Re: Coffee Consumption and Prostate Cancer Risk and Progression in the Health Professionals Follow-up Study

We are concerned about the media purporting that drinking six or more cups of coffee per day can prevent lethal prostate cancer, following publication of the Harvard report (1). Such “advice” has been given prominence in the Australian, Chinese, and Korean news media, just to name a few.

In the Health Professionals Follow-up Study, coffee intake was measured by cups per day, and separate analyses were conducted for regular and decaffeinated coffee. Cup size and brewing strength were ignored. The authors acknowledged the limitation of self-reported coffee consumption but also argued that any such misclassification in coffee intake is expected to bias observed associations toward the null and would not explain the inverse associations. Nevertheless, these will affect the calculation of caffeine intake and the corresponding results. It would be useful to validate “total caffeine intake from all sources” with biomarkers in future studies, rather than relying on food composition conversions.

Indeed, differences in cultivars, coffee beans, production, and brewing methods can influence the coffee composition and internal exposure to bioactive ingredients present in coffee. Previous studies on coffee have shown that different methods of preparation (boiled, filtered, and percolated) can affect our serum lipids (2,3). Similarly, no distinction was made on black vs white coffee (ie, with milk or cream added), which can alter the biochemistry and impact on the results.

Although repeated measures of cups per day at the four yearly surveys were taken during the follow-up, detailed information on quantities of intake and cumulative exposure (years of drinking) was lacking. It is important to assess the effect of habitual consumption over an extended duration. Cumulative coffee exposure may be measured in terms of (cups per day × years of drinking), in the manner of pack-years for quantifying cigarette-smoking exposure. Moreover, of the 642 lethal prostate cancer case patients, only 12 men drank six or more cups of coffee, whereas the proportion of men without developing prostate cancer who drank six or more cups was not stated. The authors proceeded to “test for a linear trend across categories of intake.” But the data presented in tables 2 through 4 indicate that a linear trend does not adequately capture the apparent nonlinear relationship between quantity of coffee intake and the prostate cancer risk.

The diuretic effect of high caffeine intake is well known, especially for those who consume six or more cups of coffee per day. No adjustment was made with regard to fluid intake by the cohort. In particular, consumption of tea and other beverages was not considered, even though such information was collected by their food-frequency questionnaire.

Despite the lack of such evidence for coffee, there is a large body of evidence from experimental studies that documents a protective effect of tea against prostate cancer; evidence for a protective effect of tea from epidemiological studies remains inconclusive (4,5). In view of the likely synergism between habitual tea drinking and habitual coffee drinking for the underlying population, the effect of tea consumption should not be overlooked.

Finally, this study begs the question: Is high coffee consumption safe? The adverse effects of excessive coffee drinking should not be ignored. Although caffeine is non-toxic, it is known that in large doses it may cause problems such as anxiety, sleeplessness, headaches, abnormal heart rate, and irritability. Frequent use may also result in withdrawal symptoms following cessation. On the balance of scientific evidence, we would still recommend tea, especially green tea (which has a low caffeine content), as a safe and healthier alternative to coffee.

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References

Notes
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