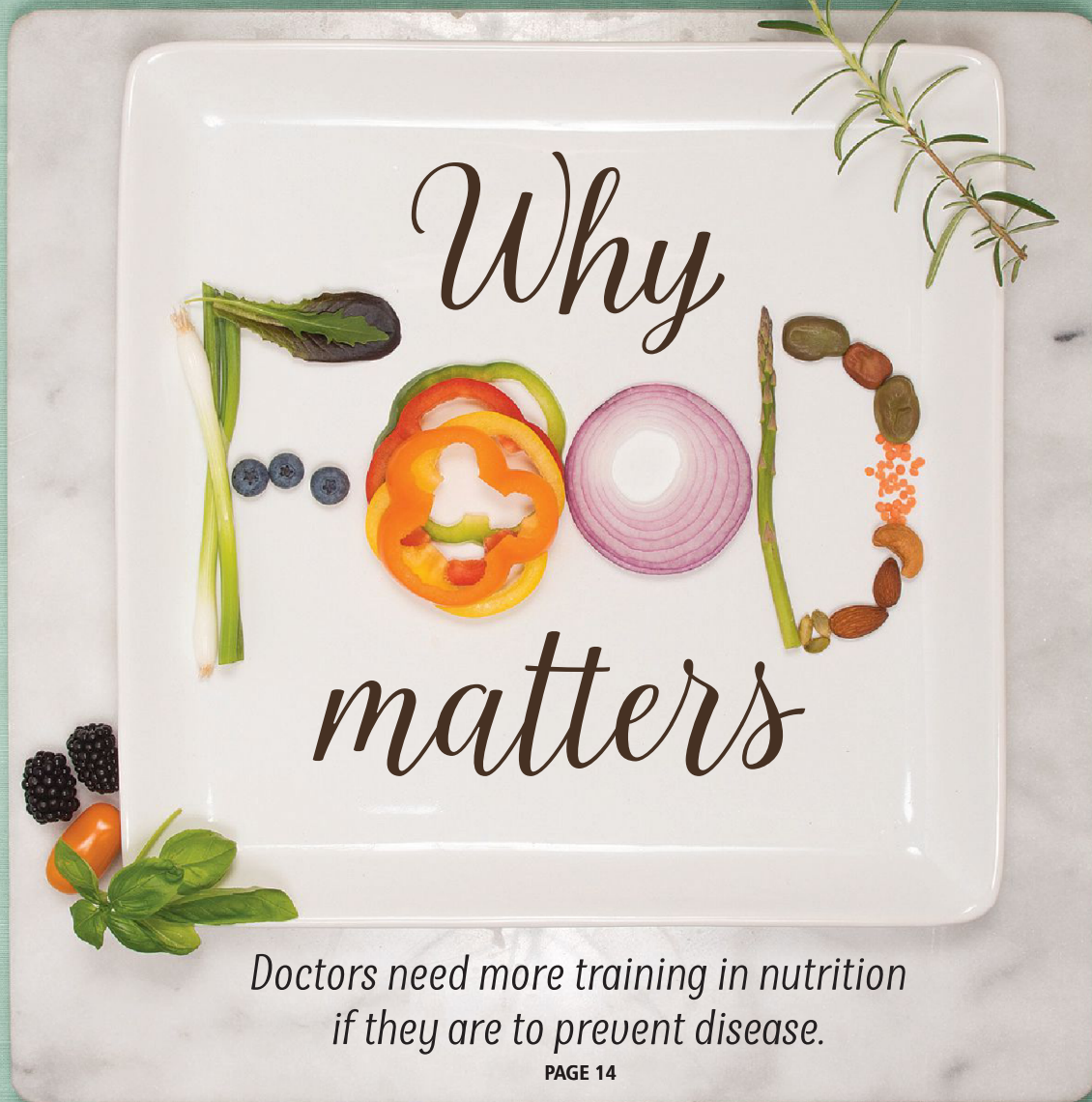


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Physicians' and medical students'
FAVORITE HEALTHY RECIPES PAGE 20

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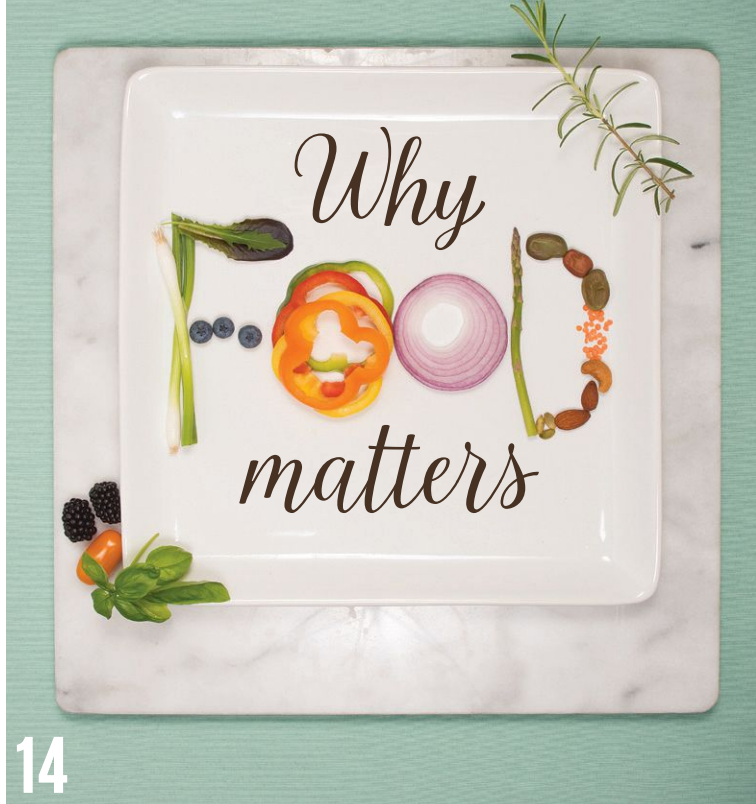
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PHOTO BY SCOTT WALKER

Charles R. Meyer, MD, Editor in Chief

Preventing diabetes, obesity and heart disease can start at the dinner table, and the medical system needs to sponsor the changes.

Food for thought

When my father was 40, he discovered Adelle Davis. The best-selling author of books such as *Let's Eat Right to Keep Fit* and *Let's Get Well* and a frequent guest on Johnny Carson's *Tonight Show*, Davis evangelized diet as the path to health. Her dietary recommendations included unprocessed foods, large quantities of vitamin supplements, and avoiding simple sugars and saturated fats—all of which were supposed to improve your mental abilities and prevent heart disease and cancer. Breakfast at our house included a pile of vitamin bottles in the middle of the table and the whirring sound of the Osterizer as my father prepared “tiger’s milk,” a concoction that variously contained skimmed milk, orange juice, Brewer’s yeast, bananas and wheat germ. Although it was a forerunner of today’s smoothies, I always thought that only somebody convinced of its health-promoting qualities could enjoy it.

Davis was controversial, sparking criticism from scientific and medical authorities who claimed that her ideas had little support from the reams of studies she quoted and that some of her recommendations, such as high doses of vitamins, were potentially dangerous. “Food faddism” was a charge levelled against her and other diet gurus in the 1960s and ’70s.

Since Davis’ death in 1974, food hasn’t gotten any less controversial, fueled in part by the quixotic opinions of medical science which seems to change its stance on diet almost biannually. Eggs are good, eggs are bad. Butter is good, butter is bad. Our food fads seem to cycle like El Niño. Remember when oat bran was the secret to saving your arteries? Today’s tiger’s milk is frequently a green slurry chock full of

veggies and assurances of weight loss and more energy.

Buried in the stew of confusion is the fundamental truth that diet is important and does affect a person’s health. Too many calories are bad. Too much simple sugar, especially in the form of fructose, contributes to diabetes and weight gain (Adelle Davis is smiling in her grave). And trans fat seems to have earned a position on the list of no-no’s that it’s not likely to lose, especially as politicians call for bans on it.

With some sound dietary principles established and in response to the age-old criticism that doctors and the health care system don’t know or care enough about nutrition, medical schools and health care institutions have inaugurated innovative nutrition classes for medical students and physicians. They also have started exporting nutritious foods to communities that don’t have easy access to them. Preventing diabetes, obesity and heart disease can start at the dinner table, and the medical system needs to sponsor the changes. And the fix is not like cod liver oil—it’s enjoyable. Rather than using books and lectures, these classes and programs teach by feeding, spreading the gospel of veggies and grains.

A lot of what Adelle Davis preached was a bit flakey but she did have more than a kernel of sound nutritional truth in her sermons. I guess I won’t give away my Osterizer.

Charles Meyer can be reached at charles.073@gmail.com.

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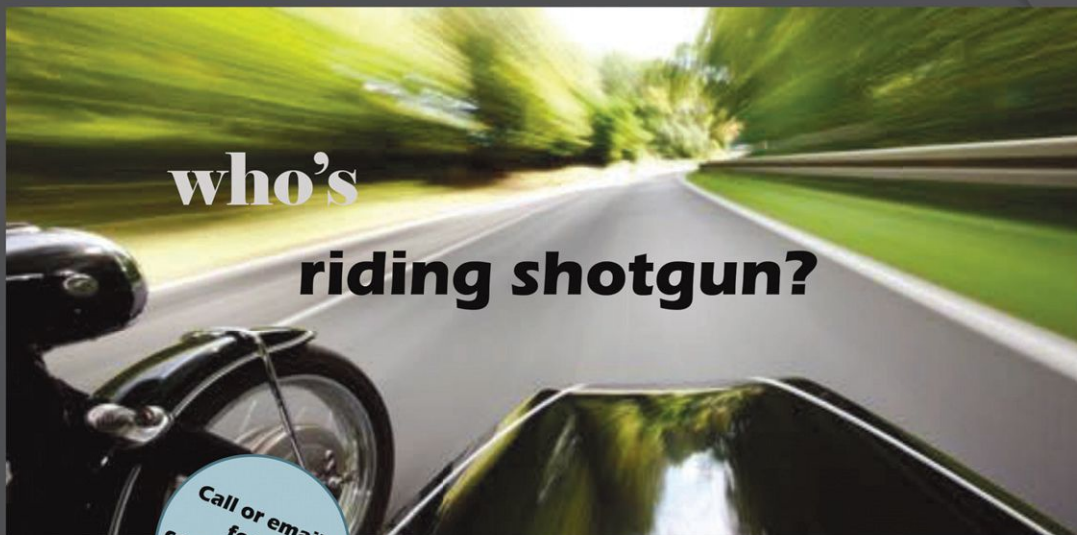
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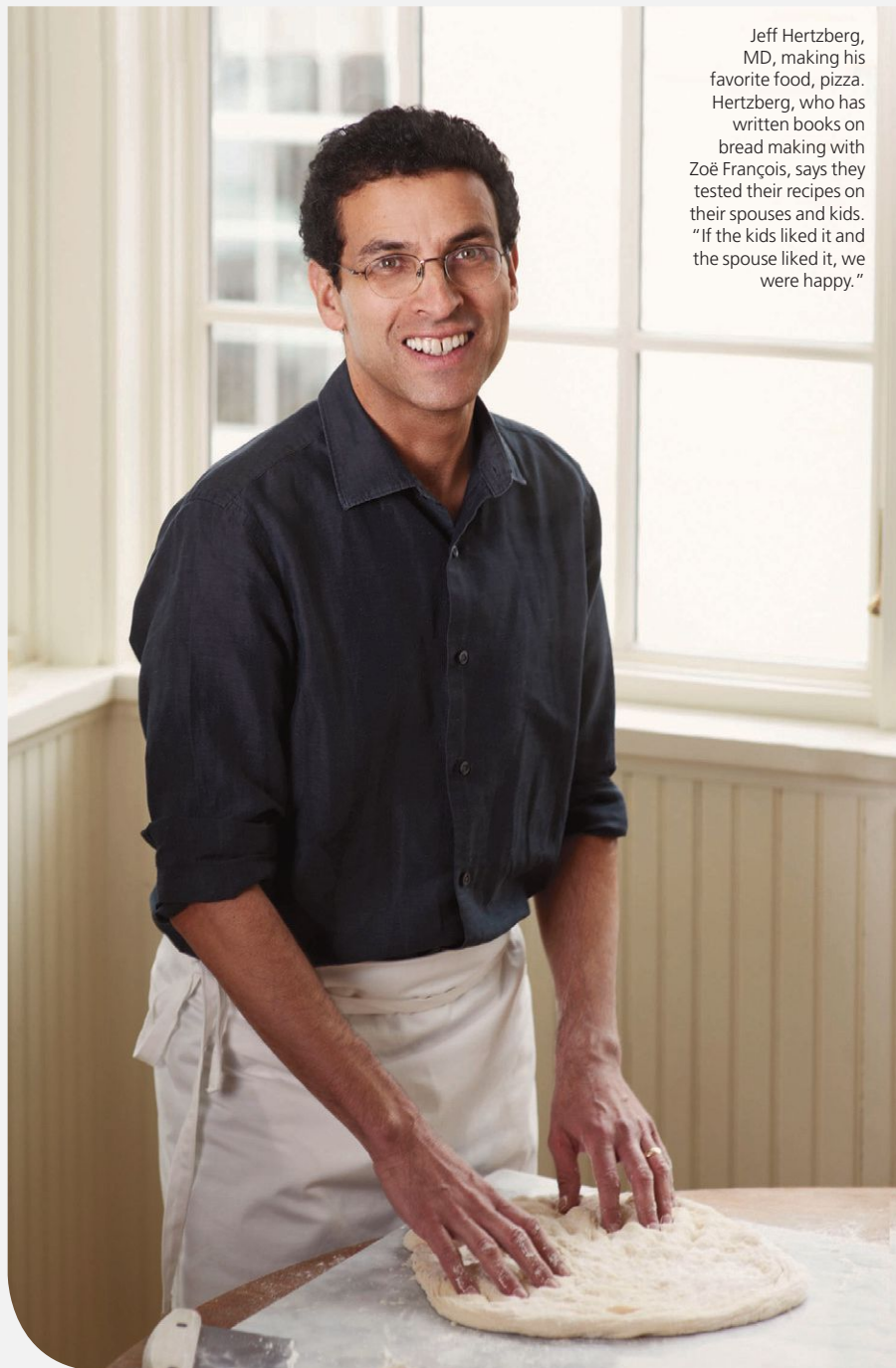
Quick bread

When he moved to Minneapolis for his internal medicine residency in 1987, Jeff Hertzberg, MD, couldn't find anything that compared with the bread and pizza he grew up with in New York City. So he decided to try making his own. "I thought, What better time to take up a time-consuming hobby than in residency?" he says with a laugh.

Hertzberg, who is now a health informatics consultant, started with traditional techniques learned from his wife, who had worked at a coop during college. But he found the process complicated and time-consuming. "If you wanted to have bread that day, you couldn't," he explains.

So he went looking for a faster way. He began experimenting with high-moisture dough and found it could be stored in the refrigerator for up to two weeks. Hertzberg could come home from work, break off a piece, form it into a loaf and have fresh bread shortly after.

Cooking and bread making became his outlet—something he would do after com-



Jeff Hertzberg, MD, making his favorite food, pizza. Hertzberg, who has written books on bread making with Zoë François, says they tested their recipes on their spouses and kids. "If the kids liked it and the spouse liked it, we were happy."

PHOTO BY MARK LUJENBURG

ing home from the clinic or consulting. "It's my opportunity to totally be creative," Hertzberg says, adding that he does most of the cooking for his wife and two teen-aged daughters.

An on-air call to Lynn Rosetto Casper, host of American Public Media's *The Splendid Table*, in 2000, led to more. At the urging of his wife, Hertzberg called in to

ask for advice on how to publish a book about baking artisan bread using his simple, quick formula. An editor at St. Martin's Press was listening and called Hertzberg to encourage him to put together a proposal. "But I didn't do it," he recalls.

Three years later, while at MacPhail Center for Music with his youngest daughter, he met another parent, Zoë François,

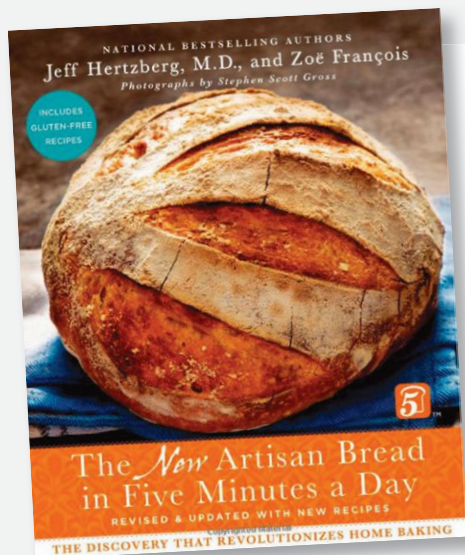
who had trained as a pastry chef at the Culinary Institute of America. “We started talking, and I told her about the book offer. She said ‘You had a book offer and didn’t do it? Everyone in my world would kill for an opportunity like this.’”

Hertzberg agreed to put together a proposal if she would work on it with him. That was the beginning of *Artisan Bread in Five Minutes a Day*, the best-selling cookbook that brought Hertzberg and François to the attention of the *New York Times* and Associated Press in 2007 and turned what started as a hobby into a side business. The duo has since published three more books plus British, Taiwanese, Japanese and Chinese editions of the original.

Hertzberg admits he’s still surprised by the book’s popularity. (It has sold more than 400,000 copies.) “We did it on a whim,” he says. “We thought if we could get some press, it might sell.” He attributes some of its success to their being among the first cookbook authors to have a website where readers could ask questions. (He says they still answer four to five a day.)

“The first book was a lot of work,” Hertzberg recalls. “I can’t even imagine how many hours I spent in the evening and in the early morning working on it.” He describes developing recipes as a riff on the scientific method: You come up with a hypotheses (that wet dough could be stored for four days, for example) and then test and revise it. It’s how Hertzberg found his dough could be stored for up to two weeks.

He says his co-author forced him to be precise in his measurements, something he doesn’t do when cooking for his family, and to document his work. “I want cooking to be free-form, not a chore,” he says. Hertzberg admits they had their share of failures when developing recipes. “Some of our added vegetable breads failed, and some of our gluten-free recipes made spectacular bricks you could use as a doorstep.”



Jeff and Zoë’s books

Artisan Bread in Five Minutes a Day
(2007, revised 2013)

Healthy Bread in Five Minutes a Day
(2009, revision coming December 2016)

Gluten-Free Artisan Bread in Five Minutes a Day (2014)

Artisan Pizza and Flatbread in Five Minutes a Day (2011)

Hertzberg says the books have evolved with health trends and readers’ tastes.

“I grew up eating white bread and white pasta, which are really not good for you,” he says, explaining that the recipes in the original book mainly used white flour. He says the second edition of *Healthy Bread in Five Minutes a Day*, which will come

out in December, includes instructions for converting recipes to 100 percent whole-grain and using more unusual flours such as sprouted wheat and kamut. “We try to make it so anyone can get a decent bread,” he says.—KIM KISER

CONGRATULATIONS!



The Minnesota Health Action Group and the Champions of Change* congratulate the 276 health care clinics that qualified for **2016 Minnesota Bridges to Excellence and the Quality Incentive Payment System** rewards. These clinics realized achievements and improvements in health outcomes for patients with diabetes, vascular disease, and depression.

