news about reaction time is it's something you can train.

So there was just a So it's not immutable, it's not just, you know, you're stuck with the reaction time you have, you can actually get better at it. And if you train your reaction time for six weeks, there was a randomized control study that just got published called the active study, this just a few days ago, and they've been following people for 20 years.

So they had them train their reaction time 20 years ago, and then they looked at risk of dementia, and the people that train their reaction time had 25% less dementia.

And it was just like six weeks of training. Yeah. So I would say, you know, go there, see how you're doing on your reaction time. And then, you know, if it's not where you want it to be, it'll show you where you are compared to the average person of your same age and sex.

Exercise, Diet, and Brain Protection

And so if you're not better than the average person of your same age and sex, then recommend, you know, racket sports, ping pong, video games, things to start training your reaction time.

And then eventually, My husband will be so excited when you said video games. Some excuse for video games. Yeah, a lot of people like that. If you look at the UK biobank, people that play video games, I think it's like 30% less dementia than the average person.

Of course, it's just correlation. It's observational. But yeah, so people like that. There was a randomized control trial on Super Mario Brothers. 64 in particular.

I played that one back in the day. I had the real original one where you had to blow on it and then put it back in. Oh yeah, I remember that. So that one can actually increase the volume of certain brain regions.

There was a randomized control trial to show this. That's hilarious that anybody would think to do that. I think a lot of people will be excited about that information and I also love that all of the things that we've really talked about are really actionable and people like if they're not where they want to be with their brain health and their their neuro age that there is plenty that they can still do and it doesn't there's lots of hope basically.

Because I think one of the things that we've always thought is, Alzheimer's and dementia, well, it just runs in your family. You're going to get it. You can't do anything about it.

So I think that's kind of always been how people thought about it. And everything that you're doing really sounds like it's proving those ideas wrong.

Which is nice. I like that. Where can people find you? Um, so you can play the reaction time game and find NeuroAge at NeuroAgeTX.com. And you can find me on Twitter and Instagram at DrGlorioso.

And also I'm on LinkedIn all the time. So I have a unique name. So friend me. Yeah. So, so those would be the best, best ways to get in touch with me.

Okay, awesome. Any final thoughts or things you'd like to share about, you know, hope for preventing these cognitive decline diseases or plug for neuro age, anything like that?

Yeah, I'd say don't wait to start working on it, especially if you have a family history or a genetic risk, because all of these interventions work better the earlier on that you do them.

So we know this from Alzheimer's clinical trials, when people start earlier with the therapeutics, with the interventions, it works better. Even if it seems like you're Concerned, it's better to start now.

Brain aging is a marathon, not a sprint. So these little tiny changes that you make over the next decade are going to add up to your cognitive reserve when you're in your 80s or 90s.

And you're going to thank yourself for doing that. Great, that's awesome. Sorry, I have one more thing. Just because you said earlier that sleep was like number three, and then we talked a little bit about stress, what is the number one pillar that people should be working on?

So I would say if I had to choose one, it would be exercise. And that has huge impacts on your brain. There's this brain-body axis, and exercise is a great way to grow your brain back, to keep your brain young.

And we know a little bit about what types of exercise. So I say about an hour a day is what people should aim for. With one day off, don't over train.

We've seen people over train and that can also create too much inflammation. So at least take one day off and a variety of exercises. So we don't, we know there's not one single exercise that's better than the others.

But if you do multiple different types, like some resistance training, some cardio, some balance and agility. Dancing and Tai Chi are actually wonderful for your brain.

A lot of great evidence because they combine multiple things.

Hopeful Takeaways and Closing

You know, there's a cognitive component to learning the steps, and there's a balance component, and there's a little bit of a community component because you usually do those things with other people.

So I'd say exercise. And then the second one is diet. We recommend a Mediterranean-style diet that has the most evidence of all of them, which is high in fruits and veggies.

It's the big thing. and also high in plant protein and fish as the omega-3s, which is really good for your brain. Yeah, I think that people often forget that you need to have healthy fats in your diet.

You have to eat fat because otherwise your body is going to take any sugar you eat and try to make cholesterol and triglycerides and all that kind of stuff with it.

So you have to feed your body so that it doesn't try to make up for it in the wrong way. Yeah. And Mediterranean diet, which has most evidence of any diet for dementia prevention, has a higher fat content than you would think.

So it's 35% to 40% fat. But the kicker to that is it's almost no saturated fat. So it's all olive oil, the good fats. So I think there was a study that showed four tablespoons of olive oil a day, which sounds like a lot.

This was the right amount. I could do that on my salad. I could do that on my salad. Okay, well thank you so much for being on. This has been super informative and really exciting and hopeful.

and try and do what you told us. Work on my stress. And sleep. Stress and sleep. Thanks so much for having me. This has been really fun. Appreciate it.

Yes, thank you. Bye. You know how us women are always just pushing through it, and then when we go to find help, we're often not taken seriously or told, oh, that's just part of being a woman.

Yeah, we've lived through it, prioritizing everybody else, and then our own health falls to the wayside. That's why we started blossoming longevity by women or women.

We created programs that meet women where they are, addressing the root causes and all of the struggles that come with every stage of life. Like our vitality program.

It reconnects you with your youth and your life so that you can thrive through the years. And with Clarity, we go beyond the skin to restore your health, clear your complexion so you can feel radiant from the inside out.

With our silhouette program, we help you reclaim your strength, optimize your metabolism, and your body composition so that you can feel great in your body again.

And with Harmony, we help you rebalance your hormones to heal from within so you can feel vibrant and ready to take on the world. That is why it's time to stop saddling and start flourishing.

Visit blossominglongevity.com today. Thanks for watching Hormone Heroines. If this episode spoke to you, follow the show and share it with someone who also needs to hear it.

And write a review. That helps more people find their way back to balance. See you next week.