

## **Review of 30 studies suggests coffee consumption associated with reduced risk of type 2 diabetes**

*New review suggests regular coffee consumption reduces the risk of developing type 2 diabetes by approx. 30%*

09 April 2018 – A new review paper has analysed scientific studies, covering nearly 1.2 million participants in total, to gain a better understanding of how coffee consumption affects the development of type 2 diabetes and its associated complications.

‘Coffee consumption and reduced risk of developing type 2 diabetes: a systematic review with meta-analysis’<sup>1</sup>, by Associate Professors Mattias Carlström and Susanna Larsson<sup>2</sup>, found that aggregated evidence from 30 studies indicates that coffee consumption reduces the risk of developing type 2 diabetes by approximately 30%.

The review found that both caffeinated and decaffeinated coffee consumption reduced the risk of type 2 diabetes. The association was dose-dependent: the risk of type 2 diabetes decreased, respectively, by 7% (caffeinated) and 6% (decaffeinated) per cup per day. However, the risk reduction of new-onset type 2 diabetes appeared to be slightly stronger with caffeinated coffee.

The pooled relative risk for incident type 2 diabetes was 0.71 for the highest category of coffee consumption (median consumption, 5 cups per day) compared to the lowest category (median consumption, 0 cups per day).

The relationship between coffee consumption and type 2 diabetes is of significant interest, given the increasing worldwide prevalence of the disease. Type 2 diabetes is also associated with a number of adverse complications, further increasing the burden on both the individual and the healthcare system.

The authors reviewed the potential underlying mechanisms contributing to coffee consumption’s effect on type 2 diabetes risk. These potential mechanisms include coffee’s antioxidant properties, as oxidative stress has been linked to a number of adverse effects on cardiovascular, metabolic and renal functions. It has been demonstrated that acute as well as long-term intake of coffee can lower oxidative stress associated with type 2 diabetes. A number of studies have also shown that regular coffee consumption may reduce levels of pro-inflammatory markers: chronic low-grade inflammation has been linked to cardiovascular and metabolic disorders, such as type 2 diabetes.

The paper's authors note that long-term randomised placebo-controlled trials are needed to confirm the observed protective association between coffee consumption and types 2 diabetes risk, and to help understand the underlying mechanisms of this relationship. As an individual's genotype changes the way they metabolise caffeine, interventional studies should categorise participants accordingly.

Although future studies are still needed, the existing knowledge from epidemiological studies emphasises the prevention of type 2 diabetes with increasing intake of coffee.

The authors conclude that coffee – alongside important lifestyle changes to address a range of risk factors – could offer new therapeutic opportunities for type 2 diabetes and associated complications.

-ENDS-

Readers interested in finding out more about coffee & health can visit: [www.coffeeandhealth.org](http://www.coffeeandhealth.org)

## Notes to editors

- This paper was funded in part by ISIC but this has not in any way affected the production or content of the research. The author has declared no conflict of interest.
- In its Scientific Opinion on the safety of caffeine, the European Food Safety Authority (EFSA) concluded that intakes of up to 400mg of caffeine (the equivalent of up to 5 cups of coffee per day), from all sources, do not raise any concerns for healthy adults<sup>3</sup>. One cup of coffee provides approximately 75-100mg caffeine.
- More information on coffee and type 2 diabetes can be found on the Coffee & Health website: <http://coffeeandhealth.org/topic-overview/type2diabetes-2/>

## References

1. Carlström M. and Larsson S.C. (2018) Coffee consumption and reduced risk of developing type 2 diabetes: a systematic review with meta-analysis. *Nutrition Reviews*, 10.1093/nutrit/nuy014
2. Mattias Carlström, Associate Professor of Physiology, Department of Physiology and Pharmacology, Karolinska Institutet, Sweden; and Susanna Larsson, Associate Professor of Epidemiology and Senior Researcher, Unit of Nutritional Epidemiology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden
3. EFSA (2015) Scientific Opinion on the Safety of Caffeine. *EFSA Journal*, 13(5):4102.

## About ISIC

The Institute for Scientific Information on Coffee (ISIC) is a not-for-profit organization, established in 1990 and devoted to the study and disclosure of science related to “coffee and health.” Since 2003 ISIC also supports a pan-European education programme, working in partnership with national coffee associations in nine countries to convey current scientific knowledge on “coffee and health” to health care professionals.

ISIC’s activities are focused on:

- the study of scientific matters related to “coffee and health”
- the collection and evaluation of studies and scientific information about “coffee and health”
- the support of independent scientific research on “coffee and health”
- active dissemination of balanced “coffee and health” scientific research and knowledge to a broad range of stakeholders.

ISIC respects scientific research ethics in all its activities. ISIC’s communications are based on sound science and rely on scientific studies derived from peer-reviewed scientific journals and other publications.

ISIC members are six of the major European coffee companies: [illycaffè](#), [Jacobs Douwe Egberts](#), [Lavazza](#), [Nestlé](#), [Paulig](#), and [Tchibo](#).

## About coffeandhealth.org

The website [www.coffeandhealth.org](http://www.coffeandhealth.org) is a science-based resource developed for health care and other professional audiences and provides the latest information and research into coffee, caffeine and health.

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