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ASSOCIATION BETWEEN SERUM 25-HYDROXYVITAMIN D LEVEL AND INSULIN RESISTANCE IN AN ELDERLY KOREAN POPULATION. *Bo Mi Song, Hyeon Chang Kim, Yumie Rhee, Yoosik Youm, Chang Oh Kim (Department of Public Health, Yonsei University College of Medicine, Seoul Korea)

Introduction: A low serum vitamin D concentration has been reported to be associated with increased risk of diabetes mellitus. But the relationship with 25-hydroxyvitamin D [25(OH)D] level and insulin resistance has not been ascertained in the Korean elderly population. The purpose of this study was to investigate the association between 25(OH)D level and insulin resistance in community-living elderly Koreans. Methods: This study used data from the Korean Urban Rural Elderly (KURE) study. In 2011 study, 927 participants aged 65 years or older completed baseline health examinations. Participants were recruited from an urban and a rural communities. After excluding two individuals missing 25(OH)D value, cross-sectional analyses were conducted for 925 participants (302 men and 623 women). Plasma glucose and serum insulin levels were measured from overnight fasting blood samples and homeostasis model assessment for insulin resistance (HOMA-IR) was calculated using them. Fasting glucose, insulin and HOMA-IR were log-transformed for parametric tests. Results: In men, serum 25(OH)D level was significantly associated with HOMA-IR ($\beta = -0.01$, $p = 0.027$) even after adjustment for age, body mass index, smoking status, alcohol intake and regular exercise. However, there were significant differences in serum 25(OH)D level (18.68 vs. 26.39 ng/ml; $p < 0.001$) and HOMA-IR (1.58 vs. 1.04; $p < 0.001$) between urban and rural areas. After additional adjusting for residential area, the association was not significant ($\beta = -0.001$, $p = 0.767$). In women, the association between 25(OH)D and HOMA-IR was not significant before ($p = 0.238$) and after ($p = 0.929$) adjustment for residential area. Conclusion: Our findings suggest that serum 25(OH)D level is not independently associated with insulin resistance in elderly Koreans.

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PERINATAL OXIDATIVE STRESS AFFECTS FETAL GHRELIN LEVELS. *Zhong-Cheng Luo, Jean-Francois Bilodeau, Anne-Monique Nuyt, William Fraser, Francois Audibert, Jin-Ping Zhao, Lin Xiao, Pierre Julien, Emile Levy (Sainte-Justine Hospital Research Center, University of Montreal, Montreal QC Canada)

The prenatal period is considered a critical developmental window in "programming" the vulnerability to obesity and "metabolic syndrome"related disorders. The mechanisms remain unclear. Perinatal oxidative stress may affect the expression of certain redox-sensitive gene products and "program" such susceptibility. This study investigated (for the first time) whether perinatal oxidative stress may affect fetal circulating levels of ghrelin - an important hormone regulating appetite and energy balance . Indices of oxidative stress (F2-isoprostanes, malondialdehyde (MDA)) were measured in maternal (24-28 weeks gestation) and cord blood in 255 singleton pregnancies. Plasma ghrelin concentrations were significantly higher in cord versus maternal blood (median: 392 versus 132 pg/ml), and were strongly correlated ($r = 0.50$, $p < 0.0001$). Indices of oxidative stress were highly correlated in maternal versus fetal cord blood ($r = 0.35$ for MDA, $r = 0.57$ for F2-isoprostanes, all $p < 0.0001$). Adjusting for gestational age at blood sampling and cord blood glucose concentration, consistent negative correlations were observed in cord plasma ghrelin levels with indices of oxidative stress in both maternal blood ($r = -0.37$, $p < 0.0001$ for MDA; $r = -0.17$, $p = 0.01$ for F2-isoprostanes) and cord blood ($r = -0.15$, $p = 0.02$ for MDA; $r = -0.28$, $p < 0.0001$ for F2-isoprostanes). Most observed associations remain significant after adjusting for maternal and pregnancy characteristics. The data consistently suggest that perinatal oxidative stress may suppress ghrelin expression during fetal life in humans, which may be a mechanistic link in programming the susceptibility to obesity and metabolic syndrome related disorders.

