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Media Contact:
Tara Yates
(267) 646-0558
tara.yates@aacr.org
In Houston, Dec. 6-9:
(713) 576-5445

Coffee Consumption Associated with Reduced Risk of Advanced Prostate Cancer

- Avid coffee drinkers had 60 percent lower risk of aggressive prostate cancer.
- Drinking coffee is linked to varied blood levels of insulin, sex hormones.

HOUSTON – While it is too early for physicians to start advising their male patients to take up the habit of regular coffee drinking, data presented at the American Association for Cancer Research Frontiers in Cancer Prevention Research Conference revealed a strong inverse association between coffee consumption and the risk of lethal and advanced prostate cancers.

"Coffee has effects on insulin and glucose metabolism as well as sex hormone levels, all of which play a role in prostate cancer. It was plausible that there may be an association between coffee and prostate cancer," said Kathryn M. Wilson, Ph.D., a postdoctoral fellow at the Channing Laboratory, Harvard Medical School and the Harvard School of Public Health.

In a prospective investigation, Wilson and colleagues found that men who drank the most coffee had a 60 percent lower risk of aggressive prostate cancer than men who did not drink any coffee. This is the first study of its kind to look at both overall risk of prostate cancer and risk of localized, advanced and lethal disease.

"Few studies have looked prospectively at this association, and none have looked at coffee and specific prostate cancer outcomes," said Wilson. "We specifically looked at different types of prostate cancer, such as advanced vs. localized cancers or high-grade vs. low-grade cancers."

Caffeine is actually not the key factor in this association, according to Wilson. The researchers are unsure which components of the beverage are most important, as coffee contains many biologically active compounds like antioxidants and minerals.

Using the Health Professionals' Follow-Up Study, the researchers documented the regular and decaffeinated coffee intake of nearly 50,000 men every four years from 1986 to 2006; 4,975 of these men developed prostate cancer over that time. They also

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examined the cross-sectional association between coffee consumption and levels of circulating hormones in blood samples collected from a subset of men in the cohort.

"Very few lifestyle factors have been consistently associated with prostate cancer risk, especially with risk of aggressive disease, so it would be very exciting if this association is confirmed in other studies," said Wilson. "Our results do suggest there is no reason to stop drinking coffee out of any concern about prostate cancer."

This association might also help understand the biology of prostate cancer and possible chemoprevention measures.

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Presenter: Kathryn M. Wilson, Ph.D.

Abstract Number: A106

Title: Coffee consumption and risk of lethal and advanced prostate cancer.

Author Block: *Kathryn M. Wilson[1], Julie L. Kasperzyk[1], Jennifer R. Stark[1], Michael N. Pollak[2], Meir J. Sampfer[3], Edward Giovannucci[1], Lorelei A. Mucci*[3]. [1]Harvard School of Public Health, Boston, MA; [2]McGill University, Montreal, QC, Canada; [3]Channing Laboratory, Brigham and Women's Hospital/Harvard Medical School, Boston, MA.

Abstract Body:
Background: Coffee is a commonly consumed beverage which contains many biologically active compounds. It is a major source of caffeine and antioxidants, and it has effects on insulin and glucose metabolism as well as sex hormone levels. This suggests that coffee may have a beneficial effect on risk of prostate cancer; however, this association has not been studied in depth.

Methods: We prospectively investigated the association between coffee intake and prostate cancer risk in the Health Professionals' Follow-Up Study. From 1986 to 2006, 4975 cases of prostate cancer were identified. Intake of regular and decaffeinated coffee was assessed in 1986 and every four years thereafter. We used Cox proportional hazards models to assess the association between coffee intake and risk of prostate cancer. To investigate possible mechanisms, we used linear regression to examine the cross-sectional association between coffee intake and levels of circulating hormones in blood samples collected between 1993 and 1995 from a subset of men in the cohort.

Results: There was a weak inverse association between total coffee intake and overall prostate cancer risk, with an adjusted relative risk of 0.81 (95% CI: 0.67-0.97, p-value for linear trend=0.08) for men consuming six or more cups of coffee (regular or decaf) per day compared to non-drinkers. The association was stronger for lethal and advanced (fatal, T3b or T4, or N1 or M1) prostate cancers. Compared to non-drinkers, the highest consumers had a relative risk of 0.41 (CI: 0.22-0.77, p-trend=0.02) for lethal cancer and 0.41 (CI: 0.24-0.71, p-trend=0.002) for advanced cancer. The association with lethal and advanced cancers was more pronounced in never smoking men (RR=0.11; CI: 0.02-0.83, p-trend=0.001 for advanced cancer). The inverse association was seen in both the pre-PSA and PSA screening eras. Results were similar for regular and decaffeinated coffee. For the highest versus lowest groups of intake, the relative risk of advanced cancer was 0.67 (CI: 0.34-1.33, p-trend=0.03) for regular coffee and 0.72 (CI: 0.46-1.13, ptrend= 0.03) for decaffeinated coffee. There was an inverse association between caffeine intake and risk of lethal and advanced disease, but this association was weaker than that seen for coffee, and it became non-significant when total coffee intake was also included in the model. Coffee intake was inversely associated with plasma levels of C-peptide (ptrend= 0.003) and positively associated with testosterone (p-trend=0.03) and SHBG (p-trend=0.04). Coffee intake was not related to circulating levels of IGF-1, IGFBP3, free

testosterone, or estradiol.

Conclusion: The strong inverse association between coffee consumption and risk of lethal and advanced prostate cancers is potentially important and should be confirmed in other populations. The association appears to be related to non-caffeine components of coffee and may be mediated through effects on insulin metabolism and/or sex hormone levels.