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For the love of vegetables

While living in downtown St. Paul during residency, Andrea Westby, MD, and her husband often spent Saturday mornings at the farmer's market. As they wandered the aisles, they challenged themselves to try different vegetables. "We would ask the vendors 'What is this? What can you do with it?'" she says of things like bok choy, kohlrabi and beet greens. "We got adventurous with trying to do things with what was available locally."

Those trips to the market were the beginning of a love affair with vegetables for the Perham, Minnesota, family physician. "I love to build new dishes and try new foods, and I love the idea of being able to show people how you can eat things like kale and

like it," she says.

So when Sanford Health's Perham clinic, where Westby works, received a grant from the state to help improve the health of people with hypertension and diabetes, she thought they should focus on cooking and eating.

At the urging of her nurse practitioner partner, who knew about Westby's passion for produce and her creative cooking skills, Westby agreed to teach four community education classes this summer on using different vegetables. "I'm not a chef by any means," she says, "but as long as people didn't expect to learn knife skills, I was fine with cooking in front of them."

Westby was pleasantly surprised to see the high school's family and consumer science room filled with colleagues, patients and other members of the community for the initial session in June on preparing, storing and pairing greens, including Swiss chard, collard greens, spinach and kale, with other

Andrea Westby, MD, shows members of the community new ways to use vegetables.



PHOTO BY EMILY DREYER



Favorite vegetables

Sweet potatoes, beets and all greens (particularly kale)

Favorite cookbooks

Vegetables from Amaranth to Zucchini: The Essential Reference by Elizabeth Schneider

Getting to YUM by Karen Le Billon (great for families with young children)

On fitting healthy eating into a busy schedule

"Do your prep work. When we go to the grocery store, we come home and wash it [produce], prep it and have it available so it's easy to grab or throw together with something."

foods. A number of participants signed up on the spot for the remaining classes on peppers and cruciferous vegetables; squashes; and root vegetables.

Westby says her goal is to make using vegetables approachable. "I don't want people to be overwhelmed by recipes that need a lot of ingredients," she says, adding that some of the ones she used in class are her own inventions.

She says she's learned from the experience of teaching. "I've always been able to talk to patients about food and nutrition and give them some specifics," she says. "But because I did more research into each of the items I used, I can teach it better and better express what kind of nutritional value they have."— KIM KISER



Westby serves up one of her creations.



Kitchen staff *wisdom*

Before enrolling in Mayo Medical School, Jessica Saw dreamed of opening a pizzeria. Even well into her medical training, she still wanted to do it.

“A lot of things about medical school were a struggle,” says the Olympia, Washington, native. “And I never got to experience this other career I wanted.” So she took a leave of absence midway through her third year to explore this avenue.

Some friends, who knew of her interest in food, connected Saw with the people who were starting up Forager Brewing Company in Rochester. So in 2015, while also doing research in the microbiome lab at Mayo, she went to work for the brewery and restaurant, which focuses on using fresh, locally grown and “foraged” ingredients.

When Saw got involved, the group was rehabbing a building that once housed a food cooperative. “I got to do some of the construction—put up siding, tilting—things I didn’t know how to do,” she says. Once construction was finished, she moved into the kitchen. Although she had made and served meals in a coop as an undergraduate, she had no formal restaurant experience. “I was cooking, I was doing the dream. I finally got to be in a professional kitchen,” she says.

She took away insights from her year in the restaurant business that she plans to



PHOTO COURTESY OF JESSICA SAW

Mayo medical student Jessica Saw in the kitchen at Forager in Rochester.

apply as she pursues her interest in bariatric surgery.

1. Communicate. “A restaurant is a fast-paced environment,” she says. “You’re trying to coordinate between servers and the kitchen ... trying to get entrees out at the same time. There were times when staff didn’t communicate because someone was in a bad mood, and it would be a horrible day.”

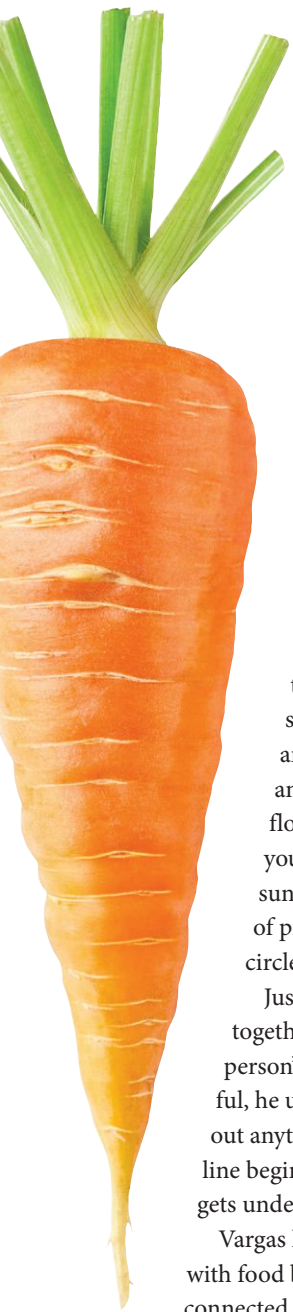
2. Be smart about your movements. “In the OR, we’re always tiptoeing around each other saying things like, ‘Excuse me, I have a scalpel behind you,’” she says. “In the kitchen, it’s much quicker and more direct. When someone says ‘Knife behind,’ everyone knows not to step back. With every movement you have to save as much time as you can, just like in surgery.”

3. Understand the pecking order, but honor new ideas. “It’s a hierarchical system in the kitchen, just like in medicine. The chef at Forager developed the menu, but he let us give opinions and was

wonderful about being open to how things could be better. He let me as a student and first-time chef take risks and try some new things,” she says.

4. Appreciate your team. Just like in the OR, everyone in a restaurant has a role to play. “When you finish a shift, you feel like you’ve finished with a long surgical procedure. There’s a feeling of community among the group. Everyone is appreciative of each other.”

Saw, who returned to Mayo last spring to finish her third year of medical school, still gets back to Forager but as a customer rather than a worker. This fall, she’ll begin working toward a doctorate in physiology at the University of Illinois before returning to Rochester for her final year of medical school. Saw says she eventually wants to be involved in something that helps change the way people eat. “Food and eating are an important part of medicine that’s often forgotten,” she says.—KIM KISER



Health foodies

Hospitals and clinics are getting into a new kind of **“food service.”**

BY CARMEN PEOTA

Early on what promises to be a hot Friday morning, Donn Vargas, director of community outreach for NorthPoint Health and Wellness, is scurrying around the parking lot beside the north Minneapolis clinic. The lot is a beehive of activity. Volunteers sort produce under white tents. Representatives from nearby schools, health plans and social service agencies arrange brochures and health-related swag (condoms, dental floss, cooking utensils, etc.) on folding tables. A young woman makes “ants on a log” (celery with sunflower butter and raisins) and sets out cups of pineapple-infused water. A long line of people circles the parking lot.

Just before 9 a.m., Vargas calls the volunteers together and explains how they’ll place food in each person’s bag as they walk by. Be respectful and careful, he urges, reminding them that they shouldn’t give out anything they wouldn’t eat themselves. Then the line begins to move, and Free Produce Friday officially gets underway.

Vargas hopes participants will come away not only with food but also with the idea that food is very much connected to health. “A healthy diet goes a long way toward promoting health and wellness,” he says.

NorthPoint delivers this message, along with groceries, to people in the neighborhood in several ways. It runs a food shelf; participates in Fare for All, a buying program through which people can purchase groceries at discounted prices; and has a mobile food program that brings groceries to seniors and people with disabilities. Located in the middle of one of Minnesota’s food deserts (an area in which a substantial share of residents do not have easy access to a large grocery store), the medical and social services provider knows people struggle to afford and even find healthy food. “What we are trying to do is eliminate barriers to food access,” Vargas says.

NorthPoint’s efforts might once have seemed unique. But today, with growing awareness of food as a social determinant of health, an increasing number of health care systems are taking similar measures.



Volunteers and staff hand out fresh fruit and vegetables at NorthPoint Health and Wellness’s Free Produce Fridays.

PHOTO BY PHILIP HERNANDEZ

A share in a farm

One of those is Lakewood Health System in Staples, a town of about 3,000 in north-central Minnesota. A number of years ago, Lakewood set out to tackle the community’s high obesity rates,

doing such things as partnering with the town's only grocery store to call out healthy food choices and offering cooking classes.

Three years ago, it decided to do more and tapped a resource in its back yard: local farmers. Lakewood designed a program in which it gives free produce grown by those farmers to families referred by its physicians and other providers. To enroll, at least one adult in each household needs to be screened at the clinic for such things as diabetes and depression, and have their BMI, blood pressure and weight monitored. In return, they get a box of produce.

Participants pick up their produce every other week at a farmers' market Lakewood hosts in its parking lot. There they also can watch cooking demonstrations, ask questions and meet local growers. "Often, it's the first time they've been to a farmer's market," says Alicia Bauman, community health project manager for Lakewood.

What they get each week is determined by Sprout Food Hub, which aggregates and distributes products grown on farms in central Minnesota. "Each week, it's a different surprise," Bauman says. As an example, one week they got wild rice and potatoes and the next garlic scapes, romaine lettuce, thyme and oregano, cucumbers and a dozen eggs. "It's almost like Christmas morning."

During the first two years, 50 families participated. This year, 100 are. As important as getting the food into their hands is planting new ideas about what to eat, where to get healthy food and how to prepare it. "Certainly, the food is helpful," Bauman notes. "But more important is skill-building around food, purchasing and cooking."

In nearby Long Prairie, CentraCare Health is piloting a similar program, as is St. Gabriel's Health in Little Falls. Kathy Geislinger, who promotes health and wellness for CentraCare, says she thought a program modeled after the one in Staples was just what Long Prairie needed. "The school district is about 64 percent free



Farmers' market day at the hospital in Long Prairie.

PHOTO COURTESY OF CENTRACARE HEALTH

and reduced lunch, and we knew that food shelf visits were high," she says.

She and others approached the hospital administrator about the idea and suggested starting small, recruiting 25 families from

“
Certainly, the food is helpful. But more important is skill-building around food, purchasing and cooking.”

– Alicia Bauman

the community. They asked two questions related to food insecurity (not having reliable access to a sufficient amount of affordable, nutritious food) to those who showed interest. If a family member answered yes to one, they were in. As it turned out, 22 of 25 participants are from the area's burgeoning Hispanic community.

As they do in Staples, the participants in Long Prairie pick up their vegetables at a farmers' market located on hospital property. Participants also come to the clinic to have



Screening for food insecurity

In 2015, the American Academy of Pediatrics recommended for the first time that pediatricians screen all families for food insecurity. The recommended screening tool consists of the following two statements:

- 1 Within the past 12 months, we worried whether our food would run out before we got money to buy more.
- 2 Within the past 12 months, the food we bought just didn't last and we didn't have money to get more.

Those who respond "often" or "sometimes" (as opposed to "never") to one or both statements are to be referred to community resources.

their BMIs, weight, blood glucose levels and other health indicators checked.

As Geislinger sees things, having access to healthy food is a matter of equity. “Everybody should have the opportunity to eat healthy food.”

Embedded services

Hennepin County Medical Center (HCMC) pediatrician Diana Cutts, MD, has long maintained that making sure everyone has access to healthy food is health care’s business because food is fundamental to health. She points to research that shows children from food-insecure households are more likely than other children to be hospitalized, be in poor health or have developmental delays.

Cutts also notes that obesity and food insecurity are “very tightly braided together.” People on more limited incomes make food choices that are economically rational but nutritionally less than optimal, she explains. “We really won’t be able to make progress with our obesity problem

until we make progress on ensuring people have access to healthy food.”

Food insecurity affects 20 percent of children nationwide. “That’s one in five,” she says. In order to determine which patients fall into that category, Cutts would like to see all physicians follow the new American Academy of Pediatrics recommendation and make screening for food insecurity a routine part of practice (see p. 11). “One of the reasons we say we need to screen is that our assumptions are inevitably incorrect,” she says, noting that food insecurity exists in the suburbs as well as in urban and rural areas.

Cutts believes health care is uniquely positioned to address the problem. “One of the key things about health care infrastructure,” she says, “is that it reaches places food shelves don’t.” Smaller communities usually have a clinic or hospital but not always a food shelf.

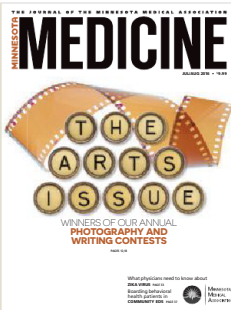
Cutts has been a driving force behind efforts to make use of the infrastructure at HCMC. The health system has long had a food shelf that distributes food to

patients being discharged from the hospital, through its 30 outpatient clinics, and by nurses and paramedics who do home visits. More recently, it started a summer feeding program for kids. But what Cutts is really excited about are efforts to make food a part of routine care.

That’s beginning to happen. Physicians and other providers can now use HCMC’s medical record to refer people to Second Harvest Heartland’s Supplemental Nutrition Assistance Program (SNAP). SNAP workers then screen individuals and families to see if they’re eligible for local and federal programs.

Cutts says she used to be one of a handful of physicians around the country saying that food belonged under the purview of health care. Today, she’s got company. “The ground under my feet has really changed—and for the better,” she says. **MM**

Carmen Peota is a Minneapolis freelance writer and former editor of *Minnesota Medicine*.



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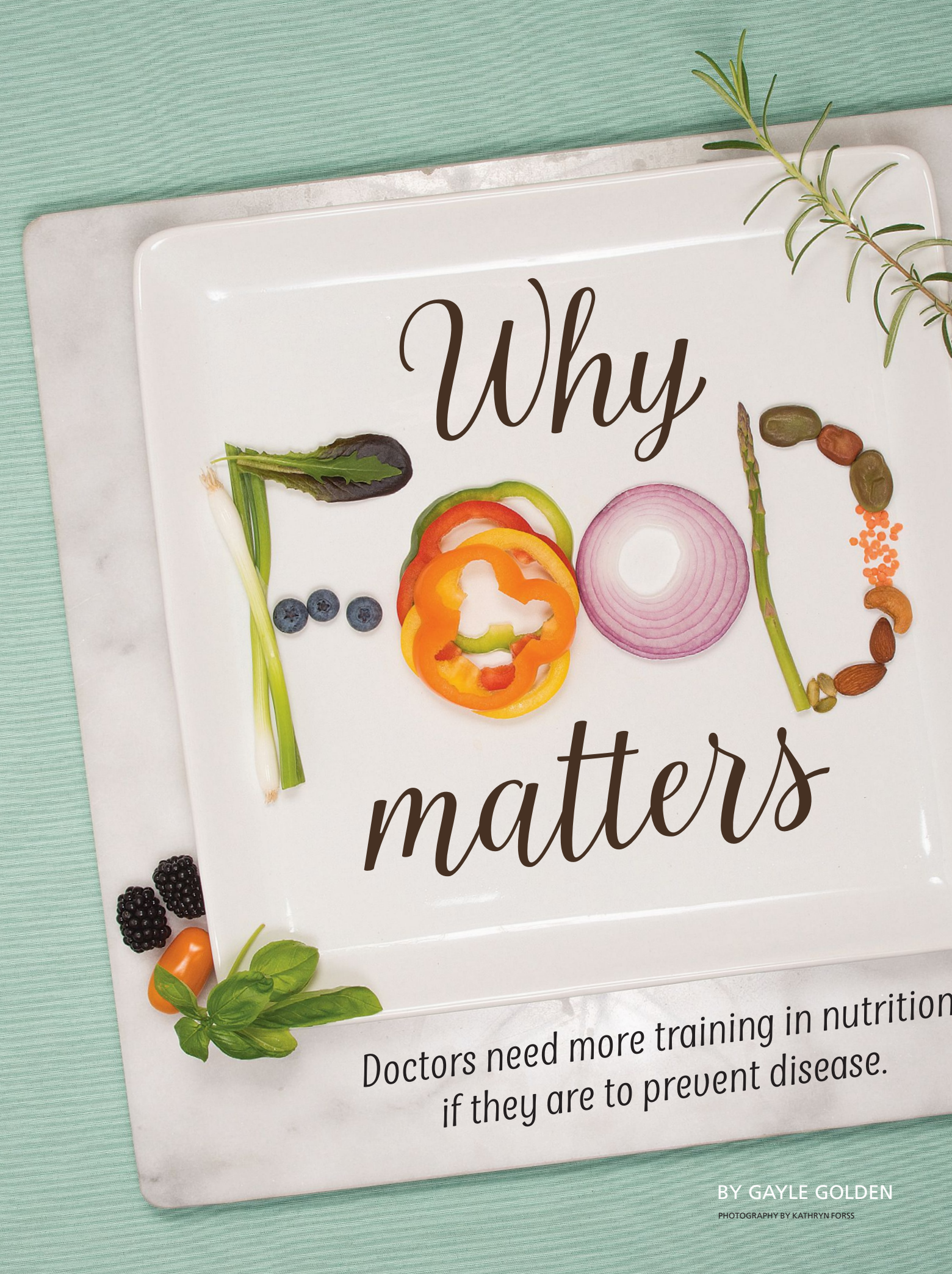
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Why matters

Doctors need more training in nutrition
if they are to prevent disease.

BY GAYLE GOLDEN
PHOTOGRAPHY BY KATHRYN FORSS



The continuing medical education lesson was spread out before a dozen or so doctors at Mayo Clinic's Dan Abramson Healthy Living Center one recent summer day: grilled eggplant, lightly marinated beets, salad, whole grains and salmon. Their assignment? Dig into the lunchtime spread while listening to an admonition they've no doubt heard since childhood. "It's something your mother would say: 'Eat your vegetables,'" Donald Hensrud, MD, MPH, told the group. "But there's really a lot of science behind that idea."

From there, Hensrud moved to a swift-paced presentation of recent studies showing how a diet consisting of many of the same foods piled on the doctors' plates has been linked to reduced rates of heart disease, cancer, diabetes and even overall mortality. To reinforce that message, the doctors attending the program would chop and sauté a meal together in the center's expansive teaching kitchen.

As basic as it seems, that lesson about food addresses what many say is a persistent problem in medicine—doctors' lack of knowledge about nutrition, particularly of the scientific understanding gained during the past two decades. Physicians say they

don't know how to talk to patients about nutrition, even though it's clear that what we eat can lead to common conditions, including diabetes and obesity, that are predicted to seriously burden health care in coming decades. And when patients ask about nutritional fads marketed to them in grocery store aisles or online, doctors aren't always prepared with answers.

"The public is very interested in nutrition, but there aren't as many people on the medical side of things who are available and informed and helpful to provide people with good advice instead of what's on the Internet," Hensrud says.

