Real-world Utilization of a Novel Multi-Analyte Blood-Based Biomarker Panel, the Octave® MSDA Test in Clinical Practice across the United States

Darin T. Okuda, MD[2], Gargi Datta, PhD[1], Matt Burrill[1], Elisa Toy, PhD[1], David Brazel, PhD[1], Jonathan Verrier, PhD[1], Ferhan Qureshi[1], Terrie Livingston, PharmD[1]

[1]Octave Bioscience, Inc, Menlo Park, CA, USA. [2]Department of Neurology, The University of Texas Southwestern Medical Center, Peter O'Donnell Jr. Brain Institute, Dallas, TX, USA

EP2474

Introduction

The complexity of MS highlights the need for reliable, accessible biomarkers to improve disease management. Blood-based biomarkers provide a minimally invasive, cost-effective, scalable way to monitor disease activity (DA) and guide personalized treatment. Integrating them into routine care could support earlier diagnosis, better-targeted therapy, and improved long-term outcomes for people living with MS.[1]

Objectives

To describe the real-world utilization of the Octave® Multiple Sclerosis Disease Activity (MSDA) Test, a clinically validated, multi-analyte, blood-based biomarker panel for MS in clinical practice across the US.[2,3]

Methods

The Octave® MSDA Test provides a quantitative, objective, validated disease activity (DA) score with established thresholds corresponding to low (1.0–4.0), moderate (4.5–7.0), and high (7.5–10) levels of disease activity (Figure 1).

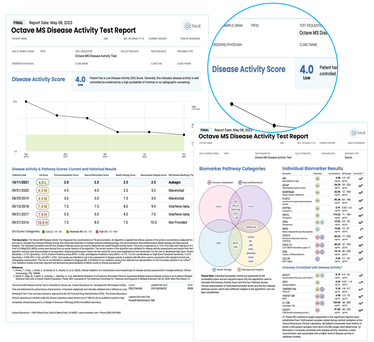


Figure 1: Example Octave® MSDA Test report.

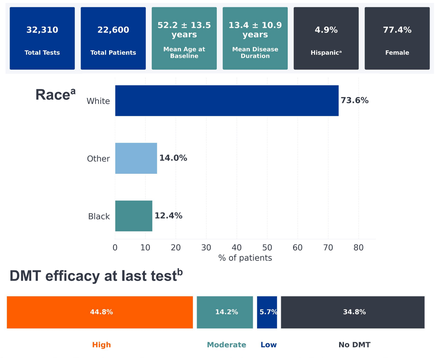


Figure 2: Patient Demographics and Disease Data
[a]Patient data not reported:
Race n=9,004; Ethnicity n=9,999
[b]Excludes DMT not entered (n=5,711) and Other/No Match (n=25)

We conducted a retrospective descriptive analysis of data elements collected and reported from the Octave® MSDA Test requisition form until end of July 2026. Demographic and disease related data includes gender, age, race and ethnicity, current disease modifying therapy (DMT), reason for test, and date of MS diagnosis.

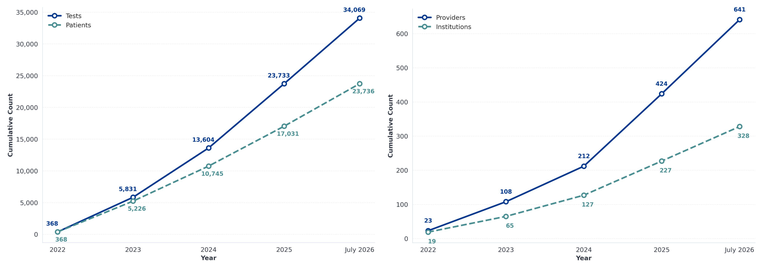


Figure 3: Left: Cumulative MSDA tests and patients by year, through July 2026.
Right: Cumulative number of institutions and providers by year, through July 2026.

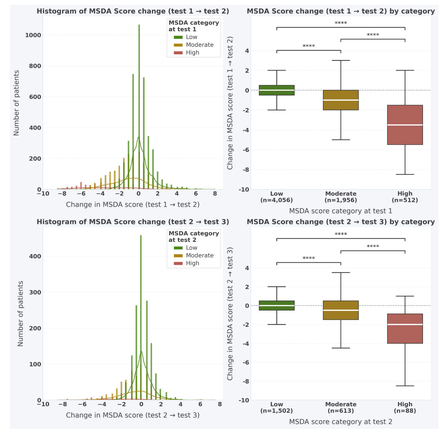


Figure 4: Change in MSDA scores between consecutive tests.
Left panels show histograms of the change in MSDA score between two tests, and right panels show boxplots of change in MSDA score between two tests by MSDA score categories. Only patients with at least a 3 month interval between consecutive tests were included in this analysis. Bonferroni-corrected p-values were calculated using Welch's t-test for pairwise group comparisons. Significance thresholds:
**** p < 0.0001 *** p < 0.001 ** p < 0.01 * p < 0.05 ns: not significant

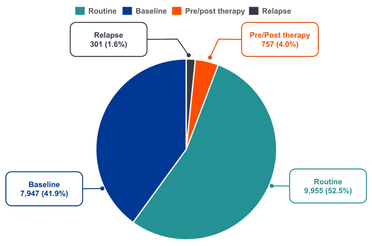


Figure 5: Percentage of MSDA tests by indication of use (excluding 15,109 Other)
Primary reasons categorized under "Other" include relapse symptom assessment, longitudinal clinical monitoring, evaluation of DMT response, and additional clinician-specified indications.

