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Article Title  
Appraising causal relationships of dietary, nutritional and physical-activity exposures with overall and aggressive prostate cancer: two-sample Mendelian-randomization study based on 79,148 prostate-cancer cases and 61,106 controls


Abstract: Background: Prostate cancer is the second most common male cancer worldwide, but there is substantial geographical variation, suggesting a potential role for modifiable risk factors in prostate carcinogenesis. Methods: We identified previously reported prostate cancer risk factors from the World Cancer Research Fund (WCRF)'s systematic appraisal of the global evidence (2018). We assessed whether each identified risk factor was causally associated with risk of overall (79,148 cases and 61,106 controls) or aggressive (15,167 cases and 58,308 controls) prostate cancer using Mendelian randomization (MR) based on genome-wide association study summary statistics from the PRACTICAL and GAME-ON/ELLIPSE consortia. We assessed evidence for replication in UK Biobank (7,844 prostate-cancer cases and 204,001 controls). Results: WCRF identified 57 potential risk factors, of which 22 could be instrumented for MR analyses using single nucleotide polymorphisms. For overall prostate cancer, we identified evidence compatible with causality for the following risk factors (odds ratio [OR] per standard deviation increase; 95% confidence interval): accelerometer-measured physical activity, OR=0.49 (0.33–0.72; P=0.0003); serum iron, OR=0.92 (0.86–0.98; P=0.007); body mass index (BMI), OR=0.90 (0.84–0.97; P=0.003); and monounsaturated fat, OR=1.11 (1.02–1.20; P=0.02). Findings in our replication analyses in UK Biobank were compatible with our main analyses (albeit with wide confidence intervals). In MR analysis, height was positively associated with aggressive-prostate-cancer risk: OR=1.07 (1.01–1.15; P=0.03). Conclusions: The results for physical activity, serum iron, BMI, monounsaturated fat and height are compatible with causality for prostate cancer. The results suggest that interventions aimed at increasing physical activity may reduce prostate-cancer risk, although interventions to change other risk factors may have negative consequences on other diseases.

When  
Tuesday, February 4th  
12:00-1:00pm

Where  
M&V 240  
Tufts University School of Medicine  
136 Harrison Avenue; Boston, MA 02111

WebEx  
Meeting #: 731 910 271  
Password: JR2Tft26  
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Contact  
If you would like to be added to the OJC mailing list or have any questions please contact: Kat Rancano  
(Katherine.rancano@tufts.edu)

A light snack will be served – please bring your own beverage.