

# Diet and Lifestyle of Kindergarten Children in Gifu III

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## Abstract

The living environment of children in Japan has been changing drastically in recent years<sup>1)</sup>. Among the many concerns this has raised, is the need to ensure that children observe the “Three Health Basics.” This paper aims to help improve the lifestyle habits of pre-school aged children by examining their eating and lifestyle habits in relation to the consumption of breakfast.

This study is based on a survey of 257 parents of children aged three to six attending a private kindergarten in Gifu City, Gifu Prefecture, conducted between late June and early July, 2013. There were 241 responses, for a response rate of 93.8%.

97% of the children surveyed ate breakfast daily. 26% of these ate breakfast with both parents, and 9% ate it alone. It was found that there were significant differences in duration of sleep, duration of meals, consumption of potatoes, consumption of green and yellow vegetables, consumption of other vegetables, consumption of meat, consumption of eggs, consumption of carbonated beverages, and overall health condition, between children who do and don't eat breakfast.

Children who didn't eat breakfast showed imbalances in lifestyle rhythms, general health, and types of food consumed. Because the nutritional approach of parents, such as allowing children to snack on impulse, has a large effect on lifestyle rhythms and eating habits, this paper aims to provide information useful in informing and supporting parents.

**Key words** : eating habits, breakfast

## Introduction

Recent changes in social and domestic environments have had a large effect on the lifestyles of children. There have been many reports<sup>1)</sup> of sleep and diet problems, and problems with the environment and content of play.

In light of this situation, the Ministry of Education's Central Education Council has examined all lifestyle habits, including diet, rest, and sleep, and issued a report recommending that proper habits be instilled in children<sup>2)</sup>. And in 2001, the School Health Committee issued its *Statement on Children's Sleep Habits*, which states that sleep problems are a major concern among children's health issues. Chapter two of the Kindergarten Teaching Procedures (revised in 2008), which concerns the goals and content of kindergarten education, states that “The kindergarten should coordinate with families in instilling basic life skills and values through daily activities and lifestyle.”<sup>3)</sup>

However, the Ministry of Education's 2010 white paper on *The Present State of Children's Life Habits* reports that the basic lifestyle habits of children from infancy through the primary school years have become very irregular, and that this instability is one reason for the decline in physical strength, vigor, and interest in learning<sup>4)</sup>.

In previous papers, the authors reported on the overall lifestyles, eating habits, and sleep patterns of kindergarten children<sup>5)</sup>. This paper concentrates on the consumption of breakfast in particular.

## Methodology

### I. Period and Subjects of the Study

This study was conducted in 2013, between the end of June and the beginning of July, at the Tokai Daiichi and Tokai Daini Kindergartens in Gifu City, Gifu Prefecture. An anonymous survey was distributed to 257 families of kindergarten children.

The purpose of the survey was explained in advance, and parents agreeing to participate filled in and returned the questionnaires provided.

The response rate was 93.8%; the parents of 59 three-year-olds, 71 four-year-olds, 84 five-year-olds, and 27 six-year-olds completed the questionnaire, for a total of 241 responses.

## 2. Survey Questions

The survey used a questionnaire sheet, and parents selected the appropriate response from among several choices. The questions covered basic attributes, sleep habits, foods consumed and eating patterns, exercise, play, and TV and other media use, among other topics.

## 3. Statistical Analysis

The data collected was compiled and analyzed with SPSS software. The comparisons between children eating and not eating breakfast used either the  $\chi^2$  test or the t test.

## Results

Breakfasts are often skipped by young parents, causing concern for the health of their children. The discussion below examines the effect on lifestyle and eating habits of aspects surveyed which showed a significant difference between children who do and do not eat breakfast.

Table 1 shows the proportion of breakfast eaters in relation to their weekday bedtimes. The proportion of children not eating breakfast was much greater in the group going to bed after 10 PM ( $P < 0.01$ ).

