Coffee – the Wonder

Mircea CİNTEZA, MD, PhD^{a, b}

^aDepartment of Cardiology, Emergency University Hospital, Bucharest, Romania

^b“Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania

There are thousands of paradoxes in nature. Here is just an example: when burning tobacco leaves, the smoke may produce cancer and myocardial infarction; and when roasting coffee seeds, you may be protected from getting cardiovascular (CV) disease and even some types of cancer.

There are hundreds of papers dealing with all these four items and related subjects. So, I will only cite and comment very, very few of them.

Of course, I will not comment here on tobacco, which is one of the most powerful cardiovascular risk factors, equally as bad as diabetes and untreated hypertension. And regarding cancer, tobacco not only produces lung cancer, but also cancers at a distance. This proves that the carcinogenic substances obtained by burning tobacco leaves preserve their bad power after circulating in blood, being filtered by the liver, and crossing the endothelium.

Let us say some words about coffee consumption and the cardiovascular risk.

First, let us look at the instant effects of coffee: some tachycardia, maybe a very slight elevation of blood pressure, a positive psychological status, or some mood improvement – which – *per se* – is positive.

And then? Probably nothing bad and, on the contrary, some good effects at a distance.

I will begin noting that coffee entered the Prevention Guidelines (1). In the recent European ones, there are

some considerations, including “*Moderate coffee consumption (3-4 cups per day) is probably not harmful, perhaps even moderately beneficial*” – OK! – and “*Non-filtered coffee... may be associated with an up to 25% increased risk of ASCVD (atherosclerotic cardiovascular disease) mortality by consumption of nine or more drinks a day*” (1) – another OK! A call for moderation. Do not drink more than four cups of coffee per day and you will be protected.

Next, I cite some recent studies which show aspects of the protecting cardiovascular activity of moderate coffee intake (2-4).

Coffee contains cafestol, which elevates blood cholesterol. However, this is no more present in filtered coffees and instant coffee, which are recommended to be consumed (2).

Moderate coffee intake is associated with a lower risk of developing heart failure, as found in three different clinical studies (the FHS, the ARIC and the CHS clinical studies) (3).

I further cite a study performed on a large cohort of Italian population (4). It was called the Moli-sani study and included 2 0487 persons followed for 8.3 years. Here is a conclusion regarding coffee: *In this large cohort of Italian adults, moderate consumption (3–4 cups/d) of Italian-style coffee was associated with lower risks of all-cause and, specifically, of CVD mortality* (4).

So, not only CV mortality, but also total mortality are positively influenced.

It is to be noted, in many studies, that the type of coffee you drink matters.

Cafestol, which is not beneficial, is mainly present in unfiltered brews, such as French press, Turkish and Greek

Address for correspondence:

Mircea Cinteza, MD, PhD

Department of Cardiology, Emergency University Hospital, 169 Independentei Avenue, District 5, Bucharest, Romania

Email: mirceacinteza@gmail.com

Article received on the 20th of December 2021

coffees, but it's also in espressos, which is the base for most barista-made coffees, including lattes and cappuccinos. The conclusion should be to prefer filtered coffee (2), but the Moli-sani study had positive results on more than 18 000 persons with the use of the Italian style coffee, which is an unfiltered one.

Some studies try to have a conclusion regarding the way of preparing coffee, but the result is unclear: “*Unfiltered brew was associated with higher mortality than filtered brew, and filtered brew was associated with lower mortality than no coffee consumption*” (5). Here I will retain that, by drinking some coffee, you may have a lower mortality than no coffee consumption! And the tasty coffees, which are the unfiltered ones, are not proved to be harmful.

It is presumed that not only caffeine and cafestol have a CV risk influence, but other substances, which are common for roasted coffee, may act too. Coffee is an important source of antioxidants. However, a systematic review concludes that it is not clear whether the anti-inflammatory action of coffee has a major effect on CV risk (6). Thus, other mechanisms are probably involved.

