In Reply—Caffeine Effects on Arterial Stiffness: To Drink or Not to Drink

GUESSOUS, Idris, PONTE, Belen


DOI : 10.1016/j.mayocp.2018.06.007
PMID : 30077208

Available at:
http://archive-ouverte.unige.ch/unige:117742

Disclaimer: layout of this document may differ from the published version.
to recall bias. Also, they give a sense of the frequency of consumption of specific amounts of caffeinated beverages, in a short period of time rather than the specific amount consumed the day of the 24-hour urine collection. Perhaps using 24-hour dietary recalls or even food diaries would offer better information regarding actual caffeine intake during the day of the urine collection and the previous day; this is to match intake with caffeine urine metabolites and consequently to more accurately assess their association with PP and PWV. In our view and on the basis of available data, we have a lot more to learn concerning the effects of caffeine intake on arterial wall properties and blood pressure.

Kalliopi Karatzi, PhD
Department of Nutrition and Dietetics
Harokopio University of Athens
Athens, Greece

Theodore G. Papaioannou, PhD
Biomedical Engineering Unit, First Department of Cardiology, Hippokration Hospital Medical School, National and Kapodistrian University of Athens
Athens, Greece

Theodora Psaltopoulou, PhD
Department of Hygiene, Epidemiology and Medical Statistics, School of Medicine National and Kapodistrian University of Athens
Athens, Greece

Dimitris Tousoulis, PhD
Biomedical Engineering Unit, First Department of Cardiology, Hippokration Hospital Medical School, National and Kapodistrian University of Athens
Athens, Greece

Potential Competing Interests: The authors report no competing interests.


In Reply—Caffeine Effects on Arterial Stiffness: To Drink or Not to Drink

To the Editor: We thank Karatzi et al for their letter and the issues they raised. The authors stressed the fact that the rate of caffeine metabolism is variable and that it is highly attributable to genetic factors related to the CYP1A2 phenotype and liver function in general. We cannot agree more and have actually acknowledged this in the limitation section of our article as follows: “although we considered major factors, the biological half-life of caffeine is highly variable among individuals (2-10 hours) and is influenced by several genetic and nongenetic determinants (eg, liver function) that we could not account for.” It is true that information on habitual caffeine consumption, period of abstinence, and types of coffee could have been useful to further control for potential confounding.

We fully agree with Karatzi et al who underscore that questionnaires on caffeine intake are subject to recall bias. This is the reason why we have collected in our study objective information using caffeine urinary excretion instead of self-reported intake. Although Karatzi et al suggested that 24-hour dietary recall or even food diaries would offer better information regarding caffeine intake, we believe that these questionnaires are not
much more immune to bias as compared with other questionnaires. In addition, the use of these questionnaires would not help us in deciphering the role of caffeine metabolites, namely, paraxanthine, theobromine, and theophylline, in cardiovascular health. Using data from urinary excretion instead of questionnaires, we found strong positive associations of paraxanthine and theophylline with arterial stiffness. This finding is in line with the fact that paraxanthine is a very potent methylxanthine, and even slightly more potent than caffeine.

Regarding the timing of the last caffeinated beverage, it was standardized, but indeed we have not adjusted the analyses for that parameter. We also have not systematically collected information on the different types of coffee.

Finally, we fully agree with the authors that we all have a lot more to learn concerning the effects of caffeine intake on arterial wall properties and blood pressure. We hope that our study will encourage further research to increase knowledge in this field.

Idris Guessous, MD, PhD
Lausanne University Hospital
Division of Chronic Diseases
Institute of Social and Preventive Medicine
Lausanne, VD, Switzerland

Belen Ponte, MD
Geneva University Hospitals
Nephrology Division
Department of Medicine Specialties
Geneva, GE, Switzerland

Potential Competing Interests: The authors report no competing interests.


https://doi.org/10.1016/j.mayocp.2018.06.007