### Introduction

There are limited data available on how disease modifying treatments (DMTs) in patients with multiple sclerosis (MS) affect symptoms such as fatigue, pain, depression, and quality of life (QoL). NIH funded PROMIS® and Neuro-QoL® PRO measures use a common metric for all domains and provide US population norms for each as well.

The aim of the current study was to compare levels of symptoms for individuals with MS, both currently taking and not taking DMTs, with symptom levels in the US population using the PROMIS and Neuro-QoL population norms.

### Methods

**Participants:** 1000 (376 users; 624 non-users) persons with MS responded to a mailed survey. Participants were required to have self-reported MS diagnosed by a physician and to be age 18 or above.

**Measures:** PROMIS and Neuro-QoL short forms for the following domains were included: fatigue, pain interference, anxiety, depression, sleep disturbance, wake disturbance, cognitive executive function, cognitive concerns, and physical function. Self-reported DMT use and demographics were also included.

**Analyses:** PROMIS or Neuro-QoL US population means for each measure were subtracted from the mean scores on each of the measures after grouping MS participants by DMT user status. One sample t-tests were carried out to determine statistical significance; the Holm® correction method was applied to account for multiple comparisons.

### Results

Individuals with MS had statistically significantly higher pain, fatigue, depression, anxiety, sleep disturbance, and wake disturbance than the US population means (all p<0.001), and lower cognitive and physical scores (all p<0.001).

Individuals not taking DMTs had higher levels of symptoms than those on DMTs compared to the general population across all symptoms.

The largest differences between those taking and not taking DMTs were found in the fatigue and physical function domains.

### Discussion

Symptom profiles are an informative and useful way to quantify the differences in symptom levels in MS patients compared to large US based population norms, and to examine the effect of DMTs on patients with MS. MS patients endorse a higher symptom burden than the norm population across all domains.

### Summary

Although MS is responsible for a broad spectrum of symptoms, patients taking DMTs endorse less symptomatology than those not on DMTs.

### References