

# Persistent Underrepresentation of Hispanic and Latino Orthopaedic Surgeons in the Face of Increasingly Diverse Demographics

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## INTRODUCTION:

In the United States (US) the Latino and Hispanic (H/L) population composed 19% of the total population in 2021, an increase of ~14% in last 15 years. Recent studies have emphasized the importance of physicians who share similar cultural background with their patients, as it may enhance effective communication of essential medical information leading to increased patient satisfaction. Furthermore, ethnic diversity in the field of orthopaedic surgery is a crucial step toward improving patient satisfaction and reducing healthcare disparities. Given a lack of literature assessing the trends of H/L residents and physicians, we sought to analyze the H/L growth rate and representation relative to recent national demographics. We hypothesize that over the past 15 years, H/L representation lags among residency programs and attending physicians relative to their population growth, as well as when compared to other ethnic/race groups.

**METHODS:** Demographical data for the US population and growth rates were obtained from the decennial census. Race and ethnicity data for in-training residents was extracted from the Graduate Medical Education census in the Journal of the American Medical Association, over the period from 2006-2007 through 2020-2021. Similar data was obtained from the 2008 and 2018 AAOS census for attending level orthopaedic surgeons. Representation was recorded for the following groups: Hispanic/Latino, Black, Asian, Native American, Multiracial, and White were calculated as percentages of the total orthopaedic surgery residents in each academic year and along with their change ratio. For each individual group, the initial year and final year percentage was utilized to determine the change in relative representation of the total orthopaedic residents. A ratio of change for the percent of orthopaedic attendings and residents for each ethnic group relative to their national population growth over a 10 yr. span was calculated. Chi-squared analysis was conducted to compare the growth rates and determine statistical significance. Hispanic/Latino fellows per subspecialty of orthopaedics including adult reconstructive, foot and ankle, hand, musculoskeletal oncology, sports medicine, spine, trauma, and pediatrics were also compared over the last 15 years.

**RESULTS:** A total of 57,187 Orthopaedic Surgery Residents were identified over the 15-year study period, of which 2,812 identified as H/L or 4.9% of the total residents trained within this time frame. Orthopaedic Surgery Residents grew from 3,305 to 4,616 over the study period, representing a 36% increase from 2006-2007 to 2020-2021. H/L representation increased by from 3.6% (118 of 3,305) to 6.1% (281 of 4,616) representing a 70.5% increase in representation at the resident level. When comparing total representation of H/Ls being trained within each orthopaedic subspecialty; 6.1% (of 538) matriculated into adult reconstruction, 5.7% (of 210) in foot and ankle, 4.2% (of 1,906) in hand, 8.5% (of 188) in MSK oncology, 3.9% (of 2,416) in sports medicine, 5.9% (of 437) in spine, 2.3% (of 205), and 5.7% (of 476) in pediatric surgery. Representation for H/L from 2008 to 2018 at the attending level increased from 1.9% (of 25,464) to 2.2% (of 30,127) indicating a 15.8% increase. Comparing the ratios for H/L to other ethnicities of orthopaedic surgeons relative to their respective patient populations in a 10 yr. span, there was a significant difference in the growth rates respectively ( $p < 0.01$ ).

**DISCUSSION AND CONCLUSION:** This study's findings elucidate that over the past 15 years, Hispanic and Latino representation among in training residents has slightly increased but has been remarkably minimal at the attending level in orthopaedic surgery. When comparing the growth rate of the Hispanic and Latino population nationally, H/L representation falls behind relative to their colleagues of another ethnicity/race.

Year	White	Black	Hispanic/Latino	Asian	Native American	Other
2006-2007	70.0	12.0	3.6	12.0	0.5	2.0
2007-2008	70.5	12.5	3.8	12.5	0.5	2.0
2008-2009	71.0	13.0	4.0	13.0	0.5	2.0
2009-2010	71.5	13.5	4.2	13.5	0.5	2.0
2010-2011	72.0	14.0	4.4	14.0	0.5	2.0
2011-2012	72.5	14.5	4.6	14.5	0.5	2.0
2012-2013	73.0	15.0	4.8	15.0	0.5	2.0
2013-2014	73.5	15.5	5.0	15.5	0.5	2.0
2014-2015	74.0	16.0	5.2	16.0	0.5	2.0
2015-2016	74.5	16.5	5.4	16.5	0.5	2.0
2016-2017	75.0	17.0	5.6	17.0	0.5	2.0
2017-2018	75.5	17.5	5.8	17.5	0.5	2.0
2018-2019	76.0	18.0	6.0	18.0	0.5	2.0
2019-2020	76.5	18.5	6.2	18.5	0.5	2.0
2020-2021	77.0	19.0	6.4	19.0	0.5	2.0

