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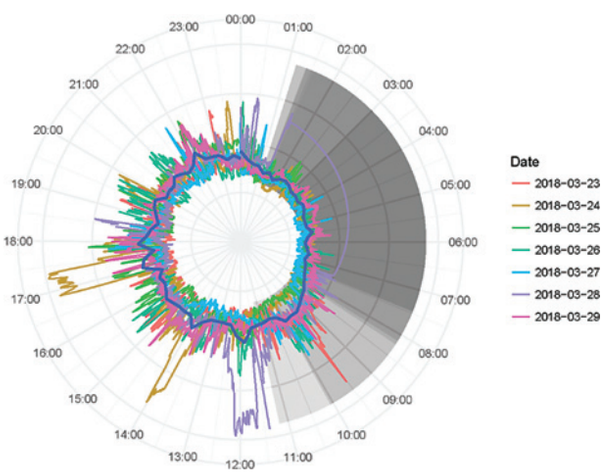
CANCER EPIDEMIOLOGY, BIOMARKERS & PREVENTION

HIGHLIGHTS

Selected Articles from This Issue

Modernizing Population Sciences in the Digital Age



Wang *et al.* | Page 712

The era of "big data" has been transformative for many disciplines, particularly for the health sciences with increased access to electronic health records and other personal information. Novel technologies (e.g., real-time/wearable technologies, smart questionnaires, text messaging, linkages to environmental data sources and other administrative databases) are enabling new ways to measure nongenetic exposures. Technological innovations are expanding and altering the nature of population recruitment, consenting, and retention through Web/mobile-based applications that are more efficient and less costly than telephone-based and mail-based methods. These developments come with their own sets of challenges, and researchers continue to develop and refine methods. This commentary by Wang and colleagues introduces a collection of articles in this special section of the journal highlighting the work of several scientists who are moving population science forward through the integration of novel methodologies. *CEBP* is proud to publish this *CEBP Focus* section, "Modernizing Population Science."

Socioeconomic Status in Relation to Risks of Gastrointestinal Cancers in Chinese Adults

Pang *et al.* | Page 823

Low socioeconomic status (SES) is associated with higher risk of certain gastrointestinal cancers in Western populations. Evidence is very limited in China, where correlates and determinants of SES differ from those in the West. This study by Pang and colleagues assessed the associations of SES with major gastrointestinal cancers in 0.5 million Chinese adults, which differed by cancer type and SES indicator. Area-level SES and individual-level household income showed positive associations with colorectal and pancreatic cancer and inverse associations with liver cancer. By contrast, there were inverse associations of education with pancreatic and liver cancer, partially explained by differences in lifestyle risk factors. More studies on SES and cancer are warranted in the Chinese population to inform targeted interventions and track cancer disparities.

Mendelian Randomization of Circulating PUFAs and Colorectal Cancer Risk

Khankari *et al.* | Page 860

Polyunsaturated fatty acid (PUFA) metabolism produces eicosanoids, some of which may influence carcinogenesis. However, epidemiologic investigations examining PUFAs and colorectal cancer (CRC) are inconsistent. In this Mendelian randomization study, genetic variants were proxies for circulating PUFAs to potentially estimate unbiased associations. In the Genetics and Epidemiology of Colorectal Cancer Consortium (GECCO), including over 24,000 non-Hispanic whites, modest increases in CRC risk were observed for increased levels of longer-chain PUFAs, and modest risk reductions were observed for increased levels of shorter-chain PUFAs. These associations were stronger among aspirin/NSAID nonusers, suggesting a shared inflammatory pathway for CRC. Future Mendelian randomization studies should incorporate additional genetic variants to elucidate independent PUFA effects on CRC risk.

The Impact of Exclusive Use of Very Low Nicotine Cigarettes on Compensatory Smoking

Smith *et al.* | Page 880

With the FDA considering a mandated reduction in cigarette nicotine content, a concern is that once smokers are unable to purchase normal nicotine cigarettes, they may smoke more low nicotine cigarettes or smoke more intensely. The goal of this study by Smith and colleagues was to assess whether compensation occurs when smokers provided with very low nicotine cigarettes cannot access normal nicotine cigarettes. To assess exclusive use of low nicotine cigarettes, current smokers were confined to a hotel and only able to smoke either normal nicotine or very low nicotine cigarettes. There was no significant increase in number of cigarettes smoked or smoke exposure in the low nicotine condition. These data show that a nicotine reduction policy is unlikely to result in increased smoking to obtain more nicotine.