

# Insights on the relationship between essential tremor and carpal tunnel syndrome: a letter to the editor

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## Dear Editor,

I read with great interest your article titled "Is essential tremor a risk factor for carpal tunnel syndrome? A prospective study excluding the most common comorbid conditions" by Kocatürk İ., published in *Anatolian Current Medical*, 2024;6(4):325-330.<sup>1</sup>

Carpal tunnel syndrome (CTS) is the most common entrapment neuropathy of the upper extremity, resulting from compression of the median nerve as it passes through the carpal tunnel.<sup>2</sup> CTS is commonly associated with risk factors such as repetitive hand movements, wrist injuries, obesity, and conditions like diabetes mellitus, hypothyroidism, and rheumatoid arthritis. These factors contribute to the compression of the median nerve within the carpal tunnel, leading to characteristic symptoms.

Kocatürk İ. examined whether essential tremor is a risk factor for CTS in the article. In this study, the most common risk factors for CTS were excluded, and the presence of CTS in this patient group was evaluated using electromyography (EMG), with tremor severity assessed via the Fahn-Tolosa-Marin Clinical Tremor Rating Scale (FTM TRS). Although the study was well planned, there are a few ambiguities we would want to address.

First, in this study, CTS classification was conducted using only distal latency and amplitude assessments to differentiate normal, mild, and moderate cases. However, in mild CTS cases, sensory distal latency prolongation and/or reduction in sensory conduction velocity are typically observed, while moderate CTS cases are characterized by these findings along with prolongation of the median nerve distal motor latency and/or reduction in motor conduction velocity. In the literature, including studies investigating the association between tremor and CTS, distal latency measurements are supplemented with sensory conduction velocity for mild CTS and motor conduction velocity for moderate CTS.<sup>3,4</sup> The pathophysiology of CTS is associated with demyelination,

where compression of the median nerve within the carpal tunnel results in slowed conduction velocity and prolonged distal latency, both markers of demyelination. In the study by Kocatürk İ., however, the omission of conduction velocity measurements may have led to the lack of a significant association between tremor and EMG findings, potentially leading to the detection of fewer CTS cases overall.

Secondly, the analysis of occupational groups in this study reveals a methodological limitation. The authors reported the distribution of occupational categories; retiring, homemaker, worker, civil servant and student-but only performed a statistical comparison between the homemaker and "others" categories. The exclusion of other occupational groups from the analysis may have influenced the results. Given that CTS is recognized as a common occupational disease often associated with job-related factors, studies have shown higher prevalence rates among office workers and civil servant.<sup>5,6</sup> A comprehensive comparison among the included occupational groups could have highlighted significant differences in CTS distribution.

Finally, we believe that the issues mentioned in our letter may be beneficial to comment on the results of the current study. We are aware of the challenges in performing experimental research studies and congratulate the authors for their valuable study.

Sincerely,

## ETHICAL DECLARATIONS

### Referee Evaluation Process

Externally peer-reviewed.

### Conflict of Interest Statement

The authors have no conflicts of interest to declare.

### Financial Disclosure

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### Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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**Dear Editor,**

1. In this study, patients with only sensory findings were defined as mild carpal tunnel syndrome (CTS), and patients with sensory and motor findings (distal latency prolongation or speed decrease) were defined as moderate CTS. In other words, median motor speed was also taken into account when defining moderate CTS.<sup>1</sup> Although the referenced study stated motor involvement in addition to sensory findings for moderate CTS, as stated in the method section of this study, prolongation of median motor distal latency has been accepted as a sufficient and sensitive method for defining moderate CTS in many studies.<sup>2,3</sup> In addition, prolongation of median motor latency is also an expected finding in patients with decreased median motor speed.<sup>2</sup>

2. Since this study population was relatively small, it would be difficult to evaluate 4 or 5 groups statistically, and therefore patients were divided into two groups as housewives and others.

Thank you for your valuable contributions.

Best regards.

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