

December 28, 2018

Statement of the Japan Society for DOHaD

## **Necessity for immediate measures against “an increase in the percentage of low-birth-weight babies in Japan”**

In October 2017, the National Center for Child Health and Development reported that the adult height in Japan has been decreasing since 1980, and it is associated with an increase in the percentage of low-birth-weight babies in Japan<sup>1)</sup>. Due to this report, a risk of a decrease in the final height was added to the risks of lifestyle-related diseases as adverse events in the health of low-birth-weight infants<sup>1)</sup>.

In response to this, in August 2018, Science published an article stating that a decline in the birth weight in Japan can be a risk of long-term health disorders such as diabetes and hypertension, and the nation’s all-out efforts to increase attention to this problem and immediate countermeasures are necessary<sup>2)</sup>. This is an extremely important article academically, socially, and administratively that raises awareness of the critical situation in Japan and re-recognition of the importance of DOHaD.

However, in this article, it was mentioned that some obstetricians recommended a low calorie diet during pregnancy in the 1970s to reduce the risk of toxemia of pregnancy (hypertensive disorders of pregnancy at present), and this view was incorporated into the guidelines of the Japan Society of Obstetrics and Gynecology in 1981. However, in this description, the time when a low calorie diet began to be recommended to prevent toxemia of pregnancy in Japan is incorrect, about 20 years earlier than the actual time. Actually, a low calorie diet was only recommended to treat pregnant women complicated with toxemia of pregnancy in 1981<sup>3)</sup>. It is noted that weight gain restriction during pregnancy for the prevention of toxemia of pregnancy began to be recommended for pregnant females in general for the first time in 1999<sup>3)</sup>. On the other hand, the mean birth weight in Japan began to decrease from about 1980. In addition, the Guideline for Obstetrical Practice in Japan (edited by the Japan Society of

Obstetrics and Gynecology · Japan Association of Obstetricians and Gynecologists) since 2011 has recommended no strict weight gain restriction for pregnant females. These facts differ from the contents of the above article in Science. Therefore, obstetricians' instructions regarding weight gain restriction during pregnancy may not be the main cause of the increase in the percentage of low-birth-weight babies or the decline in the mean height of Japanese<sup>3)</sup>.

Nevertheless, as Science suggested, the increase in the percentage of low-birth-weight babies in Japan is the most serious in the world, and an urgent problem requiring immediate measures. Since this social phenomenon may be associated with various factors in multiple fields<sup>3)</sup>, a multidisciplinary approach is necessary to devise effective measures.

Based on the above, the Japan Society for DOHaD is determined to perform multidisciplinary and scientific analysis of the increase in the percentage of low-birth-weight babies as a suspected risk of disorders in the health of Japanese people in the next generation, gather the total knowledge of researchers in various fields, and make efforts to devise concrete and effective measures including those against inadequate nutritional intake due to a desire for slimness among modern females, those to achieve full understanding of the necessity of an appropriate nutritional intake, not excessive or inadequate, during the growth period and pregnancy, and instructions regarding appropriate weight gain during pregnancy.

- 1) Morisaki N et al. Ecological analysis of secular trends in low birth weight births and adult height in Japan. *J Epidemiol Community Health* 71:1014-1018, 2017  
<https://jech.bmj.com/content/71/10/1014.long>
- 2 ) Normile D. Staying slim during pregnancy carries a price. *Science* 361:440, 2018  
<http://www.sciencemag.org/news/2018/08/staying-slim-during-pregnancy-carries-price>
- 3) Itoh H, et al. Multiple causative factors underlie low birthweight. *Science* (eLetter : 14 October 2018) <http://science.sciencemag.org/content/361/6401/440/tab-e-letters>