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Title: Self-reported race and ethnicity affect FeNO values in healthy individuals

Dr. Tiago 1438 Jacinto tiagojacinto@med.up.pt^{1,2}, Prof. Andrei 1444 Malinovski andrei.malinovski@medsci.uu.se^{3,4}, Prof. Christer 1445 Janson christer.janson@medsci.uu.se³, Prof. João 1446 Fonseca fonseca.ja@gmail.com^{1,2,5} and Prof. Kjell 1447 Alving kjell.alling@kbh.uu.se⁶.¹ Allergology, Instituto CUF, Matosinhos, Portugal ;² Health Information and Decision Sciences, Faculty of Medicine, Porto, Portugal ;³ Department of Medical Sciences, Respiratory Medicine and Allergology, Uppsala University, Uppsala, Sweden ;⁴ Department of Medical Sciences, Clinical Physiology, Uppsala University, Uppsala, Sweden ;⁵ Allergology, Hospital S.João EPE, Porto, Portugal and⁶ Department of Women's and Children's Health, Uppsala University, Uppsala, Sweden .

Body: Background: Race and ethnicity are known factors of variation in pulmonary function. We aim to determine if self-identified race/ethnicity affect the values of exhaled nitric oxide (FeNO) in healthy and asthmatic individuals in a population setting. Methods: We analyzed the valid FeNO measurements (NIOX MINO) recorded in the National Health and Nutrition Examination Survey 2007-10 (n=13,275; age 6-79 years). Race/ethnicity is coded as Mexican American (20%), Other Hispanic (11%), Non-Hispanic White (43%), Non-Hispanic Black (20%) and Other Race - Inc. Multi-Racial (5%). Adjustments were made using multiple-linear regression models. Results: Non-Hispanic Whites have the lowest FeNO values (mean 15.8 ppb, 95%CI 15.4; 16.1) and Other Race - Including Multi-Racial the highest (20.0 ppb (18.6; 21.4)). Race and ethnicity significantly affect FeNO values even after adjusting for age, gender, BMI and reported hay fever in non-asthmatic subjects (B=0.30, p=0.01), but not in individuals with self-reported asthma (B=0.09, p=0.83). However, the mean difference between race/ethnicity categories was reduced after excluding subjects with hay fever.

Absolute FeNO (ppb) mean and mean difference to reference category (Non-hispanic whites)

	All	Mean diff.	Excluding hay fever	Mean diff.
Non-Hispanic White	18.2		14.8	
Mexican American	18.5	0.3	16.5	1.7
Other Hispanic	20.9	2.7	17.1	2.3
Non-Hispanic Black	22.7	4.5	17.9	3.1
Other Race - Inc. Multi-Racial	25.1	6.9	18.5	3.7

Conclusion: Race and ethnicity are significant factors for FeNO in healthy individuals. Hay fever seems to play an important role in the mean difference between race/ethnicity categories. An objective measurement of atopy is probably needed to clarify this relationship.