

# Small Increase in Girth, Big Increase in HT Risk

BY BRUCE JANCIN  
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COLORADO SPRINGS — Marginally increased waist circumference is strongly associated with prevalent hypertension in normal-weight and overweight adults, according to data from a large National Institute of Neurological Disorders and Stroke-sponsored study.

The finding is likely to change both clinical practice and guidelines, Dr. Deborah A. Levine predicted in reporting the results at a conference of the American Heart Association.

"As a practicing general internist, I do not routinely measure waist circumference as well as I should," conceded Dr. Levine of Ohio State University, Columbus. "And I certainly don't do it in persons with normal [body mass index] at this time. But these data have prompted me to reconsider that practice."

Moreover, the new data indicate a need to revise current U.S. guidelines regarding how waist circumference measurement is used as a cardiovascular risk assessment tool.

Current NIH guidelines include a less-than-forceful recommendation to consider measuring waist circumference—a guide to central adiposity—in individuals with

normal BMIs. But the new data presented by Dr. Levine indicate that waist circumference measurement is a valuable indicator of risk in patients with normal BMIs.

The U.S. guidelines define normal waist circumference as less than 80 cm in women and 94 cm in men, and elevated waist circumference as more than 88 and 102 cm, respectively. The middle zone of marginally elevated values—80-88 cm in women and 94-102 cm in men—is a gray area that's largely disregarded by physicians and researchers alike. But this needs to change.

"Our data suggest that we should be treating waist circumference as a continuous risk factor and not a categorical variable where the middle category is actually ignored in practice and in studies," Dr. Levine said.

In light of the new findings, she said, the current International Diabetes Federation guidelines make far more sense. In the IDF guidelines on metabolic syndrome, the group defines any waist circumference that's above normal as elevated, period.

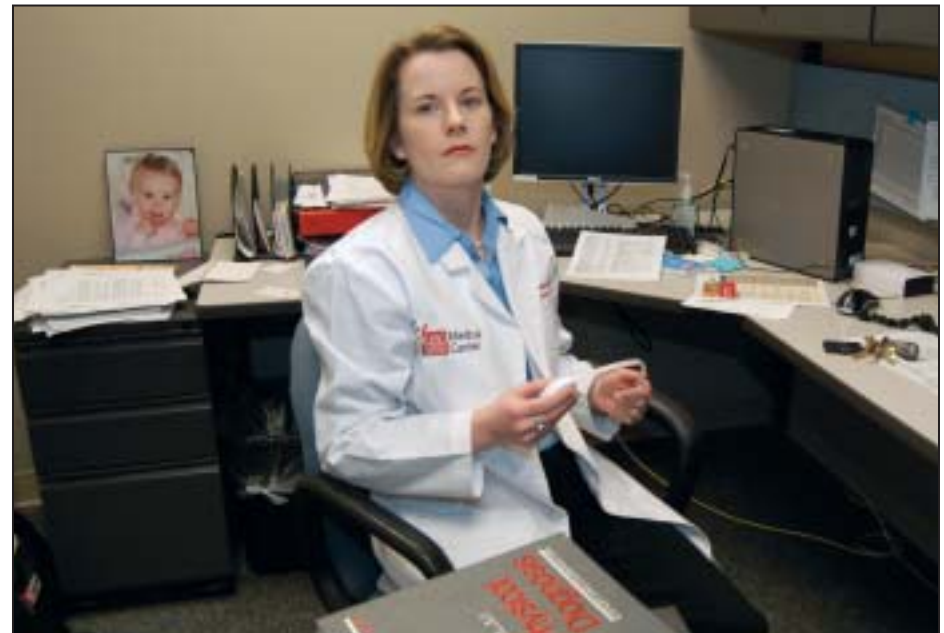
Dr. Levine presented an analysis of waist circumference and prevalent hypertension in 21,351 black and white adult community-dwelling participants in the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study, a population-based study whose primary goal is to identify explanations for the excess stroke mortality in the so-called "stroke belt" in the southeastern United States.

The prevalence of baseline hypertension was 45% among participants with a normal BMI, 56% in those who were overweight, and 66% in subjects with class I obesity. After adjustment for numerous demographic factors

as well as alcohol and tobacco use, physical activity, and glomerular filtration rate, a marginally increased waist circumference—that is, 80-88 cm in women and 94-102 cm in men—was independently associated with a 58% higher hypertension prevalence in normal-weight individuals and a 31% higher hypertension prevalence in those who were overweight, compared with participants with comparable BMI values but normal waist circumference.

