

# Could carpal tunnel syndrome fuel heart failure risk?

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Call it a hand signal of sorts.

New research from Germany shows that the common nerve disorder [carpal tunnel syndrome](#) (CTS) may be a harbinger for [heart failure](#) among older folks. In a study of 164,000 people, those 60 years or older who had the condition, which causes pain, weakness and numbness in the hand and wrist, had nearly a 50% higher risk for heart failure.

But the association between the two is just that, said study author Karel Kostev, a senior scientific principal for epidemiology with IQVIA in Frankfurt. There is no proof that one causes the other, and the findings should not cause patients with carpal tunnel to panic.

Their findings were published July 12 in *JAMA Network Open*.

"These two diagnoses are very different," Kostev said, "and there is no direct link between them." As of now, he added, there is "no reason to check for heart failure only [based on] having carpal tunnel syndrome" or any other inflammatory disease involving an extremity.

Still, the identified association between CTS and heart failure is of interest because both are relatively common, and both are potentially serious. CTS affects between 3% and 6% of adults, according to the American Academy of Family Physicians.

"Carpal tunnel syndrome is a painful disorder of the hand, caused by pressure on nerves that run through the wrist usually due to inflammation," Kostev noted. Left untreated, it can lead to permanent hand dysfunction, the American Academy of Orthopaedic Surgeons notes.

Just over 6 million adult Americans have heart failure, according to the U.S. Centers for Disease Control and Prevention. Kostev explained that it develops when the heart doesn't pump enough blood for the body's needs.

"In most cases, heart failure develops slowly and occurs in elderly people," he said. Absent intervention, it significantly raises a person's risk for premature death.

This spotting of a link between CTS and heart failure is not new, Kostev said. A Danish study was the first to report the association in 2019.

To further explore the relationship, Kostev and a team led by Dr. Mark Luedde, of the Cardiology Joint Practice Bremerhaven at Christian Albrechts-University of Kiel in Bremerhaven, looked at about 82,000 German patients who were first diagnosed with CTS between 2005 and 2020 and the same number without CTS. The average age of both groups was 53. About two-thirds were women.

All were then tracked for about a decade to identify which patients also ended up being diagnosed with heart failure. In the end, no risk association of any kind was seen among patients under age 60, although Kostev noted that it's difficult to put much stock in that finding given that heart failure is very rare among younger patients.

The research team did, however, find a clear risk among patients 60 and up. In that age group, 6.2% of non-CTS patients were ultimately diagnosed with heart failure, compared with 8.4% of CTS patients.

The risk association was similar among both men and women, suggesting that seniors with carpal tunnel may face a roughly 50% greater risk for developing heart failure than seniors who do not have the hand disorder.

What's unknown is why. One theory: "CTS may be an early symptom of a disease called amyloidosis," Kostev said, describing that as a [rare disease](#) that occurs when a protein called amyloid builds up in organs, causing them to work improperly.

But given that "not each CTS case is linked to amyloidosis, and not each amyloidosis causes heart failure," Kostev said the amyloid theory may not fully explain the connection researchers identified.

Even so, the potential role of amyloidosis may be significant, noted Dr. Gregg Fonarow, director of the Ahmanson-UCLA Cardiomyopathy Center in Los Angeles, who reviewed the findings. He noted that amyloidosis is "an under-recognized" cause of heart failure that's often diagnosed at a very late stage among heart failure patients.

Fonarow noted that past research has indicated that [amyloidosis](#) patients "may present with symptoms of carpal tunnel syndrome approximately 5 to 15 years prior to cardiac impairment and a heart failure diagnosis."

He said that suggests a CTS diagnosis could be a useful early indicator of a potential uptick in heart failure risk.

Given that the vast majority of CTS patients do not develop [heart](#) failure, however, Fonarow cautioned that "the role for routine systematic cardiac screening of those diagnosed with [carpal tunnel](#) syndrome requires further study."

**More information:** Mark Luedde et al, Association Between Carpal Tunnel Syndrome and Subsequent Heart Failure Among Adults in Germany, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.23091](#)

The U.S. National Institute of Neurological Disorders and Stroke has more on [carpal tunnel syndrome](#).

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