



September 11, 2026

News Release

Yakult Honsha Co., Ltd.

Tokyo Metropolitan Institute for Geriatrics and Gerontology

**Yakult Honsha and Tokyo Metropolitan Institute for Geriatrics and Gerontology Confirm
Significantly Lower Risk of All-Cause Mortality Among Elderly Men Who Habitually
Consume Dairy Products Containing *Lacticaseibacillus paracasei* strain Shirota**

Yakult Honsha Co., Ltd. (President: Hiroshi Narita) and the Tokyo Metropolitan Institute for Geriatrics and Gerontology (Chairman: Masahiro Akishita) conducted an epidemiological study investigating the impact of habitual consumption of dairy products containing *Lacticaseibacillus paracasei* strain Shirota*¹ (LcS) on all-cause mortality*² among elderly residents of Nakanojo Town, Gunma prefecture.

The study indicated the following.

Among elderly men who consumed dairy products containing LcS at least three days per week during the previous five years, the risk of all-cause mortality was significantly lower than that among those who consumed such products less than three days per week.

This is the first epidemiological evidence showing an association between the continued consumption of a specific strain of lactic acid bacteria and all-cause mortality. These findings support the health benefits of the habitual consumption of dairy products containing LcS. In contrast, no significant association with all-cause mortality was observed among elderly women. This may be attributable to the lower mortality rate among women and an insufficient follow-up period to detect such an effect.

The findings were published online on August 18, 2026, in *The Journal of Nutrition, Health and Aging*.

*1: This bacterium was previously called *Lactobacillus casei* strain Shirota.

*2: All-cause mortality refers to death from any cause, including disease and accidents.

1. Background

As populations continue to age worldwide, extending both lifespan and healthy life expectancy has become an important social challenge. Since 2014, Yakult Honsha and the Nakanojo Study Group at the Tokyo Metropolitan Institute for Geriatrics and Gerontology, led by Dr. Yukitoshi Aoyagi, have been conducting epidemiological research on lactic acid bacteria intake and health among the elderly residents of Nakanojo Town. Previous findings from this cohort have suggested that habitual consumption of dairy products containing *Lactocaseibacillus paracasei* strain Shirota (LcS) may help reduce the risk of hypertension, constipation, and anemia, indicating that habitual consumption may contribute to maintaining health in older adults.

Hypertension, constipation, and anemia are common conditions among elderly individuals, and each has been associated with an increased risk of mortality. Based on these observations, researchers have examined whether the consumption of dairy products containing LcS is associated with all-cause mortality.

While several studies have investigated dairy consumption and all-cause mortality, many have not distinguished between products containing live lactic acid bacteria and those that do not, and the bacterial strains studied have varied considerably. As a result, the impact of habitual consumption of a specific probiotic strain on all-cause mortality has remained unclear. This prospective epidemiological study*¹ was therefore conducted to evaluate the relationship between the consumption of dairy products containing LcS and all-cause mortality among elderly Japanese adults.

*1: A study in which participants are followed over a specified period to investigate associations between factors such as lifestyle habits and diet, and outcomes such as disease and mortality.

2. Study Overview

(1) Methodology

A total of 1,280 older adults residing in Nakanojo Town who participated in the study between 2014 and 2018 (519 men and 761 women; mean age, 73.5 years) were followed through December 31, 2025. Data collected from health examinations and questionnaires administered at the time of study enrollment, as well as during the follow-up period, were used to obtain background information such as smoking and drinking habits, frequency of consumption of dairy products containing LcS, and mortality data. For this analysis, participants were divided into two groups based on their frequency of consumption of dairy products containing LcS during the five years prior to study enrollment: those who consumed such products less than three days per week and those who consumed them three or more days per week. A prospective analysis of the association with all-cause mortality in both men and women was subsequently conducted.

(2) Results

The 1,280 study participants were followed for an average of 9.3 years (112.1 months). The number (percentage) of deaths was 147 (28.3%) among men and 114 (15.0%) among women.

A multivariable analysis of all participants, adjusted for major confounding factors including age, BMI, drinking habits, and smoking habits, found that among men ($n = 519$), the risk of all-cause mortality was

significantly lower in those who consumed dairy products containing LcS three or more days per week (n = 118) than in those who consumed such products less than three days per week (n = 401) (Figure 1: relative risk [hazard ratio]*², 0.648; P = 0.030). The survival curve also remained higher in the group consuming such products three or more days per week (Figure 2).