Missing ingredient

Recognizing that medical schools weren't doing enough on nutrition, the National Research Council in 1985 recom-

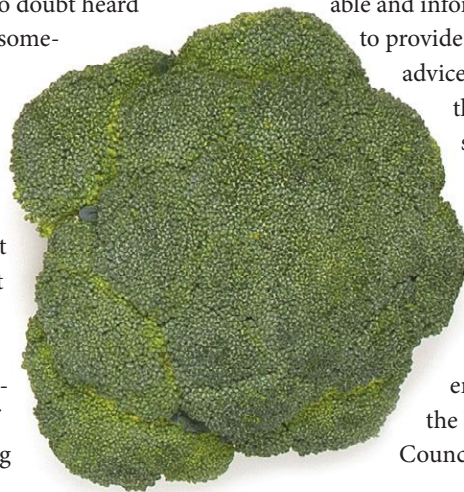
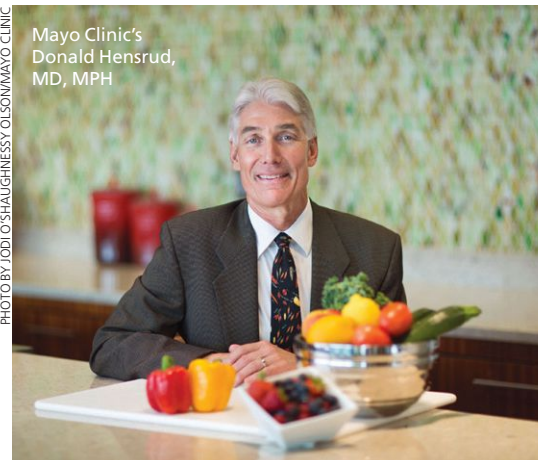


PHOTO BY JODI O'SHAUGHNESSY OLSON/MAYO CLINIC

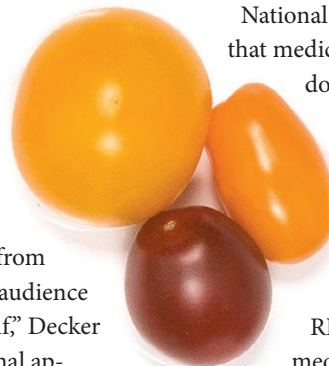
Mayo Clinic's
Donald Hensrud,
MD, MPH



mended that they offer a minimum of 25 hours of education on the topic. Yet according to a survey of 133 medical schools published in the *Journal of Biomedical Education* last year, 71 percent failed to meet that goal. More than one-third offered less than half the recommended hours.

When nutrition is taught, it's most often tucked into academic classes such as biochemistry or physiology—not integrated into clinical instruction, where students might learn practical strategies for discussing diet with patients. Last spring, Dominic Decker, MD, then a fourth-year

University of Minnesota medical student, kicked off a presentation to faculty using slides of standard first-year nutrition lectures, which featured arrows, letters, abbreviations all swirling from an image of the liver. The audience groaned. “I groaned myself,” Decker says, calling that educational approach to nutrition “a huge disservice” that doesn’t translate into patient conversations.



National surveys have indeed shown that medical students and residents don't feel confident providing patients with practical information about nutrition. “I think there are enough of these reports that tell us we are missing something,” says Kelly M. Adams, MPH, RD, lead author of the study on medical schools and a researcher with the Nutrition in Medicine Project at the University of North Carolina at Chapel Hill.



ways to address

Even with extensive knowledge about nutrition and cooking, doctors still face myriad challenges when talking to patients about food and health. One is how to counter the misperception that eating healthy is expensive. In many cases, that's more perception than reality. “I think there's a knowledge gap. Some healthy food is costly, but some of it is not,” says Jean Fox, MD, a gastroenterologist at Mayo Clinic who argues that rice, legumes and many vegetables are actually quite cheap. Fox, who attended a CME program on food and nutrition at Mayo in June, also contends that patients need training. “If you don't know what to do with kale ... and if you don't prepare it well, it tastes really bad.”

Food fads are another area of confusion. During the class, Fox and others had a chance to ask the instructor, Donald Hensrud, MD, MPH, how to answer patients' questions regarding the heavily marketed gluten-free trend and the touted benefits of coconut oil or nutritional supplements.

But by far the biggest problem for doctors? Finding time to discuss nutrition with patients during increasingly short visits and eat well themselves. “I can bring an orange to work, but I don't have time to wash it, peel it and eat it between patients,” Wendy Bongers, MD, a Faribault family physician, confessed to peers at the Mayo CME program.

Elk River family physician Kelly Kinnan, MD, who also attended the Mayo program, said she would love to have talking points to share with patients whose conditions don't always warrant a visit with a nutritionist. “I have a very brief time with them,” she says. “I need to explain this stuff quickly and clearly in a motivating way.”

Despite these challenges, physicians can encourage good nutrition. Here are tips from some experts including Harvard School of Medicine's David Eisenberg, MD; Mayo Clinic's Hensrud and Warren Thompson, MD; Twin Cities integrative medicine specialist Greg Plotnikoff, MD; HealthPartners' Steven Radosevich, MD, and Michael Stiffman, MD; and the University of Minnesota's Kate (Venable) Shafto, MD.

1 *Screen for nutrition issues.* Have all patients answer pre-visit screening questions to trigger deeper discussions about nutrition. These can include: How many servings of fruits and vegetables do you eat a day? How often do you eat red meat? How often do you drink soda or sugary beverages? Do you know the difference between whole and refined grains?

2 *Have regular nutrition check-ins.* Always address nutrition during physical exams. Do a dietary history for all patients who have had cardiac procedures or are at risk for diabetes, high cholesterol or high blood pressure.

The reason the schools fall short often comes down to resources, she and others say. Medical schools increasingly need to cram more information into the curriculum, and nutrition itself often lacks a designated department with a teaching staff and budget.

“There’s only so much time,” says Alan Johns, MD, MEd, associate dean for curriculum, medical education and technology at the University of Min-



nesota Medical School, Duluth, where students already spend an average of 25 hours per week in class mastering competencies required for board exams. Johns agrees that nutrition—beyond the biochemistry-based approach—is among several subjects that should be added to the curriculum. “But if we put them in, we have to ask: What do we take out?” he says.

Mindset is also a factor. Medical schools have long taught nutrition as it relates to illness—deficiencies arising out of particular diseases, for instance, or feeding during hospitalization. As a result, doctors often know more about targeted deficiencies related to disease than they do about general nutrition, Hensrud says. “Our medical educational system is a disease-treatment model. You have to prioritize education. If it’s not a specialty if it’s not being reimbursed very well, if it’s along the lines of prevention it’s not going to be emphasized in the medical curriculum,” he explains.



nutrition in practice

3 *Focus on the evidence.* Make sure patients understand that switching to a plant-based diet not only helps treat illnesses such as diabetes or cardiovascular disease but also can prevent those illnesses. Patients will listen if you talk about the evidence.

4 *Debunk stereotypes.* Counteract the idea that eating healthy means eating bland or expensive food. Offer recipes that use low-cost items such as lentils or rice and show how to make simple soups or salads containing whole grains and vegetables. Have printed copies on hand.

5 *Clear up confusion about fats.* Low fat does not necessarily mean healthy. Tell patients our bodies need the right kinds of fat, which can be found in olive oil, nuts, avocados, seeds, salmon and coconuts. Meats should be lean and antibiotic-free. A little bit of fat in each meal helps reduce hunger between meals.

6 *Offer strategies for shopping.* Be ready with quick tips for navigating the grocery store. Tell patients that shopping the perimeter will put them within reach of real foods, not packaged alternatives. Remind them what they put in the cart will end up in their stomach.

7 *Educate yourself.* Consider taking an online CME course offered by the Nutrition in Medicine Project, which provides

brief, targeted modules on topics commonly encountered in clinical practice such as helping patients change behavior; or attend the Mayo CME class offered through the Dan Abramson Healthy Living Center or one of several well-known conferences such as the Center for Mind-Body Medicine’s “Food as Medicine” or Harvard’s “Healthy Kitchens, Healthy Lives.” (David Eisenberg, MD, founder of “Healthy Kitchens, Healthy Lives” will be speaking at the University of Minnesota November 16. For more information go to z.umn.edu/FoodMattersLecture.)

8 *Learn to cook.* Experience in the kitchen is the best way for doctors to understand how to help patients with cooking healthy, delicious food. Plus, says Harvard’s Eisenberg, “it’s unabashedly fun.”

9 *Develop a 30-second “elevator speech” on diet.* This one works: *Eat mostly vegetables, except for corn, peas and potatoes. Eat more fruit. Eat whole grains, but not refined products. Eat more nuts, more yogurt, more fish. Don’t worry about coffee because it’s fine. On the other hand, avoid red meat, processed meats, refined grains, sweets and desserts, sugary beverages, potato chips. And if you really want to get simple about it, remember good fats can make good carbs taste better. That means relying on olive oil, avocados or nuts to add flavor to grilled vegetables, whole-grain breads or fruits.*—G.G.

Hensrud acknowledges that his medical school training in the early 1980s barely touched on the subject beyond the Krebs cycle and other biochemical processes; so after an internal medicine residency and preventive medicine fellowship at Mayo Clinic, he headed to the University of Alabama for a fellowship in clinical nutrition.

New information

Also contributing to the problem is the fact that the knowledge base has changed. At the time Hensrud was in school, the medical community generally saw good nutrition as avoiding illness-causing vitamin deficiencies through supplements or fortified foods. A public obsession with quick weight loss was creating confusion about the value of carbohy-

drates. The U.S. dietary guidelines, issued every five years since 1980, focused on eating simply a “varied diet” with an emphasis on reducing fats—an approach that created further confusion as well as a huge market for “fat-free” products often packed with added sugars. Since then, studies have shown that fat itself isn’t really the culprit; instead, it’s the kind of fat that matters. The latest dietary guidelines urge people to limit consumption of saturated and trans fats as well as sugars and sodium, and to get nutrients from food itself, not just supplements.



Within the past two decades, multiple studies have linked a diet of whole grains, vegetables, fruits, smaller portions of lean proteins such as fish or white meat, and fats derived from olive oil or nuts with decreased risk of coronary artery disease, stroke, diverticular disease, colorectal cancer, obesity, Type 2 diabetes and even total mortality. A 2014 cohort analysis of more than half a million participants, published in the journal *BMJ*, showed a roughly 25 percent overall reduction in mortality risk among those who ate five servings of fruits and vegetables every day—something only one in four Americans do.

“That’s pretty powerful evidence that nutrition influences not only disease-specific mortality but overall mortality,” Hensrud explains. “Both the medical profession in general—physicians and other health care providers—and the general population don’t quite appreciate the power of prevention with regard to nutrition.”

Indeed, doctors are often surprised by the evidence. At last year’s annual Minnesota Academy of Family Physicians conference, Michael Stiffman, MD, led

a packed session on the latest nutrition studies. Many of those who attended said it gave them new insights. “I think we as physicians tend to be rooted in past recommendations about nutrition, which really are no longer true,” Stiffman says, noting that it’s been at least five years since studies showed a strictly low-fat diet fails to protect against heart disease. “You want a balanced diet. You want to have healthy fats in your diet. You want to have healthy proteins in your diet. You want to have healthy carbohydrates in your diet.”

Stiffman’s “aha!” moment came about a decade ago, when he attended “Healthy Kitchens, Healthy Lives,” a national conference sponsored by the Harvard T.H. Chan School of Public Health and the Culinary Institute on the latest in nutrition research that also offers hands-on cooking experiences under the guidance of top chefs.

“By and large, clinicians who go there have a blast,” says Harvard School of Medicine’s David Eisenberg, MD, who launched the conference 12 years ago and says more than 6,000 health care providers have attended. “They feel guilty about receiving continuing medical education credits. They eat healthy, delicious food and realize they could live this way forever. And many of them anecdotally write to me every year and say this has changed them, it’s changed their kids, it’s changed the way they think about their patients and the way they talk to their patients.”

Steven Radosevich, MD, medical director of HealthPartners’ Como Clinic in St. Paul and a longtime cook, was also galvanized by the conference, which he attended eight years ago. When he returned, he began handing out recipes to patients instead of just preaching about diet. He eventually partnered with University of Minnesota psychologist William Doherty, PhD, LP, MFT, to create the Como Health Club, which offers patients programs on exercise and stress

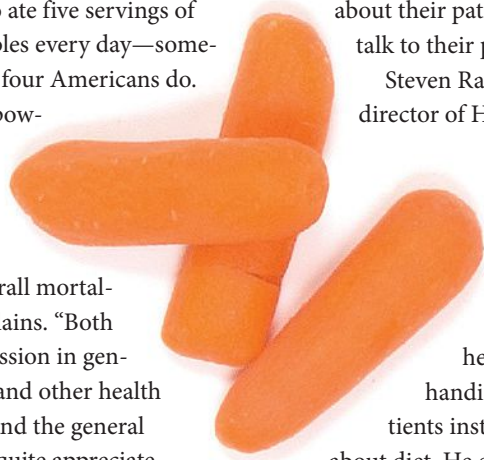


PHOTO BY KATHRYN FORBES

On the final night of the “Food Matters for Doctors” class, three teams of University of Minnesota medical students planned and cooked meals designed for persons with diabetes, obesity and hypertension.

reduction as well as cooking classes at The Good Acre, a food hub for local farmers near the St. Paul campus.

All this, he says, has made a difference for patients and doctors alike.

“Historically, if we just tell people to eat their fruits and vegetables, we know the impact of that is pretty low,” Radosevich says. “If we pin them down a little more on what they can do, actually give them a recipe or tell them they can come see our health coach or come to one of our classes, the impact really jumps.”

Tastes of change

For integrative medicine specialists, who have long understood the power of “food as medicine,” it’s frustrating that so many still dismiss the idea of using food to prevent or reverse disease. “Pharmaceuticals are still the primary tool,” says Nancy Sudak, MD, an integrative physician in Duluth and founding CEO of the Academy of Integrative Health and Medicine. “I don’t think anyone is satisfied by that. But physicians in the managed care climate haven’t felt like they’ve had the power, time or influence to use nutrition to have that critical impact on patients’ lives.”

Even so, the paradigm may be slowly shifting as novel approaches to nutrition education have begun to simmer within academic centers and practices. The 22-credit Mayo CME course, created by Hensrud and internist Warren Thompson, MD, was offered through the clinic’s Healthy Living Program for the first time in June to 15 physicians in spa-like facilities on the Rochester campus, giving physicians experience with exercise and stress reduction as well as hands-on cooking. Another session was scheduled for early August; starting in January 2017, Mayo will offer the course every other month depending on demand. In the Twin Cities, HealthPartners holds an annual three-credit one-night class modeled after the Healthy Kitchens program. The class is taught by chefs at the Cordon Bleu. This October, the Institute of Lifestyle Medicine will hold a national summit for medical school educators to discuss how to incorporate topics such as exercise, stress reduction and nutrition into medical school curriculum.

Within the past year, Eisenberg has helped create a national Teaching Kitchen Collaborative made up of 23 organizations, some affiliated with medical schools, that plan to use cooking in kitchens to reinforce nutrition instruction in the same way science courses use laboratories. “Because without that contextualization, it’s just an abstraction,” he says.

This fall, the Center for Spirituality and Healing at the University of Minnesota, which has joined the collaborative, plans to offer a one-credit cooking course for medical students and other health science graduate students. The course, “Food Matters for Doctors,” was created last year by Kate (Venable) Shafto, MD, and local chef Jenny Breen and taught at The Good Acre. Demand for the cooking-based elective was high: Sixty-five medical students applied for 18 spots in the class.

One of those attending was Dominic Decker, the medical student who showed those dizzying slides to faculty last spring and

who is now a first-year resident at Brown University. He says the teaching kitchen experience has transformed his conversations with patients into meaningful, two-way exchanges about food choices, grocery shopping and recipes. It’s also given him skills to stay nourished through the long, sleep-deprived hours of his training—skills his peers from around the country simply don’t have, he says. “It contributes enormously to my patient care,” he says, “but that self-care piece is also really important.”

Harvard’s Eisenberg is working with the National Board of Medical Examiners to set requirements—not just recommendations—for education about general nutrition, rather than deficiencies related to disease. He argues that knowing how to counsel a patient about basic nutrition is as important as knowing how to respond to a patient with acute chest pain or have a conversation about do-not-resuscitate orders. “In light of the fact that at least 80 to 100 million Americans are pre-diabetic, have pre-metabolic syndrome or are diabetic, can’t we make the argument it’s no longer negotiable whether you should have the skill set to talk to someone who is going in the wrong direction in terms of their weight, lipids or lifestyle?” MM

Gayle Golden is a Twin Cities writer and senior lecturer in the University of Minnesota School of Journalism and Mass Communications.

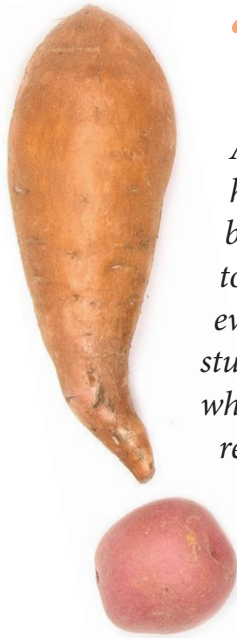


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RECIPE Rx

As we started planning this issue on food and nutrition, we kept hearing about the importance of cooking. If physicians are going to be credible when talking to patients about healthy eating, they ought to know something about making a healthy meal, right? They might even want to share a recipe. We know many physicians and medical students like to cook, and we thought it would be fun to find out what they are making. So we asked you to share your favorite healthy recipes with us.

The following are a few that we received. We'll post these and others on our website (mnmed.org). Try them out and share them with your patients and colleagues. Also feel free to send us your favorite. We'll add it to the collection.



RECIPE

WARM BRUSSELS SPROUTS SALAD

(Adapted from www.happyhealthymama.com)

Andrea Westby, MD, family physician, Sanford Health's Perham Health Clinic

I actually had given up on Brussels sprouts until I found this recipe. Now I am hooked.

- 1 pound brussels sprouts, tough end removed, quartered, outer leaves separated from the core (about 2 ¼ to 2 ½ cups)
- 2 garlic cloves, chopped
- 1 tablespoon cooking oil of choice
- 2 ½ tablespoons fresh orange juice
- ½ tablespoon extra virgin olive oil
- ¼ teaspoon Dijon mustard
- ½ cup pomegranate seeds (I substitute raisins soaked overnight in a 50/50 mixture of orange juice and water if pomegranate seeds are not available)
- ½ cup goat cheese, crumbled



- 1 In a large skillet, heat oil. Add brussels sprouts and garlic. Cook until leaves are wilted, cores are crisp and tender, and everything is nicely browned (about 8 to 10 minutes).
- 2 Meanwhile, in a small bowl, whisk together the orange juice, olive oil and mustard.
- 3 Transfer the cooked brussels sprouts to a serving bowl. Drizzle with orange dressing and top with pomegranate seeds and goat cheese. Serve immediately.

Makes 4 servings

RECIPE

GREEN SMOOTHIE

Anne Horst, MD, St. John's Family Medicine Residency

This recipe is perfect for those who want to sneak more greens into their diet or indulge their sweet tooth in a healthy way. It's full of antioxidants, fiber, iron and vitamins A, C, E and K as well as many B vitamins, and it has no added sugar. (Anyone taking warfarin should take the vitamin K into account because it will likely affect their warfarin dosing.)

- 1 ripe banana, frozen (it helps to peel and break into pieces before freezing)
- Approximately 1 cup of spinach (kale and other greens also work)
- Approximately 1/2 cup unsweetened almond milk (unsweetened dairy milk, rice milk or coconut milk also work)
- 4 to 6 ice cubes

Blend all ingredients and enjoy! If it doesn't blend easily, add more liquid.

