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Georgia Southern University

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Georgia Southern finds Fish consumption is associated with a decreased risk of death among adults with diabetes.

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There are few studies examining the beneficial effects of fish consumption on cardiovascular diseases (CVDs) among adults with diabetes, who experience a substantially high risk of CVDs.

Researchers from Georgia Southern University analyzed the data of 1136 adults with diabetes mellitus aged 18 years and older who participated in the National Health and Nutrition Examination Survey, conducted between 1988 and 1994, and were followed up through December 31, 2010. Cox regression was used to estimate the adjusted hazard ratios (HRs) for the relative risk across the levels of fish consumption.

A total of 698 deaths were recorded at the end of 11,465 person-years follow-up with a mortality rate of 60.88 per 1000 person-years. CVDs were listed as a contributing cause for 326 deaths, thus accounting for 46.4% of total deaths. Stroke-specific mortality rate among patients who ate fish less than once a week was more than twice as high as that among patients who ate fish more than twice a week, 6.23 vs. 2.36 per 1000 person-years, respectively. The corresponding CVD-specific rate was 34.38 vs. 22.99 per 1000 person-years, respectively. The adjusted HRs of death due to stroke were 1.00 (reference), 0.55 (95% confidence interval Z 0.28e1.07), and 0.30 (0.11e0.80) among patients who ate fish <1, 1 – 2, and more than twice a week, and the corresponding HRs of death due to CVDs were 1.00 (reference), 0.78 (0.60e1.02), and 0.69 (0.50e0.96), respectively.

The researcher concluded that a high consumption of fish may reduce the risk of death, especially stroke, among adults with diabetes.

“Fish consumption is associated with a decreased risk of death among adults with diabetes: 18-year follow-up of a national cohort” was recently published in The Journal of Nutrition, Metabolism and Cardiovascular Disease.

The paper was authored by a group of doctoral students from Georgia Southern University, including Mr. Abraham Deng, Mr. Anunay Bhattacharya, Ms. Swaha Pattanaik, MPH, and Mr. Chongjian Liu. Dr. Jingjing Yin, Assistant professor, Georgia Southern University Jiann-Ping Hsu College of Public Health (JPHCOPH), Dr. Levi Ross, associate professor, the University of Alabama, Health Science, and Dr. Jian Zhang, professor of epidemiology, Georgia Southern University, JPHCOPH served as the faculty advisors.
Georgia Southern evaluates N95 Filtering Facepiece Respirators on Construction Jobsites for Protection against Airborne Ultrafine Particles

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Ultrafine particles include particles smaller than 0.1 μm sizes, which can penetrate deep into our lungs. Exposure to high concentrations of airborne ultrafine particles in construction jobsites including silica nanoparticles may play an important role in the adverse health effects among construction workers, therefore adequate respiratory protection is required. The performance of NIOSH-approved N95 masks has never been evaluated in field conditions against ultrafine particles on construction jobsites. A recent Georgia Southern field study, led by Dr. Atin Adhikari, has evaluated performance of N95 masks against ultrafine particles of different size ranges during three common construction related jobs using a manikin-based set-up at 85 L/min air flow rate. The researchers used two NanoScan SMPS (Scanning Mobility Particle Sizer Spectrometer) nanoparticle counters for measuring ultrafine particles in two sampling lines of the test filtering facepiece respirator — one from inside the respirator and one from outside the respirator. Particle size distributions were characterized using the NanoScan data collected from outside of the respirator. Two models of N95 respirators were tested — foldable and pleated. Collected data indicate that penetration of all categories of ultrafine particles can exceed 5% and smaller ultrafine particles of <36.5 nm size generally penetrated least. Foldable N95 filtering facepiece respirators were found to be less efficient than pleated N95 respirators in filtering nanoparticles mostly at the soil moving site and the wooden building frameworks construction site. Upon charge neutralization by isopropanol treatment, the ultrafine particles of larger sizes penetrated more compared to particles of smaller sizes. The findings from the field experiments, therefore, indicate that N95 filtering facepiece respirators may not provide desirable 95% protection for most categories of ultrafine particles and generally, 95% protection is achievable for smaller particles of 11.5 to 20.5 nm sizes. The study also provides evidence showing that foldable N95 respirators are less efficient than pleated N95 respirators in filtering ultrafine particles, mostly in the soil moving site and the wooden building framework construction site. This work has been financially supported by the CPWR (The Center for Construction Research and Training) through NIOSH (National Institute for Occupational Safety and Health) cooperative agreement OH009762 (PI: Dr. Adhikari).

“Field Evaluation of N95 Filtering Facepiece Respirators on Construction Jobsites for Protection against Airborne Ultrafine Particles” was recently published in The Journal of Environmental Research and Public Health.

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