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ALL-CAUSE, CARDIOVASCULAR, AND CANCER MORTALITY IN POSTMENOPAUSAL WHITE, BLACK, HISPANIC, AND ASIAN WOMEN WITH AND WITHOUT DIABETES IN THE U.S.: THE WOMEN'S HEALTH INITIATIVE 1993-2009. *Yunsheng Ma, James Hébert, Jo Ann Manson (University of Massachusetts Medical School, Worcester MA 01545)

Objective: Using data from the Women's Health Initiative (WHI), we compared all-cause, cardiovascular (CVD), and cancer mortality in White, Black, Hispanic, and Asian postmenopausal women with and without diabetes. Research Design and Methods: Race/ethnicity, diabetes status, total and specific mortalities were obtained from 158,833 postmenopausal women recruited from 1993-1998 and followed up until August 2009. Comparisons of all-cause, CVD, and cancer mortality by self-reported diabetes status and by race/ethnicity were made using Cox proportional hazard models from which hazard ratios (HRs) and 95% confidence intervals (CI) were computed. Results: With an average age of 63 at baseline, WHI participants included 84.1% White, 9.2% Black, 4.1% Hispanic, and 2.6% Asian. The percentages of women with prevalent or incident diabetes from study enrollment to August 2009 were, in decreasing frequency: 27.1% for Blacks, 20.8% for Hispanics, 15.9% for Asians and 11.7% for Whites. Within each racial/ethnic subgroup, women with diabetes had approximately 2 to 3 times higher risk of all-cause, CVD and cancer mortality as compared to those without diabetes. However, the HRs for mortality outcomes were not significantly different between race/ethnic subgroups according to diabetes status. Population attributable risk percentages (PARP), which take into account both the prevalence of diabetes and HRs associated with the disease, indicated that for all-cause mortality, Whites had the lowest PARP [11.1 (95% CI: 10.1-12.1)] versus Blacks [19.4 (15.0-23.7)] and Hispanics [23.2 (14.8-31.2)], while the PARP was 12.9 (4.7 – 20.9) for Asians. Conclusions: Postmenopausal women with diabetes had a higher risk of all-cause, CVD, and cancer mortality when compared with postmenopausal women without diabetes. Both Black and Hispanic women are at higher-than-average risk of developing diabetes and have higher proportions of all-cause mortality attributable to diabetes compared to Whites. Because of "amplifying" effect of diabetes prevalence, efforts should focus on prevention of type 2 diabetes.

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THE MICROCLINIC HEALTH PROGRAM: A SOCIAL NETWORK-BASED INTERVENTION FOR WEIGHT LOSS AND DIABETES RISK MANAGEMENT. ***Marta Prescott, Daniel Zoughbie, Katie Watson, Nancy Bui, Rami Farraj, Nadia Elkarra (Mailman School of Public Health, Columbia University, New York NY 10032)**

Obesity and behavioral risk factors have been shown to aggregate and propagate via social networks. We aimed to examine the ability of a program, the Microclinic Health Program, to harness organic social structures by determining the extent to which change in clinical markers that occurred during the program was clustered within social layers. The program was conducted among 720 individuals who participated in the 4-month type-2 diabetes education program in Amman, Jordan. All subjects participated with 2-8 friends or family members (a microclinic) and had diabetes, were at-risk for diabetes, or had a loved one with diabetes. Clinical markers (weight, Body Mass Index [BMI], and Hemoglobin A1c [HbA1c]) were measured at baseline and at the end of the program. We used multivariable multi-level linear regression to examine the change in clinical markers as well as examine the clustering of change within social layers (microclinics, classes, or cohorts). At the end of the program, results indicated decreased weight (Beta [B]:-1.38 kg; 95% confidence interval [CI]: -1.73, -1.04), BMI (B:-0.55 kg/m2; 95% CI -0.69, -0.41), and HbA1c (B:-0.48%; 95% CI -0.61, -0.34). Additionally, the trajectories of change in these risk factors were clustered in the social layer within microclinic groups (Intraclass correlation [ICC] = 57.7% weight loss, ICC = 52.5% for BMI decrease, and ICC = 35.3% for HbA1c). Based on the clustering of change, our results suggest that the program successfully harness an organic social-network to promote improvements in diabetes management. Such a social network-based intervention may be a promising tool to propagate healthy behaviors for diabetes and obesity prevention throughout a community.