

# Letter to the Editor

## New Criteria for 'Obesity Disease' in Japan

To the Editor:

The American Heart Association<sup>1</sup> and IDF<sup>2</sup> stated that the criteria of abdominal obesity were waist circumference (WC)  $\geq 90$  cm in men and  $\geq 80$  cm in women for Asian populations other than Japanese, and  $\geq 85$  cm in men and  $\geq 90$  cm in women for Japanese. They indiscriminately accepted recently issued Japanese definition and criteria of metabolic syndrome,<sup>3</sup> which were proposed by the Examination Committee of Criteria for 'Obesity Disease' in Japan set up by the Japan Society for the Study of Obesity<sup>4</sup> (ie, WC of 85 cm in men and 90 cm in women) as equivalent values for visceral fat area (VFA) of 100 cm<sup>2</sup>. However, these cutoff-points of WC result from the inappropriate presupposition that VFA is linearly proportional to WC. They determined the values by linear regression  $y=ax-b$ , where  $y=VFA$  and  $x=WC$ , though in fact, the dots in their VFA–WC graphs were scattered along quadratic lines.<sup>4</sup> These distributions are natural because the area varies with the square of the circumference. If they had determined the cutoff-points of WC by quadratic regression lines or by receiver-operating characteristic curves as they did to determine the cutoff-points of BMI and VFA, the values might have been equivalent to the Asian criteria:  $\geq 90$  cm in men and  $\geq 80$  cm in women.

### References

1. Grundy SM, Cleeman JJ, Daniels SR, Donato KA, Eckel RH, Franklin BA, et al. Diagnosis and management of the metabolic syndrome: An American Heart Association/National Heart, Lung, and Blood Institute Scientific Statement. *Circulation* 2005; **112**: 2735–2752.
2. The IDF consensus worldwide definition of the metabolic syndrome. Available from [www.idf.org/home/index.cfm?unode=1120071E-AACE-41D2-9FA0-BAB6E25BA072](http://www.idf.org/home/index.cfm?unode=1120071E-AACE-41D2-9FA0-BAB6E25BA072)
3. The Examination Committee of Criteria for Metabolic Syndrome. Definition and criteria of metabolic syndrome. *J Jpn Soc Int Med* 2005; **94**: 794–809 (in Japanese).
4. The Examination Committee of Criteria for 'Obesity Disease' in Japan, Japan Society for the Study of Obesity. New criteria for 'obesity disease' in Japan. *Circ J* 2002; **66**: 987–992.

Eiji Oda, MD

Department of Internal Medicine,  
Niigata Prefectural Yoshida Hospital,  
Niigata, Japan

## Author's Reply Cutoff Point of Waist Circumference in Japan

We thank Dr Oda for his interest in our article.<sup>1</sup> He commented that the linear regression analysis between visceral fat area (VFA) and waist circumference (WC) was inappropriate and recommended a quadratic regression analysis. When we re-examined the analysis, the WC corresponding to 100 cm<sup>2</sup> was 84.2 cm in men and 92.0 cm in women by quadratic regression analysis, compared with the values from linear regression analysis of 84.4 cm in men and 92.5 cm in women. There were little differences between curve and linear approximations in both sexes.

The cutoff-points of WC for Asian populations are 90 cm in men and 80 cm in women as proposed by WHO/IASO/IOTF<sup>2,3</sup> however, the value is defined as a predictive one for clustering risk factors. On the other hand, the WC in Japanese criteria is assumed to be a marker for VFA, which is an essential factor in the new criteria of metabolic syndrome proposed by JSIM or the IDF<sup>4,5</sup>. Accordingly, we think that the Japanese cutoff-points of WC are appropriate and the only ones supported by evidence. The Asian committee, of which we are a part, is now studying the standardization of the cutoff-points of WC in Asia populations.

### References

1. The Examination Committee of Criteria for 'Obesity Disease' in Japan, Japan Society for the Study of Obesity. New criteria for 'obesity disease' in Japan. *Circ J* 2002; **66**: 987–992.
2. WHO/IASO/IOTF: The Asian-Pacific perspective: Redefining obesity and its treatment. <http://www.idi.org.au/home.htm> Accessed 21 August 2003.
3. Tan C-E, Ma S, Wai D, Chew SK, Tai ES. Can we apply the national cholesterol education program adult treatment panel definition of the metabolic syndrome to Asians? *Diabetes Care* 2004; **27**: 1182–1186.
4. The committee for Japanese Definition of metabolic syndrome. Definition and criteria of metabolic syndrome. *J Jpn Soc Int Med* 2005; **94**: 794–809 (in Japanese).
5. The IDF consensus worldwide definition of the metabolic syndrome. Available from [www.idf.org/home/index.cfm?unode=1120071E-AACE-41D2-9FA0-BAB6E25BA072](http://www.idf.org/home/index.cfm?unode=1120071E-AACE-41D2-9FA0-BAB6E25BA072) Accessed 14 April 2005.

Yuji Matsuzawa, MD

Sumitomo Hospital,  
Osaka, Japan