

cannot be causally explained by the factors contained in its current diagnostic criteria. The latter serves to identify the presence of higher risk condition but does not necessarily represent the sole targets of therapy for the condition.

SCOTT M. GRUNDY, MD, PHD<sup>1,2,3</sup>

From the <sup>1</sup>Center for Human Nutrition, University of Texas Southwestern Medical Center, Dallas, Texas; the <sup>2</sup>Department of Clinical Nutrition and Internal Medicine, University of Texas Southwestern Medical Center, Dallas, Texas; and the <sup>3</sup>Department of Internal Medicine, University of Texas Southwestern Medical Center, Dallas, Texas.

Address correspondence to Scott M. Grundy, MD, PhD, Center for Human Nutrition and Departments of Clinical Nutrition and Internal Medicine, University of Texas Southwestern Medical Center, 5323 Harry Hines Blvd., Y3.206, Dallas, TX 75390-9052. E-mail: scott.grundy@utsouthwestern.edu.

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## The Metabolic Syndrome (Emperor) Wears No Clothes

Response to Kahn

**K**ahn (1) pointed out that metabolic syndrome is associated with many uncertainties and inconsistencies, which could easily misdirect care, mislead patients, and lead to unnecessary health care costs. The risk of cardiovascular disease (CVD) associated with the syndrome is no greater than that explained by the presence of its components, and it is possible to create an almost infinite number of scenarios in which individuals who do not meet the diagnostic criteria for metabolic syndrome would be at greater risk of CVD than would those who do, as noted by Reaven (2).

What if, among the diagnostic components of metabolic syndrome, waist circumference, which is one of the anthropometric markers of obesity, was substituted by high-sensitivity C-reactive protein (CRP)? CRP is a sensitive marker of subclinical systemic inflammation and positively relates to leptin (3) and insulin resistance (4) and negatively relates to adiponectin (5), even in people with nor-

mal BMI (excluding those with diabetes). Reaven (2) pointed out that only about one-third of the most insulin-resistant individuals were actually obese, and the degree of correlation between insulin-mediated glucose uptake and BMI, waist circumference, and visceral obesity were almost equal. Neither abdominal obesity nor metabolic syndrome, as defined by the National Cholesterol Education Program Adult Treatment Panel III criteria, were a significant independent risk factor for CVD in multiple regression analyses (6,7), while very low levels of CRP were useful for risk prediction among women with calculated 10-year Framingham risks <10% (8). Previously, we propose a CRP value of 0.65 mg/l as the cut point for metabolic syndrome (9) instead of ethnic-specific controversial cut points of waist circumference. Whether the new clothes fit the emperor should be revealed by re-analyses of existing epidemiological studies including CRP data.

EJI ODA, MD

From the Department of Internal Medicine, Niigata Prefectural Yoshida Hospital, Niigata, Japan.

Address correspondence to Eiji Oda, MD, Department of Internal Medicine, Niigata Prefectural Yoshida Hospital, Yoshida-Daibocho 32-14, Tsubame, Niigata, 959-0242, Japan. E-mail: ijie@venus.sannet.ne.jp.

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## The Metabolic Syndrome (Emperor) Wears No Clothes

Response to Oda

**T**he possible inclusion of C-reactive protein (CRP) in the metabolic syndrome algorithm highlights the problems of the construct itself. If the syndrome is supposed to be a predictive tool for future cardiovascular events, then we should indeed test the benefit of adding CRP, along with age, sex, race, adiponec-tin, homocysteine, etc. If the utility of the syndrome is to call attention to obesity, then there is no need for expensive laboratory tests. If the virtue is to predict diabetes, then a measure of glucose intoler-ance alone is better. If the syndrome is supposed to identify those with insulin resistance, then there are simpler ways to do so; however, measuring CRP might be helpful.

Dr. Oda (1) seems to have one purpose for the construct; others have different perspectives. The problem is that no one, not even the proponents themselves (2–4), have conveyed the exact utility of the syndrome and shown that it is better than or even equal to other approaches, and the critical issue, therefore, is why clinicians should even bother diagnosing metabolic syndrome in the first place.

RICHARD KAHN, PHD

From the American Diabetes Association, Alexan-dria, Virginia.

Address correspondence to Richard Kahn, PhD,