

Adopting Global Lung Function Initiative Reference Equations Alters Pulmonary Function Testing Interpretation in a Safety-Net Cohort



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Supplementary Table 1. Number and percentage of patients with abnormal PFT components, by race and reference range.

		Grady Reference Ranges				GLI Reference Ranges			
		Black	White	Hispanic	Total	Black	White	Hispanic	Total
PFT Component	FEV1	2631 (37.4)	254 (48.0)	91 (29.0)	2976 (27.8)	3662 (52.1)	201 (38.0)	65 (20.7)	3928 (49.9)
	FVC	2281 (32.4)	201 (38.0)	82 (26.1)	2564 (32.6)	3405 (48.4)	138 (26.1)	57 (18.2)	3600 (45.7)
	FEV1/FVC	1415 (20.1)	129 (24.4)	20 (6.4)	1564 (19.9)	1391 (19.8)	134 (25.3)	25 (8.0)	1550 (19.7)
	TLC	472 (6.7)	67 (12.7)	39 (12.4)	578 (7.3)	2813 (40.8)	93 (17.8)	52 (16.8)	2958 (38.3)
	DLCO	2132 (30.3)	169 (32.0)	53 (16.9)	2354 (30.0)	3165 (45.3)	178 (33.8)	50 (16.0)	3393 (43.4)

Supplementary Table 2. PFT patterns by reference range applied, stratified by race.

		Grady Reference Ranges				GLI Reference Ranges			
		Black	White	Hispanic	Total	Black	White	Hispanic	Total
PFT Pattern	Normal	3071 (44.6)	197 (37.7)	190 (61.3)	3458 (44.8)	1666 (24.2)	225 (43.0)	203 (65.5)	2094 (27.1)
	Obstruction	1359 (19.7)	125 (23.9)	20 (6.5)	1504 (19.5)	1072 (15.6)	127 (24.3)	23 (7.4)	1222 (15.8)
	Restriction	423 (6.1)	62 (11.9)	37 (11.9)	522 (6.7)	2519 (36.6)	87 (16.6)	51 (16.5)	2657 (34.4)
	Mixed Obstruction and Restriction	34 (0.5)	4 (0.8)	0	38 (0.5)	294 (4.3)	6 (1.2)	1 (0.3)	301 (3.9)
	Non-Specific	1514 (22.0)	102 (19.5)	51 (16.5)	1667 (21.6)	947 (13.7)	45 (8.6)	24 (7.7)	1016 (13.2)
	Isolated Low DLCO	489 (7.1)	33 (6.3)	12 (3.9)	534 (6.9)	392 (5.7)	33 (6.3)	8 (2.6)	433 (5.6)

Supplementary Table 3. Patient characteristics by classification pattern of FEV1 when transitioning from GLI-race specific to GLI-global reference equations.

-		Always Abnormal (n=2897)	Always Normal (n=3870)	Normal to Abnormal (n=1031)	Abnormal to Normal (n=79)	Total (n=7877)
Female Sex, n(%)		1572 (54.3)	2689 (69.5)	602 (58.4)	44 (55.7)	4907 (62.3)
Age, mean (sd)		57.5 (11.5)	56.3 (13.3)	58.3 (13.4)	53.9 (10.1)	57.0 (12.7)
BMI, mean (sd)		31.8 (10.2)	31.8 (8.8)	31.6 (9.1)	32.8 (9.4)	31.8 (9.4)
Race, n(%)	Black	2631 (90.8)	3372 (87.1)	1031 (100)	0	7034 (89.3)
	White	210 (6.9)	375 (7.1)	0	53 (67.1)	529 (6.7)
	Hispanic	65 (2.2)	223 (5.8)	0	26 (32.9)	314 (4.0)
Tobacco Use, n(%)	Current	1112 (38.8)	1069 (27.9)	340 (33.3)	28 (35.9)	2549 (32.7)
	Former	914 (31.9)	1008 (26.3)	312 (30.5)	20 (25.6)	2254 (28.9)
	Other	43 (1.5)	73 (1.9)	21 (2.1)	2 (2.6)	139 (1.8)
	Never	800 (27.9)	1678 (43.8)	349 (34.2)	28 (35.9)	2254 (28.9)

Note: Missing: BMI: 2, Tobacco use: 80.