Some other studies concomitantly examine the risk of coffee on cancer and CV cardiovascular risk (7, 8). Both studies cited here conclude that the final result is positive: the Norwegian one (7) addresses 117,228 women, while the other one (8) concludes that “*there is highly suggestive evidence for an inverse association between coffee intake and risk of liver and endometrial cancer*”. For other sites, new analyses are necessary.

Here are some other considerations taken from different sources: coffee may be beneficial in Parkinson disease; coffee consumption should not badly influence the quality of sleep; there are some people – bad neutralizers of caffeine – for whom a cup of coffee in the morning has a bad influence on their sleep for the next two nights; caffeine is also addictive, and an abrupt stop of drinking coffee may bring strong migraines.

Coming to the conclusions, there is strong evidence that a moderate coffee intake (4-5 cups a day) may have a favourable influence on risks of CV disease and some cancers. Total mortality was positively influenced. There are no observations regarding the specie of coffee used. There is ongoing debate about the way of preparing coffee, and adding milk or sugar has a negative impact.

Similar analyses were made for cocoa. Today it is well known that dark chocolate (70% cocoa or more) lowers the cardiovascular risk.

Finally, I would like to mention a notable personality in cardiovascular medicine: Thomas Luesher (9) as I do believe that citing him is a splendid conclusion: “*Well, wine is truly a joy, but at best neutral when consumed in moderation. Chocolate is a joy for our CV system, if consumed in dark, bitter form. And coffee? It wakes us up, less so, if you drink it regularly, and at that dose of up to 4 cups a day, might even be protective.*”

I stop here just to go and take my third cup of coffee today. Fortunately, I am a good coffee metabolizer. ◻

REFERENCES

1. Visseren FLJ, Mach F, Smulders YM, et al. ESC Guidelines on cardiovascular disease prevention in clinical practice. *European Heart Journal* 2021;42:3227-3337. doi:10.1093/eurheartj/ehab484.
2. Ang Zhou, Elina Hyppönen. Habitual coffee intake and plasma lipid profile: Evidence from UK Biobank. *Clinical Nutrition* 2021. doi: 10.1016/j.clnu.2020.12.042.
3. Stevens LM, Linstead E, Hall JL, Kao DP. A Machine Learning Analysis of the FHS, Framingham Heart Study, the ARIC Study (Atherosclerosis Risk in Communities), and the CHS (Cardiovascular Heart Study). *Circulation: Heart Failure* 2021;14:e00679. <https://doi.org/10.1161/CIRCHEARTFAILURE.119.006799>.
4. Ruggiero E, Di Castelnuovo A, Costanzo S, et al. Daily Coffee Drinking Is Associated with Lower Risks of Cardiovascular and Total Mortality in a General Italian Population: Results from the Moli-sani Study. *The Journal of Nutrition* 2021;151:395-404. <https://doi.org/10.1093/jn/nxaa365>.
5. Tverdal A, Selmer R, Cohen JM, Thelle DS. Coffee consumption and mortality from cardiovascular diseases and total mortality: Does the brewing method matter? *Eur J Prev Cardiol* 2020;27:1986-1993. doi: 10.1177/2047487320914443.
6. Smetana GW, Brindamour L, Bain PA, Mukamal KJ. Impact of Coffee Consumption on Physiological Markers of Cardiovascular Risk: A Systematic Review. *Amer J Medicine* 2021;134:626-636e2. doi:10.1016/j.amjmed.2020.09.036.
7. Lukic M, Barnung RB, Skeie G, et al. Coffee consumption and overall and cause-specific mortality: the Norwegian Women and Cancer Study (NOWAC). *Eur J Epidemiol* 2020;35:913-924. doi: 10.1007/s10654-020-00664-x.
8. Zhao LG, Li ZY, Feng GS, et al. Coffee drinking and cancer risk: an umbrella review of meta-analyses of observational studies. *BMC Cancer* 2020;20:101. <https://doi.org/10.1186/s12885-020-6561-9>.
9. Luscher TF. Wine, chocolate, and coffee: forbidden joys? *European Heart Journal* 2021;42:4520-4522. doi:10.1093/eurheartj/ehab654.