Similar results were obtained in a matching analysis*³ conducted among participants with comparable background characteristics. In this analysis, survival time was also significantly longer, by 9.8 months, in the group consuming dairy products containing LcS three or more days per week than in the group consuming less than three days per week.

Among women, however, neither the multivariable nor the matching analysis found an association between consumption frequency and either the risk of all-cause mortality or survival time.

These findings indicate that among men who habitually consumed dairy products containing LcS three or more days per week, the risk of all-cause mortality was lower and survival time tended to be longer.

*2: A measure indicating the ratio between groups of the risk that a particular event will occur over time. A value below 1 indicates that the risk of the event occurring is lower than that in the comparison group.

*3: A statistical method used to adjust for differences in background factors, such as age and lifestyle habits, between groups by selecting and comparing participants with similar background characteristics from each group. In this study, propensity score-matching analysis was used to assess the robustness of the results obtained from the multivariable analysis.

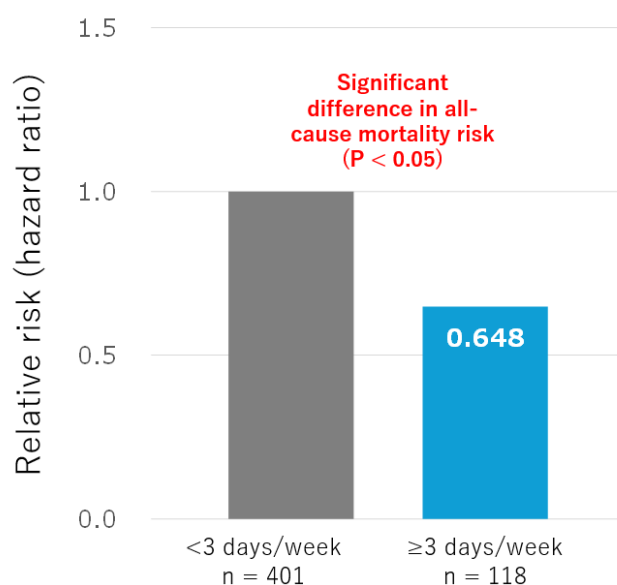


Figure 1: Frequency of consumption of dairy products containing LcS and risk of all-cause mortality among men