Results

- **Demographics** | Baseline demographics include mean age 52.2 years; 77.4% female; mean disease duration 13.4 years; patient reported race and ethnicity 73.6% White, 14% Black, and 4.9% Hispanic. Of patients with HCP reported DMT use, 44.5% of patients were treated with a high efficacy DMT (anti-CD20s, natalizumab, cladribine, alemtuzumab) and 34.8% reported not currently on a DMT at their latest test (Figure 2).
- **MSDA Utilization** | The Octave® MSDA Test has been commercially available in the U.S. since March 2022. By end of July 2026, we report on 23,736 MS patients tested. A total of 34,069 MSDA tests have been ordered from 328 institutions and 641 HCPs (Figure 3).
- **MSDA Scores** | MSDA scores were 67.6% low, 26.7% moderate and 5.7% high. 71.7% of patients had 1 MSDA Test, 18.3% had 2 and 10.0% had ≥3 MSDA Tests. For tests ≥3 months apart, MSDA score changes differed significantly across all categories (p≤0.0001). From Test 1 to 2, mean changes were +0.2, −1.0, and −3.5 for low, moderate, and high baseline scores; from Test 2 to 3, they were +0.1, −0.6, and −2.5 (Figure 4). In the high category, decreases exceeded the minimum detectable change (1.24), suggesting effective intervention between tests.[4] Top HCP-reported testing indications were routine monitoring, baseline evaluation, pre/post-therapy assessment, and relapse assessment (Figure 5). Figure 6 shows MSDA scores by DMT mechanism of action and not intended for direct efficacy comparisons.

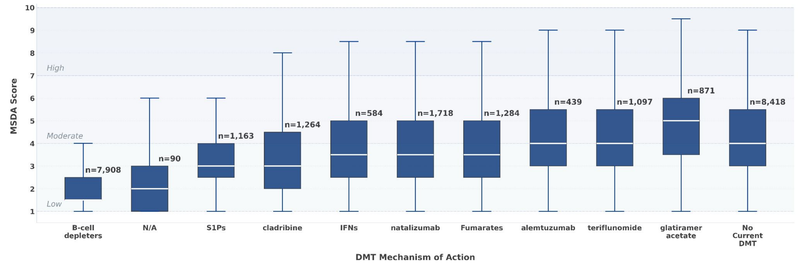


Figure 6: MSDA score by DMT Mechanism of Action

Conclusions

This report highlights the increasing utilization of the Octave® MSDA Test in clinical practice across the US and its utility in informing provider decision-making. Continued research is essential for unlocking the full potential of the Octave® MSDA test, ensuring its seamless integration into clinical workflows and establishing the test as a critical tool to improve patient outcomes.

Disclosures: D. Okuda received personal compensation for consulting and advisory services from Amgen, Biogen Inc., Cortechs.AI, Eisai, EMD Serono, Genentech, Genzyme/Sanofi, Immunic Therapeutics, Moderna, Octave Bioscience, Pfizer, and Zenas BioPharma along with research support from Alexion and Novartis. D.T.O. has issued national and international patents along with pending patents related to other developed technologies. D.T.O. received royalties for intellectual property licensed by The Board of Regents of The University of Texas System. D.T.O. is the Founder of Revert Health Inc. G. Datta, E. Toy, M. Burrill, D. Brazel, J. Verrier, F. Qureshi, and T. Livingston are employees of and hold equity interest in Octave Bioscience. M. Burrill is a consultant for Octave Bioscience.

References:[1]Paul A, Comabella M, Gandhi R. Biomarkers in Multiple Sclerosis. Cold Spring Harb Perspect Med. 2019 Mar 1;9(3):a029058.
[2]Chitnis T, Foley J, Ionete C, et al. Clinical Validation of a Multi-protein, Serum-based Assay for Disease Activity Assessments in Multiple Sclerosis. Clinical Immunology. Aug 2023.
[3]Qureshi F, Hu W, Loh L, et al. Analytical validation of a multi-protein, serum-based assay for disease activity assessments in multiple sclerosis. Proteomics Clinical Applications. Feb 2023.
[4]McCurdy S, et al. Longitudinal short-term assessments of single- and multi-protein disease activity biomarkers to determine reliability and the minimum detectable change in people with clinically stable RRMS. Mult Scler. 2026 May 6:13524585261439680.

Presented at the 10th Joint ACTRIMS-ECTRIMS meeting (MSToronto), October 21-23, 2026 in Toronto, Canada.