Makes one serving

RECIPE

CURRIED CHICK PEAS WITH
AUTUMN VEGETABLES

Kate (Venable) Shafto, MD, University of Minnesota

This recipe comes from chef Jenny Breen, co-instructor of the "Food Matters for Doctors" class we created and author of Cooking Up the Good Life. It combines a lot of vegetables (you can use any kind) in a delicious sauce, and it's really hard to mess up. You also can add meat (chicken cooked separately, diced and then added at the end, for example). I like this so much, it was one of the dishes served at my recent wedding reception dinner.

- 2 tablespoons olive oil
- 2 tablespoons toasted sesame oil
- 2 leeks, cleaned, halved and sliced (may substitute onion)
- 4 cloves garlic, minced
- 2 inches fresh ginger, peeled and minced
- 2 medium carrots, sliced
- ½ head cauliflower, chopped
- ½ head broccoli, peeled and chopped (including top half of stem)
- 1 small eggplant, diced (optional)
- 1 red pepper, seeds removed, diced or cut into strips
- 1 14-ounce can full-fat, organic coconut milk (shake well before adding)
- 1 cup apple juice (optional)
- 1/2 cup stock or water, if needed
- 2 cups chickpeas cooked in 6 cups water (or one 25-ounce can, drained)
- 1 tablespoon turmeric
- 1 tablespoon cumin
- 1 tablespoon chili powder
- 2 teaspoons fresh thyme
- 1 teaspoon cayenne or red chilis
- 2 teaspoons salt
- Black pepper to taste

- 1 Heat oils together in pan, add leeks/onion and carrots. Sauté on medium heat about 3 minutes until leeks are soft. Saute with garlic, ginger, being careful to not burn the garlic.
- 2 Add eggplant (if using), peppers, broccoli and cauliflower and sauté another 5 minutes. Add spices and apple juice (if using) and continue to cook, making sure the spices are well-blended.
- 3 Add coconut milk and chickpeas and combine thoroughly. Turn heat to low and simmer about 15 minutes, until veggies are soft.
- 4 Serve over cooked grain or noodles.

Makes 6 to 8 servings

RECIPE

SUNDRIED
TOMATO
SQUASHTA
(SQUASH-
PASTA)

(Adapted from <http://paleomg.com>)

Andrea Weiers, MS4, University of Minnesota Medical School

This dish tastes just like it was made with traditional pasta. We've served it to guests who didn't know it wasn't.

- 1 medium spaghetti squash
- 4 cloves garlic, minced
- 2 large shallots, finely chopped
- 8 ounces sundried tomatoes in oil cut in half (or preferred size)
- 1 teaspoon sea salt
- 1 teaspoon red pepper flakes
- ½ teaspoon basil (dried)
- Black pepper to taste
- ¾ cup canned coconut milk
- 1 cup low-sodium vegetable or chicken broth

- 1 Preheat oven to 400° F.
- 2 Cut spaghetti squash in half and bake on cookie sheet 40 minutes or until the "spaghetti" can be easily scooped out. (Err on the side of over-baking, as the final product will taste better if the "noodles" are fully cooked.)
- 3 Heat 3 tablespoons of oil from the sundried tomatoes in a large skillet over medium heat. Add garlic and shallots. Once fragrant, add sundried tomatoes and continue heating 4 to 5 minutes.
- 4 Mix in salt, red pepper flakes, basil, black pepper.
- 5 Add coconut milk and broth. Stir well.
- 6 As this heats, scoop out the spaghetti squash with a spoon and add it to the broth mixture.
- 7 Simmer until thickened, approximately 10 minutes.
- 8 Add salt and pepper to taste.

Makes 4 servings

RECIPE

ASPARAGUS PESTO

Saumya Shah, MS2,
Mayo Medical School

This is the most amazing experimental creation. My roommate and I use it as a sandwich spread, dipping sauce with baby carrots or pita chips, and pasta sauce. It's a healthy way to consume vegetables.

- 1 pound asparagus
- 1 stalk broccoli, chopped
- 1 cup walnuts
- 4 cloves garlic, chopped
- ½ cup olive oil
- ⅓ cup Parmesan cheese
- 1 tablespoon black pepper
- 1 tablespoon oregano
- 1 tablespoon dried basil
- 1½ jalapeño peppers
- 2 tablespoons cooking oil
- Salt to taste

- 1 Bring a large pot of water to boil, add salt. Add asparagus and chopped broccoli. Cook until tender but not mushy. Drain well and save the cooking water. Let vegetables cool.
- 2 Add 2 tablespoons of cooking oil to a pan. Add walnuts. Roast at medium-high heat until they start browning (approximately 5 to 7 minutes). Stir occasionally.
- 3 Transfer the roasted walnuts, cooked asparagus and broccoli to a food processor. Add the garlic, olive oil, jalapeño peppers, black pepper, oregano, dried basil and salt. Process the mixture. If necessary, add olive oil to moisten.

Makes 3 to 4 cups



RECIPE

BIBIMBAP (KOREAN-INSPIRED MIXED RICE AND VEGETABLES)

(Adapted from bonappetit.com)

Charlene Gaw, MS2, Mayo Medical School

Bibimbap is a well-known and beloved Korean dish. The name means "mixed rice." It includes warm rice, sautéed vegetables and chili pepper paste. Substitute brown rice (a whole grain) for the white rice to make the dish healthier. This dish is a good option for someone on a low-cholesterol diet.

- 4 cups cooked white rice (or brown rice)
- 1 cup bean sprouts
- 1 cup spinach, cut into thin strips
- 1 clove garlic, minced
- 1 carrot, cut into matchsticks
- 1 cucumber, cut into matchsticks
- ¼ cup gochujang (Korean hot pepper paste; available in most Asian food stores)
- 4 large eggs
- 2 tablespoons olive oil
- 2 tablespoons reduced-sodium soy sauce
- 4 teaspoons sesame oil
- Pinch of red pepper flakes

- 1 Heat 1 tablespoon olive oil in a nonstick skillet over medium heat.
- 2 Add carrots, cook until softened (approximately 3 minutes). Add garlic and bean sprouts and cook until tender (approximately 2 minutes).
- 3 Stir in spinach and cucumber. Add soy sauce, gochujang and red pepper flakes to taste. Set mixture aside in a bowl.
- 4 Add 1 tablespoon olive oil to the skillet. Over medium-low heat, fry eggs on one side until yolks are runny but whites are firm (approximately 2 to 4 minutes).
- 5 Divide cooked rice among 4 serving bowls. Add vegetable mixture, 1 teaspoon of sesame oil and a small amount of gochujang paste to each bowl. Finish each dish by placing a fried egg on top.

Makes 4 servings



RECIPE

HOMEMADE GRANOLA

(Adapted from cookieandkate.com)

Dominic Decker, MD, University of Minnesota Medical School, class of 2016

This granola is full of fiber, protein and omega-3 fatty acids and is a quick, satisfying snack. It's sweetened with maple syrup, which is mostly made of sucrose and thus has a lower glycemic index than store-bought granola, which contains fructose.

- 4 cups rolled oats
 - 1 cup raw sunflower seeds
 - 1 cup raw pecans
 - ½ cup unsweetened coconut flakes
 - ½ cup maple syrup
 - ½ cup olive oil
 - 1 teaspoon salt
 - 2 teaspoons ground cinnamon
 - ½ cup unsweetened dried cherries
- 1 Preheat oven to 350° F.
 - 2 Mix oats, sunflower seeds, pecans, salt, ground cinnamon and coconut flakes in a large bowl. Add maple syrup and olive oil to coat well.
 - 3 Spread mixture evenly on a large baking sheet lined with parchment paper.
 - 4 Bake for 25 minutes or until golden brown. Allow to cool completely.
 - 5 Once cool, break apart and mix in dried cherries. Store in airtight container.

Makes approximately 10 cups

RECIPE

MULLIGATAWNY SOUP

(Adapted from a Cooks of Crocus Hill recipe)

Steven Radosevich, MD

This is one recipe I give out to patients. I've added more vegetables and brown rice to the original.

- 1 cup onions, diced
 - ½ cup celery, diced
 - 2 ounces butter
 - 1 cup eggplant, diced
 - ½ to 1 cup bell pepper, diced (can be green, red or yellow peppers or a combination)
 - 1 apple peeled, diced
 - 3 tablespoons curry powder
 - 4 cups chicken stock, heated
 - ¾ cup milk, hot
 - ¾ cup light cream, hot
 - 1 cup brown rice, cooked
 - 8 ounces chicken, diced (optional)
 - Salt and white pepper to taste
- 1 In a heavy soup pot, saute onions, celery in butter.
 - 2 Blanch eggplant, green peppers and apples together in boiling, salted water for 5 minutes. Drain.
 - 3 Add flour and curry powder to soup pot, mix well. Cook over low heat 5 to 6 minutes (do not brown).
 - 4 Add hot chicken stock gradually, stirring until thickened and smooth. Return to boil and add blanched eggplant, peppers and apple. Simmer until vegetables are tender.
 - 5 Blend in scalded milk and cream.
 - 6 Add rice and chicken.
 - 7 Adjust for seasoning.

Makes 8 8-ounce servings

I eat too much butter

A day of bad eating becomes a wake-up call for healthier living

BY DAVID HILDEN, MD, MPH

A few days ago, I ate French toast and bacon for breakfast. Actually, I melted some butter and soaked the French toast in it, then covered it all in maple syrup. Then I drank about four cups of coffee. Later that day, I ate a handful of chocolate-covered raisins. And a bunch of tortilla chips, straight from the bag, with salsa. Fortunately, our dog, Zoe, finished the bag, thus preventing me from doing the job myself. I also snacked on crackers and cheese. For dinner, I grilled a steak and drank a 16-ounce IPA. That was followed by more chocolate-covered raisins.

That evening, it dawned on me that either I really didn't have very good standards in terms of eating (I hope not!) or I was simply not being very mindful of what was going into my mouth. I thought it was the latter. So before I went to bed, I wrote down everything I had eaten that day.

Then I got on the scale—10 pounds heavier than last year. All in my expanding belly.

The next day, in a moment of either insanity or brilliant goal-setting, I signed up for the Twin Cities Marathon.

All this got me thinking about why it's so hard to eat what we know we should. I'm not an expert on any of this, but I do get to talk to people in my practice every day about their own successes and setbacks in achieving healthy lifestyle goals. And I've learned something about how we humans think and act.

Most of us underestimate how much bad food we eat and overestimate how much healthy food we eat. I know I don't eat as much kale and quinoa as I think I do. And when we do look closely at what we're really eating, we're shocked. So I was appalled when I looked at the list I had made and realized what I had eaten. A visit to the USDA's SuperTracker website (www.supertracker.usda.gov/default.aspx), which allows you to look up nutritional details about almost any food, informed me that altogether my day of bad eating added up to 2,046 calories, 2,837 mg of sodium, 105 g of fat and 88 g of protein (see chart). Good grief.

Looking at those numbers, I realized:

- **I ate too much salt.** The recommended amount of sodium for a guy my age is 2,300 mg daily. Most of us eat way too much salt, which can lead to higher blood pressure and an increased risk for stroke and heart disease. Trouble is, as much as 70 per-



The author shows everything's better with butter.

PHOTO COURTESY OF DAVID HILDEN

cent of the salt we eat is added to food before it gets to us. The FDA recently set targets for restaurants and processed food manufacturers to reduce the amount of sodium in their foods in order to address this problem.

- **I ate way too much fat.** At least on this day, something like 40 percent or more of my calories came from fat. Worse yet, many of those calories came from saturated fat—things like butter and bacon. You should limit fats to around 25 percent of your calories, and many say they should be the unsaturated kind, which come from things like fish, nuts and vegetables (olive oil, anyone?). You can often spot a saturated fat because it is solid at room temperature, like butter. I realize that fat is a bit controversial. There are good arguments and some good scientific studies that show sugars and carbs are the problem, not fats—even the saturated ones. I think there is something to that. I know plenty of people eat a higher-fat diet and do all right. But nearly half my calories that day came from fats and processed foods—and that can't be a good thing.

- **I could have eaten more protein.** The recommendations are rather broad on how much protein to eat, with the suggestion being that between 10 percent and 35 percent of your calories come from protein. So for my roughly 2,000-calorie day, about 18 percent came from protein (almost all from the steak, which is not a usual thing for me).

It's easy to figure out how much various nutrients contribute to your caloric intake if you know these numbers:

Proteins and carbohydrates

1 gram = 4 calories

Fats

1 gram = 9 calories

I didn't calculate my carbohydrates, but I think I likely ate too many. I usually do. I like donuts and pasta and French fries and bread . . . and, did I say donuts? It's true that the carbs we eat get broken down by the body into simple sugars. The problem is that processed sugars get into the bloodstream really fast, so our blood

glucose spikes, which perhaps leads to insulin resistance, and most importantly, causes us to overeat. The science isn't conclusive on why this is the case, but too many processed sugars in the diet do lead to more insulin production, which leads to more fat cells being created. Those cells need fuel, which leads us to crave addi-

tional sugars and overeat. Thus, the cycle continues. If I had to advise people what they should most cut down on, it would be simple and processed sugars, not because carbohydrates and simple sugars are inherently evil; they just tend to lead to a high-calorie and nutritionally weak diet.

I think knowledge is the first step toward living a healthier life. For me, knowing what I really took into my body that day motivated me to do better. From my little dietary experiment, I can see how important being mindful is when it comes to eating.

Greater awareness of what we are eating is a good first step if we are to make lasting changes. Keeping a food diary can help. (The American Heart Association has a downloadable version at heart.org. There are also loads of apps for your phone that can let you record what you've eaten.)

I've found it has not really been that hard to make small changes. I still enjoy a beer here and there. But not three at a time. I just took a road trip with my favorite beverage in the car's cup holder—a classic Coke—sugar, caffeine and all. But that was the only soda I've had in well over a month. And I've learned a neat tip from my wife about those tortilla chips: Rather than digging into the bag, I remove a reasonable portion, close the bag and put it away, then eat the chips. Score one for portion control.

I'm running faithfully, although I'm not up to marathon mileage yet. But I'm feeling more energetic, I'm in better shape, and the scale tells me I've lost about five pounds in the last month. Sustainable? I hope so. I think so! **MM**

David Hilden is in the department of medicine at Hennepin County Medical Center. He is the host of *Healthy Matters*, a live radio broadcast on WCCO 830 AM. This was adapted from his June 2, 2016, blog post (myhealthymatters.org).

FOOD	CALORIES	SODIUM (MG)	FAT (G)	PROTEIN (G)
 Bacon , 3 strips	112	404	8	8
 Butter , 2 tablespoons	204	183	23	0
 French toast , 2 slices	317	523	12	12
 Maple syrup , 1 tablespoon	52	2	0	0
 Coffee , 4 cups	9	19	0	1
 Chocolate raisins , 1/2 cup	136	34	14	4
 Tortilla chips , 3 ounces	435	299	19	6
 Salsa , 1/4 cup	10	266	0	0
 Crackers , 8	137	225	5	3
 Cream cheese , 3 tablespoons	149	159	15	3
 Steak , 6 ounces	279	703	9	49
 Beer , 16 ounces	206	20	0	2
TOTAL	2,046	2,837	105	88



2016 ANNUAL CONFERENCE

PREVIEW CHARTING THE COURSE

On September 23 and 24, more than 200 physicians and physicians-in-training will gather at the DoubleTree by Hilton Minneapolis-Park Place in St. Louis Park to help chart the course for medicine in Minnesota.

The MMA's 2016 Annual Conference will offer sessions on a range of timely and relevant topics that physicians from all clinics and specialties will find useful in daily practice. The conference will feature national keynoters, policy sessions, the ability to earn up to 6.5 CME credits, a talent show, dozens of exhibitors, a poster symposium for medical students and residents, and more.

"It will be an excellent opportunity to meet your colleagues from around the state, learn about the latest innovations in health care and hear how the work you do is changing lives," says MMA President David Thorson, MD.

Keynote speakers

"HEALTH CARE, REMIXED"

Zubin Damania, MD (aka ZDoggMD), is a Las Vegas physician who mixes medicine and music to entertain and educate. Best known for his ZDoggMD videos, he'll discuss two topics he's passionate about—health care reform and preventing physician burnout—and give a live performance.



"IS THERE A BLACK DOCTOR IN THE HOUSE?"

Damon Tweedy, MD, author of the *New York Times* best seller, *Black Man in a White Coat*, will look at why such a small percentage of physicians in the United States are black and the implications for doctors and patients.



Educational programs

The Annual Conference lineup also includes several educational breakout sessions led by both national and local speakers. They include:

- "DIAGNOSTIC ERRORS"
- "FUTURE TRENDS – MAYO CENTER FOR INNOVATION"
- "IMPLICIT BIAS"
- "A HEALTH DISPARITIES PANEL DISCUSSION"
- "RESILIENCY: YOUR GUIDE TO STRESS-FREE LIVING"
- "THE CHANGING LANDSCAPE OF OPIOID PRESCRIBING"
- "TURNING THE TIDE ON PHYSICIAN BURNOUT"

PHOTOS BY KATHRYN FORBES

Policy discussions

Want to talk policy? The conference will offer policy forums on:

Physician aid-in-dying. This controversial topic continues to generate debate across the country. Although the MMA has long opposed physician aid-in-dying, it recognizes that physicians' opinions on the matter may be changing. Help inform the MMA's position on this important issue.

Quality measurement. Measurement drives quality improvement. But how much is too much? Are the various measurement efforts by payers and the state and federal governments accomplishing their goals? Is there a better approach? Share your thoughts and opinions.

Open issues. What are the concerns in your practice that keep you awake at night?

How can the MMA address these issues? Join your colleagues for a discussion on a variety of timely and relevant topics.

MMA's Got Talent

MMA members are talented! Come see your colleagues sing, tell jokes, play guitar and do imitations. Prizes will be awarded for first, second and third place.

Poster session

For the third year, the Annual Conference will host a poster session featuring the work of Minnesota medical students, residents and fellows. Attendees will have the chance to view the exhibits, talk with poster creators and vote for a "people's choice" award winner.

Pre-conference activities

MMA member and longtime Minnesota Public Radio contributor Jon Hallberg, MD, will host his Hippocrates Cafe program the Thursday night before the conference. The show features professional actors and musicians who explore health care topics through song and story. They will focus on readings from *Minnesota Medicine*.



For more details and to register, visit WWW.MNMED.ORG/AC2016.



PHOTOS BY KATHRYN FORSS

News Briefs

Participation in state’s medical cannabis program grows with addition of intractable pain

During the month of July, the state’s medical cannabis program saw unprecedented growth in the number of patients signing up and health care providers joining. This is the result of the July 1 date for patients to begin meeting with physicians, physician assistants and advanced practice registered nurses about using medical cannabis to treat intractable pain.

Starting August 1, intractable pain patients began picking up cannabis at one of the state’s eight patient centers.

According to state law, intractable pain is pain whose cause cannot be removed and for which the full range of pain management treatments appropriate for the patient, according to generally accepted medical practice, have been used without adequate results or with intolerable side effects. As with others who qualify for participation in the program, intractable pain patients must be certified by either a physician, physician assistant or advanced practice registered nurse.

Nearly 500 patients with intractable pain joined the program in July, bringing the total number of approved patients to 1,827. The number of health care practitioners who approve patients also increased from 605 to 625 in July.



