The Mind-Kidney Connection: How Stress and Trauma Impact Kidney Health Transcript

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Stress, Trauma, and Kidney Risk

Everyday stress research is uncovering surprising connection between psychological trauma and kidney disease risk, particularly with post-traumatic stress disorder or PTSD.

One study involving World Trade Center responders found that PTSD was associated with a longitudinal decline in GFR. Under this study, observed a significantly greater decline in estimated GFR over a five year follow up in participants with PTSD, compared with those without, even after adjusting for demographics, medical conditions, and medications.

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Mind-Kidney Connection Overview

I'm your host, Doctor Bismarck, a functional nephrologist passionate about finding the root cause of kidney disease and helping you heal from inside out.

So today we are exploring a fascinating and often overlooked connection in medicine. The powerful relationship between your mind and your kidneys. We'll dive into how stress, trauma, and even sleep disruption can become hidden root causes of kidney dysfunction.

So let's start by understanding what happens to your kidneys when you are under chronic stress. When we experience stress, our body activates what's called the hypothalamic pituitary adrenal axis, or HPA axis for short.

Think of this as your body's stress response command center. When stress becomes chronic, this system stays activated for too long. Here's what happens.

Your brain signals your adrenal glands to release stress hormones like cortisol, while beneficial and short burst. Chronic elevation dramatically alters how your kidneys function.

Research shows that elevated cortisol changes kidney hemodynamics basically how blood flows through your kidneys.

How Chronic Stress Affects Kidney Function

Cortisol enhances sodium reabsorption in the kidneys, leading to sodium retention, which can contribute to high blood pressure. One of the leading causes of kidney damage.

I remember this 42 year old executive who came to me with early signs of kidney dysfunction. His labs showed

elevated creatinine levels, but traditional kidney medicine couldn't pinpoint a clear cause.

We discovered he was working 70 hour weeks under tremendous pressure, sleeping poorly and experiencing anxiety. His cortisol levels were elevated constantly throughout the day.

Testing revealed that his kidneys were experiencing reduced blood flow and increased filtration fraction, indicating efferent arterial vessel constriction.

Essentially, the small blood vessels leaving his kidneys were constricted, putting additional pressure on his kidneys. Filtration system. By addressing his stress through targeted interventions, his kidney function markers improved significantly within three months without medication.

Studies have shown that chronic stress induced elevations in stress hormones can reduce renal plasma flow and GFR, the primary measure of kidney function.

This creates a vicious cycle. Stress alters kidney function, which raises blood pressure, which creates more physiological stress, which further impacts kidney function.

Breaking the cycle requires addressing both physiological and psychological components simultaneously beyond everyday stress. Research is uncovering surprising connection between psychological trauma and kidney disease risk, particularly with post-traumatic stress disorder or PTSD.

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I've worked with 58 year old veteran experiencing progressive kidney function decline despite good control of traditional risk factors like blood pressure and diabetes.

Through comprehensive assessment, we discovered he had untreated PTSD from his military service.

PTSD and Long-Term GFR Decline

His kidney function stabilized after he began trauma focused therapy alongside our functional medicine protocol. Over eight months, his EGFR stopped declining and improved by ten points.

Something unexpected in traditional kidney medicine, where we often just hope to slow decline. The biology underlying this connection is complex but increasingly understood.

Trauma, abuse to create a state of chronic inflammation through multiple pathways, including dysregulation of immune system and increased oxidative stress, both of which can damage kidney tissues over time.

Your sympathetic nervous system is responsible for fight or flight response when chronically activated. This system releases norepinephrine throughout your body, which can wreak havoc on your kidneys.

Research has demonstrated that heightened sympathetic tone leads to renal constriction, the narrowing of blood vessels in your kidneys. This reduces blood flow and increases renal vascular resistance, which can lead to both acute kidney injury and contribute towards progressive kidney injury.

I had a 49 year old business owner with resistant hypertension and declining kidney function. His blood pressure remained high despite being on four different medications.

Assessment showed that he had dramatically elevated sympathetic activity even at rest, indicating his body was stuck in a sympathetic, dominant state.

We implemented a comprehensive protocol focused on autonomic balancing through breathwork, specific meditation techniques, and lifestyle modifications.

Within six months, his sympathetic activity normalized his blood pressure, improved enough to reduce his medication needs, and his kidney function stabilized.

Let's also talk about sleep.

Sympathetic Overdrive and Kidney Damage

Your kidneys have their own circadian rhythm, a 24 hour cycle, synchronized with your sleep wake cycle. During the night, your kidneys typically reduce their filtration rate, giving them a chance to recuperate.

When sleep is disrupted. This recovery process is compromised. Research shows that acute sleep deprivation increases diuresis and naturally uses, essentially making you produce more urine and excrete more sodium during the night.

Chronic circadian disruption, such as that experienced by shift workers, can suppress the normal rhythms of kidney function and accelerate the excretion of renal injury markers.

A prospective cohort study found that individuals who slept five hours or less per night had a significantly higher risk of rapid decline in GFR, compared to those who slept 7 to 8 hours per night.

Now that we understand this connection, let's explore evidence based interventions that can help protect and potentially improve kidney function. Mindfulness based stress reduction, also known as Mbsr, has been shown in randomized controlled trials to reduced sympathetic reactivity to mental stress in patients with chronic kidney disease.

Stage three to stage four. Another study in type two diabetes patients with early kidney disease showed that mbsr reduced unity, albumin excretion, and improved cardiovascular risk factors.

Sleep Disruption and Kidney Health

That means decreased protein in the urine. I've implemented mbsr with many patients, including a 68 year old with stage three kidney disease who was resistant to adding more medications.

After completing an eight week program and continuing with daily practice. Her stress hormones normalized blood pressure improved, and her kidney function stabilized.

After years of steady decline, I often prescribe specific breathing techniques like four, seven, eight breaths or heart focused breathing, which have been shown to quickly shift the autonomic nervous system from sympathetic to parasympathetic nervous system, which is where healing happens.

Even five minutes of this practices three times daily can make a measurable difference in stress hormone levels and kidney function markers for patients with sleep issues.

I implement comprehensive sleep protocols and sleep hygiene techniques that include light therapy, strategic melatonin supplementation, maybe optimizing the sleep environment and cognitive behavioral therapy.

Remember, every person is different and maybe the kidney function decline could be related to sleep or stress or something else.

Mindfulness, Breathing, and Sleep Interventions

So when we are talking about personalization, it is important that you focus on what is the right treatment for you. So that is why it is best to do a personalized consultation to understand what are the root causes or driving factors for your kidney disease.

To assist the mind kidney connection in your own situation. Consider these functional medicine tests for point salivary cortisol testing to evaluate your HPA axis heart rate variability analysis to assess autonomic balance, which we do it in our clinic, we call it neural check inflammatory marker panels, sleep quality assessment.

These tests can help identify specific imbalances and guide targeted interventions with kidney disease. It's especially important to be cautious about supplementation and the quality of it.

I want to emphasize that the mind kidney connection isn't alternative or fringe medicine. It is supported by a lot of scientific research and is increasingly recognized even in standard kidney care.

If you are dealing with kidney disease or want to protect your kidney health, I encourage you to take stress management seriously. It's not a luxury, but a medical necessity.

Address past trauma with qualified professionals. Prioritize quality sleep, and maintain consistent sleep wake cycles. Consider autonomic nervous system training through breathwork and meditation.

Personalized Testing and Closing Takeaways

Remember that healing is possible when we address the root causes. I have seen patients make remarkable recoveries when these overlooked factors are finally addressed.

Thank you for tuning into Wellness Focus for doctor this month. See you next time. Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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