

## Letter to the Editor

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### Waist Circumference: A Key Tool for Action against Central Obesity

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#### Dear Editor,

Worldwide, obesity is the fifth leading cause of death and it contributes to 44% of the burden of diabetes, 23% of ischemic heart disease and in between 7% to 41% of cancer burden.<sup>1</sup> Globally, 400 million adults are obese and one billion are overweight.

Central obesity is more dangerous than general obesity, as it attributes to insulin resistance, metabolic syndrome and an independent predictor of cardiovascular disease risks.<sup>2</sup> Abdominal or central obesity measured by waist circumference is the better and accurate predictor of

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cardiovascular and metabolic syndrome risk than the general obesity assessed by Body Mass Index (BMI).<sup>3</sup>

Waist circumference is an independent risk factor for subsequent myocardial infarction irrespective of BMI.<sup>4</sup> Indian Diabetic Risk Score is a screening tool devised with waist circumference as one of the four variables for diabetes screening among Indian population. Nandeshwar et al reported 94.68% sensitivity in the screening of diabetes among those at risk of developing diabetes mellitus.<sup>5</sup> Government of Tamil Nadu, also used 'ENN score' which utilizes waist circumference as one of the component for non communicable risk screening among rural population above 30 years. Since waist circumference is easy to measure compared to BMI calculation, they utilized village volunteers for risk scoring and referred the identified patients to Primary Health Center.<sup>6</sup>

Waist circumference should be measured at the level of midpoint between the lower margin of the least palpable rib and the top of the iliac crest, using a stretch-resistant tape that provides a constant 100 g tension and the subject should stand with arms at the side, feet close together, and body weight evenly distributed, and should wear little

clothing. The subject should be relaxed, and the measurements should be taken at the end of a normal expiration. Two measurements should be taken; if the measurements are within 1 cm of one another, the average should be calculated. If the difference between these two measurements exceeds 1 cm, the two measurements should be repeated.<sup>7</sup>

According to the International Diabetes Federation guidelines, central obesity is defined as a person with waist circumference more than ethnic specific cut off values as follows: For Europeans male  $\geq 94$  cm, female  $\geq 80$  cm; For South Asians, Chinese and Japanese male  $\geq 90$  cm, female  $\geq 80$  cm; For Ethnic South and Central Americans, use South Asian recommendations and for Sub-Saharan Africans and Eastern Mediterranean and Middle East populations, use European recommendations. For person with Body Mass Index  $> 30$ , central obesity can be taken granted without measuring the waist circumference.<sup>2</sup> According to World Health Organization, there will be substantial increase in risk for metabolic complications, if the waist circumference is  $> 102$  cm in male and  $> 88$  cm in female.<sup>7</sup>

Life style interventions such as dietary modifications and increased physical activity through behavioral therapy with or without pharmacotherapy and weight loss surgery are the current guidelines for the management of obesity according to American Heart Association. Dietary strategies include 1,200–1,500 kcal/day for women and 1,500–1,800 kcal/day for men for weight loss. An obese individual should do aerobic physical activity for > 150

minutes per week for weight reduction and 200-300 minutes per week for maintenance of lost weight.<sup>8</sup>

To summarize, central obesity is the important independent risk factor for cardiovascular diseases and can be assessed with simple tool of waist circumference. Waist circumference is the key indicator of general health; it can be maintained by balanced diet and adequate physical activity.

### Reference:

1. World Health Organization. Overweight and obesity. Available from <http://www.who.int/mediacentre/factsheets/fs311/en/>. Last accessed on 07.03.14.
2. International Diabetes Federation. The IDF consensus worldwide definition of metabolic syndrome. 2006. Available from [http://www.idf.org/webdata/docs/IDF\\_Meta\\_def\\_final.pdf](http://www.idf.org/webdata/docs/IDF_Meta_def_final.pdf). Last accessed on 10.03.14
3. Smith SC Jr, Haslam D. Abdominal obesity, waist circumference and cardio-metabolic risk: awareness among primary care physicians, the general population and patients at risk--the Shape of the Nations survey. *Curr Med Res Opin.* 2007;23(1):29-47.
4. Yusuf S, Hawken S, Ounpuu S, Bautista L, Franzosi MG, Commerford P et al. Obesity and the risk of myocardial infarction in 27,000 participants from 52 countries: a case-control study. *Lancet.* 2005;366:1640–9.
5. Nandeshwar S, Jamra V, Pal DK, Indian Diabetes Risk Score for screening of undiagnosed diabetic subjects of Bhopal city. *National Journal of Community Medicine.* 2010; 1(2): 176-7.
6. Government of Tamil Nadu. State Health Society. NalamanaTamizhagam. Government of Tamil Nadu's Diabetes and Hypertension Prevention Initiative. Available from:

7. <http://www.nrhmtn.gov.in/ntn.html>.  
Last accessed on 25.07.14.

8. World Health Organization. Waist circumference and waist hip ratio. Report of a WHO expert consultation. 2008. Available from [http://whqlibdoc.who.int/publications/2011/9789241501491\\_eng.pdf](http://whqlibdoc.who.int/publications/2011/9789241501491_eng.pdf). Accessed on 10.03.14. Accessed on 11.03.14

9. Jensen MD, Ryan DH, Apovian CM, Loria CM, Ard JD, Millen BE et al. 2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults: A report of American College of Cardiology/American Heart Association Task Force of Practice guidelines and the Obesity Society. *Circulation*. 2013: 00:000–000.