Physicians receive bad news from latest Avera Marshall ruling

In late July, the Minnesota Court of Appeals ruled against the medical staff of Avera Marshall Regional Medical Center and MMA members Steve Meister, MD, and Jane Willett, DO, (pictured) deciding that the hospital could unilaterally amend the medical staff bylaws that the hospital administration and staff had agreed to in 2010.

The court held that the language of the bylaws permitted unilateral amendment by the hospital, despite language indicating medical staff approval is a requisite part of the amendment process. This ruling applies to the interpretation of the specific medical staff bylaws at issue in the case. It does not necessarily apply to other medical staff

bylaws that may contain different language regarding the amendment process.

The MMA, together with the AMA, has provided ongoing professional and financial support to the plaintiffs.

It’s unlikely the case will be granted further review.

Work group meets to examine physician aid-in-dying question

A task force of physicians has begun re-examining the MMA’s position on physician aid-in-dying. The MMA Board of Trustees created the task force following ongoing discussion and debate that began at the 2015 MMA Annual Conference and continued within the MMA’s Policy Council.

The MMA’s current policy, which dates back to 1992, opposes physician participation in aid-in-dying. In the nearly 25 years since the policy was set, a number of states have enacted laws allowing physicians to prescribe terminally ill patients drugs to end their lives. Some state medical societies— notably California’s— have modified their positions away from organized medicine’s historic opposition to physician aid-in-dying.

A proposal to allow physician aid-in-dying was introduced in the Minnesota Legislature in 2015, although it was only heard in one committee in the Senate and no official vote was recorded. Given the changing sentiment on the issue both within medicine and among the public, the Board of Trustees decided to re-examine the MMA’s position.



The group is chaired by Benjamin Whitten, MD, a past MMA president and general internist at Abbott Northwestern Hospital.

Other members include:

- Stuart Bloom, MD (oncology)
- Christopher Burkle, MD (anesthesiology)
- Ken Kephart, MD (palliative care)
- Jennifer Kuyava, MD (palliative care)
- Kathryn Lombardo, MD (psychiatry)
- Lisa Mattson, MD (OB/GYN)
- David Newcomer, DO (internal medicine)
- David Plimpton, MD (internal medicine)
- John Song, MD (internal medicine)

The task force is charged with crafting specific policy recommendations regarding physician aid-in-dying that will be considered by the Board at its November 2016 meeting. Additionally, the group is to identify educational resources that will help physicians understand and examine the clinical, practical, legal and policy issues associated with physician aid-in-dying.

The issue of physician aid-in-dying also will receive further discussion at a dedicated policy forum on September 23 at the MMA Annual Conference.

MMA part of coalition to encourage immunizations

The MMA is part of a nine-member coalition of health care groups that is encouraging Minnesota families to make sure their children are up to date on all of their recommended vaccines before heading off to school this fall. Strengthening the state's immunization laws was one of the MMA's top three priorities during the 2016 legislative session.

The Minnesota Department of Health reports that childhood immunization rates in Minnesota have remained stagnant.

Other members of the coalition include: Children's Health Network, Immunization Action Coalition, Minnesota Academy of Family Physicians, Minnesota Chapter of the American Academy of Pediatrics, Minnesota Childhood Immunization Coalition, Minnesota Head Start Association, Minnesota Chapter of the National Association of Pediatric Nurse Practitioners and the School Nurse Organization of Minnesota.

MMA re-doubles its efforts on prescription opioid abuse

In mid-July, the MMA's Board of Trustees unanimously approved a list of recommendations related to the prescription opioid crisis including reconvening the MMA's Prescription Opioid Management Advisory Task Force.

The task force, which first deliberated in 2012 and 2013, will meet the rest of this year and into 2017. It will develop recommendations for the MMA on the following topics:

- Circumstances for when mandatory use of the Minnesota Prescription Monitoring Program may be appropriate.

On the calendar

Event	Date	Location
Hippocrates Cafe	September 22	DoubleTree Park Place Hotel, St. Louis Park
2016 Annual Conference	September 23-24	DoubleTree Park Place Hotel, St. Louis Park
Duluth Physicians' Social	October 4	Harbor View Room, Fitger's, Duluth

Check the MMA's website (www.mnmed.org/events) for more information and to register.

- Circumstances for when required education/additional training with respect to opioid prescribing may be appropriate.
- Strategies for expanding the number of buprenorphine providers.

The group will review the recommendations from the Department of Human Services' Opioid Prescribing Work Group to help guide an MMA response.

Beth Baker, MD, who practices occupational medicine, will serve as chair.

Other task force members include:

- Alfred Anderson, MD (pain medicine)
- Paul Biewen, MD (physical medicine and rehabilitation)
- Elisabeth Bilden, MD (emergency medicine/toxicology)
- William Dicks, MD (family medicine/pain medicine)
- Mark Eggen, MD (anesthesia)
- Tom Flynn, MD (oncology)
- Christopher Johnson, MD (emergency medicine)
- Charles Reznikoff, MD (addiction medicine)
- David Schultz, MD (anesthesia/pain medicine)
- Keith Stelter, MD (family medicine)
- Lindsey Thomas, MD (forensic pathology)
- Joseph Westermeyer, MD (addiction/substance abuse)

The MMA continues to educate Minnesota physicians on the topic through a series of free CME webinars it developed in partnership with the Steve Rummel Hope Foundation and the University of Minnesota Medical School. The goal of the webinars is to provide balanced, practical and evidence-based education on pain, opioids and addiction.

Member leads immigrant medical grad effort at White House

In his role as chair of the state's International Medical Graduate (IMG) Stakeholder Group, MMA member Edwin Bogonko, MD, testified in late June at the White House regarding credentialing for immigrant and refugee physicians.

Bogonko visited Washington for the White House Task Force on New Americans. He was joined by Yende Anderson, IMG program coordinator for the state's Office of Rural Health and Primary Care (ORHPC); Mark Schoenbaum, ORHPC director; and Wilhelmina Holder, a longtime advocate and stakeholder group member.

The IMG Stakeholder Group is working to develop strategies to leverage additional funding and explore changes in health professional licensure and regulation to ensure full utilization of immigrant international medical graduates in Minnesota's health care delivery system.



Gov. appoints two members to mental health task force

Two MMA members have been appointed to the Governor’s Task Force on Mental Health: **Paul Goering, MD**, a psychiatrist with Allina Health in St. Paul, and **Bruce Sutor, MD**, a psychiatrist at the Mayo Clinic.

The task force will work to identify gaps in the state’s mental health system and propose comprehensive recommendations to design, implement and sustain a continuum of mental health services throughout Minnesota.

According to the governor’s office, more than 200,000 adults and 75,000 children in Minnesota live with mental illness. Over the last five years, Dayton and the Minnesota Legislature have invested more than \$56 million in mental health initiatives, including \$46 million for mental health crisis services, housing for adults with mental illness, funding to increase capacity at mental health facilities across the state and initiatives to improve children’s mental health. Additionally, Dayton has proposed significant investments in the Anoka Regional Treatment Center and the Minnesota Security Hospital in St. Peter.

The task force is to report to the governor, Legislature and the public by the end of November 2016.



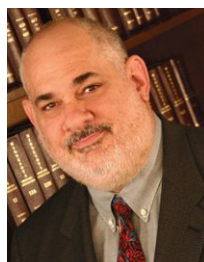
PHOTO BY KATHRYN FORBES

Final 2016 Physicians’ Social scheduled for Duluth

Following in the footsteps of the successful Physicians’ Socials in Minneapolis and Rochester, the MMA will host an event in Duluth on Tuesday, October 4, from 5:30 to 8 p.m. at the Harbor View Room at Fitger’s, 600 E. Superior St. The event is a celebration of medicine, a thank you to members, and a welcome to new and prospective members. Hors d’oeuvres and drinks will be served. For more information, go to the MMA website (www.mnmed.org/socials).



Dave Renner



Robert Meiches, MD



Janet Silversmith



Teresa Knoedler, JD



Juliana Milhofer



Eric Dick

MMA in Action

Dave Renner, the MMA’s director of state and federal legislation, attended the American Association of Medical Society Executives meeting in Baltimore in July where he discussed “Successful Campaigns,” speaking specifically about the MMA’s “Fix PA Now” campaign and the creation of the Fix PA Now Coalition. He co-presented with Rob Jorden from the AMA’s Washington, DC, office, who talked about the AMA’s “Break the Red Tape” campaign.

In July, **Robert Meiches, MD**, MMA CEO; **Janet Silversmith**, director of health policy; Renner; **Teresa Knoedler, JD**, policy counsel; **Juliana Milhofer**, policy analyst; and **Eric Dick**, manager of state legislative affairs, met with staff from the Minnesota Council of Health Plans to discuss medication prior authorization reform, MNSure, and the recent decision by Blue Cross and Blue Shield of Minnesota to exit the state’s health insurance exchange as well as other organizational updates.

In August, Silversmith gave a presentation on MACRA to Metro Urology. She will give a similar talk to Integrity Health Network in September.

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SPECIAL SECTION

MMA ANNUAL CONFERENCE 2016



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St. Louis Park, Minnesota

WWW.MNMEMED.ORG/AC2016

**FRIDAY
AND
SATURDAY**

**SEPT
23+24
2016**

CONFERENCE SCHEDULE

PRECONFERENCE SESSION:

Thursday, Sept. 22

7-9pm Hippocrates Cafe

Friday, Sept. 23

7am Registration

7am-8:30am Exhibits open

7:30-8:30 Breakfast

7:30-8:30 **Breakfast with
Damon Tweedy, MD**
(ticketed event)

8:30-9:30 **GENERAL SESSION: "Is
there a Black Doctor in the
House?" Damon Tweedy,
MD**

9:30-10 Break time with Exhibitors

10-11:20 CONCURRENT SESSIONS

- Future Trends-Mayo Center for Innovation
- Physician Aid-in-Dying
- Turning the Tide on Physician Burnout

11-11:30 Break time with Exhibitors

11:30-1pm Welcome/Awards Lunch

1-1:30 Break time with Exhibitors

1:30-2:30 CONCURRENT SESSIONS

- Diagnostic Errors
- Implicit Bias
- The Changing Landscape of Opioid Prescribing

2:30-3 Break time with Exhibitors

3-4:30 Open Issues Forum

4:30-5:30 MEDPAC Reception

4:30-6:30 Exhibits Open

5-6 Poster Symposium

5:30-6:30 Inaugural Reception

6:30-7:30 President's Inauguration

7:30-9 **GENERAL SESSION:
Health Care, Remixed
Zubin Damania, MD**
(a.k.a. ZDoggMD)

9-10:30 MMA's Got Talent

Saturday, Sept. 24

7am Registration

7-7:45 SECTION MEETINGS

- Medical Students
- Residents/Fellows
- Young Physicians

7:45-9:15 Breakfast

7:45-9:15 House of Delegates

9:30-10:50 CONCURRENT SESSIONS

- Health Disparities Panel Discussion
- Quality Measurement
- Resiliency: Your Guide to Stress-Free Living

11-12 **GENERAL SESSION:
"Make Medicine Great
Again!" The Stevie Ray's
Comedy Troupe**

12pm Adjourn



GENERAL SESSIONS

“IS THERE A BLACK DOCTOR IN THE HOUSE?”

Damon Tweedy, MD

Dr. Tweedy, author of the *New York Times* best seller, *Black Man in a White Coat*, will look at why such a small percentage of physicians in the United States are black and the implications for doctors and patients.

HEALTH CARE, REMIXED

Zubin Damania, MD (a.k.a. ZDoggMD)

Dr. Damania is a Las Vegas physician who mixes medicine and music to entertain and educate. Best known for his ZDoggMD videos, he'll discuss two topics he's passionate about—health care reform and preventing physician burnout—and give a live performance.

MAKE MEDICINE GREAT AGAIN!

The Stevie Ray's Comedy Troupe

One candidate proposes we build a wall around Zika (and make Brazil pay for it) and another uses an unsecure server to talk about Zika. Who will win your vote? Join professional comedians for a hilarious session on the current state of medicine. Sense of humor required.



CONCURRENT SESSIONS

Diagnostic Errors

Laurie Drill-Mellum, MD, MPH

Diagnostic errors are the leading cause of medical malpractice claims in the United States. Because these errors can be hard to detect and measure, they have escaped the level of scrutiny received by more visible errors. Dr. Drill-Mellum will address factors that contribute to diagnostic errors and present strategies to minimize their impact.

Future Trends – Mayo Center for Innovation

Doug Wood, MD

What does the future hold for health care? Join Dr. Wood for a stimulating discussion on topics such as participatory health care, wearables, and more.

Health Disparities Panel Discussion

*Brooke Cunningham, MD, PhD,
Christopher Reif, MD, MPH, Stephen C.
Nelson, MD, and Maria Veronica Svetaz,
MD, MHP*

Minnesota consistently scores high in state health rankings, but those numbers don't tell the whole story. Certain racial and ethnic groups in the state fare much worse than the general population on a variety of health indicators. Panel members will discuss why these disparities exist and what physicians can do to close the gap.

Implicit Bias

Stephen C. Nelson, MD

Research suggests that implicit or unconscious bias may influence a



SPECIAL EVENTS

Breakfast with Damon Tweedy, MD (Separate Ticketed Event)

Limited to 20 participants, this intimate gathering will give each participant a chance to speak to Dr. Tweedy about racial health disparities and his thoughts about the future.

Hippocrates Cafe

Developed by Jon Hallberg, MD, Hippocrates Cafe uses professional actors and musicians to explore health topics through song and story. The performers will present selected readings from *Minnesota Medicine*.



clinician's behavior resulting in differences in care provided to members of certain racial and ethnic groups as compared with the general population. Join Dr. Nelson to learn about implicit bias, review factors that affect health outcomes among Minnesotans and discover tools to help us move towards health equity.

Open Issues Forum

What are the concerns in your practice that keep you awake at night? How can the MMA address these issues? Join your colleagues for a discussion on a variety of timely and relevant topics.

Physician Aid-in-Dying

This controversial topic continues to generate debate across the country. Although the MMA has long opposed physician aid-in-dying, it recognizes that physicians' opinions on the matter may be changing. Help inform the MMA's position on this important issue.

Poster Symposium

A poster symposium will feature the work of our medical student, resident and fellow members. Take this opportunity to view the posters, talk with the participants and vote for a "People's Choice" award winner.

President's Inauguration

Join us as President David Thorson, MD, passes the Presidential Medallion to David Agerter, MD, as the 150th president of the MMA. We will also announce the MMA's highest honor, the Distinguished Service Award.

Quality Measurement

Measurement drives quality improvement. But how much is too much? Are the various measurement efforts by payers and the state and federal government accomplishing their goals? Is there a better approach? Share your thoughts and opinions.

Resiliency: Your Guide to Stress-Free Living

Amit Sood, MD

Would you like to be more resilient, decrease your level of stress and anxiety, and enhance your well-being? Then this is the session for you! Dr. Sood has developed an innovative approach to mind-body medicine by incorporating concepts within neurosciences, psychology, philosophy and spirituality. Participants will leave refreshed and with strategies they can use in everyday life.

The Changing Landscape of Opioid Prescribing

Charles Reznikoff, MD

Prince's death from an opioid overdose made headlines around the world. It also brought home the problem of opioid abuse and addiction. Opioids can be useful

medications when used properly, but how is a physician to know where to draw the line? This session will explore the history of opioids, the prevalence of addiction, and how physicians can help curb the epidemic.

Turning the Tide on Physician Burnout

Martin Stillman, MD, JD, and Sandra Shallcross, PhD, LP

Join this engaging duo from HCMC's Office of Professional Work/Life to learn about the signs and symptoms of burnout, best practices for responding to it, and interventions you and your organization can take to promote resiliency.



MMA Foundation Awards

The awards lunch on Friday will recognize our colleagues as the MMA Foundation presents the President's Award and Community Service Award.

MMA's Got Talent

MMA members are talented! Singers, musicians, comedians and more. Great entertainment by your fellow physicians, residents and medical students.

CONTINUING MEDICAL EDUCATION

*This activity has been approved
for AMA PRA Category 1 Credit™*



FIND MORE INFORMATION OR REGISTER AT [WWW.MNMEMED.ORG/ AC2016](http://WWW.MNMEMED.ORG/AC2016)



Have questions?

Contact Sandy Nentwig at am@mnmed.org or call (612) 362-3755.

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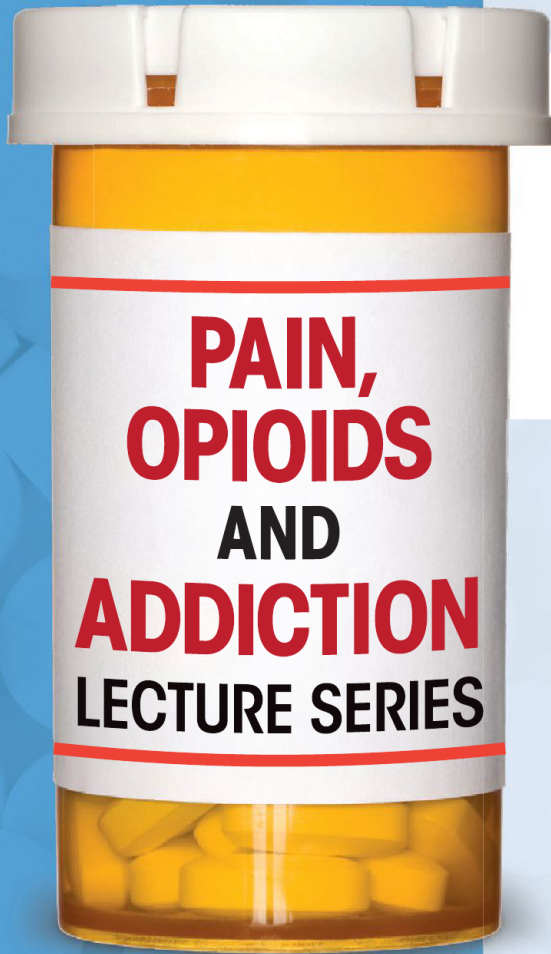


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The Pain, Opioids and Addiction lecture series

will provide physicians and other providers with valuable information on topics related to pain management, opioid prescribing and addiction.

Through this lecture series, learn how to:

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Assessment for Adverse Food Reactivity

A Clinician's Guide

BY GREGORY A. PLOTNIKOFF, MD, MTS, FACP

Patients frequently note adverse food reactions and report significant food restrictions as a result. Physicians need to consider the nutritional consequences and necessity of such voluntary dietary limitations. They also should consider adverse food reactivity in their differential diagnosis for many frequently seen concerns. This article describes a three-step process for assessing a patient's potential for true adverse food reactivity. Readers will note the significant contributions nutritionists and dietitians can offer as team members.

Help me doctor! I can barely eat any foods anymore!" "I am down to eating just 10 foods!" "I can't go out to eat anymore."

Such complaints about adverse reactions to foods are all too common. Yet for many patients, help can be elusive. Clinicians worry that exploring food reactivity will be time-consuming and that their actions won't be effective. Thus, they may not always consider it as a cause of common symptoms. Yet, adverse food reactivity needs to be considered in the differential diagnosis for many common medical concerns including headaches, asthma, atopic dermatitis, GERD, IBS, fatigue, brain fog and urticaria.

