

## Metabolic Syndrome: Device or Divisive?

By Robin Wearley, P.A.-C.



In 1988, Gerald Reaven, a renowned endocrinologist from Stanford University, presented his Banting Medal award lecture wherein he first proposed the term “Syndrome X” to describe a cluster of risk factors that, when associated with insulin resistance, puts patients at risk for development of cardiovascular disease. Today we refer to this as “metabolic syndrome.”

Since the term was first coined, numerous experts — even Dr. Reaven — have questioned the usefulness, importance and necessity of metabolic syndrome as a diagnosis. (Beaser 2007; Kahn 2005; Reaven 2006). Regardless, there is no debate over the concern for patients with multiple risk factors being at increased risk for myocardial infarction, stroke and peripheral vascular disease.

My years of experience as a physician assistant in cardiovascular surgery have led me to believe the real controversy lies in the failure of practitioners to —

- recognize the risk factors for heart disease and stroke
- demonstrate awareness of national and international guidelines
- practice principles of evidence-based medicine

Patients also must be willing to partner with their health care providers to carry out an established plan of treatment. Rather than debate the semantics of the term, I propose a collective paradigm shift to emphasize preventive medicine to identify patients at increased risk for cardiovascular events and enhance their opportunities for avoiding detrimental outcomes. Whether metabolic syndrome itself is a disease per se or not, the controversy regarding it heightens awareness among health care professionals.

### Metabolic Syndrome: The Description

Several conflicting definitions of metabolic syndrome exist among key worldwide organizations. However, the International Diabetes Federation (IDF), the Adult Treatment Panel III (ATPIII) and the World Health Organization (WHO) share these core components in their definitions: obesity, dyslipidemia, high blood pressure and insulin resistance or diabetes. WHO criteria also address nephropathy with the addition of microalbuminuria as a component because microalbuminuria is a possible risk factor for atherosclerotic vascular disease, as it indicates endothelial dysfunction and subclinical atherosclerotic damage (Naidoo 2002). Ultimately, the definition that captures the most at-risk patients, is most user-friendly and is the least confusing for clinicians should be the one used by practitioners to accomplish the end result of risk reduction. However, if one discovers one risk factor, screen for all of them, including microalbuminuria since it is a marker of vascular health.

### Metabolic Syndrome: The Consequences

The National Heart, Lung and Blood Institute estimates that 25 percent of Americans fit the criteria for metabolic syndrome. As obesity increases and physical activity decreases, this number is expected to grow as will the burden on our health care system.

What should be included in the solutions? Health care professionals should proactively increase their knowledge of evidence-based medicine and adhere to guidelines in treatment of the components of metabolic syndrome. They must strive to identify patients who are at risk for cardiovascular events and realize that this is only a small part of the battle against endothelial dysfunction. Early intervention should be the overriding objective.

Metabolic Syndrome			
	International Diabetes Federation (IDF) (Segal, et al. 2005)	Adult Treatment Panel III (ATPIII) (Reaven 2006)	World Health Organization (WHO) (Kahn, et al. 2005)
		ANY THREE OR MORE OF THE FOLLOWING:	ANY TWO OF THE FOLLOWING:
<b>Abdominal girth</b>	central obesity (waist circumference > 94 cm for European men and > 80 cm for women, other ethnic groups have specific values)	waist circumference: > 102 cm (40 in) for men and > 88 cm (35 in) for women	waist-to-hip ratio > 0.90 in men or > 0.85 in women; BMI > 30; or both
<b>Microalbuminuria</b>			UAE .20 µg/min or albumin-to-creatinine ratio > 30 mg/g
BELOW, VALUES INCLUDE SPECIFIC TREATMENT OR PREVIOUS DIAGNOSIS	PLUS: THE ADDITION OF ANY TWO OF THE FOLLOWING FOUR:		
<b>Hypertriglyceridemia</b>	high triglycerides (TG) (> 150 mg/dL)	serum TG > 1.7mmol/L (150 mg/dL)	serum TG >1.7 mmol/L (150 mg/dL)
<b>Low High Density</b>	low HDL (<40 mg/dL for men and <50mg/dL for women)	HDL < 1.0 mmol/L for men (40 mg/dL) and < 1.3mmol/L (50 mg/dL) for women	HDL < 0.9 mmol/L (35 mg/dL) in men and < 1.0 mmol/L (39 mg/dL) in women
<b>Hypertension</b> (three cuff pressures after sitting 5 minutes)	blood pressure > 130/85 mmHg	blood pressure >130/85 mmHg	blood pressure >140/90 mmHg
			PLUS:
<b>Diabetes or pre-diabetes</b> (oral glucose tolerance testing as the suggested method of diagnosis)	fasting plasma glucose > 100 mg/dL, or a diagnosis of type 2 diabetes	serum glucose > 6.1 mmol/L	diabetes or IFG/IGT/or IR (assessed by clamp studies)

Other suggestions include having a comprehensive educational program and obtaining commitments from patients, their families and the medical staff. Perhaps linking pay to performance should be seen as an opportunity to excel, rather than as a punitive measure, if the benefit is for the greater good. Of course, all options are futile unless patients, practitioners and support staff pledge to fulfill their parts of the bargain.

*Taber's Cyclopedic Medical Dictionary* defines disease as "literally the lack of ease; a pathological condition of the body that presents a group of symptoms peculiar to it and that sets the condition apart as an abnormal entity differing from other normal or pathological body states." It also defines syndrome as "a group of signs and symptoms that collectively characterize or indicate a particular disease or abnormal condition; the sum of signs associated with any pathological process." (Taber 1985)

Whether we choose the side of disease or syndrome in the debate about metabolic syndrome, there is no disputing that patients with multiple risk factors are at increased risk for cardiovascular events and diabetes. With fewer than 40 percent of patients currently achieving national and international recommendations for blood pressure control, glycemic indices and cholesterol management, it would seem ill-advised, with an impending health care crisis looming, to focus

the debate on syntax. The war against endothelial dysfunction is fought in the trenches of primary care. Primary care practitioners should use the construct of metabolic syndrome as a reminder to aggressively search for and treat each of those risk factors individually.

Most important, providers should counsel patients as to the value of maintaining a collaborative, team effort approach, so patients are invested in their own health care outcomes.

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