

## Cautious view on the link between yoghurt consumption and risk of colorectal cancer

We read with great interest the recent work by Zheng *et al* published in the Gut journal titled 'Yogurt consumption and risk of conventional and serrated precursors of colorectal cancer'.<sup>1</sup> This impressive result was widely reported and rapidly disseminated and attracted great public health attention. Although the study was well-explored, the conclusion needs to be carefully interpreted. Below are a few points of concern in relation to the potential influence of this study.

Yoghurt consumption has been associated with obvious health benefits in different populations.<sup>2</sup> However,

nutritional information and health-related attributes of yoghurt in disease progression are limited. In this study, the researchers followed the yoghurt intake and subsequent development of different types of adenoma among 32 606 men and found that compared with the population who didn't consume yoghurt, those who ate two or more servings a week were 19% less likely to develop a conventional adenoma. The total incidence of conventional adenoma of subjects without yoghurt consumption was only 1701; however, it's not clear whether the disease occurrence ratio is significant in relation to the whole population (32 606) for men, especially when the total number of non-yoghurt and yoghurt subjects are not known from the study. Detailed information on lifestyle and dietary intake are critical to fully understand the benefit of yoghurt in preventing colorectal cancer, and thus, we suggest that yoghurt itself may not be sufficient to prevent cancer risk.

Generally, yoghurt is a semi-solid fermented milk product. However, there are still different fermentation processes (eg, labneh) in different countries, depending on the starter organisms used, flavour varieties and textures. The obtained yoghurt type might give a variable effect to the results of this cohort study. The commercially supplied yoghurt products can be plain or have the addition of fruits, flavour enhancers, colouring agents and other food additives. Taking fruit as an example, yoghurt topped with fruits could exert combined health benefits through potential prebiotic and probiotic effects. The intake of fruits was inversely related to the risk of colorectal cancer among men, but not among women.<sup>3</sup> Different fruit types, such as strawberry, blueberry or banana, have different benefits in to lowering the risk of colorectal cancer.<sup>4</sup> Therefore, Yoghurt topped with different fruits might exert different influence on the conclusion of such studies.<sup>5</sup> So, we strongly recommended that the classification of Yoghurt in future studies should be documented.

We must also be cautious about drug and food interaction, especially for chronic metabolic diseases which require long-term oral administration of drugs.<sup>6</sup> For future cohort studies, we recommend that the history of drug use should be documented and followed. Lifestyle habits, such as comprehensive physical activity data and even emotional status, might also affect how the human

body transforms food nutrients in vivo. While the gut microbiota is actively involved in the progression of chronic diseases, long-term dietary habits influence the gut microbiota composition and diversity. This means that the living environment rather than *Lactobacillus bulgaricus* and *Streptococcus thermophilus* may have more influence on the occurrence of disease. For example, dietary preferences might contribute to a higher probability of cancer occurrence, due to changes in gut microbiota–food interaction. In this scenario, we highly recommend that the association between dairy intake and the risk of colorectal cancer should be critically reconsidered for the real significance of yoghurt consumption.

In summary, while we appreciate the efforts of the investigators in addressing this important issue based on the cohort study, we suggest a more systematic and comprehensive analysis of the association between dairy intake and the risk of colorectal cancer, rather than just yoghurt. Nevertheless, this latest report will increase the understanding of nutritional research for public health control.

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