

## Diagnostic Criteria and Future Trends of Metabolic Syndrome in Japan

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### Abstract

Diagnostic criteria for metabolic syndrome in Japan are different from other countries. In this paper, we outline the diagnostic criteria and problems that the authors consider these criteria to have, as well as explain content to be changed in 2018.

**Keywords:** Diagnostic criteria in Japan; Content of revision

### Introduction

The diagnostic criteria for metabolic syndrome in Japan were decided upon in 2005 by the committee for examining metabolic syndrome, which consisted of 8 academic societies such as the Japan Medical Association and the Japan Diabetes Association, and the same standards remain in use. The outline is as follows: First, waist circumference must be over the standard (85 cm in male, 90 cm in female). Next, two or more of the following three items must be abnormal: blood neutral lipid concentrations (HDL concentration <40 mg/dL or  $\geq 150$  mg/dL), fasting blood glucose ( $\geq 110$  mg/dL), and blood pressure (systolic phase  $\geq 130$  mmHg and/or diastolic phase  $\geq 85$  mmHg) [1].

From a view of the social system, the special screening system (health checkup on lifestyle diseases such as diabetes) began in 2008. This makes it obligatory to conduct medical examinations for middle-aged and elderly insured persons aged 40 to 74 years old, and also provides health guidance (medical support by doctors and public health nurses according to individual characteristics and risks) to individuals who are judged to have metabolic syndrome or reserve forces that were mandated. This screening system was created by the government (Ministry of Health, Labor and Welfare), and it is anticipated that by treating metabolic syndrome before the symptoms become serious future medical costs will be reduced. However, what actually happens is that business organizations to which insurance members belong will be obliged to judge the outcome of health guidance after five years. The Ministry is trying to increase effectiveness of this process by imposing a financial penalty on business organizations with poor health insurance results. We will explain our opinions about these diagnostic standards and systems, and outline content to be changed in 2018.

### Discussion

Similar diagnostic criteria for metabolic syndrome were established by the World Health Organization [2] and other groups; however, the criterion of waist circumference is very important given that the standard is different among countries. Measurement of waist circumference is used in place of visceral fat area data. It is considered

that visceral fat of  $\geq 100$  cm<sup>2</sup> is extremely high risk of glucose metabolism abnormality, lipid metabolism abnormality, and high blood pressure in Japan. Thus, its contribution to a diagnosis of metabolic syndrome is higher than other examination items. However, this reference value is set lower for men. Although subcutaneous fat is more abundant in females than in men, it seems that it does not actually match in terms of skeletal proportions and average body shape. Regarding the social system, it is a prerequisite to find out who has metabolic syndrome by enforcing medical examinations at all organizations with a high examination rate. Therefore, regardless of the metabolic syndrome, there is a mechanism such that supplementation from the government to the organization is imposed a financial penalty if health checkups are not enforced at a high rate because of other laws.

Unfortunately, the diagnostic criteria for metabolic syndrome are not universal [3]. Even if one is diagnosed with metabolic syndrome, a patient only receives recommendations to improve lifestyle habits such as meals and exercise; medication or surgical treatment is not carried out immediately [4]. In the opinion of the authors, metabolic syndrome is a preemptive diagnosis and indicative of a person who is likely to suffer from lifestyle diseases in the future. In oriental medicine, it is not healthy to say that one is not diagnosed as diseased because no abnormality was found even after receiving an examination. In many cases it is predicted that individuals with metabolic syndrome will become sick if left untreated, such as the case of obesity. Moreover, it seems that society at each workplace must ensure that people diagnosed with metabolic syndrome do not receive discriminatory treatment such as dismissal.

In 2016, at the review meeting of the Ministry of Health, Labor and Welfare, the diagnostic criteria for metabolic syndrome were reconsidered. It was announced that if there was no abnormality in waist circumference and there is abnormality in other diagnostic items, the individual will be subject to health guidance. In recent years, according to the research group of the Ministry, the following results are taken into consideration. Risk of developing cardiovascular diseases and lifestyle diseases may be increased without abdominal girth abnormality. Conversely, if abdominal girth fits the above guideline but there are no other abnormalities, then there is no change in risk. According to the new criteria, cardiovascular disease risk is judged from blood pressure, blood glucose, and blood lipid

examination results. Weight reduction is recommended through health guidance as before when abdominal girth is more than the guideline. If it is less than the guideline, it seems necessary to identify risk factors other than visceral fat accumulation. Thus, we are planning to develop a new program for each method that can investigate the cause. The medical examination with this new standard is scheduled to be carried out beginning in 2018 [5], and the expectation is that it can make a meaningful diagnosis better than before.

## References

1. Examination Committee of Criteria for 'Obesity Disease' in Japan, Japan Society for the Study of Obesity (2002) New criteria for 'obesity disease' in Japan. *Circ J* 66: 987-992.
2. World Health Organization (1999) Definition, diagnosis, and classification of diabetes mellitus and its complications. A report of WHO consultation, Geneva. pp:1-49
3. Eckel RH, Kahn R, Robertson RM, Rizza RA (2006) Preventing cardiovascular disease and diabetes: A call to action from the American Diabetes Association and the American Heart Association. *Circulation* 113: 2943-2946.
4. Kiyohara Y, Doi Y, Kubo M, Yonemoto K, Tanizaki Y, et al. (2006) Actual evidence of metabolic syndrome in the Japanese population. *Diabetes Care* 29: 1986-1987.
5. The Ministry of Health, Labor and welfare (2017) Reviews the diagnostic criteria for medical diagnosis of metabolic syndrome. *Aging Style*.