Evaluating patients for food reactivity is essentially a three-step process that involves 1) taking the history, 2) having the patient keep a food and symptom diary and 3) making the differential diagnosis. This article describes that process and offers further guidance for assessing whether a patient's problems may be related to foods they are eating.

1. Take the History

To begin, patients are very adept at recognizing connections between foods eaten and symptoms experienced. "I will never eat that again!" is a common statement. But are they too adept? Your task is to

figure out whether experiencing a certain symptom after eating is a coincidence or if food is a causal factor. The absence of IgE-specific reactivity does not rule out food as a causal factor (consider, for example, the connection between foods rich in vasoactive amines such as aged wines or cheeses and headaches). Likewise, reactivity identified through allergen-specific IgE antibody testing does not confirm food as a causal factor, nor does IgE sensitivity for a given allergen mean clinical responsiveness. For those reasons, all evaluations for adverse food reactivity need to be done in the context of the clinical history.

To take a good history, you will need to ask questions related to onset, timing, severity and frequency of symptoms. To understand cross-reactivity or contributing co-factors, you also will need to ask about:

- Known environmental allergies (birch, grasses, ragweed, for example)
- Season of environmental allergies (spring, summer or fall)
- Latex reactivity
- Costume jewelry or nickel reactivity
- Presence of co-factors such as use of non-steroidal anti-inflammatory drugs (NSAIDs), alcohol, angiotensin-converting inhibitors, antacids, beta-blockers, lipid-lowering drugs and probiotics; exercise; mold exposure; pancreatic exocrine insufficiency; and gastric atrophy.

2. Have the Patient Keep a Food and Symptom Diary

The second step is to ask the patient to keep a diary for two weeks. Have them list all foods eaten, the amount consumed and the timing of meals. Ask them to include details about how the foods were prepared, as knowing whether foods eaten were cooked or raw can be helpful. The diary also should include information about symptoms such as the time of onset, their severity and the length of time before resolution.

This exercise engages the patient, saves time and strengthens the physician-patient partnership, as you are essentially saying to the patient: "Please teach me about your experience." The result provides significant data physicians and/or dietitians can use to generate testable hypotheses.

Downloadable forms for tracking this information are readily available online. Many people have found the MySymptom Tracker app helpful.

3. Generate a Differential Diagnosis

Equipped with information from the history and the patient's diary, you then can begin considering possible causes. Each of the following should be explored:

Classic IgE-mediated allergies including cross-reactivity

Classic allergies, typically defined as IgE-mediated mast cell/basophil degranulation, are associated with acute onset of signs and symptoms after food ingestion. Circulatory and airway compromise are the greatest concerns. But there are many less-dramatic manifestations. One is oral allergy syndrome, a condition involving itching, tingling and possibly edema of the lips, tongue, palate and pharynx. IgE-related food reactivity may be a causal factor for unexplained hoarseness and coughing; skin conditions such as atopic dermatitis and contact dermatitis; and gastrointestinal problems including diarrhea, nausea, vomiting, abdominal pain, bloating, gastroenteritis and colitis. Laboratory tests that can be helpful include total IgE and IgE-specific food testing. Guidelines for diagnosis and management of food allergy were recently published.¹

The potential role of cross-reactivity of common environmental allergens and foods also should be considered. For example, birch allergy, which is common in the spring, is linked to reactivity with several other species: Apiaceae (carrot, celery, fennel, parsley), Betulaceae (hazelnut), Fabaceae (peanut, soybean, mungbean) and Rosaceae (apples, cherries, peaches). Grass allergies, common in the summer, are linked to reactivity to foods such as tomatoes and melons. Allergies to plants such as mugwort and ragweed, which bloom in the fall, are linked to reactivity to raw apples, bananas, broccoli, carrots, celery, chamomile, honey, melons, mustard, peaches and peppers, along with chestnuts, hazelnuts, peanuts and sunflower seeds. Spices noted for mugwort cross-reactivity include parsley, caraway, fennel, coriander, anise seed, garlic, onion, leek, paprika and pepper.

Patients with latex allergies can have severe cross-reactivity to avocado, banana, kiwi and chestnut. Other foods that may evoke allergic symptoms in individuals with latex allergy include apricots, celery, grapes, pineapple, spinach, tomato, melon, mango and peach.

Finally, persons with dust mite allergies may have reactions if they eat crustaceans (shrimp, mussels, oysters and scallops) and gastropods, cephalopods and octopods.²

The biologic basis for this unexpected cross-reactivity is the presence of similar marker allergenic molecules, “homologues,” in different species (such as the Bet v 1 in birch pollen and the Mal d 1 in apples) or a protein family well-preserved throughout many different species that can trigger IgE antibody binding. Albumins or prolamins are examples of such protein families. Glutens are the prolamins (termed “gliadins” and “glutenins”) in wheat. Prolamins are found in many other grains as well (eg, secalins in rye and hordeins in barley), which is why a completely gluten-free diet contains no wheat, rye, barley, triticale, kamut or spelt.

On a practical note, many allergens can be degraded by acidic pH (gastric acid), temperature (cooking) or proteinases (gastric or pancreatic function). These are termed “labile allergens.” Three important nuances must be considered. First, not all allergens are labile. For example, the ns lipid transfer proteins found in wheat and corn are very stable, but the birch pollen-related Bet v 1 homologues are considered labile. Yet, even with cooking, the Bet v 1 homologues found in hazelnuts, celery, peanuts and soybeans can result in systemic reactions when ingested. Second, hypochlorhydria, either functional or iatrogenic, has been correlated with enhanced sensitization to food allergens. This can be significant in the elderly. Third, concomitant use of non-steroidals or concomitant exercise may worsen a known allergic reactivity.

Predominantly non-IgE-mediated immune reactivity

Food-specific T-cell-mediated reactivity can occur from several hours to more than 24 hours after exposure. Manifestations include atopic dermatitis, protein contact dermatitis, rhinoconjunctivitis, bronchial

asthma, gastroenteritis, and brain fog or confusion.

People of all ages can have T-cell-specific reactions—beginning in infancy with food protein-induced enterocolitis. Signs of such reactions include delayed reactivity, vomiting, diarrhea and dehydration. Cow’s milk and soy proteins are the most common culprits; but grains, vegetables and poultry have been identified as causes as well.³ Milk-specific, skin-homing cutaneous lymphocyte antigen (CLA+) T- cells (Th2) have been found in atopic dermatitis lesions in older people.⁴ Likewise, wheat gluteins elicit a Th1-mediated immune response in persons with variants in the HLA-DQ2 or HLA-DQ-8 genes.⁵

In patients with other forms of predominantly non-IgE-mediated reactivity, such as eosinophilic esophagitis and non-celiac gluten sensitivity, resolution of signs and symptoms can occur with elimination or elemental diets. For example, in both celiac and nonceliac wheat reactivity, the pest-resistant molecules α -amylase/trypsin inhibitors (ATIs) CM3 and 0.19 engage the TLR4-MD2-CD14 complex to activate monocytes, macrophages and dendritic cells. This results in the release of proinflammatory cytokines with subsequent consequences to intestinal wall integrity.⁶ These observations may explain why, even with negative IgE and gluten reactivity markers (IgA and IgG forms of TTG, anti-gliadin antibodies), the adoption of dairy-free, wheat-free or grain-free diets correlates with improvements in systemic inflammatory conditions including autoimmune disease.

At this time, there are no validated, standardized testing protocols. Clinicians can try guided elimination diets followed by guided reintroductions and oral food challenges. Many have found specialized lymphocyte proliferation assays and IgG food reactivity panels to be helpful for generating hypotheses to guide elimination diets beyond wheat, dairy and corn.



Non-immune-mediated (pharmacologic) reactivity

Tyramine, tryptamine, putrescine, cadaverine and beta-phenylethylamine are considered dietary biogenic or vasoactive amines and are linked to headaches/migraine headaches, angioedema and urticaria. Excessive amounts of the most well-known of these amines, histamine, is associated with an incredible array of symptoms ranging from classic signs of allergy to arrhythmias, asthma, brain fog, cold flashes, flushing, hypotension, profound fatigue and diarrhea. In general, people suffering from histamine-associated disorders, including mast cell activation syndrome, have extremely thick medical records because of extensive evaluation of multisystem disabling symptoms. Some patients have been misdiagnosed with bipolar or personality disorders.⁷

Foods can be rich sources of histamine. Examples include leftovers, especially meat, poultry or fish, as well as alcohol, pickled or fermented foods including vinegar, aged cheeses, shellfish, pulses (beans, chickpeas, lentils), nuts and chocolate. Some foods, including citrus fruits, tomatoes, wheat germ, black or green tea, and sulfite preservatives, also can release histamine.

Histamine is metabolized in the gastrointestinal tract by diamine oxidase in the cytosol of cells by histamine-N-methyltransferase. Significant genomic variability exists for these two genes in the population. Epigenetic challenges to optimal functioning appear to follow from episodes of infectious gastroenteritis.

Maldigestion

The differential diagnosis needs to extend to the patient's capacity to digest foods, especially carbohydrates. Dietary carbohydrates must be digested by pancreatic amylase and the three intestinal epithelial enzymes (lactase, sucrose and maltase) into absorbable monosaccharides. Lactose intolerance caused by lactase enzyme deficiency is the most widely recognized form of maldigestion. However, in adults,

one needs to consider fructose and sorbitol malabsorption, as well as intolerance of FODMAPs (fermentable oligosaccharides, disaccharides, monosaccharides and polyols).

Carbohydrates that are not absorbed in the intestinal tract are fermented by the intestinal microbiota, causing production of gas. These nonabsorbed carbohydrates also exert an osmotic force that draws fluids into the lumen resulting in osmotic diarrhea. Clinically, patients will complain of abdominal distension and pain, nausea, diarrhea and flatulence. They also may note extra-intestinal symptoms including headache, vertigo, brain fog, muscle/joint pain and fatigue. These symptoms are likely caused by the production of toxic metabolites (signaling-mechanism disruptors) by the anaerobic digestion (fermentation) of nondigested carbohydrates by intestinal bacteria.⁸

Lactose is found in all dairy products unless they are specifically labeled as lactose-free (such as kefir and processed milks). Lactose malabsorption can be demonstrated primarily through genetic testing. Risk for lactose deficiency is reported as part of the 23andme direct-to-consumer genetic testing results.

Fructose is found in all fruits as well as beans, broccoli, carrots, cauliflower, corn, green peppers, honey, peas, sweet potatoes and tomatoes. Of course, it is in all foods sweetened with high-fructose corn syrup.

FODMAPs are short-chain carbohydrates that are poorly absorbed at the intestinal level. Foods containing FODMAPs include those with lactose and fructose plus fructans, galactans and polyols. Fructans are found in wheat, persimmon and watermelon as well as asparagus, chicory, beets, broccoli, Brussel sprouts, cabbage, eggplant, fennel, onions, garlic and leeks. Galactans are found in legumes, predominantly beans. Polyols are in the artificial sweeteners erythritol, mannitol, sorbitol and xylitol plus apples, apricots, cherries, peaches, pears, plums, cauliflower, corn and mushrooms.

Recent clinical trials of a diet low in FODMAPs for persons with IBS have demonstrated that the diet clearly reduced

functional gastrointestinal symptoms.^{9,10} Because of the very restrictive nature of a low FODMAP diet, patients who try it will do best with the help of a nutritionist or dietician.

Other considerations

Clinicians need to be aware of a number of other factors. The first is the presence of classic allergic contact dermatitis from allergens such as nickel sulfate or flavorings such as vanillin. For example, reactions people may have to nickel-containing jewelry can extend to the nickel found in many (healthy) foods. In sensitized patients, dietary nickel can cause both a relapse of contact eczema as well as widespread chronic dermatopathies quite similar to those triggered by IgE-mediated food allergies including atopic dermatitis and chronic urticaria with angioedema.¹¹

The nickel content of foods can vary. Those with consistently high nickel content include whole wheat, whole grain, rye, oat, millet, buckwheat, cocoa, chocolate, tea, gelatin, baking powder, soy products, red kidney beans, legumes including lentils, peanuts, soy beans and chickpeas, dried fruits, canned foods and strong licorice. Foods with variable nickel content include mackerel, tuna, herring and shellfish; sunflower seeds, hazelnuts, marzipan and walnuts; and tomatoes, onions and carrots. Cooking acidic foods in stainless steel cookware may increase their nickel content.¹²

The second is salicylate-rich foods—a category of foods that have been linked to imbalanced release of pro-inflammatory eicosanoids from arachidonic acid. Salicylate intolerance has been defined as “a nonspecific antigen-induced pseudo-allergic hypersensitivity reaction to salicylic acid, its derivatives or other related organic or inorganic acids of similar chemical structure.”¹³ Dietary salicylates are COX-2 inhibitors.¹⁴ Persons who are NSAID-intolerant, including those with NSAID hypersensitivity or aspirin-exacerbated respiratory disease, may also be intolerant of salicylates in foods.¹⁵

Foods rich in salicylates include fruits and vegetables such as apples, cherries,

lemons, nectarines, oranges, peaches, strawberries, raspberries, raisins, kiwi, asparagus, corn and tomatoes. Spices that are a rich source of salicylates include cardamom, cinnamon, cumin, fenugreek, ginger, licorice, mint, nutmeg, oregano, paprika, pepper, peppermint, rosemary, thyme and turmeric. Liqueurs, wines and rum as well as citrus fruit juices and tomato juices/sauces are also high in salicylates.^{16,17}

The third is sulfites added to foods as preservatives or the consumption of sulfur-rich foods. In 1984, the U.S. Food and Drug Administration noted that it had received more than 250 reports of significant suspected sulfite reactions including six deaths.¹⁸ Reactivity is believed to primarily affect the lungs and is especially prominent in persons with steroid-dependent asthma. Anaphylaxis, urticaria, skin reactions and rhinitis have also been well-described.¹⁹

In my experience, both genomic and nongenomic impairment of the sulfite oxidase enzyme appear to increase sensitivity to dietary sulfites and/or thiols. This enzyme catalyzes the oxidation of sulfite to sulfate, the final reaction in the oxidative degradation of the sulfur amino acids cysteine and methionine. Although frank deficiency is fatal at an early age, sulfite oxidase insufficiency can result in neurological abnormalities including seizures. Molybdenum and vitamin B2 (riboflavin) are necessary co-factors.²⁰ Key upstream enzymes are vitamin B6-dependent. The sulfite oxidase enzyme is believed to be inhibited by mercury.

Sulfites can be added to lettuce, shrimp, crab sticks, squid, dried fruits, dried mushrooms, dehydrated potatoes including cakes, fries and croquettes, cider, wine, beer, fruit drinks, white grape juice, horseradish sauce and caramel coloring including that found in cola. Sulfur-rich foods include cruciferous vegetables, eggs, cheese, beans including soybeans, garlic and onions, mustard, horseradish, quinoa, wheat and turmeric.

The fourth is monosodium glutamate (MSG). Ingestion of this additive has been

linked to asthma, headaches, urticaria, angioedema, rhinitis, mental health concerns and seizures. Glutamate decarboxylase (GAD1) is the enzyme that converts glutamate, an excitatory neurotransmitter, into GABA, an inhibitory neurotransmitter. This enzyme has great variability in function among people because of both genomic and nongenomic factors. Vitamin B6 as pyridoxal-5-phosphate is a co-factor. Impairment or overwhelming of this enzyme would be expected to result in an imbalance between excitatory and inhibitory neurotransmitters. Deficiency of this enzyme can result in pyridoxine dependence with seizures.²¹

MSG is a common ingredient in Asian foods ("Chinese restaurant syndrome") and is the secret in the Colonel's secret recipe for Kentucky Fried Chicken; it is also added to Parmesan cheese, soups, gravies, rubs, sauces, instant rice and noodle dishes. A complete list of foods containing MSG can be found at: www.truthinlabeling.org/hiddensources.html.

Summary

The differential diagnosis for many common conditions seen in clinical practice should include adverse food reactivity. The three steps described in this article allow clinicians to assess the likelihood of an adverse food reaction underlying an illness. You will note that many of the lists of foods for each consideration overlap. This may help explain why people without markers of gluten immune reactivity, for example, feel better after eliminating wheat from their diets. Because of this, a patient often can judge for himself what works using an elimination/reintroduction diet. Finally, this approach implicitly identifies the very important role nutritionists and dieticians can play in helping identify and address adverse food reactivity. **MM**

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Problems with the 2015 Dietary Guidelines for Americans

An Alternative

BY JAMES J. DINICOLANTONIO, PHARM.D, ZOE HARCOTBE, PH.D, AND JAMES H. O'KEEFE, MD

The updated 2015 Dietary Guidelines for Americans, published in January 2016, have stirred much controversy since the advisory report first appeared. Several important changes have been made, with some recommendations having greater scientific evidence for their support than others. The focus of this review is to discuss specific recommendations from the 2015 Dietary Guidelines for Americans that lack sound scientific evidence; these include: 1) Allowing approximately half of all grains to be refined; 2) The continued recommendations for fat-free or low-fat dairy and limitation of saturated fat intake to <10% of calories; 3) Sodium intake < 2,300 mg/day; and 4) Consumption of up to 27 g/day of "oils" (high in polyunsaturated fat or monounsaturated fat). Based on our review, the aforementioned recommendations found in the updated 2015 Dietary Guidelines for Americans may increase the incidence of cardiometabolic disease, diabetes, obesity, dyslipidemia, cardiovascular disease and possibly cancer.

The Dietary Guidelines for Americans (DGA) is an extremely important nutritional document that influences the dietary habits of most Americans and can directly impact the health of the nation.¹ While lack of randomized controlled trials does not necessarily prohibit the prescribing of certain dietary recommendations, the overall evidence—from populations, observational studies and clinical trials—must be taken into account to ascertain if each recommendation is scientifically sound. Thus, we reviewed the recommendations in the 2015 DGA and have noted several that not only lack sound scientific evidence but also may have unintended consequences, such as promoting the very diseases they are trying to prevent.

Specific recommendations in the 2015 DGA may increase the incidence of cardiometabolic disease, cardiovascular (CV) disease and possibly cancer.

Grains, at Least Half of Which are Whole Grains

The DGA report defines whole grains as: whole-wheat bread, oatmeal, whole-grain cereals, popcorn, brown rice and whole-grain pasta. Refined grains are listed as: white bakery goods, bagels, pizza, grain-based desserts, refined cereals (corn flakes, rice cereals), tortillas, white rice and white pasta.² The 2010 DGA acknowledged that usual whole-grain consumption in the United States met only 15% of the target, while refined grain consumption was nearly twice the goal level.³

Grains are a relatively recent addition to the human diet, added approximately 10,000 years ago with the invention of agriculture. Their integration into the diet allowed human beings to move away from their traditional hunter-gatherer-type eating pattern. Cereal grains as consumed today, whether defined as whole or refined, would not be found in nature and thus humans did not evolve eating such substances. Common sense would advise

caution being applied to recommendations to consume more of relatively recent adaptations to the food chain.

