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**EDITORIAL**

**Anthony J. Viera, MD, MPH**  
Editor-in-Chief

[jfp.eic@mdedge.com](mailto:jfp.eic@mdedge.com)

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# Feeling salty about our sodium intake

**T**he World Health Organization (WHO) recently released its inaugural report on the devastating global effects of hypertension, including recommendations for combatting this “silent killer.”<sup>1</sup> Notable in the 276-page report is the emphasis on improving access to antihypertensive medications, in part through team-based care and simple evidence-based protocols. This strategy is not surprising given that in clinical medicine we focus on the “high-risk” strategy for prevention—ie, identify people at increased risk for an adverse health outcome (in this case, cardiovascular disease events) and offer them medication to reduce that risk.<sup>2</sup>

## Should we replace even a small amount of the sodium in processed foods with potassium?

As part of the high-risk strategy, we also counsel at the individual level about lifestyle modifications—but unfortunately, we tend not to get very far. Given the substantial evidence demonstrating its benefits, a low-sodium DASH (Dietary Approaches to Stop Hypertension) eating plan is one of the lifestyle recommendations we make for our patients with hypertension.<sup>3,4</sup> The DASH part of the diet involves getting our patients to eat more fruits, vegetables, and whole grains and limit sugar and saturated fats. To achieve the low-sodium part, we might counsel against added table salt, but mostly we discourage consumption of canned and other foods that are commercially processed, packaged, and prepared, because that’s the source of more than 70% of our sodium intake.<sup>5</sup> It’s not difficult to understand why real-world uptake of the low-sodium DASH eating plan is low.<sup>6</sup>

This issue of *The Journal of Family Practice* features a PURL that supports a much more prominent role for salt substitutes in our counseling recommendations.<sup>7</sup> Potassium-enriched salt substitutes not only lower blood pressure (BP) but also reduce the risk for cardiovascular events and death.<sup>8</sup> They are widely available, and while more expensive per ounce than regular salt (sodium chloride), are still affordable.

Still, encouraging salt substitution with one patient at a time is relying on the high-risk strategy, with its inherently limited potential.<sup>2</sup> An alternative is the population strategy. For hypertension, that would mean doing something for the entire population that would lead to a downward shift in the distribution of BP.<sup>2</sup> The shift does not have to be large. We’ve known for more than 3 decades that just a 2-mm Hg reduction in the population’s average systolic BP would reduce stroke mortality by about 6%, coronary heart disease mortality by 4%, and total mortality by 3%.<sup>9</sup> A 5-mm Hg reduction more than doubles those benefits. We are talking about tens of thousands fewer patients with heart disease and stroke each year and billions of dollars in health care cost savings.

Reducing our nation’s sodium intake, a quintessential population approach, has proven difficult. Our average daily sodium intake is about 3600 mg.<sup>10</sup> Guidance on sodium reduction from the US Food and Drug Administration (targeted to industry) has aimed to reduce Americans’ average sodium intake to 3000 mg/d over the short term, fully acknowledging that the recommended sodium limit is 2300 mg/d.<sup>11</sup> We’ve

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got a long way to go.

Might salt substitution at the population level be a way to simultaneously reduce our sodium intake and increase our potassium intake?<sup>12</sup> The closest I found to a population-wide substitution study was a cluster randomized trial conducted in 6 villages in Peru.<sup>13</sup> In a stepped-wedge design, households had 25% of their regular salt replaced with potassium salt. Small shops, bakeries, community kitchens, and food vendors also had salt replacement. The intention-to-treat analysis showed a small reduction in systolic BP (1.3 mm Hg) among those with hypertension at baseline (n = 428) and a 51% reduced incidence of developing hypertension among the other 1891 participants over the 4673 person-years of follow-up.

I found this study interesting and its results compelling, leading me to wonder: In the United States, where most of our sodium comes from the food industry, should we replace even a small amount of the sodium in processed foods with potassium? We're not getting there with DASH alone. **JFP**

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