Abbreviations: BMI: body mass index, FEV1: forced expiratory volume in 1 second, SD: standard deviation.

Supplementary Table 4. Patient characteristics by classification pattern of TLC when transitioning from boren to GLI reference equations.

Characteristic		Always Abnormal (n=557)	Always Normal (n=4762)	Normal to Abnormal (n=2401)	Abnormal to Normal (n=3)	Total (n=7723)
Female Sex, n(%)		328 (58.9)	3117 (65.5)	1357 (56.5)	2 (66.7)	4907 (62.3)
Age, mean (sd)		56.8 (10.7)	56.6 (12.8)	55.9 (11.3)	76 (2.6)	56.4 (12.2)
BMI, mean (sd)		33.6 (10.3)	31.1 (9.1)	32.9 (9.7)	33.7 (7.2)	31.9 (9.4)
Race, n(%)	Black	455 (7.2)	4075 (85.6)	2358 (98.2)	2 (66.7)	7034 (89.3)
	White	65 (11.7)	429 (9.0)	28 (1.2)	1 (33.3)	529 (6.7)
	Hispanic	37 (6.6)	258 (5.4)	15 (0.62)	0	314 (4.0)
Tobacco Use, n (%)	Current	123 (22.2)	1670 (35.4)	744 (31.4)	0	2549 (32.7)
	Former	165 (29.8)	1352 (28.7)	661 (27.9)	1 (33.3)	2254 (28.9)
	Other	9 (1.6)	77 (1.6)	51 (2.2)	0	139 (1.8)
	Never	257 (46.4)	1617 (34.3)	914 (38.6)	2 (66.7)	2254 (28.9)

Note: Missing: TLC value: 154, tobacco use: 234, BMI: 2.

Abbreviations: BMI: body mass index, SD: standard deviation, TLC: total lung capacity.

Supplementary Table 5. Patient characteristics by classification pattern of DL_{co} when transitioning from NHANES I to GLI reference equations.

Characteristic		Always Abnormal (n=2209)	Always Normal (n=4313)	Normal to Abnormal (n=1184)	Abnormal to Normal (n=119)	Total (n=7825)
Female Sex, n(%)		1291 (58.4)	2847 (66.0)	682 (57.6)	50 (42.0)	4907 (62.3)
Age, mean (sd)		60.9 (10.7)	53.5 (12.9)	60.8 (10.5)	57.4 (11.6)	56.8 (12.5)
BMI, mean (sd)		29.2 (9.0)	33.5 (9.4)	30.6 (8.6)	32.0 (9.4)	31.8 (9.4)
Race, n(%)	Black	2019 (91.4)	3731 (86.5)	1146 (96.8)	89 (74.8)	7034 (89.3)
	White	147 (6.7)	328 (7.6)	31 (2.6)	21 (17.7)	529 (6.7)
	Hispanic	43 (2.0)	254 (5.9)	7 (0.6)	9 (7.6)	314 (4.0)
Tobacco Use, n(%)	Current	947 (43.2)	1077 (25.3)	475 (40.5)	46 (39.0)	2549 (32.7)
	Former	753 (34.4)	1095 (25.7)	350 (29.8)	32 (27.1)	2254 (28.9)
	Other	18 (0.8)	98 (2.3)	20 (1.7)	3 (2.5)	139 (1.8)
	Never	474 (21.6)	1992 (46.7)	328 (28.0)	387 (31.4)	2254 (28.9)

Note: Missing: DLCO: 54, BMI: 2, Tobacco Use: 134.

Abbreviations: BMI: body mass index, SD: standard deviation, DLCO: diffusing capacity.

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