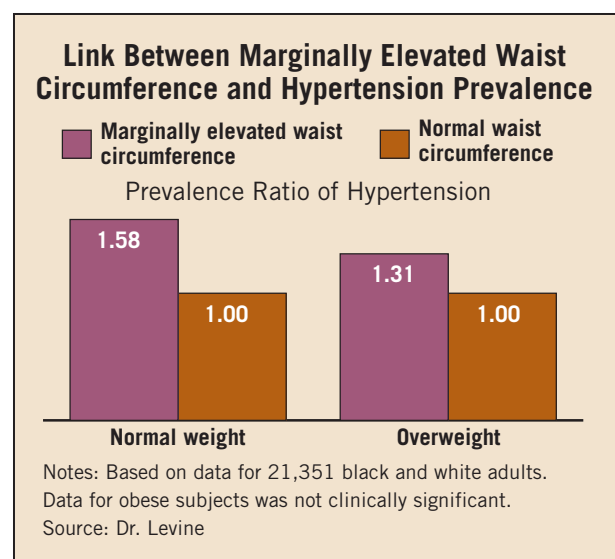
An elevated waist circumference was associated with a 2.1-fold increased hypertension prevalence in normal-weight subjects, a 1.6-fold increase in those who were overweight, and a 48% increase in REGARDS participants who were obese class I.

As expected, a marginally increased waist circumference did not confer significantly increased risk of hypertension in obese subjects; it's known that waist circumference has a diminished ability to independently predict cardiovascular risk factors and morbidity in obese individuals. ■



"We should be treating waist circumference as a continuous risk factor and not a categorical variable" that goes ignored, Dr. Deborah A. Levine said.

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## Sodium:Potassium 'Most Important Predictor' of CV Risk

BY BRUCE JANCIN  
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COLORADO SPRINGS — The intake ratio of sodium to potassium bears a much stronger association with subsequent development of cardiovascular disease than does consumption of either alone, according to new findings from the Trials of Hypertension Followup (TOPH) Study.

"We found that sodium and potassium may have a joint effect on the development of cardiovascular disease, in keeping with a proposed biologic symmetry. In our data the ratio was the most important predictor," Nancy R. Cook, Sc.D., reported at a conference of the American Heart Association.

She presented a 10- to 15-year follow-up of 2,275 participants in TOPH-I and -II, a pair of National Institutes of Health-sponsored randomized clinical trials of sodium reduction and other interventions aimed at preventing hypertension in individuals who were prehypertensive at baseline. There were 193 cardiovascular events—acute myocardial infarction,

stroke, revascularization procedures, or cardiovascular death—during follow-up.

A key feature of both studies was the periodic collection of 24-hour urine sodium and potassium excretions over several years.

"Most observational studies have had an imperfect measure of exposure. It's very difficult to capture sodium on a food-frequency questionnaire because it's so much affected by what you add at the table or what's in processed food products. It really varies by product and brand. Also, a single urinary excretion may not reflect usual intake over a longer period of time," noted Dr. Cook of Brigham and Women's Hospital, Boston, and the Harvard School of Public Health.

In the TOPH follow-up analysis, there was a significant, linear relationship with cardiovascular risk from lowest to highest quartile of the sodium to potassium ex-

cretion ratio. After full statistical adjustment for numerous variables, including demographics, alcohol intake, body weight, physical activity, smoking status, and changes in those variables over the course of the study, individuals in the highest quartile of sodium to potassium

**'We found that sodium and potassium may have a joint effect on the development of cardiovascular disease, in keeping with a proposed biologic symmetry.'**

ratio had a highly significant 50% increased risk of a cardiovascular event during follow-up, compared with those in the lowest quartile. For each unit increase in sodium to potassium ratio, future cardiovascular risk rose by 24%, she added.

The mean ratio was 2.9 in both men and women in the study population as a whole. But it differed modestly by age and more profoundly by race. Black participants had lower potassium excretion levels than whites, leading to a much higher sodium to potassium ratio of 3.4.

Considered separately, neither sodium nor potassium excretion alone was signif-

icantly related to cardiovascular risk across quartiles.

Audience member Dr. Francesco P. Cappuccio observed that most of the Western world is now moving toward a generalized reduction in sodium intake at a population level in order to prevent cardiovascular disease. But the new TOPH analysis suggests an alternative approach may be better.

"Should we be looking into the use of salt substitutes in which sodium chloride is replaced by potassium in order to convey more cardiovascular protection? We know that increasing potassium intake through dietary means alone—eating more fruits and vegetables—is as hard as decreasing the salt in processed food," said Dr. Cappuccio, professor of clinical sciences at Warwick Medical School, Coventry, England.

Dr. Cook replied that such an approach "would certainly be compatible" with the TOPH findings.

She noted that a small trial in Taiwan has demonstrated decreased cardiovascular mortality with the use of a potassium-based salt substitute, compared with ordinary table salt. ■