

## Waist-hip ratio is a practical and valid predictor of CAD risk

### TO THE EDITOR:

We were interested to read the recent commentary provided by Dr. Bronson regarding the practical value of waist-hip ratio (WHR) for office-based prediction of risk for heart disease (1). Although we wholeheartedly agree that such measures as computed tomography (CT), as shown by Goodpaster and colleagues (2), may be superior in quantifying visceral adipose tissue and hence better able to predict development of the metabolic syndrome, WHR should not yet be brushed aside.

First, the association of WHR and risk for coronary artery disease is clear. Yusef and colleagues (3), in a case-control study evaluating 27 098 patients and spanning 52 countries, demonstrated that WHR shows a graded and highly significant association with myocardial infarction (MI) worldwide. WHR was shown to have a stronger association with MI risk than body mass index. This multinational study included both men and women across multiple ethnic groups, including people of Asian and South Asian descent.

Second, standardization of measurement for WHR improves measurement reproducibility and allows for simple data collection in the medical office. Guidelines for measuring WHR are available on the Stanford School of Medicine Web site (4). We are currently using these guidelines in an ongoing obesity study at our institution, and we find that WHR measurements are highly reproducible among all members of our research team.

### IN RESPONSE:

I appreciate the response by Pannu and Snyder to my recent commentary. It is hard to beat the cost of a tape measure! I fully agree that WHR is a useful measure in research settings where process control in anthropometric measures can be very high. Others have reported challenges in achieving high levels of measurement reliability of WHR (1). Further difficulties for many primary care settings include adding these measures to the typical 15- to 20-minute office visit. A CDC Workshop commented on the difficulty of use of these measures in public health and primary care settings: "Because measurement errors may be compounded in a ratio, and because the interpretation of these ratios in pathophysiologic terms is difficult, the public health applications of these ratios might be limited. Simple measurements are more likely to be useful.....For anthropometry to be of maximum value in public health promotions, body measurements must be well standardized. Height and weight already are 2 fairly well-

Lastly, a nonstretchable 1.5-m tape measure costs around US \$1.15. For overly obese patients, we spend a little more on the 3-m version (US \$1.95). Besides the advantage of tape measurement being less invasive than CT scanning, cost comparison between the 2 tools makes the choice clear for our financially challenged research group.

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### References

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3. Yusuf S, Hawken S, Ounpuu S, 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.
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standardized measures, but there is not yet agreement on a bone landmark to make the measurement of waist circumference highly reliable and reproducible" (2).

WHR is very useful in research settings, but perhaps not ready for routine ambulatory clinical practice.

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### References

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