As the dietary guidelines' documented consumption confirms, most grain intake is refined and most grain intake is part of a more broadly processed product, for example pizza, desserts, cookies and muffins. Refined and whole-grain products tend to be high in added sugar and ingredients generally added during manufacture. Grain-based desserts are the single highest source of calories in American citizens aged 2 years and older.³ In addition to the harm of added sugar, grains are nutritionally poor when compared with the essential fats, complete protein and micronutrients provided by meat, fish, eggs, vegetables, fruits, nuts and seeds—the diet for which humans are evolutionarily adapted.⁴ The recommendation to consume grains is ultimately a recommendation to increase the consumption of carbohydrates. Allowing almost half of all grains to be of the more refined type may particularly

increase the incidence of cardiometabolic disease, diabetes and obesity. Indeed, replacing fat with carbohydrate (in most instances refined grains) has been found to increase small-dense low density lipoprotein (LDL).⁵⁻⁷ This results from an increase in triglyceride in very low LDL (VLDL), leading to triglyceride-rich LDL and the formation of small-dense LDL.⁸ Small-dense LDL does not bind to the liver's LDL-receptors as well as native LDL and thus remains present in the blood longer, making these LDL particles more susceptible to oxidation. Moreover, small-dense LDL particles are inherently more susceptible to oxidation and penetrate into the sub-endothelium more readily than large buoyant LDL because they are smaller and denser.⁹ Hence, small-dense LDL are undoubtedly more atherogenic than large buoyant LDL.¹⁰ Thus, the consumption of grains, and in particular refined grains, in the place of dietary fat may increase the amounts of small-dense LDL shifting the LDL pattern from the less atherogenic type (Pattern A) to one that is more atherogenic (Pattern B). Moreover, if grain replaces dietary fat, this may also lead to an increase in weight gain, fat mass, insulin resistance, a reduction in HDL and an increase in triglycerides.¹¹⁻¹³ Thus, the recommendation to consume grains (whole as well as the more refined type) may increase the incidence of cardiometabolic disease and CV disease.

Summary

The recommendation to consume grains (particularly of the refined type) will likely lead to a decrease in HDL and an increase in triglycerides, small-dense LDL, insulin resistance, obesity, and hence increase the risk of the metabolic syndrome, diabetes, dyslipidemia, obesity, atherosclerosis and CV disease.

An Alternative Recommendation

Avoid grains and consume instead more natural, nutrient dense foods, such as meat, fish, eggs, vegetables, fruits, nuts and seeds.

Choose Fat-free or Low-fat Dairy and Consume Less than 10% of Calories from Saturated Fat

Numerous clinical trials in humans have either recommended consuming less animal/saturated fat (and hence an increased consumption of fat-free/low-fat dairy) or replacing animal/saturated fat (full-fat dairy, for example) with polyunsaturated fat (mainly vegetable oils), which has not led to a reduction in CV disease.¹³ More importantly, there is no evidence that consuming fat-free or low-fat dairy or reducing the intake of saturated fat in general from clinical trials in humans improves health outcomes.¹⁴⁻¹⁶ Moreover, low-fat dairy formulations are generally higher in added sugars and thus this recommendation may lead to an increase in the consumption of added sugars and hence increase CV risk.¹⁷

Dietary fat not only provides satiety but also enhances absorption of fat-soluble vitamins.¹⁴ The recommendation to consume fat-free or low-fat dairy may increase the risk of deficiencies of fat-soluble vitamins (A, D, E and K). The low-fat advice beginning in the 1980s was associated with a steep increase in rates of diabetes and obesity in the United States.¹³ Hence, the continued advice to consume low-fat dairy and restrict saturated fat intake to <10% of calories is repeating history but expecting a different outcome. The unintended consequences of eating low-fat dairy or restricting saturated fat intake includes an increase in the intake of refined carbohydrates and sugar (despite a recommendation to restrict the latter to <10% of total calories). It is illogical to presume that low-fat versions of natural foods (which have had their inherent fat artificially removed) are healthier than their full-fat versions (as they are found in nature). Some populations with exceptional longevity, such as the Sardinians of Italy, do not consume fat-free or low-fat dairy but full-fat dairy. The French have the highest intake of saturated fat in Europe and the lowest rate of CV disease.¹⁸ Maasai and Samburu warriors, who consume ample amounts of full-fat milk, have much lower rates of hypertension and

CV disease compared with the Western world.^{19,20} The Kitavans, who consume 17% of total energy as saturated fat (from coconuts) appear to have a virtual absence of ischemic heart disease and stroke.²¹ The body needs to obtain dietary fat from somewhere, and if dairy fat (or saturated fat) is replaced with fat from vegetable oils, this may lead to an increased risk of CV events, CV death, premature mortality and cancer.^{13,22} Moreover, low-fat versions of natural foods such as dairy are less satiating and will likely result in an increased total caloric intake throughout the day, increasing the risk of obesity.¹⁴

Summary

Reducing the intake of full-fat dairy and saturated fat in general may lead to an increased intake of refined carbohydrates and sugar, and may increase the risk of diabetes, obesity and CV disease. Moreover, reducing the intake of these natural animal fats may increase the risk for fat-soluble vitamin deficiency.

An Alternative Recommendation

Eat natural foods, meat, fish, eggs, dairy products, avocados, nuts and seeds, and the natural fats contained therein.

Consume Less than 2,300 mg of Sodium per Day

The Institute of Medicine (IOM) recently reviewed the literature regarding sodium intake relating to CV risk. They concluded that there was no evidence for reducing the intake of sodium to <2,300 mg/day.²³ Furthermore, the IOM noted that this recommendation may increase the risk of CV disease/premature mortality. Additionally, there is no evidence from clinical trials that reducing the intake of sodium *per se* reduces the risk of CV disease. A meta-analysis of prospective cohort studies and randomized clinical trials indicates that restricting sodium intake to less than 2.65 g/day will likely increase the risk of CV events and all-cause mortality.²⁴ While reducing the intake of sodium may lower blood pressure, the increase in heart rate and adverse changes in counter-regulatory hormone levels more

than offsets its supposed benefit.²⁵ When the increases in noradrenaline, adrenaline, renin, angiotensin-II, aldosterone, triglycerides and cholesterol are taken into account, sodium restriction seems to cause an overall increased CV risk.²⁶ Numerous studies indicate that sodium restriction increases the risk of CV events and total mortality.^{24,27,28} Sodium intake in animals, just like humans, is determined by need.²⁹ It is illogical to think that conscious sodium restriction is possible or that it will lead to improved health outcomes. The sodium issue may have arisen from a lack of distinction being made between sodium and the sources of sodium in modern diets. The dietary guidelines document sources of sodium in the American diet in great detail, from soups and condiments to burritos and ready meals.³ Virtually no natural food is reported as a source of sodium. Processed food *per se* is generally unhealthy; sodium *per se* is not.

Summary

Reducing the intake of sodium leads to the activation of the renin angiotensin aldosterone system as well as the sympathetic nervous system. These effects seem to outweigh any small reduction in blood pressure.

An Alternative Recommendation

Eat natural foods, meat, fish, eggs, dairy products, nuts and seeds, and the natural sodium contained therein.

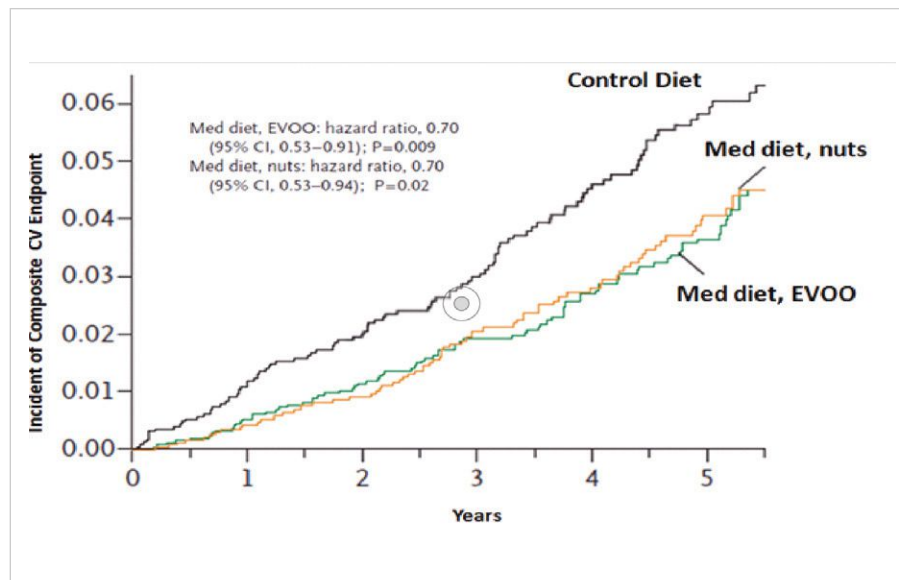
Oils High in Polyunsaturated (Omega-6) Fat

The 2015 dietary guidelines state, “The recommendation for oils in the Healthy US-Style Eating Pattern at the 2,000-calorie level is 27 g (about 5 teaspoons) per day.”³¹ “Commonly consumed oils extracted from plants include canola, corn, olive, peanut, safflower, soybean and sunflower oils.” “The fat in some tropical plants, such as coconut oil, palm kernel oil and palm oil, are not included in the oils category because they do not resemble other oils in their composition.”

The strongest evidence from meta-analyses of randomized controlled trials

FIGURE

Kaplan-Meier estimates of the incidence of outcome events in the total study population



The incidence of the primary end-point (a composite of acute myocardial infarction, stroke and death from CV causes). Hazard ratios were stratified according to center (Cox model with robust variance estimators). CI denotes confidence interval; EVOO: extra-virgin olive oil; and Med: Mediterranean.

suggests that the recommendation to replace saturated fat with omega-6 fat high in linoleic acid (mainly from industrial seed/vegetable oils) will increase the risk of cardiovascular events, cardiovascular death, all-cause mortality.^{13,22,30} Additionally, the recommendation to consume up to 27 g/day of vegetable oils may increase the risk of insulin resistance, diabetes, obesity and cancer.^{13,31} An increase in vegetable oils (and hence linoleic acid) will likely increase the susceptibility of LDL to oxidation and hence increase atherosclerotic plaque formation and cardiovascular events.³²

Vegetable oils were never a part of the diet of early humans. Only in the past century have human beings consumed vegetable oils in any substantial quantity. The increase in the intake of vegetable oils has paralleled the rise in chronic disease in the United States.^{33,34} Moreover, we are unaware of any population that is relatively free of heart disease that consumes such high amounts of industrial seed/vegetable oils as recommended by the dietary guidelines.

Among the strongest randomized controlled trial evidence available comes from the PREDIMED Study,³⁵ which tested Mediterranean diets (MeDiets) supplemented with either olive oil or nuts, ver-

sus a control group assigned to a low-fat American Heart Association (AHA) diet. The two MeDiets were quite high in total fat (about 40% of total calories) and in the 7,447 patients significantly lowered the primary endpoint (myocardial infarction, stroke or death from CV causes) by 30% and 28% in the olive oil and nuts arms, respectively, compared with the AHA diet (Figure). These high-fat MeDiets also reduced the occurrence of new diabetes, atrial fibrillation, breast cancer, cognitive decline and high blood pressure, and slowed progression or induced regression of carotid artery intimal-medial thickness and carotid plaque.³⁶⁻⁴¹ Another MeDiet in a secondary prevention trial led to an approximate 70% reduction in cardiovascular events and all-cause mortality in the secondary prevention Lyon Diet Heart Study.⁴² MeDiets do not encourage intake of industrial seed oils, which may be related their health benefits.

Summary

The recommendation to consume up to 27 g/day of industrial seed/vegetable oils should instead be specifically recommending increased intake of olive oil and nuts, particularly in the context of a traditional

MeDiet that is high in vegetables and fish, and low in processed foods, refined carbohydrates and added sugars.

An Alternative Recommendation

Eat natural foods, meat, fish, eggs, dairy products and seeds, and the natural saturated and unsaturated fats contained therein.

Conclusion

Several recommendations in the 2015 DGA lack sound scientific evidence. The recommendations discussed in this review, such as the consumption of grains, low-fat dairy, saturated fat intake <10% total calories, sodium < 2,300 mg/day and industrial seed/vegetable oils up to 27 g/day, may lead to unintended consequences such as an increased incidence of cardiometabolic disease, diabetes, obesity, dyslipidemia, CV disease and cancer. The dietary guidelines have, once more, missed the opportunity to deliver a simple, memorable, effective message to Americans: eat natural food and avoid processed food. **MM**

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Reimagining Nutrition Education in a Teaching Kitchen

Findings from a Pilot Study

BY KATE (VENABLE) SHAFTO, MD, FAAP, FACP, JENNY BREEN, MPH, MED, AND DOMINIC DECKER, MD, MS

Students in U.S. medical schools spend little time learning about nutrition as it relates to health and disease. As a result, they lack important skills needed to care for themselves and their patients. To close this gap in their knowledge, instructors from the University of Minnesota created a course, “Food Matters for Doctors,” that combines didactic learning about practical topics related to food and nutrition with hands-on experience in the kitchen. They piloted the course in the spring of 2016. This article describes the course and changes in students’ knowledge and abilities before and after completing it.

An irony exists within the U.S. health care system: While rates of chronic disease are climbing, the number of hours medical students spend learning about nutrition is dwindling. In 2010, the Minnesota Department of Health estimated that more than 50% of deaths in our state were the result of cancer, heart disease, stroke and diabetes—diseases that are intimately related to diet and other lifestyle factors.¹ A 2008-09 survey of U.S. medical schools revealed that the average number of hours spent on nutrition education over four years had fallen to 19.6 from 22.3 in 2004.² The survey further demonstrated that a significant portion of nutrition education was focused on biochemical pathways and micronutrients.

Recognizing that without practical knowledge about food future physicians will lack vital skills for self- and patient care, two of the authors created a new kind of course on nutrition for medical students and piloted it at the University of Minnesota. This article describes that effort and its impact on students.

The Course

The course, “Food Matters for Doctors,” was co-designed by an internal medicine-pediatrics physician and a professional

chef and public health educator, both of whom have teaching appointments at the University of Minnesota. It ran from January to March 2016. The pilot was funded by the American Academy of Pediatrics Section on Integrative Medicine.

The course consisted of six three-hour sessions, during which students learned practical information about relevant topics and gained hands-on experience in a kitchen. Among the topics addressed were lifestyle medicine and mindful eating, the Standard American Diet (SAD), the U.S. Department of Agriculture’s nutrition guide (MyPlate), the gut microbiome and pre- and probiotics, and inflammation as a precursor to chronic disease. Scientific literature underpinning each of these topics was presented to and discussed with the students. Upon completion of the didactic portion of the class, students and instructors prepared foods relevant to each session’s discussion in the teaching kitchen using fresh, locally-sourced ingredients. Vegetarian, vegan, Mediterranean, Paleolithic, gluten-free, low-glycemic index and anti-inflammatory diets were addressed. Discussions covered everything from the best way to peel ginger root to advice about providing patients with information about food. At the end of each session,

students and instructors gathered around tables to practice mindful eating and talk about the complex social and cultural functions of food by sharing their own food stories. Students were encouraged to continue to cook and eat mindfully outside of class.

Classes were held at The Good Acre near the University of Minnesota’s St. Paul campus. The building—which is a processing and distribution warehouse for local farmers—has both a conference room and a teaching kitchen.

A total of 65 medical students applied to participate in the pilot; of those, 18 were selected based on their interest and ability to attend all six sessions. The 18 students came from all four medical school classes and a variety of cultural backgrounds. There were slightly more females (10) than males (8), and they said they intended to practice in a range of specialties after graduation.

Students were asked to complete online surveys prior to and at the end of the course that assessed their knowledge, skills and confidence regarding food, cooking and nutrition. The students were asked to rate their ability and confidence on 31 competencies, using a 5-point scale, with 1 representing either “poor” or “strongly

disagree” and 5 representing “excellent” or “strongly agree.” All 18 students completed the pre-course survey; 17 completed the post-course survey. Survey responses were not matched to individual participants, and the study was granted an IRB exemption.

The students’ scores were averaged. In total, 14 competencies increased by >1.0 point and five of those increased by >2.0 points (Table).

TABLE

Average pre- and post-course survey response and change

COMPETENCY	PRE-COURSE* (N=18)	POST-COURSE* (N=17)	CHANGE
Examine and measure gut health in patients	1.7	4.8	3.1
Guide patient through recommended dietary changes	2.4	4.8	2.4
Discuss diet modifications with patient with chronic disease	2.7	4.8	2.1
Connect with peers/community around food	2.4	4.5	2.1
Explain whole-foods diet in basic terms	2.7	4.7	2.0
Stock kitchen with staple items	3.1	4.8	1.7
Link diets with signs/symptoms of chronic disease	3.1	4.8	1.7
Create menu/shopping list for week of healthy meals/snacks	2.9	4.5	1.6
Budget time to prepare healthy food during school week	2.7	4.3	1.6
Define and identify macronutrients	3.4	4.8	1.2
Budget money to prepare healthy food during school week	3.0	4.3	1.3
Prepare balanced meals	3.6	4.8	1.2
Find macronutrients	3.4	4.5	1.1
Know way around kitchen	3.6	4.6	1.0

*Scale of 1 to 5. 1=poor/strongly disagree; 5=excellent/strongly agree

Discussion

The areas where students indicated the most change deserve special consideration, as they represent not only the strengths of the course but also the deficiencies of current medical school nutrition education. As an example, although emerging research is identifying the complex role of the gut microbiome in disease development and prevention, medical students are not currently provided with information about this research.³ In our study, the most common pre-class response to the statement “I know how to examine and measure gut health in patients” was “disagree.” Following education on this topic, that changed to “strongly

agree.” Not only did the students gain an understanding of gut health, but they also were provided with recipes that used fermented foods, such as miso paste and sauerkraut, that aid in gut health—pairing knowledge with practical application.

A core focus of this reimagined nutrition curriculum was to help students gain skills in guiding patients through recommended dietary changes and discussing diet modifications with patients who have

chronic disease. Memorizing enzymes in a metabolic pathway, as students are required to do in traditional courses on nutrition, does not prepare them to have meaningful conversations about food in the clinic or at the bedside. On the other hand, teaching them how to cook healthy, whole foods increases their confidence in their own cooking abilities and food knowledge, which in turn better enables them to engage patients about the foods they consume.

Finally, the course allowed students from all years of medical school to connect with each other in myriad ways. In addition to talking in class, they shared their thoughts about nutrition education

reform and their own food stories in an online forum. Students remarked that they developed a sense of camaraderie through cooking and eating with their peers; additionally, they indicated that it was refreshing to feel an absence of competition they experienced in other classes. At their suggestion, a group of students shared ideas for modifying the existing nutrition curriculum with the University of Minnesota Medical School’s administration.

Because of the interest in and success of the pilot, a “Food Matters” course is being offered through the Center for Spirituality and Healing at the University of Minnesota this fall. The one-credit elective will be open to all students within the Academic Health Center as well as non-health sciences students.

Conclusion

Medical students need to be equipped with relevant, practical knowledge of nutrition as well as cooking skills if they are to help stem the tide of food- and lifestyle-related diseases. By taking part in a class that paired teaching about relevant nutrition issues with training in the kitchen, students were able to increase their knowledge, skills and confidence regarding food, cooking and nutrition. **MM**

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The Art of Listening

BY ANGELA BUFFINGTON, PHD, MA, PAUL WENNER, PHD, DANA BRANDENBURG, PSYD, JERICA BERGE, PHD, MPH, MICHELLE SHERMAN, PHD, AND CHRISTINE DANNER, PHD

Communication, once thought of as a soft skill for physicians, is now recognized as an essential skill. This article asserts that listening is the foundation of good communication and that all physicians can become better listeners if they have the desire to improve and are intentional about how they approach listening. The authors share five strategies to help physicians improve their skills: listening with curiosity, reflective listening, empathic listening, listening for discrepancies and listening in silence.

