

PANEL SUMMARY

PANEL SUMMARY: CVD HEALTH FACTORS AND CVD RISK FACTORS: STATE OF THE SCIENCE, EMERGING PRIORITIES PART 2: OBESITY, PHYSICAL ACTIVITY, NUTRITION

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SUMMARY

Tucker and Talegawkar presented morbidity and mortality data on racial disparities related to cardiovascular disease (CVD) and nutrition, reporting that recent data show overall US death rate for CVD to be 26.3%, but 42.3% for African American (AA) men and 29.8% for AA women. The overall prevalence of overweight or obesity was 66.3% but 71.4% for AA men and 79.6% for AA women. Participation in physical activity and consumption of fruits and vegetables are lower in the southeastern states (CDC data). Tucker and Talegawkar emphasized the importance of regional and minority specific food frequency questionnaires such as the instrument used for the Jackson Heart Study (JHS).¹ Food items added for the Mississippi study included fried catfish, pig organ meats including chitterlings, and purple hull peas. Top food sources of energy intake for the JHS included sugar-sweetened beverages (12.8%), rice and pasta (6.9%), and corn products (6.5%). Four food patterns were identified in the JHS Diet and Physical Activity Sub Study (DPASS) of 499 participants characterized by higher prevalence of these food groups: fast foods (snacks and fast foods), Southern (corn products), prudent (fruits, vegetables, hot cereals, dairy), and juice.²

Hairston talked about the importance of sleep and the association of habitual short or longer sleep hours with CVD

risk. Factors that could increase sleep disturbance for AAs may include more frequent napping, greater consumption of high fat foods, noisier environments, and less control over temperature.^{3,4} Sleep deprivation is associated with decreased leptin, which may lower satiety, and increased ghrelin, which may increase appetite, and decreased insulin secretion. Shorter sleep is associated with higher caloric intake and may be associated with lower energy expenditure due to fatigue; it may be a marker of unfavorable health status. Long sleep could be a surrogate for depression or an indicator of sleep apnea.^{5,6}

Dubbert spoke about the emerging evidence concerning health risks associated with high levels of sedentary behavior and low levels of physical activity. In the JHS, waist circumference decreased with increasing quartiles of physical activity in the domains of active living, sports and home life. In other research, dose-response relationships have been found between sedentary behavior and all cause mortality, waist circumference, plasma glucose, triglycerides, and HDL cholesterol.^{7,8} In the JHS DPASS, BMI was greater in women who watched TV at least 2 hr/day (unpublished data). Sedentary behavior and physical activity should be studied with JHS data.

Fox discussed the relationships of BMI to CVD risk factors and the importance of studying differences by ethnicity.⁹ The prevalence of obesity and most CVD risk factors was higher in the JHS compared to the Framingham Heart Study (FHS) and,

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with increasing BMI, stronger effects were observed with respect to risk factors in the FHS compared with the JHS. Suggestions for new directions for the JHS include: detailed phenotyping of normal weight participants to understand precursors of hypertension and diabetes, examining body composition in JHS in relation to outcomes, comparing data to other studies, harmonizing the JHS data with other studies among African Americans, and performing an intervention at the next JHS examination to reduce weight, weight gain, and obesity-related outcomes.

REFERENCES

1. Carithers T, Dubbert PM, Crook E, et al. Dietary assessment in African Americans: methods used in the Jackson Heart Study. *Ethn Dis.* 2005;15 (4 Suppl 6):S6-49-55.
2. Talegawkar SA, Johnson EJ, Carithers TC, Taylor HA Jr, Bogle ML, Tucker KL. Serum carotenoid and tocopherol concentrations vary by dietary pattern among African Americans. *J Am Diet Assoc.* 2008;108(12):2013-2020.
3. Myers HF, Kagawa-Singer M, Kumanyika SK, Lex BW, Markides KS. Behavioral risk factors related to chronic diseases in ethnic minorities. *Health Psychol.* 1995;14(7):613-621.
4. Ancoli-Israel S, Klauber MR, Stepnowsky C, Estline E, Chinn A, Fell R. Sleep-disordered breathing in African-American elderly. *Am J Respir Crit Care Med.* 1995;152(6 Pt 1):1946-1949.
5. Miller MA, Cappuccio FP. Inflammation, sleep, obesity and cardiovascular disease. *Curr Vasc Pharmacol.* 2007;5(2):93-102.
6. Knutson KL, Van Cauter E, Zee P, Liu K, Lauderdale DS. Cross-sectional associations between measures of sleep and markers of glucose metabolism among subjects with and without diabetes: the Coronary Artery Risk Development in Young Adults (CARDIA) Sleep Study. *Diabetes Care.* 2011;34(5):1171-1176.
7. Katzmarzyk PT, Church TS, Craig CL, Bouchard C. Sitting time and mortality from all causes, cardiovascular disease, and cancer. *Med Sci Sports Exerc.* 2009;41(5):998-1005.
8. Owen N, Healy GN, Matthews CE, Dunstan DW. Too much sitting: the population health science of sedentary behavior. *Exerc Sport Sci Rev.* 2010;38(3):105-113.
9. Taylor HA Jr, Coady SA, Levy D, et al. Relationships of BMI to cardiovascular risk factors differ by ethnicity. *Obesity (Silver Spring).* 2010;18(8):1638-45. Erratum in: *Obesity (Silver Spring).* 2010;18(3):650.