

### The utility of autonomic symptom questionnaire in diabetic autonomic neuropathy screening

**Aims:** Early detection of autonomic neuropathy in diabetes could positively affect treatment targets and interventions and aid symptom management. However, currently, there is a lack of feasible tests in the clinic due to their demands in time, resources, operator training, and patient preparations. The Composite Autonomic Symptom Score (COMPASS)-31, a validated, self-assessment questionnaire designed for clinical autonomic research and practice, could represent a promising surrogate for the gold standard CAN tests. This study explored using a Norwegian, digitally distributed version of the COMPASS-31 in diabetes and matched controls.

**Methods:** This observational case-control study included people with long-term type 2 diabetes, newly diagnosed type 2 diabetes, and matched controls. A Norwegian version of the COMPASS-31 was answered online. Diabetic neuropathy was assessed with cardiovascular autonomic reflex tests, electrical skin conductance, monofilament test, and sural nerve conduction.

**Results:** People with long-term diabetes had higher COMPASS-31 scores than the other groups, and women scored higher than men. Independent of groups, COMPASS-31 scores correlated with definite or borderline cardiovascular autonomic neuropathy, while no associations were detected with sudomotor function, monofilament test, or sural nerve function.

**Conclusions:** Signs and symptoms of autonomic neuropathy are a neglected area of care for people with diabetes, even though they should be a preindication that further testing is needed. This practical and user-friendly questionnaire may support more rigorous autonomic investigation in the future.

**Comments.** Diabetic autonomic neuropathy is one of the most wide-reaching and debilitating but still among the least understood complications of diabetes, which in part hinders a comprehensive investigation. Though current guidelines suggest screening at diagnosis of type 2 diabetes and within five years of type 1 diabetes, and sooner with symptoms, there is a lack of compliance due to many factors, including time shortage and lack of specific tests. Thus, we need to be creative to increase compliance. One route could be to screen for autonomic symptoms in a more standardized way using, e.g., the COMPASS-31 questionnaire. This questionnaire has the advantages of being relatively short (as short as 18 questions if no symptoms exist), easy to understand and fill out, possible to administer without healthcare personnel present, and easy to interpret. On top of that, it provided organ-specific scores, which makes it possible to target further investigations.

However, we need to evaluate this questionnaire more profoundly and in larger cohorts since different studies have found the scores associated with various peripheral and autonomic neuropathy tests. This study investigated 66 people (of which almost half were healthy). Only two people had definite cardiovascular autonomic neuropathy, and approximately 14 people had borderline, thus making it more challenging to distinguish borderline and diabetes from healthy. However, the result from this and similar still indicate use in the future.

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**Reference.** Meling S, Tjora E, Eichele H, Ejskjaer N, Carlsen S, Njølstad PR, Brock C, Søfteland E. The Composite Autonomic Symptom Score 31 Questionnaire: A Sensitive Test to Detect Risk for Autonomic Neuropathy. *J Diabetes Res.* 2023 Aug 9;2023:4441115. doi: 10.1155/2023/4441115. PMID: 37593120; PMCID: PMC10432092.

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