



# NEURODIAB

## 31<sup>ST</sup> ANNUAL MEETING OF THE DIABETIC NEUROPATHY STUDY GROUP OF THE EASD

27-30 AUGUST 2021

ARISTOTLE UNIVERSITY OF THESSALONIKI  
RESEARCH DISSEMINATION RESULTS



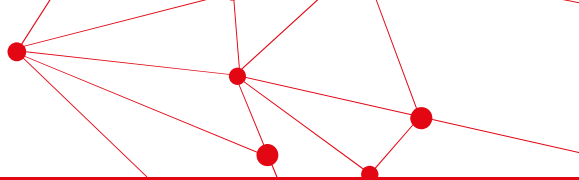
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## DAY 1 | FRIDAY 27 AUGUST 2021, ORAL ABSTRACT

### OR.08 NERVE CHECK MASTER FOR SCREENING OF PERIPHERAL NEUROPATHY. DATA IN A POPULATION OF PATIENTS WITH TYPE 1 AND TYPE 2 DIABETES

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**Objectives:** Quantitative sensory testing (QST) is required for early detection of sensory neuropathy. Nerve Check Master (NCM) is a portable device designed to assess vibration (VPT), warm (WPT), cold (CPT), heat pain (HPT) perception thresholds. Previous studies have suggested that NCM offers good accuracy to diagnose diabetic peripheral neuropathy (DPN). The present study aimed to test the diagnostic validity of NCM in patients with type 1 (T1D) or type 2 diabetes (T2D) as compared to healthy subjects (HC), included both in France and in Italy.

**Methods:** We included 76 T1D adults (aged 35 years, median; diabetes duration 13.5 years, mean HbA1c 8.0%), 56 T2D subjects (aged 60 years; diabetes duration 12.6 years, mean HbA1c 7.6%) and 43 HC (aged 53 years; HbA1c 5.7%, median), who underwent QST assessment with NCM. DPN was defined according to the Michigan Neuropathy Screening Instrument (MNSI). NCM measurements were considered in favor of DPN if 3 of the 4 tests were abnormal.

**Results:** Among T1D patients, the prevalence of DPN was 26% and 38% according to MNSI and NCM, respectively, while it was 35% and 48% among T2D patients. In T1D patients, compared to MNSI, NCM offered sensitivity 65%, specificity 71%, positive (PPV) and negative predictive values (NPV) 45% and 85% respectively. In T2D patients, NCM offered sensitivity 65%, specificity 61%, PPV 48% and NPV 76%. The rates of abnormal tests were the highest for VPT and HPT: 67% and 58% in T1Ds, and 83% and 66% in T2Ds. Among patients with abnormal MNSI, 90% and 70% of T1Ds and 95% and 80% of T2Ds had abnormal VPT and HPT, respectively. Among patients with negative MNSI, VPT and HPT were abnormal in 59% and 53% of T1Ds and in 72% and 55% of T2Ds. Among the 43 HCs, all were negative at MNSI and 38 negative subjects at NCM. All of 5 positive HC were positive both at VPT and HPT.

**Conclusions:** These data suggest that both in T1D and T2D subjects, NCM may be used as a screening tool to assess DPN. Considering the cut-off of 3 abnormal tests, NCM shows a good accuracy compared to MNSI. By evaluating both small and large fiber impairment, NCM may detect more patients with DPN than MNSI. In our T2D population the prevalence of DPN was slightly higher than in T1D population.