

Hot Topic in Health Psychology



This new section will offer intriguing new topics for discussion and reflection – through the EHPS newsletter and the website.

In this issue Dr. Jack James, one of our keynote speakers for Galway 2005, offers us a “hot” issue. The Hot Topic will also be available on our web site www.ehps.net

Address correspondence to:
Professor Jack E. James
Department of Psychology
National University of Ireland,
Galway, Ireland

Phone: + 353 91 512 016
Fax: + 353 91 521 355
Email: j.james@nuigalway.ie

Hot Beverages? Some Aren't So Hot!

Caffeine is the most widely consumed psychoactive substance in history. The popular view is that coffee and tea (as well as caffeine-containing sodas and “energy” drinks) are fairly benign beverages that may even confer benefits while posing little or no risk to health. The prevalence of this view may be evidence of the success of manufacturers in achieving the product image for caffeine they have invested heavily in creating. New findings, however, do not support the popular view.

It has long been alleged, on the basis of apparently sound science, that caffeine benefits aspects of cognitive performance and feelings of well-being. However, after controlling for key shortcomings of earlier studies, our research has led to quite a different understanding of the effects of caffeine on performance and mood. In a typical earlier study, participants would be randomly assigned to drug (caffeine) and placebo-control conditions. Measurements of performance would be taken for both groups before and after double-blind administration of caffeine/placebo. Relative to baseline and placebo, post-caffeine levels of performance were often observed to have improved, leading to the conclusion that caffeine enhances performance. However, a critical appraisal of this standard design shows that the findings it has yielded are ambiguous.

As typically applied, the double-blind placebo-controlled trial ignores a crucial fact, namely, that for the large majority of people (including participants in research studies) caffeine is part of the daily diet. One consequence of habitual use is the occurrence of withdrawal symptoms during periods of abstinence, and relief from (i.e., reversal of) withdrawal effects when caffeine is again ingested. Caffeine is usually consumed in separate portions throughout the day, with fewer portions consumed later in the day, followed by overnight abstinence. With the half-life of caffeine in healthy adults being approximately 5 hours, typical overnight abstinence of 10-14 hours results in substantial elimination of systemic caffeine by early morning. Thus, when waking, the majority of consumers are entering the early stages of caffeine withdrawal.

Researchers have traditionally made use of this naturally occurring period of overnight abstinence by asking participants to forgo their usual morning caffeine beverage prior to laboratory testing. Accordingly, rather than showing actual net benefits, improved performance in those studies could have represented restoration of performance (after ingestion of caffeine in the laboratory) that was in the process of being degraded by overnight withdrawal. Using improved experimental protocols, we have shown that overnight caffeine abstinence has detrimental effects on performance and mood, with both being restored when caffeine is re-ingested. Most importantly, we have found that caffeine has little or no net enhancing effects on performance and mood. Indeed, we have found that dietary caffeine has modest detrimental net effects on some indices of mood (i.e., consumer well-being is decreased by dietary caffeine). In summary, caffeine-induced improvements in performance and mood do not represent net benefits, but rather relief from the adverse effects of caffeine withdrawal.

Besides lack of benefit, of the many possible risks associated with life-long caffeine use, the effect of greatest concern is the likely involvement of the drug in the development of cardiovascular disease. It has long been known that caffeine increases blood pressure. In the past, concern was dampened by the long held belief that these acute effects do not persist (i.e., people develop tolerance) when caffeine is consumed habitually. However, as with performance and mood, improved understanding has come about by extending the traditional drug-challenge paradigm to take account of the everyday use of caffeine. Ours and others' studies show that caffeine-induced increases in blood pressure are not removed by habitual use of the drug. For the average consumer, including men and women across the age span, effects are evident for most of the waking hours of the day.

While caffeine-induced blood pressure effects are persistent, they are modest. The average population effect may be estimated conservatively to be about 2-4 mm Hg, and the question arises as to whether effects of this magnitude have any appreciable impact on population cardiovascular mortality and morbidity. The clearest insight into this question is provided by population statistics of the relationship between blood pressure level and rates of cardiovascular disease. Epidemiologists estimate that a 2 mm Hg reduction in population systolic blood pressure would result in lower mortality of about 7% for coronary heart disease and 10% for stroke. Based on the reasonable assumption that dietary caffeine is responsible for increasing population blood pressure by about 2-4 mm Hg, population-wide cessation of caffeine use could lead to decreases in premature death of up to 14% for coronary heart disease and 20% for stroke. This exceeds the cumulative life-saving benefit of antihypertensive treatments.

So, the hot topic here is that caffeine beverages are not so hot after all.

Impressions from Recent Conferences

Health and Demography in the States of the Former Soviet Union

Five substantive areas were covered:

- * The State of Health*
- * The Reliability of Health Statistics*
- *The Nature of the Health Care System*
- *Social, Political, and Economic Causes and Consequences of Population Decline*
- *Efforts of the International Community to Address Public Health.*

The status of health and its short and long-range demographic implications for the States of the Former Soviet Union were the subject of a Conference held at Harvard University, Cambridge, US, at the end of April 2005. The Conference concentrated on the concerning health trends in Russia and the countries of Eurasia, and in some cases made reference to similar issues in the countries of Central and East Europe. It was made possible by a wide collaborative effort, which included representatives from the Weatherhead Center for International Affairs, from the Davis Center for Russian and Eurasian Studies and the Center for Population and Development at Harvard University. The Conference was held under the auspices of the recently formed *Association for the Study of Health and Demography in the Former Soviet Union*, an affiliate group within the American Association for the Advancement of Slavic Studies, and interested parties are urged to join the Association. The meeting was hosted by Yoshiko Herrera from the Weatherhead Center for International Affairs and by Mark Field from the Davis Center for Russian and Eurasian Studies.

The Conference brought together an international group of some forty scholars