Tryptophan Talks to Your Heart About Inflammation

4 MIN READ

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BY MAGGIE MICHALCZYK

Beyond the turkey nap, tryptophan quietly shapes your heart health.

Most of us have a singular association with the amino acid tryptophan: a Thanksgiving turkey, which results in a **good nap**. It's true that the tryptophan in turkey can make us drowsy by affecting our sleep-wake cycles. (The size of a Thanksgiving meal also likely factors in.) But that's just one source of tryptophan. One function. There are others worth knowing about.

Beyond turkey, you'll find tryptophan in dark meat chicken, dairy products, pumpkin seeds, chia seeds, beans, oats, broccoli, and asparagus. The body doesn't make this essential amino acid on its own, meaning we need to get it from our diets.

Functionally, tryptophan does a lot. It helps build proteins, supports the production of vitamin B3, and is the raw material your body uses to make serotonin and melatonin — the chemicals behind good sleep and stable mood. It also plays a surprisingly complex role in heart health, one that researchers are still working to understand. The short version: tryptophan can be good for your heart, but chronic inflammation can flip the script.

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The Link Between Tryptophan and Heart Health

Studies link higher tryptophan levels in the blood to a **lower risk** of heart disease and

early death. But whether it's protective depends on how the body breaks it down. That happens via three pathways: one in the gut, another that produces serotonin, and a third called the kynurenine pathway (KP), which is closely tied to immune function and inflammation.

A **new review** published in *Frontiers in Cardiovascular Medicine* highlights a connection between activation of the kynurenine pathway and higher rates of cardiovascular disease. This is notable, since *most* tryptophan (more than 95% of it) gets processed this way.

In a healthy body, the kynurenine pathway becomes activated in a regulated way. But when the pathway becomes overactivated, often in response to chronic inflammation or immune stress, the balance of kynurenine pathway metabolites shifts.

This contributes to heart disease in several ways: it activates the immune system, drives inflammation, generates oxidative stress, and damages the lining of your blood vessels. That last one, endothelial dysfunction, sits at the root of atherosclerosis, heart failure, and high blood pressure.

While the exact mechanisms are still not fully understood and "still need to be verified by more functional experiments," the authors emphasize that the *balance* of metabolites within the pathway (protective versus harmful) is what shifts under inflammatory stress.

Still, the findings offer something actionable and worth considering: getting your **chronic inflammation** in check could promote healthier tryptophan metabolism via this well-worn pathway, leading to higher chances of better heart health outcomes.

Lowering Inflammation Through Diet

Medications targeting the KP pathway are in development, most prominently as cancer immunotherapies in clinical trials. But lifestyle factors including diet and exercise remain the most accessible levers for the rest of us.

When it comes to chronic inflammation, what's on our plate matters most. The Mediterranean diet has the strongest evidence base for reducing chronic inflammation and supporting heart health. One study cited in the review found it may even modify the relationship between kynurenine pathway metabolites and the risk of atrial fibrillation and heart failure, early evidence that what we eat could shape how our bodies process tryptophan downstream. It emphasizes a variety of fiber-rich plant foods, healthy fats, and lean proteins while limiting processed foods, sugar, and saturated fats.

What you avoid is equally important. At a time when high-sugar, high-salt, ultra-processed foods are ubiquitous, reducing your intake is truly one of the best things we can do for heart health, gut health, longevity, and more.

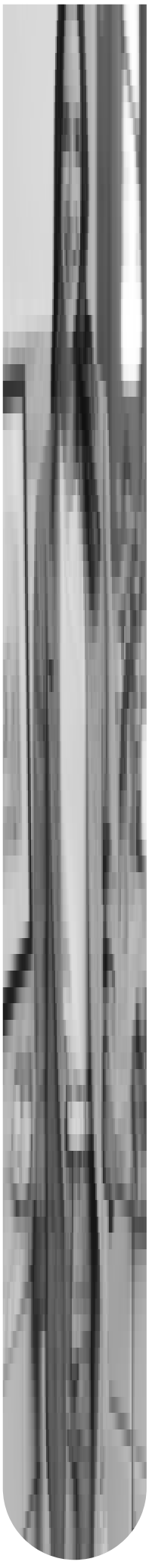
Start small by limiting pre-packaged foods, cooking at home, and covering half your plate with plant foods to reap the benefits of their protective properties. Getting a variety of micronutrients and polyphenols from a rainbow of colorful fruits and veggies can protect our hearts, bodies, and minds.

And just like the centenarians in Sardinia who follow the Mediterranean diet know, healthy eating is just one part of the puzzle. So is daily exercise, stress management, quitting smoking, limiting alcohol, getting adequate sleep, and connecting with people and nature — all powerful ways to reduce inflammation, and simple cornerstones of heart health.

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WRITTEN BY:



Maggie Michalczyk

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