

**Consumption of Dairy Products Containing *Lactobacillus Casei* Strain Shirota
Lowers the Incidence of Constipation and Acute Respiratory Infections (ARIs)*
among Young Children in Vietnam**

**– A large-scale trial conducted in collaboration with
the National Institute of Nutrition (NIN), the Ministry of Health, Vietnam –**

Yakult Honsha Co., Ltd. (President: Takashige Negishi) and the National Institute of Nutrition (NIN) under the Ministry of Health of Vietnam carried out a large-scale trial in which a thousand young children leading normal lives in Vietnam consumed dairy products containing living *Lactobacillus casei* strain Shirota (LcS). The study indicated the following three points:

- (i) The incidence of constipation in the group of young children who consumed the dairy products containing LcS (Probiotic group) was significantly lower than that of the group of young children who did not consume the dairy products (Control group).
- (ii) The incidence of diarrhea among the Probiotic group tended to be lower than that of the Control group.
- (iii) The incidence of acute respiratory infections (ARIs) in the Probiotic group was significantly lower than that of the Control group.

* Acute respiratory infections (ARIs) are caused by various types of pathogens such as viruses, bacteria, mycoplasmas, and chlamydiae, and ARIs include upper respiratory inflammation, acute otitis media, pharyngitis, laryngitis, croup, bronchitis, bronchiolitis, and pneumonia.

The results of the study were published in the electronic edition of the academic journal *European Journal of Clinical Nutrition* on September 28, 2020.

1. Background

One of the Sustainable Development Goals (SDGs) calls for everyone “to ensure healthy lives and promote well-being for all at all ages”, which includes solving health problems and reducing mortality among children below the age of five. Constipation and diarrhea are noted

such health issues of children, and in some countries the incidence of constipation among this group is as high as 30%. Constipation can be a risk factor that lead to mental stress and eating disorders, and it is believed that lowering the incidence would contribute towards children leading healthy lives. Further, the World Health Organization (WHO) has reported that ARIs are one of the leading causes of death among children around the world, accounting for a third of all deaths.

In Vietnam, there are many children who complain of digestive problems such as constipation and diarrhea and it is a challenge to improve the nutritional condition of children. In addition, the number of young children who die from ARIs is high, accounting for 10 to 20% of all deaths.

The Yakult Group is engaged in business activities in 40 countries and regions around the world including Japan and is proactively carrying out research aimed at solving the health issues faced in these countries. There have been a number of studies involving consumption of dairy products containing LcS around the world as well as in Japan, and they have confirmed their beneficial effects on constipation, diarrhea, and ARIs.

Based on the study results that the Yakult Group has obtained to date, it was assumed that continued consumption of dairy products containing LcS would contribute also to improvement in the health conditions of young children in Vietnam, so the Group carried out a verification trial focusing on the incidence of constipation, diarrhea, and ARIs.

2. Study details

<Study method>

A total of 1,003 kindergarteners (three to five years old) living in Thanh Hóa Province, Vietnam, were divided into two groups: the Probiotic group, in which children consumed dairy products containing LcS (510 children), and a Control group, in which the children did not consume the dairy products (493 children). The Probiotic group consumed the dairy products containing LcS (6.5 billion live bacteria) every day for 12 weeks. Kindergarten teachers and guardians were asked to record the children's status with regards to consumption of the products, defecation, abdominal conditions, and ARI-related symptoms. Doctors evaluated the incidences of constipation, diarrhea, and ARIs from these records at five time points: at the start of product consumption, at the 4, 8, 12 weeks of product consumption, and after 4 weeks after the product consumption.

<Study results>

(i) Incidence of constipation

The study confirmed that the incidences of constipation among the Probiotic group during the trial period and the 4 weeks after the product consumption were significantly lower than that of the Control group (Fig. 1).

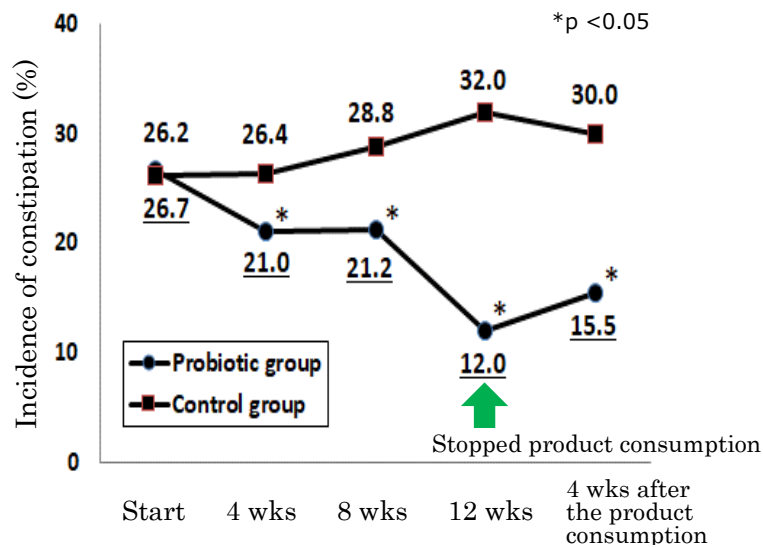


Fig. 1 Incidence of constipation

(ii) Incidence of diarrhea

The study confirmed that the incidences of diarrhea among the Probiotic group throughout the product consumption period tended to be lower than that of the Control group, and that it was significantly lower at the 4 weeks after the product consumption (Fig. 2).

