

<論説>

Daily rhythm improvement strategy for children
— Encouraging the “Eat, be active and sleep well” movement —

Akira Maehashi¹

子どもの生活リズム向上戦略
— 「食べて、動いて、よく寝よう！」運動の奨励 —

前橋 明¹

Three problems faced by children in recent years

1. Sleep rhythm out of order

The first concern is that more and more children in today's Japanese society are becoming night owls. It is now a common sight to see children brought to family restaurants, pubs, karaoke bars, etc. by their parents late at night. Some pubs have even begun to provide designated areas and special menus for children. In fact, growing numbers of parents are letting their children stay up late, saying things like “No problem. Our children are full of life,” “Night is the time when children can have quality time with their father” or “Our children say they are not sleepy yet.” Consequently, today's children increasingly tend to “go to bed late, wake up late and always feel tired!”

The fact that more than 40% of Japanese young children go to bed after 10:00 p.m. is a national crisis in Japan. The problems here are “lack of knowledge” and “low awareness,” causing parents to be ignorant about healthy lifestyles for their children and preventing them from helping their children maintain natural daily rhythms, as well as the nocturnal lifestyles of many adults, which lead their children into unhealthy lifestyles.

So, what actually happens when young children do not sleep long enough (ten hours) at night? These children, particularly short-sleeping ones who sleep

less than nine and a half hours, tend to demonstrate behavioral characteristics, such as being less able to exercise caution or concentrate, easily becoming irritated, or being hyperactive and constantly on the move. Such children can neither keep their composure nor properly take part in kindergarten activities, and are likely to have trouble focusing in lessons after moving on to elementary school.

2. Eating rhythm out of order

When children go to bed late and wake up late or are lacking in sleep, they often fail to have a full enough breakfast or even skip it. This is the second concern.

Skipping breakfast can make children irritable and cause young children to demonstrate behaviors such as throwing building blocks, treating their toys roughly and suddenly hitting friends from behind. Today, however, only 80% of Japanese young children have breakfast every morning. At the same time, increasing numbers of children are failing to have bowel movements at home to make a fresh start in the morning before arriving at kindergarten, resulting in many children not showing up in good spirits. When this is the case, it is no wonder that children are less active in the morning. Reduced physical activity leads to a decline in the daily amount of exercise and prevents children from appropriately building up their physical strength.

1 早稲田大学 Doctor of Medicine, Professor of the Faculty of Human Sciences, Waseda University

3. Lack of exercise

The third concern is that there has been a marked decrease in the amount of exercise taken by children in their daily lives. For example, the number of steps walked by an average five-year-old nursery school child from 9:00 a.m. to 4:00 p.m., which was about 12,000 in 1985–1987, dropped to 7,000–8,000 in 1991–1993. The number fell below 5,000 after 1998 and the current amount of physical activity done by young children has become less than half compared to the Showa period (1926–89). In addition, as it has become more common for children to travel to and from nursery school by car, there has been a decline also in the total number of steps walked by children during the whole day. The result is a lack of exercise that is essential for children to build up their physical strength.

Body temperature rhythm affected by the autonomic nerves and hormones in the brain

Keeping late hours can disturb the sleep rhythms of children, which, in turn, can interrupt their eating rhythms, leading to no breakfast and no defecation. The result of this can be reduced physical activity in the morning, affected by morning sleepiness and

fatigue. This can cause not only a decrease in their physical strength but also impaired functioning of the autonomic nerves, which can upset their day-and-night body temperature rhythms (Figure 1).

This is the reason that there are children with “hyperthermia” and “hypothermia,” whose core body temperatures are not maintained at a stable 36°C level since they cannot control their body temperatures, as well as nocturnal children whose body temperature rhythms are disturbed so that they are inactive in the morning with a low body temperature and become active at night with a high body temperature.

Generally speaking, human body temperature maintains a certain cycle in daily life in which it becomes lowest at around 3:00 a.m. at night and highest at around 4:00 p.m. in the afternoon, influenced by hormones in the brain (Figure 2). This circadian variability is one of the biological rhythms that human beings have acquired over time. For example, around 4:00 p.m. in the afternoon is the time of the day when people become most active. This is why I call it children’s “Golden Time for Play and Learning.” I believe it should be the time of the day in which children exercise their curiosity and look for things that

