

## Eating Less Meat: A Healthy and Environmentally Responsible Dietary Choice

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► See related Practice Guideline on page 525.

The 2015-2020 *Dietary Guidelines for Americans* reflect the impact of dietary patterns on health outcomes, such as diabetes mellitus, cardiovascular disease, and some cancers.<sup>1</sup> Consistently strong evidence supports the dietary benefits of eating more fruits and vegetables; in addition, moderate to strong evidence indicates that consumption of whole grains should be increased. Low- or nonfat dairy products, seafood, legumes, and nuts, as well as moderate alcohol intake, are also considered beneficial, although less consistently so. Moderate to strong evidence supports a decreased intake of red and processed meat, and consistently strong evidence underscores the benefits of reducing consumption of sugar and sweetened beverages.<sup>1</sup> Some of these recommendations have come under scrutiny, however, because of recent findings that saturated fat may not pose a cardiovascular health risk and that persons who drink whole milk may have similar health outcomes compared with those who drink low-fat versions.<sup>2,3</sup> Although physicians may not need to be as strict as previously thought when counseling patients against consumption of saturated fats, they should be informed about the ways in which meat—particularly red meat, when compared with other sources of protein and dairy products—contributes to environmental degradation and climate change.<sup>4-6</sup>

A diet low in meat and dairy is important because cultivation of these products has a substantial negative impact on carbon dioxide emissions, water consumption, and pollution. According to the 2015-2020 dietary guidelines, moderate to strong evidence demonstrates that healthy dietary patterns that are higher in fruits, whole grains, legumes, nuts, and seeds, and lower in animal-based foods are associated with more favorable environmental outcomes.<sup>1</sup> Red meat and cow-based dairy products, in particular, should be curtailed, because cattle farming has been consistently identified as the least resource-efficient of all livestock husbandry.<sup>7</sup> Cattle feed requires more water than any other agricultural product, and nitrogen-containing fertilizer is a major source of water pollution. Cattle produce methane, a potent greenhouse gas, and contribute additional carbon dioxide emissions because

of the energy required to provide feed, especially the corn- and soy-based versions produced through modern industrial food systems. Overall, cattle farming contributes about 65% of all livestock emissions, or about 9% of all emissions linked to human activity in the United States.<sup>7</sup> It also promotes deforestation.

What should physicians tell their patients about eating meat? Most healthy diets encourage food selections similar to those recommended in the 2015-2020 dietary guidelines, including the Mediterranean diet and the Dietary Approaches to Stop Hypertension (DASH) diet.<sup>8,9</sup> Even as current research suggests a more permissive approach to saturated fat intake, a truly healthy diet likely requires reduced meat and dairy consumption, in particular, concomitant replacement of saturated fats with poly- and monounsaturated fats, or whole-grain, complex, unrefined carbohydrates. Appropriate substitution of these nutrients leads to better cardiovascular outcomes than a diet high in saturated fat alone.<sup>10</sup> Finally, all studies, in addition to those favorable to meat-based diets, have demonstrated the negative health effects of processed meats<sup>2</sup>; therefore, it is recommended that they be eliminated from the diet.

These heart-healthy recommendations align with the environmental concerns about meat and dairy outlined above. Physicians may be apprehensive that some of their patients may reject dietary recommendations based on slowing climate change, the causes of which continue to divide the American public. In following public health and advocacy measures that the 2015-2020 guidelines and other sources recommend,<sup>1,11,12</sup> physicians can counter the damaging environmental effects of industrial agricultural practices without ever having to explicitly mention climate change. However, physicians may wish to take a more active educational stance. For example, patients who decide to continue eating meat and dairy products can be given information about meat produced under more sustainable conditions, such as beef from grass-fed cattle with the sole water source of rainwater. In the context of such discussions, physicians can further inform their patients that what is good for their health is also good for the planet. This statement is no more audacious than telling patients that antibiotic overuse in persons and farm animals is a public health hazard causing bacterial resistance.

In articulating and acting on the synergistic relationship between the salutary effects of a healthy diet and sustainability, physicians will need to embrace a broader concept of health.<sup>5,11</sup> Physicians have the opportunity to ►

## Editorials

make explicit the link between a plant-centered diet and reduced greenhouse gas emissions, thus giving patients yet another reason to adopt a diet high in fruits and vegetables and lower in red meat and dairy.

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