



## Retrospective Analysis of Multiple Sclerosis Patients in Hawaii: How Do Caucasians Compare with Other Ethnocultural Groups

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**Background:** Historically, Multiple Sclerosis (MS) has largely been considered a disease disproportionately affecting Caucasians. However, current literature points to an increasing burden of MS in certain minority groups, namely African Americans and Hispanics. As Hawaii is a majority-minority state with a diverse population, it is a prime location for the analysis of MS burden among ethnocultural groups.

**Objectives:** To uncover similarities and differences in clinical presentation and initial imaging between the Caucasian MS patient population and MS patients of other ethnocultural groups (OEG) in Hawaii.

**Methods:** This is a single center retrospective pilot study of patients ages 18+ years with a diagnosis of MS (ICD-10 G35) between 2008-2023. Demographics, comorbidities, and presenting Expanded Disability Status Scale (EDSS) scores were collected for all patients. Initial spine and brain magnetic resonance imaging (MRI) reports and EDSS scores at time of imaging were recorded as available, with particular attention to lesion location and number. Patients with unknown racial status or yet to be seen in the office were excluded. Results: Of the 128 patients analyzed, 85 were Caucasian (C) and 43 were confirmed members of Other Ethnocultural Groups (OEG) which included 12 Hispanics, 10 Asians, 9 African-Americans, 6 Native Hawaiian and Other Pacific Islanders, and 6 who identified as Other. There were no significant differences in sex, home zip code, insurance status, or family history of MS. Caucasians had a lower prevalence of hypercholesterolemia ( $p=0.021$ ) and slightly lower EDSS scores at time of presentation ( $p=0.047$ ; C: median of 3.50, interquartile range [IQR] of 3.00-4.50; OEG: median of 4.00, IQR 3.25-5.00). While there was no difference in age at time of initial presentation, Caucasians were older at the time of their spine MRI compared to OEG ( $p=0.017$ ; C: median=43, IQR 35-58; OEG: median=37, IQR 28-44). No significant differences were found for either spine or brain MRI lesion burden or lesion location.

**Conclusions:** The key findings are that OEG presented with worse initial EDSS scores and Caucasians were older in age at the time of initial spinal cord MRI. Whether these differences should be attributed to biological influence, socioeconomic factors, and/or other phenomena is unclear at this time. Further investigation is required for confirmation as the limitations of this study include its single center nature, small sample size, and varying detail of records.