

# Tremor Distribution in Relatives of Patients with Cervical Dystonia Versus Essential Tremor

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**Objective:** To examine the relationship between cervical dystonia and essential tremor (ET) through a comparison of tremor distribution reported in relatives of patients with cervical dystonia plus tremor (CD/T), cervical dystonia without tremor (CD no T), and ET.

**Background:** Fixed-rate rhythmic movements (tremor) of head, hand and/or voice occur in focal cervical dystonia although their prevalence and validity are debated. Family history of tremor is common in CD, although less common than ET, and correlates with presence of tremor in CD. Tremor location in CD relatives has not been reported previously. A comparison of tremor location in relatives of those with CD/T, CD no T, and ET may explicate the relationship between tremor and focal dystonia

**Design/Methods:** A retrospective record analysis of 238 CD patients (mean age 55, 178 female), 127 of whom had tremor, and 45 Et patients (mean age 62, 24 female) evaluated by protocol video, accelerometer, high-resolution voice recording, multi-channel EMG, quantitative neurologic examination and in-depth family history interview. Tremor was documented if more than 10 seconds of fixed rate (< 2-hertz variability) rhythmic movement was recorded.

**Results:** Relatives/tremor distribution:

- A) 56 CD/T families with 98 relatives - head 31%, hands 62%, both 6%
- B) 33 CD no T families with 50 relatives - head 56%, hands 34%, both 10%
- C) 25 ET families with 43 relatives - head 5%, hands 93%, both 2%

p = head A and B vs. C, .005, hands A and C vs B, .005.

**Conclusions:** Tremor distribution in relatives of CD with or without T is more apt to include head tremor than in ET relatives. CD/T like ET has a high representation of family members with hand tremor. A familial, perhaps genetic, factor similar to that in ET may influence the occurrence of tremor in focal dystonia.

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