Communication historically has been thought of as a secondary skill in medical practice. Consequently, medical schools paid little attention to the topic in the past.¹ Today, however, communication is a standard element in physician training. In fact, the Accreditation Council for Graduate Medical Education (ACGME) requires all resident physicians to demonstrate competency in the domain of communication such that they have the skills they need to effectively exchange information and collaborate with patients, their families and other health professionals.²

So what does it take for physicians to be successful communicators? Sir William Osler knew. The acclaimed father of modern medicine once told rising physicians: “Listen to your patient, he is telling you the diagnosis.”³ As Osler reminds us, listening is the cornerstone of good communication. But the art of listening is not easily mastered.

Although we listen to others each and every day—frequently without thinking—we often do not do this well. Being a *good* listener requires us to do more, and in order to cultivate the skills needed to become good listeners, we must have the desire to improve and a willingness to learn. Here we share a number of ways

physicians who wish to become better listeners can learn this art.

Listening with Curiosity

Physicians are trained to be problem-solvers. As such, they develop many skills that allow for efficient daily functioning. One is to categorize information. For example, when patients come in, physicians quickly assign them to categories: black/white/Hispanic, male/female/transgender, young/middle-aged/old, drug-seeker/upstanding citizen. Physicians become faster at doing this with experience, and they may not realize they are even doing it.

Likewise, physicians also assign patients to categories related to illness (diabetic/heart-diseased/cancer, alcoholic/depressed/resilient, even compliant/non-compliant) and use a predetermined, automatic script when talking to them. These categories and scripts can get in the way of understanding what’s truly happening with patients. For one thing, they can lead physicians to assume they already know all there is to know about a patient.

One way to interrupt this cycle is to consciously employ curiosity. The idea is to listen for personal connections with patients—comments about their family or livelihood, a story about their drive to the appointment. The goal is to pique your own curiosity about a patient as a

person rather than a diagnosis. Simple comments such as “Tell me how life has changed since your diagnosis” or “What has been the most difficult aspect of your treatment” are impactful for patients. Again, going back to Osler’s words, “The good physician treats the disease; the great physician treats the patient who has the disease.”³

A key to listening with curiosity is to slow down. Although brief medical appointments and busy schedules make this challenging, it helps to remind yourself that taking the time to be curious can actually save time in the long run because patients will be more engaged in the visit and less resistant to taking action to improve their health.⁴ When you listen with curiosity, you’ll find yourself becoming less judgmental and better able to understand a patient from his or her perspective. This can be hard work, but it is arguably as important as making a diagnosis.

Reflective Listening

Reflective listening is a core listening skill. When employing reflective listening, the question is not “What can I do for this patient?” but rather “How does this person see him or herself?” The listener does not provide his or her own perspective on the situation. Instead, the focus is on understanding the patient’s needs or thoughts.

Reflective listening requires you to listen to what the patient is saying at both the content level and the emotional level. Its purpose is to build rapport, help patients feel heard and understood, and clarify what they said while allowing them the opportunity to better understand their own thoughts about the situation. There are several approaches to reflective listening, all of which draw on a patient's own words:

Repetition: repeating a key part of the patient's statement

Patient: "Everything on my body hurts right now."

Physician: "Everything just hurts."

Paraphrasing: changing the patient's statement slightly

Patient: "I just don't understand, one minute she tells me to take that medication, the next she tells me to stop the medication."

Physician: "The instructions have been really confusing."

Summarizing: succinctly recapping the patient's statement

Physician: "Let me see if I have this right. (summarize and reflect)..."

These skills can be useful when you are trying to help a patient faced with a difficult situation or who is angry or resistant, or to ensure that a patient understands the instructions provided during the visit. The best way to start using reflective listening is to simply try it and then keep working at it. It may feel awkward at first, but it will become more natural with practice.

Empathic Listening

Empathy is the capacity to understand another person's perspective as if it was your own. Although it is similar to reflective listening, empathic listening has the added element of emotional understanding and unconditional acceptance that lets a patient know the listener is truly present and cares. In fact, it can be so powerful that if physicians do nothing but listen empathically, patients are highly likely to make lifestyle changes on their own.⁵ Moreover, a physician's show of empathy has been found to contribute to patients' overall satisfaction with the encounter.⁶

Physicians see themselves as healers. Thus, as a patient speaks, their natural tendency is to formulate a differential diagnosis, fix a problem, cure a disease, or ameliorate pain and suffering. But most of the problems patients present with are complex, and physical problems frequently have strong emotional underpinnings. The challenge is how to effectively enter into a patient's world, consider his or her experiences and emotions, and relate to that patient as an individual. The way to do this is to listen with the intent to understand rather than to respond.⁷ If done well, empathic listening can result in the patient feeling understood and valued.

The technique involves using simple statements that reflect understanding or name emotions. Examples of phrases that demonstrate empathic listening include:

"I respect how difficult this has been for you."

"You seem overwhelmed by having to take so many medications."

"This sounds really scary to you."

"It seems like you're feeling pretty down today."

Empathy also can be conveyed through eye contact, a gentle touch on the hand or a warm smile.

Listening for Discrepancies

There is often a discrepancy between patients' actions and their desired state of health. It may be the difference between their desire to lose weight and their current eating habits. Or the difference between their desire to stop smoking and daily use of cigarettes. Or the difference between wanting to decrease symptoms but refusing to take medications. When you listen for and identify such a gap, you can help the patient see it as well. This can be the starting point for a powerful conversation that can help bring present behaviors and desired behaviors into harmony.⁴

It is important to use the word "and" rather than "but" when pointing out these incongruities. Doing so highlights for the patient that both the present and desired state are important. It also challenges the

patient to think about both simultaneously. For example, you might say to a patient: *"You have told me that eating healthy is really important to you because you want to control your diabetes and be there for your family, AND, at the same time you have told me that you are really discouraged because you have tried several times to eat more healthfully and you haven't been successful. What do you make of this dilemma?"*

As the patient starts discussing both aspects of the discrepancy, you are again challenged to listen intently—this time to identify barriers and strengths in regard to the patient moving toward better health. Once these barriers and strengths are identified, a conversation about how to change habits can follow.

Listening in Silence

Often, a well-meaning physician will ask an open-ended question only to step in almost immediately with a comment as the patient struggles to answer. Silence can be uncomfortable during a conversation. We may think it indicates that we don't know what to say or that a patient doesn't understand the question or may not feel safe enough to share what he is thinking or feeling. Perhaps worst of all, we may think of silence as time wasted. After all, we are in a setting where time is a precious commodity.

And yet, silence is invaluable. For one thing, it is very hard for someone to listen well when speaking. Consequently, the ability to tolerate silence is a key component of listening well. Silence allows space for thoughts to form, for ideas to take shape. With silence, we can convey acceptance, empathy and patience. Silence can communicate to a patient that he can take the time he needs with whatever it is he is experiencing. Most important, silence indicates to a patient that what he has to say is important and that you as his physician are willing to wait for it.

Still, tolerating silence can be difficult. It is challenging to resist the urge to fill the void it creates. Silently counting to 10 prior to asking a follow-up question can be helpful. Although those 10 seconds can

feel awkward, patients often make valuable comments at about the count of nine. Without allowing for silence, we risk missing out on important patient insights.

Osler knew this too. “Look wise, say nothing and grunt,” he said. “Speech was given to conceal thought.”³ Put another way: God gave us two ears and one mouth for a reason.

Conclusion

Listening is the foundation of good communication. It is the way physicians can show respect for patients and learn important information about them. We can all become better listeners if we are committed to improving and are intentional about how we listen. A wise colleague once said, “It took a lot of years of practicing medicine for me to realize that patients didn’t care about how much medical knowledge I had. Rather, they cared that I took the time to listen.” MM

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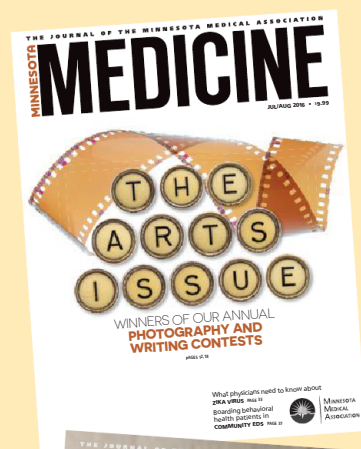
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Somali Cultural Competency among Students in One Minnesota Medical School

BY ELIZABETH FRACICA, ADEEL ZUBAIR AND JAMES NEWMAN, MD

Minnesota has the largest Somali population in the United States. Thus, students in the state's medical schools are likely exposed to Somali patients during their training. We assessed baseline knowledge of and attitudes about Somali patients among students at one medical school in the state. We then exposed those students to an educational intervention and reassessed their knowledge and attitudes afterward. We found students' baseline knowledge was poor (65% of questions answered correctly, on average), but improved (80% answered correctly, on average) post-intervention. The majority of students also felt the quality of care they could provide Somali patients would be compromised because of their lack of cultural understanding. Although the results were not statistically significant due to low power, this study represents a meaningful attempt to assess students' baseline knowledge as well as a proof-of-concept intervention to highlight ways to improve cultural competency training in Minnesota's medical schools.

Medical schools across the United States are recognizing the importance of incorporating cultural education into their curricula in order to help students care for a more diverse patient population.^{1,2} Several landmark reports and studies have highlighted the need to improve cultural awareness and competency among physicians and other health care providers in order to reduce health disparities between minority/ethnic populations and the general population.^{3,4} One systematic review of 34 studies of interventions designed to improve the cultural competence of health professionals showed cultural competency training not only improves attitudes, knowledge and skills but also increases patient satisfaction.⁵ Despite the growing body of research supporting the efficacy and necessity of cultural competency training, the majority of medical schools have not incorporated such programs into their curricula.⁶ This is in part because of the lack of specific

evidence-based guidelines for cultural competency training in curriculum development.⁶ In addition, a limited amount of research addresses the effect of cultural competency training on patient adherence to therapy, equity of services across racial groups or health outcomes.⁷

Because Minnesota is home to the largest Somali population in the United States, students in the state's medical schools are exposed to a significant number of Somali patients during their training. However, an informal analysis of the curriculum at Minnesota's medical schools shows they mirror national norms in that their curricula do not include much cultural competency education. We conducted a study of students at one Minnesota-based medical school in order to characterize their baseline knowledge of and attitudes about Somali culture. We then performed a small-scale culturally-immersive educational intervention designed to improve their knowledge of, attitudes about and

skills required to work with this population. We focused our intervention on eight key areas previously identified in cultural competency education: general cultural concepts, racism and stereotyping, the physician-patient relationship, language, specific cultural content, access issues, socioeconomic status, and gender roles and sexuality.⁸ We then re-evaluated students' knowledge and attitudes following the intervention.

The Study

We assessed Mayo Medical School students' baseline knowledge about and attitudes towards Somali patients in January 2013. All students were invited to attend a lunchtime educational session, during which a 25-question survey was administered before the intervention. The survey included 20 True/False questions to assess students' knowledge and five questions to assess their attitudes. Forty-eight students

attended the event and 47 completed the pre-intervention survey.

The intervention consisted of an hour-long presentation on Somali culture. Students heard from a Mayo Clinic medical translator who was native to Somalia and who regularly educates Western health professionals about how to best care for this unique population. The speaker discussed the history of Somalia, public health problems affecting this population, Somalis' barriers to accessing health care in the United States, gender-specific issues, and cultural differences in terms of behavior and beliefs relevant to health care professionals.

Students had the opportunity to learn and practice several basic Somali phrases and greetings, which they were encouraged to use to establish rapport when caring for Somali patients. They also were served traditional Somali food and were provided with recipes. In addition, the students received four case-based learning scenarios to review independently. These highlighted specific examples of barriers Somali patients experienced when trying to access health care.

We re-administered the survey at a follow-up meeting two months later to assess improvements in students' knowledge of the Somali culture, their attitudes about Somali patients and their skills in working with Somali patients. Students who did not attend the meeting received the post-intervention survey both electronically and in paper form to maximize response rates.

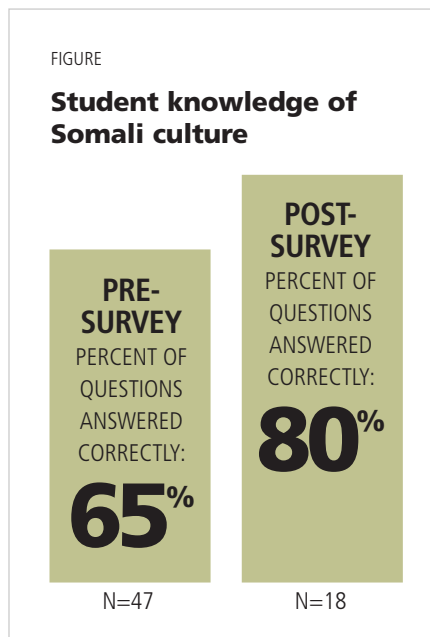
Findings

A total of 47 students completed the pre-intervention survey (97.9% response rate); 18 took the follow-up survey two months later (38.3% response rate).

Overall, the results showed that the students had relatively poor baseline understanding of Somali culture, as they answered an average of 65% of questions correctly on the initial assessment. On follow up, the students' knowledge of Somali culture improved, as they answered 80% of the questions correctly, on average (Figure). Those averages were obtained

using the mode of the pre- and post-intervention surveys. This change was not statistically significant ($p=0.241$).

In terms of attitudes, students felt strongly that members of the Somali



community faced more challenges than the general population in scheduling appointments. This was reflected in both the pre- and post-intervention survey scores (1.63 and 1.53, respectively, using a scale of 1 to 5 [1= strongly agree, 5 = strongly disagree]). When asked to respond to the statement "I feel uncomfortable treating Somali patients," 27 students answered "No," and 20 said "Yes" in the initial survey; five students answered "Yes," and 13 responded "No" in the follow-up survey ($p=0.273$). Of the students who said in the pre-intervention survey that they felt uncomfortable, most cited the following reasons: "I do not understand how to meet their needs," "I am frustrated by their practices" and "I greatly dislike having to use a translator." Of the students who said they felt uncomfortable in the post-intervention survey, three responded "I do not know much about their culture"; one said, "I am afraid"; one said, "I do not know how to meet their needs"; and two said, "I greatly dislike having to use a translator." When asked to respond to the statement, "I look forward to interacting with Somali patients," most students responded

positively on both the pre- and post-intervention surveys (average response = 1.87 and 2.11, respectively [1=strongly agree, 2=agree]). This difference was not statistically significant ($p=0.257$). When responding to the statement "I feel like the quality of care I provide to Somali patients might be compromised due to a lack of understanding of their culture," 82.6% of students (38 out of 46) agreed with it in the pre-intervention survey and 88.8% of students (16 out of 18) agreed with it in the follow-up survey. These results were not statistically significant ($p=0.539$). When asked to respond to the statement "My knowledge of Somali culture is excellent," students disagreed with this statement (4.1304; 4=disagree) in the pre-intervention survey. They felt slightly more neutral following the educational intervention (3.56; 3=neutral). This change was statistically significant ($p=0.0154$).

Overall, the results demonstrated minimal baseline knowledge on the part of students about Somali history, culture and the unique barriers faced by this population in terms of accessing care. Although statistically significant improvements in students' perceptions of knowledge about Somali culture were observed following the intervention ($p<0.05$), the majority of students indicated that they felt like the quality of care they could provide to Somali patients might be compromised because of a lack of understanding of their culture both before and after the intervention. Of the minority of students who felt uncomfortable treating Somali patients overall, the most commonly cited reasons were: the need to use a translator, fear, and lack of knowledge about how to meet these patients' unique needs.

Discussion

Our study was designed to understand, improve and call attention to the need to incorporate cultural competency training in Somali culture in one Minnesota medical school's curriculum. A review of the online curricula and informal student interviews indicate similar gaps may exist in other Minnesota medical schools. Because the intervention was only performed

in one school and the level of curricular detail available online for other schools may not have fully characterized all formal learning experiences, the external validity of our data are limited. Additional information should be collected from other medical schools in the state to verify the need for such education.

Most changes in student knowledge and attitudes following the intervention were not statistically significant and were limited by small sample size and low follow-up response rates. Although not enough to change their attitudes about the quality of care they could provide Somali patients, the students' reported confidence in their knowledge about Somali culture did significantly improve following this intervention. In addition, students' baseline knowledge and attitudes about Somali culture have now been characterized for the first time in the literature.

This was one of the most well-attended medical student lunch meetings of the year. More than half of the members of the first- and second-year classes were present,

indicating their interest in learning more about Somali culture and how to care for this population. This show of interest in itself speaks to the desire for more formal education on Somali culture and cultural competency training in general.

Conclusion

Improved medical student understanding of cultural barriers to health care will lead to improved quality of care among Somali patients and other vulnerable populations. Our intervention serves as a proof-of-concept study, which we hope will lead to more formal integration of Somali cultural competency training into existing curricula in Minnesota's medical schools. **MM**

Elizabeth Fracica and Adeel Zubair are students at Mayo Medical School. James Newman is with the Mayo Clinic department of internal medicine.

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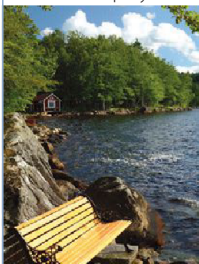


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The cloud

BY JAMIE SANTILLI, MD

You Doctors have no idea what it feels like to be sick or hold a dead child in your arms.”

The woman was sitting on her bed in the hospital maternity section, her legs tucked under her body, arms wrapped around her knees. She was rocking forward and backward. Her face was tear-stained. She was exhausted after delivering her stillborn baby girl.

“Mrs. D.? I am covering for your physician who was unable to come to the hospital today.” Her eyes pierced my heart with their hate.

“You Doctors have no commitment.” She buried her head in her knees. Her body shook slightly. She sighed, exhaling a long, slow breath. I could see she was suffering.

Thoughts raced through my mind. I just met this woman. Why was she so angry with me? She seemed to have so much resentment and hate, yet was it really hate? My mind flashed back to the instant I learned my own child had died. No rational thought was present at that moment, only emptiness engulfed in a cloud of grief. Memories of my daughter and her suffering would trigger tumultuous storms of emotion followed by hate, despair, rationalization, intellectualization. This went on for months. Serenity and acceptance of her death finally came years later. Instantly, I realized it was not me this grieving mother hated. It was life. It was death. It was hopelessness and the loss of a clear forecast of a future filled with sunny days, celebrations of nonexistent birthdays and memories never to emerge from the shadows.

“Mrs. D., your doctor told me of Allisa’s death. Words cannot express my deepest

sympathy to you and your family. I am here to assist you as best as I am able, to walk with you as you journey through the cloud of grief.”

She looked up at me with bloodshot eyes. She saw a stranger, unaware of my loss as professional boundaries do not allow disclosure. I saw a glimmer of trust. We worked through the swirl of emotions trying to weather the storm, two mothers who had lost, transformed through anger, confusion and shock, to move forward to honor her daughter’s memory. **MM**



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