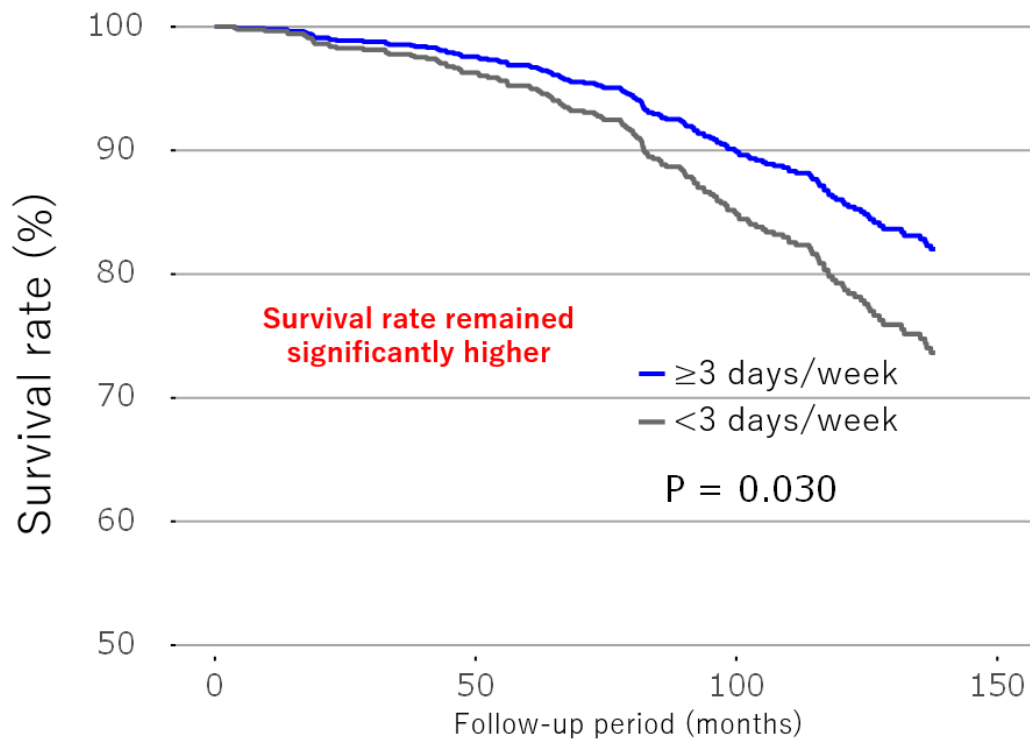


Figure 2: Multivariable-adjusted survival curves for consumption of dairy products containing LcS among men

3. Relationship Between Intake of LcS and All-Cause Mortality

Previous findings from the Nakanojo study have shown that older adults who consumed dairy products containing LcS had a lower risk of developing hypertension and anemia (Figure 3), as well as a lower incidence of constipation, defined as having bowel movements three or fewer days per week (Figure 4). No clear differences between men and women were observed in these associations. Preventing hypertension and anemia may contribute to a reduced risk of mortality by lowering the risk of cardiovascular diseases and ischemic damage to organs. In addition, constipation is known to be associated with a higher risk of death from conditions such as coronary artery disease and stroke. Because constipation may also be associated with chronic inflammation and impaired kidney function resulting from deterioration of the intestinal environment, its prevention may likewise contribute to a lower risk of all-cause mortality.

In the present study, however, no association was observed between the consumption of dairy products containing LcS and all-cause mortality among women. One possible explanation is that the mortality rate among women was low, and the follow-up period may not have been sufficiently long. Accordingly, the findings regarding the association with all-cause mortality in women should be interpreted with caution at this stage. Another possibility is that women generally have healthier lifestyle profiles than men, including lower rates of alcohol consumption and smoking, which may have made the effects associated with lactic acid bacteria intake less apparent.