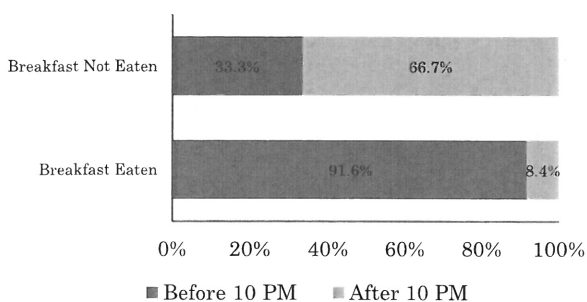


Table 1. Skipped Breakfasts and Weekday Bedtimes (Before and After 10 PM)

On holidays, as shown in table 2, although the proportion of children in the daily breakfast group who go to bed after 10 PM increases, it is still significantly smaller than the proportion in the breakfast skipping group ( $P < 0.05$ ).

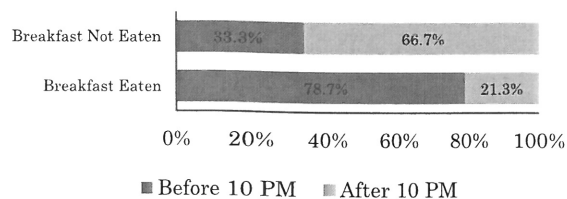


Table 2. Skipped Breakfasts and Holiday Bedtimes (Before and After 10 PM)

Table 3 compares breakfast consumption and the times at which snacks are eaten. The proportion of the breakfast eating group who consumed snacks at “consistent” or “nearly consistent” times was high, but the proportion of the breakfast skipping group whose snacks were “irregular” was significantly higher ( $P < 0.05$ ).

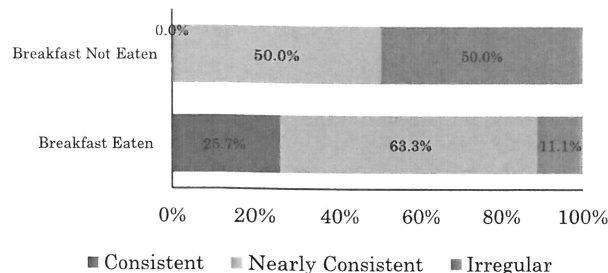
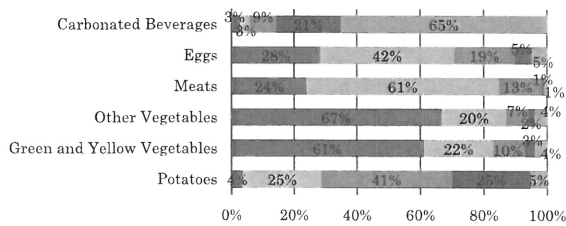


Table 3. Breakfast Consumption and Snack Times

Table 4 shows the relationships between the frequency of consumption of various types of food and the consumption of breakfast. Food types that showed significant differences in frequency of consumption were potatoes ( $P < 0.05$ ), green and yellow vegetables ( $P < 0.05$ ), other vegetables ( $P < 0.05$ ), meats ( $P < 0.01$ ), eggs ( $P < 0.05$ ), and carbonated beverages at snack time ( $P < 0.01$ ).

The frequency of consumption of carbonated beverages was significantly higher in the group who skipped breakfast, and the consumption of each of the other types of food listed above was extremely low.

