

Waist circumference: a simple, inexpensive, and reliable tool that should be included as part of physical examinations in the doctor's office^{1,2}

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Increasing evidence shows that abdominal adiposity has a direct influence on health and that visceral fat correlates with health risks to a greater extent than does adipose tissue in other regions of the body. Janssen et al (1) reported that increased visceral fat, as measured by magnetic resonance imaging in 341 whites, had a stronger correlation with waist circumference (WC) than with body mass index (BMI; in kg/m²). Using the third National Health and Nutrition Examination Survey data in 9019 whites, Zhu et al (2) recently reported that WC is more closely linked to cardiovascular disease risk factors than is BMI.

The compelling statistical results presented in the article by Kahn and Valdez (3) in this issue of the Journal are based on data obtained from the same group of study participants reported on by Zhu et al. These results provide the first irrefutable evidence that WC is a reliable risk indicator for the syndrome of lipid overaccumulation, as documented by elevated fasting triacylglycerol concentrations and by accelerated mortality after middle age in a large population with wide age and BMI ranges. Measurement of fasting serum triacylglycerol concentrations is a reliable laboratory procedure to determine the amount of accumulated lipid in the metabolic pool of the body. The results presented by Kahn and Valdez serve to validate the potential usefulness of WC in physical examinations for clinical purposes; therefore, their results should encourage physicians to include WC measurement in the health evaluation procedures that they use in their routine clinical practices. This inclusion was suggested recently in a report by Ross and Katzmarzyk that was based on their observations of 7573 participants in the Canadian Population Survey. Ross and Katzmarzyk reported that cardiorespiratory fitness is inversely associated with WC and is independent of BMI. Therefore, they emphasized that the measurement of WC would be a reliable, easy, and inexpensive indicator by which to identify persons at risk of lipid accumulation (4).

The World Health Organization stated in a recent report that obesity has become a global problem (5). Because underdeveloped countries may not be able to provide adequate treatment of health-related problems associated with obesity, such as diabetes and heart disease, it is expected that obese persons in these countries probably face even more severe health-related consequences than do their counterparts in the United States and other developed countries. WC measurement would offer

clinicians in these countries a desperately needed, useful, and inexpensive tool for their routine clinical practice.


Currently, few clinicians make WC measurements in their routine clinical practices, and WC is generally considered to be a measure for research purposes. There are several reasons for this outlook. First, there is no systematic and continuous effort from any organization to inform practicing physicians about the potential usefulness of WC measurement. Second, there are no standardized and calibrated normal ranges for WC, and cutoffs associated with equivalent risks vary with age, sex, and ethnicity. For example, the World Health Organization has suggested lower cutoffs for Asians living in the Pacific region (6). On the basis of a public health survey of 55 563 persons, Lin et al (7) suggested that the WC cutoffs for Asians living in Taiwan should be even lower than the World Health Organization recommendation. Further observations are required to ascertain whether the WC cutoffs should be different for whites living in Ireland than for whites living in other geographic areas (8). Third, the methods for WC measurements have varied in previous studies. The lack of a standardized measuring protocol for WC is understandably a concern for clinicians who are trying to determine which reference values to use to interpret WC results.

In general, clinicians gain new clinical knowledge from their own experiences and from reports in medical journals, and they may learn about new techniques and drugs from commercial marketing materials. Clinical trials are most often promoted by pharmaceutical companies because of the potential financial rewards. WC charts do not have such financial potential and are unlikely to be promoted by privately supported efforts. In contrast, *The Practical Guide: Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*, which was published by the National Institutes of Health in October 2000 (9), indicated that WC measurement is an easy, inexpensive, and useful tool for identifying overweight and obesity and for evaluating treatment in adults.

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Many research centers have been involved in measuring body composition with the use of both anthropometric and state-of-the-art techniques in large numbers of people with wide ranges of demographic and health backgrounds. However, information generated by each of these individual research centers is limited to subgroups of the general population. The US government and the World Health Organization should work with experts in the related fields to develop WC charts and to provide them to physicians working in general practice or primary care.

Clinicians have become increasingly concerned about the amount of time required to obtain medical histories and to perform physical examinations, because the time available to physicians is further limited by current reimbursement policies. Measuring WC takes no more time than does measuring height or weight, all of the commonly used protocols are highly reproducible and easy to learn, and minimal cost is required to establish them at any clinical office (10). In light of experts' warnings about the health risks related to greater WC, the few minutes needed with a tape measure to obtain this useful variable could be cost-effective, especially when a patient's visit to his or her doctor's office is for evaluation of overweight and obesity. Any reduction in WC would most likely result in a decrease in trunk fat content, regardless of the type of treatment or intervention, and this reduction may have greater clinical implication than does a reduction in body weight. 

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