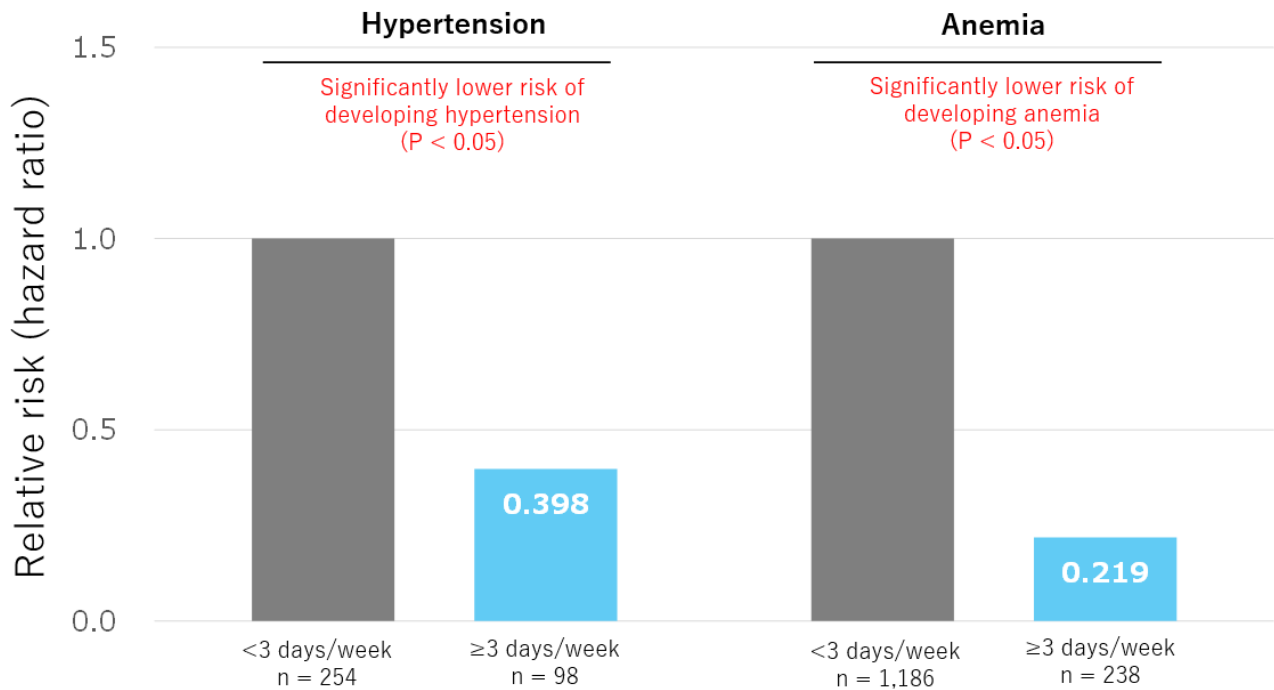


Figure 3: Habitual frequency of consumption of dairy products containing LcS and risk of disease onset
 (Aoyagi et al, *Beneficial Microbes*, 2017, Aoyagi et al, *Beneficial Microbes*, 2025)

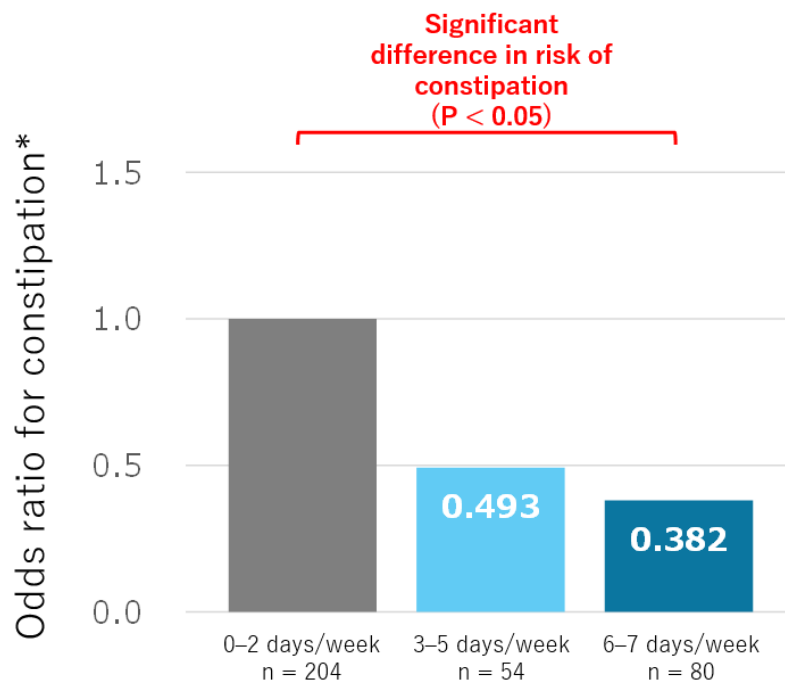


Figure 4: Frequency of consumption of dairy products containing LcS and constipation (*defined as bowel movements three or fewer days per week)
 (Aoyagi et al, *Frontiers in Microbiology*, 2019)

4. Future Outlook

This epidemiological study found that elderly men who habitually consumed dairy products containing LcS had a lower risk of all-cause mortality. They also tended to have longer survival time.

These findings represent the first epidemiological evidence of an association between the habitual consumption of a specific strain of lactic acid bacteria and all-cause mortality. Previous findings from the Nakanojo study have also shown that the habitual consumption of dairy products containing LcS is associated with a reduced risk of developing hypertension, anemia, and constipation. Although the present study found no clear association with all-cause mortality among women, previous studies have demonstrated beneficial associations with these conditions in populations that included women, suggesting that consumption may also help maintain health among women.

These findings indicate that the consumption of dairy products containing LcS is associated with a range of health outcomes. As differences were observed with continued consumption three or more days per week, the findings also suggest the importance of maintaining regular consumption over time.

Furthermore, these findings point to new possibilities for promoting longevity through the habitual consumption of foods and provide epidemiological support for the relationship between the intestinal environment, health, and longevity.

We will continue to explore the potential health benefits associated with the consumption of probiotics, including LcS.

5. Publication information

Name of the journal: *The Journal of Nutrition, Health and Aging*

(<https://doi.org/10.1016/j.jnha.2026.100956>)

Article: Association between habitual intake of fermented milk products containing lactic acid bacteria and all-cause mortality: a community-based cohort prospective study

Authors: Y. Aoyagi, R. Amamoto, S. Park, K. Shimamoto, T. Suwa, H. Makino, S. Matsubara