Frequency of Consumption of Foods by Daily Breakfast Eaters



Frequency of Consumption of Foods by Breakfast Skippers

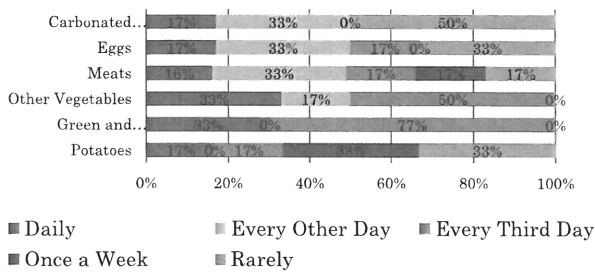


Table 4. Breakfast Consumption and the Frequency of Consumption of Types of Food

Table 5 shows the relationship between breakfast consumption and health condition. In contrast to the 50.0% of the children who eat breakfast daily that reported good health, significantly fewer (28.6%) of the children who don't eat breakfast daily reported good health ( $P < 0.05$ ). On the other hand, the proportion of children with cavities was significantly higher for those skipping breakfast (28.5%) than those who ate it daily (11.4%) ( $P < 0.05$ ). Further, 14.3% of the children who skipped breakfast suffered from shallow sleep, while none of the breakfast eaters did ( $P < 0.05$ ).

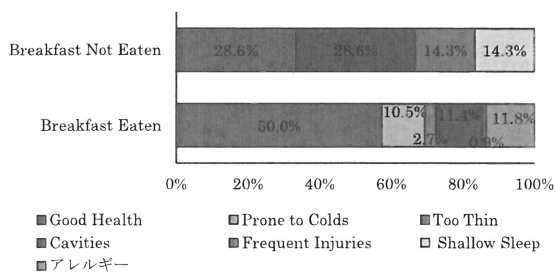


Table 5. Breakfast Consumption and Health Condition

## Discussion

The first years of childhood are a period of intense physiological, emotional, and intellectual development. It is also a time when children learn eating and lifestyle habits, and start to build basic social skills. It is therefore a very important period in life. We began this study of kindergarten children's habits in light of the three basics of health (diet, rest, and sleep), with the purpose of finding information that would be useful in improving their lifestyles.

We found that compared with children who eat breakfast daily, children who do not are much more likely to be awake past 10 PM on weekdays and holidays. We also found that the times at which snacks were consumed were much more likely to be consistent or nearly consistent for children who ate breakfast daily, and significantly more likely to be irregular for children who do not eat breakfast.

From this we conclude that households whose children do not eat breakfast daily are less likely to have a well-regulated nutritional lifestyle, and are more likely to be eating whatever they want, whenever they want it.

Significant differences were found in the frequency of consumption of potatoes, green and yellow vegetables, other types of vegetables, meats, and eggs, between children who did and did not eat breakfast daily. It was also found that children who didn't eat breakfast were significantly more likely to drink carbonated beverages at snack times, than children who ate breakfast daily.

The health condition of children who ate breakfast daily was found to be better. 50% of those who ate breakfast daily said their health was good, compared to only 28.6% of those who don't eat breakfast daily. On the other hand, children who don't eat breakfast were much more likely to have cavities and suffer from shallow sleep.

Although the skipping of breakfast is not necessarily the cause of problems such as mediocre health, cavities, or shallow sleep, this study has shown that the non-consumption of breakfast is a useful indicator that other problems may exist in the child's lifestyle. It is also an indicator of inconsistent parental guidance, which can lead to late bedtimes, impulsive

snacking, an unhealthy diet, and poor tooth brushing.

In March 2011, the Cabinet Office of the Government of Japan published its *Second Plan for the Advancement of Child Nutrition*, based on the results of the previous five years of effort. This plan lays out specific goals for the advancement of children's nutritional development in the five years from 2011 to the end of fiscal 2015, and outlines a number of policies intended to promote good dietary habits<sup>6)</sup>. The plan lists three new main areas of concern: (1) advancement of appropriate dietary habits that continue seamlessly through every stage of life, (2) advancement of dietary habits that will help prevent lifestyle diseases, and (3) advancement of good dietary habits in children through communal consumption of meals at home.

The present study of the state of diet and nutrition was conducted in the two kindergartens with the *Second Plan for the Advancement of Child Nutrition* in mind. It is the authors' hope that these findings can be used to help work with families to improve their dietary lifestyle.

For example, knowing whether or not children are eating breakfast would allow kindergarten teachers to watch for other problems, and know what childrearing advice to give to parents. Knowledge of children's breakfast eating habits is therefore a useful tool in the effort to advance good lifestyle habits, as laid out in the Second Plan.

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