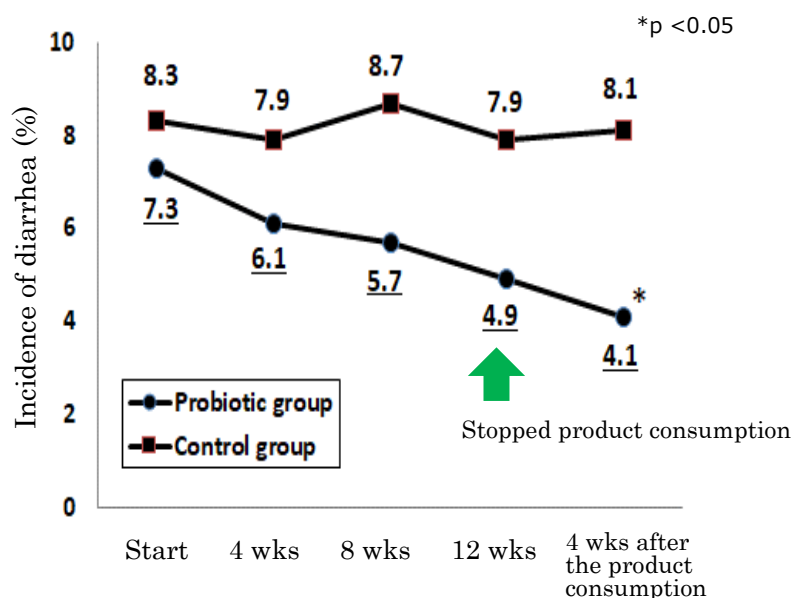


Fig. 2 Incidence of diarrhea

(iii) Incidence of ARIs

The study confirmed that the incidence of ARIs among the Probiotic group was significantly lower than that of the Control group at the end of product consumption, as well as 4 weeks after product consumption (Fig. 3).

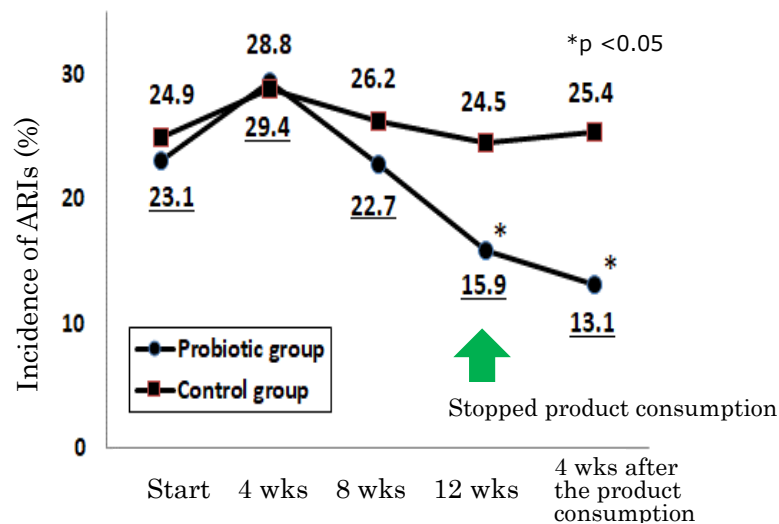


Fig. 3 Incidence of ARIs

3. Observations

The results of this study confirmed the effectiveness of the consumption of dairy products containing LcS in controlling the incidences of constipation and ARIs among young Vietnamese children leading normal lives. The results also suggest its effectiveness in controlling incidences of diarrhea. This study, targeting a thousand young children, reaffirms the effectiveness of LcS, which has earlier been established in studies in Japan and abroad. Based on the results of such a large-scale study, the continued consumption of dairy products containing LcS can be expected to contribute not just to the healthy lives of Vietnamese children but, also to the enhancement and maintenance of health among the general public.

4. Significance of this study

<Comment from Truong Tuyet Mai, Deputy Director, the National Institute of Nutrition, the Ministry of Health, Vietnam>

The study found that consumption of dairy products containing LcS is effective in controlling incidences of constipation and ARIs among young Vietnamese children. The fact that consumption of a dairy product, which even children can drink easily, showed such effects is a very important piece of knowledge in terms of public health for Vietnam, where malnutrition and health care of children are major issues. I expect more efficacy data will be accumulated and verification of new effectiveness will be pursued.

<Comment from Fumiyasu Ishikawa, Director, Yakult Central Institute, Yakult Honsha Co., Ltd.>

Against the backdrop of increasing awareness regarding the importance of maintaining a healthy body in daily life, we have repeatedly confirmed that continued consumption of dairy products containing LcS improves the intestinal environment. We have also discovered that continued consumption of dairy products containing LcS maintains immunity and improves the body's natural resistance, thus helping to reduce the risk of ARIs. The result of this large-scale study targeting a thousand young Vietnamese children, showing that such a dairy product was able to suppress the incidence of constipation and ARIs, further establishes the effectiveness already indicated. Dairy products containing LcS are consumed in 40 countries and regions around the world including Japan. We will further pursue verification of product efficacy taking into consideration the health issues and scientific significance in these countries and regions.

5. Publication information

Name of the journal: European Journal of Clinical Nutrition

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