

TABLE E-1 Patient Characteristics

Characteristics	Service						
	Overall Population	Trauma	Foot and Ankle	Sports Medicine	Arthroplasty	Hand	Metabolic Bone Disease
No. of patients	723 (100%)	121 (16.7%)	192 (26.6%)	86 (11.9%)	238 (32.9%)	43 (5.9%)	43 (5.9%)
Female sex (%)	64.87	66.12	70.83	44.19	57.14	93.02	90.70
Age* (yr)	60 ± 17.3	63 ± 21.1	52 ± 15.5	45 ± 14.9	66 ± 11.1	66 ± 15.5	74 ± 11.6
Age category (%)							
18 to 50 yr	26.40	17.45	40.10	61.63	7.14	11.63	4.65
51 to 70 yr	42.70	26.44	48.96	36.05	51.67	46.51	20.93
>70 yr	30.80	42.98	10.94	2.33	41.18	41.86	74.42
Body-mass index†‡ (kg/m <sup>2</sup> )	27.2 ± 6.38 (n = 429)	NA	26.1 ± 5.21 (n = 133)	28.6 ± 7.62 (n = 77)	29.2 ± 7.42 (n = 146)	24.5 ± 4.67 (n = 35)	24.1 ± 5.20 (n = 38)
Underweight (<18.5 kg/m <sup>2</sup> ) (%)	0.00	NA	0.00	0.00	0.00	0.00	0.00
Normal (18.5 to 24.9 kg/m <sup>2</sup> ) (%)	40.33	NA	48.12	29.87	29.45	57.14	60.53
Overweight (25.0 to 29.9 kg/m <sup>2</sup> ) (%)	35.20	NA	33.08	40.25	34.93	31.43	36.84
Obese (≥30 kg/m <sup>2</sup> ) (%)	24.48	NA	18.80	29.87	35.62	11.43	2.63
Unknown§ (%)	40.66	100.00	30.73	10.47	38.66	18.60	11.63
Race (%)							
White	546 (75.5%)						
Black	20 (2.8%)						
Hispanic	10 (1.4%)						
Asian	5 (0.7%)						
Other	18 (2.5%)						
Unknown	124 (17.2%)						
Skin tone# (%)							
Light			85.43	71.74	93.27		
Dark			14.56	28.26	6.72		

\*The values are given as the mean and the standard deviation. †The values are given as the mean and the standard deviation, with the number of patients for whom body-mass index data were available in parentheses. ‡NA = not applicable (data not available). §Based on total number of patients in each service. #Light skin tone includes whites and Asians. Dark skin tone includes blacks and Hispanics.

TABLE E-2 Univariate Analysis of Potential Risk Factors for Hypovitaminosis D

	Normal*	Abnormal**†	Odds Ratio	95% Confidence Interval
Age group (n = 723)				
18 to 50 yr (n = 191)	95 (49.7%)	96 (50.3%)	(Reference)	
51 to 70 yr (n = 309)	187 (60.5%)	122 (39.5%)	0.65	0.45 to 0.93‡
>70 yr (n = 223)	129 (57.8%)	94 (42.2%)	0.72	0.49 to 1.06
Sex (n = 723)				
Male (n = 254)	127 (50.0%)	127 (50.0%)	(Reference)	
Female (n = 469)	284 (60.6%)	185 (39.4%)	0.65	0.48 to 0.89‡
Race (n = 599)				
White (n = 546)	337 (61.7%)	209 (38.3%)	(Reference)	
Black (n = 20)	2 (10.0%)	18 (90.0%)	14.51	3.33 to 63.18‡
Hispanic (n = 10)	5 (50.0%)	5 (50.0%)	1.61	0.46 to 5.64
Asian (n = 5)	3 (60.0%)	2 (40.0%)	1.08	0.18 to 6.49
Other (n = 18)	5 (27.8%)	13 (72.2%)	4.19	1.47 to 11.93
Skin tone§ (n = 582)				
Light (n = 551)	340 (61.7%)	211 (38.3%)	(Reference)	
Dark (n = 31)	7 (22.6%)	24 (77.4%)	5.53	2.34 to 13.05‡
Body-mass index (n = 429)				
Normal (n = 173)	113 (65.3%)	60 (34.7%)	(Reference)	
Overweight (n = 151)	93 (61.6%)	58 (38.4%)	1.18	0.75 to 1.85
Obese (n = 105)	50 (47.6%)	55 (52.4%)	2.07	1.26 to 3.40‡
Service (n = 723)				
Arthroplasty (n = 238)	146 (61.3%)	92 (38.7%)	(Reference)	
Sports (n = 86)	41 (47.7%)	45 (52.3%)	1.74	1.06 to 2.86‡
Foot/ankle (n = 192)	126 (65.6%)	66 (34.4%)	0.83	0.56 to 1.24
Hand (n = 43)	26 (60.5%)	17 (39.5%)	1.04	0.53 to 2.02
Metabolic bone disease (n = 43)	31 (72.1%)	12 (27.9%)	0.61	0.30 to 1.26
Trauma (n = 121)	41 (33.9%)	80 (66.1%)	3.10	1.96 to 4.90‡

\*The values are given as the number of patients, with the percentage in parentheses. The percentages are based on the n values for each subgroup as shown in the first column. †Abnormal indicates vitamin D levels that are insufficient (<32 ng/mL) or deficient (<20 ng/mL). ‡The mean difference is significant at the 0.05 level. §Light skin tone includes whites and Asians. Dark skin tone includes blacks and Hispanics.

TABLE E-3 Multivariate Logistic Regression Analysis of Potential Risk Factors for Hypovitaminosis D

Risk Factor	Univariate Unadjusted Odds Ratio (95% Confidence Interval)	P Value	Logistic Regression Adjusted Odds Ratio (95% Confidence Interval)	P Value
Female sex	0.65 (0.48 to 0.89)	0.006	0.64 (0.42 to 0.99)	0.047
Body-mass index	1.04 (1.01 to 1.08)	0.008	1.05 (1.01 to 1.08)	0.008
Dark skin tone	5.53 (2.34 to 13.05)	<0.001	7.82 (2.57 to 23.78)	<0.001
Race			*	
Black	14.51 (3.33 to 63.18)	<0.001†		
Other‡	2.48 (1.21 to 5.09)	0.011		

\*Variable did not meet criteria for inclusion in final model. †Fisher exact test. ‡Nonwhite, nonblack.