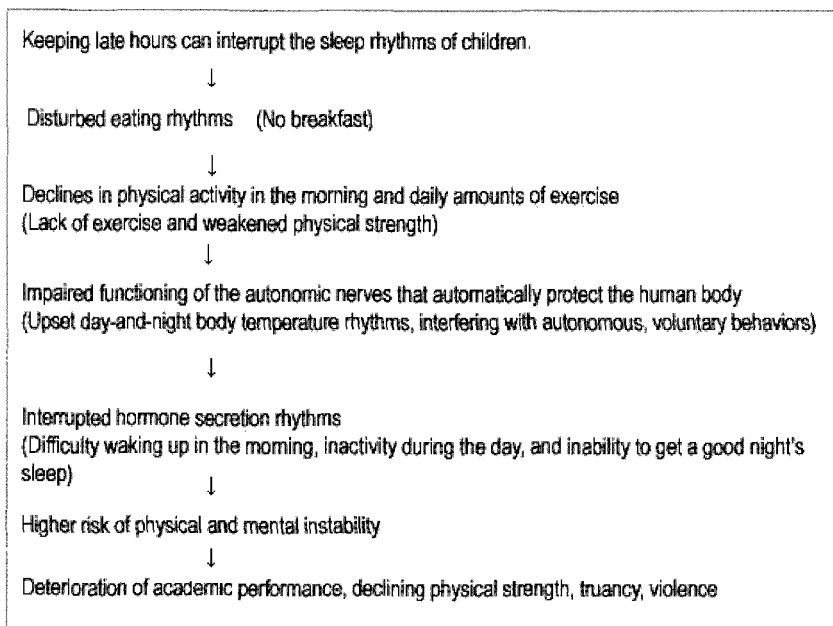


Figure 1: The flow and onset of problems common to Japanese children

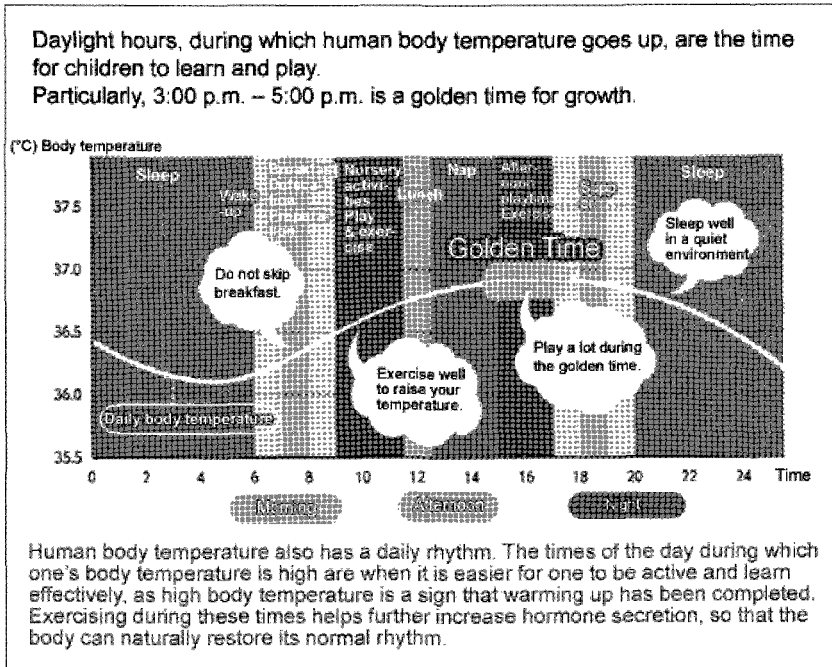


Figure 2: Daily body temperature rhythm

catch their interest, for example nature, animals, sports games—I name it—and lose track of time and enjoy play. By experiencing such enthusiasm, attempting new things and repeating a cycle of creating ideas and putting them into practice, over and over again, children can achieve dramatic growth.

However, the body temperature rhythms of children who lead nocturnal lifestyles are several hours behind the normal body temperature rhythm. Their bodies are not really awake and are still inactive in the morning, as they have to get up and start the day while their body temperatures are still as low as when they are asleep. The reverse is also true; their body temperatures remain high at night, causing them to have difficulty falling asleep and leading to a vicious cycle.

Restoring these delayed body temperature rhythms back to normal is the key to the success of the daily rhythm improvement strategy. Here are the two most effective methods of achieving this end: (1) exposing children to sunshine in the morning and (2) getting them to exercise during the day.

Launch of the “Go to Bed Early, Get up Early and Have Breakfast” movement and challenges

Put simply, the solution to the problems experienced by children is to get adults to take more seriously the “lifestyles that babies, toddlers and children should have (to achieve a good dietary, exercise and rest balance).” In fact, the “Go to Bed Early, Get up Early and Have Breakfast” movement is a nationwide movement that Japan has developed as the result of its efforts to achieve the above. Although this movement sure is effective in encouraging people to take action to promote health, we must admit that it still has room for improvement before it can bring more life to children by proactively stimulating their autonomic nervous systems. Figure 1 illustrates my view of how problems facing Japanese children have developed.

If you want to stop these problems from continuing, the first thing to do is take “sleep” more seriously to help protect and nurture the brains of children. This is why I emphasize the importance of “going to bed early and getting up early.” Another important thing is to place special emphasis on “breakfast,” as sleep

disorders lead to “eating” disorders.

A shortcoming of this national movement, however, is that it only covers these two aspects, while the third one, “exercise,” should be an indispensable part of the daily lives of children if you expect them to be self-motivated, self-directed and able to think and act independently. In fact, exercise and physical play are essential for the development of autonomic functions. It is necessary, also from the perspective of lifestyle improvement, that we should not overlook the importance of providing children with opportunities and occasions, as part of their daily lives, to take

exercise during the day to let out their physical energy and release their emotions.

To this end, it is essential that another element, “exercise,” should be added to the nationwide “Go to Bed Early, Get up Early and Have Breakfast” movement. To put it plainly, it should be “Eat, be active and sleep well.” In other words, the key is to launch a campaign that emphasizes the importance of “physical activity” and proactively put it into practice. My hope is that children, who are our future, can develop healthy lifestyles and lead healthy, fulfilling lives.