

**In Response To:**

Zesiewicz T, Vu T, Carranza MA, et al. Unusual wrist tremor: unilateral isometric tremor? Tremor Other Hyperkinet Mov. 2014; 4: <http://tremorjournal.org/article/view/194>

Letter to the Editor

**Another Case of “Shopping Bag” Tremor: A Difficult to Classify Action Tremor**

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To the Editor:

Zesiewicz et al.<sup>1</sup> reported an unusual case of unilateral wrist tremor that occurred while the patient carried a weighted object (e.g., a shopping bag) or made a fist, and suggested that this could be a form of isolated isometric tremor. Here we report another patient who presented with a phenomenologically similar tremor.

A 70-year-old right-handed female presented to the Center for Parkinson’s Disease and Other Movement Disorders at Columbia University Medical Center. Her chief complaint was hand tremor. By history, the tremor occurred in its most extreme form while holding a shopping bag in either hand, but particularly in the left. She noted that if the bag was empty or too heavy, tremor would not occur; hence, the tremor would commence only with a lightly weighted bag (approximately 1–2 pounds). She also noted mild hand tremor while performing other activities of daily living (e.g., bringing a spoon to her mouth or hold-

ing a newspaper), but it was the “shopping bag” tremor that was most severe and distressing. This distressing tremor had been present for the past 3–5 years, although a mild bilateral kinetic tremor of the hands had preceded it by 15 years. Her family history was significant for one maternal uncle with Parkinson’s disease and one niece with mild positional hand tremor. Her past medical history was significant for diabetes mellitus and asthma, as well as mild depression in the past that had been responsive to pharmacotherapy. Her medications included metoprolol ER 100 mg bid, gabapentin 200 mg bid, venlafaxine ER 37.5 mg qd, and buspirone 7.5 mg bid. The patient was not interested in taking medications for the tremor.

She signed an informed consent for a videotaped neurological examination. She was examined with her arms at rest (lying, seated, standing, and walking), and there was no visible tremor.

When a weighted shopping bag was placed in either the right or left hand, a moderate to marked amplitude tremor developed, mainly

involving flexion–extension movements at the metacarpophalangeal and wrist joints. The tremor did not subside until the bag was removed. For maximal tremor, her hand had to be partially open, forming a “J” shape (Video Segments 1–5), while loosely grasping the handle of the bag. If she clenched a tight fist around the handle of the bag, the tremor lessened considerably. When she made a tight fist in either hand (no shopping bag), a very mild version of the tremor emerged. The tremor did not disappear or change in character with distraction, nor was it entrainable. The examiner could not reproduce it with suggestion. Spiral drawing, bringing a cup to her mouth, and pouring water elicited only a mild kinetic tremor. There was no head, voice, or jaw tremor. The Unified Parkinson’s Disease Rating Scale (UPDRS)<sup>2</sup> revealed normal facial expression, normal gait and arm swing, absence of axial bradykinesia and normal tone. Finger taps on the left were not as fast as on the right, but she was right-handed, there was no decrement and all other rapid alternating movements were symmetric and normal. There was no dystonic posturing of her hands during arm extension and no torticollis or blepharospasm. The remainder of her neurologic examination was unremarkable.

This case represents another example of a tremor that is produced most prominently by the action of holding a loosely weighted bag. The tremor is not neatly classifiable into the existing classification schemes for tremor, as it shares characteristics with both task-specific and isometric tremor. Task-specific tremors appear during specific activities,<sup>3</sup> most commonly during writing but also during diverse activities such as playing an instrument, golfing, bowling, or performing surgery.<sup>4</sup> Isometric tremor occurs in situations where antagonist muscles contract synchronously against a rigid resistance,<sup>5</sup> and includes orthostatic tremor, where the floor serves as the counterpoint against which the muscles of the lower extremities contract. Isometric tremor can occur in isolation or as a symptom of any other tremor disorder. In patients with Parkinson’s disease, for example, an isometric action tremor is often inducible by fist clenching.<sup>6</sup>

The tremor described here does not completely fulfill the criteria of task specificity. One key feature of task-specific tremor is the skilled nature of the task, which requires the use of an instrument or tool.<sup>7</sup> Risk for task-specific movement disorder increases with degree of skill.<sup>8</sup> Carrying a shopping bag involves no particular expertise. The situational specificity of the tremor is related to other factors, namely the weight of the bag and position of the upper limb, which must fall within narrow ranges to elicit the tremor. These factors are closely tied to isometricity.

Another feature of task-specific tremor is intent to perform the task.<sup>9</sup> Assumption of the posture in preparation for activity, such as holding a pen, is not sufficient to induce tremor; rather, the tremor begins when the decision is taken to start the activity, which may not coincide with movement onset. In the current case, tremor continued at the same rate regardless of the patient’s attention to the activity, and therefore required no cognitive engagement. Merely assuming the correct posture was also insufficient. Resistance in the form of weight on the fingers or, to a lesser degree, force from her own clenched fist, was necessary to reproduce the tremor. In our opinion, the tremor most closely resembles a focal isometric tremor, despite some task-specific features.



**Video. Segment 1. Subject sitting with the arms at rest.** No tremor was noted. **Segment 2. Subject Sitting with Arms Extended.** A mild postural tremor is noted in the right greater than left hand, and mainly involves the thumb. **Segment 3. Subject Performing Finger-to-Nose Maneuver.** A mild kinetic tremor is noted (left greater than right hand). **Segment 4. Subject is Instructed to Make a Fist with Both Hands while Standing.** A mild tremor is noted in both hands. **Segment 5. Subject Is Instructed to Hold a Shopping Bag in Each Hand while Standing.** This results in a marked tremor in both hands.

While it is possible that this patient could have had early Parkinson’s disease, the absence of any other clear signs of parkinsonism (rest tremor, bradykinesia, changes in arm swing, changes in tone) make this unlikely, especially as the shopping bag tremor had already been present for 3–5 years and thus, one would expect signs of parkinsonism to be clearly manifest at this point. The tremor was somewhat asymmetric, however tremor asymmetry is a feature of numerous types of tremor besides Parkinson’s disease (e.g., essential tremor) and this is therefore of little diagnostic significance.<sup>10</sup> The tendency for the tremor to emerge when precisely the right balance of forces was present, gave it a latency and a crescendo-like quality at times, but this should not be confused with the re-emergent tremor associated with Parkinson’s disease; by contrast, it further supports the view of this tremor as an isometric tremor. Given the high population prevalence of Parkinson’s disease, the presence of a family history of that disease in a single second-degree relative is of dubious significance as well.

Another possibility is that this case represents a subtype of essential tremor. This designation, however, would require an alteration in the definition of essential tremor, whose cardinal feature is a kinetic tremor.<sup>11</sup> In our case, the kinetic component of the tremor, as demonstrated in the finger-to-nose task, was quite mild compared to the tremor elicited by holding the shopping bag. Another relevant characteristic of essential tremor is that placing a weight on the hand generally improves

rather than exacerbates the tremor, and serves as the basis for the recommendation that patients with essential tremor use weighted utensils when eating.

This and Zesiewicz' case suggest a heretofore unrecognized subtype of isometric tremor. It is important for clinicians to recognize it as distinct from other tremor disorders such as those typically seen in patients with essential tremor or Parkinson's disease. Treatment can be targeted towards the associated tremor disorder if one is identified, but in its isolated form, the optimal treatment remains unknown.

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