UNITED STATES OF AMERICA

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DEPARTMENT OF AGRICULTURE
AND
DEPARTMENT OF HEALTH AND HUMAN SERVICES

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DIETARY GUIDELINES ADVISORY COMMITTEE

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SECOND MEETING

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THURSDAY, JANUARY 29, 2009

The meeting came to order, at 8:00 a.m., in the Jefferson Auditorium of the USDA South Building, 1400 Independence Avenue, S.W., Washington, D.C., Dr. Linda Van Horn, Chairperson, presiding.

PRESENT:

LINDA V. VAN HORN, PHD, RD, LDCHAIR
CHERYL ACHTERBERG, PHD, MEMBER
LAWRENCE J. APPEL, MD, MPH, MEMBER
ROGER A. CLEMENS, DRPH, MEMBER
NAOMI K. FUKAGAWA, MD, PHD, VICE CHAIR
MIRIAM E. NELSON, PHD, MEMBER
SHARON M. NICKOLS-RICHARDSON, PHD, RD, MEMBER
THOMAS A. PEARSON, MD, PHD, MPH, MEMBER
RAFAEL PEREZ-ESCAMILLA, PHD, MEMBER
XAVIER PI-SUNYER, MD, MPH, MEMBER
ERIC B. RIMM, SCD, MEMBER
JOANNE L. SLAVIN, PHD, RD, MEMBER
CHRISTINE L. WILLIAMS, MD, MPH, MEMBER

ALSO PRESENT:

CAROLE DAVIS, CO-EXECUTIVE SECRETARY, USDA
KATHRYN MCMURRY, CO-EXECUTIVE SECRETARY, DHHS
ROBERT POST, ACTING EXECUTIVE DIRECTOR, CNPP, USDA
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JOAN LYON, CNPP, USDA

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8:08 a.m.

DR. POST: Good morning.

I would like to introduce myself. I am Robert Post. I'm the Acting Executive Director of the Center for Nutrition Policy and Promotion in USDA.

I would like to personally welcome you to the second meeting of the 2010 Dietary Guidelines Advisory Committee.

The Center for Nutrition Policy and Promotion has the lead responsibility for managing the process for establishing the Dietary Guidelines for Americans and the Committee's activities.

However, the process to produce the 2010 Dietary Guidelines is a joint effort. So I have to tell you that we do, in fact, actively collaborate closely with our partners in this process. The Center works with the Agricultural Research Service of USDA, and also with the Office of Disease Prevention and

Health Promotion of the Department of Health and Human Services.

Together, we have a shared commitment to helping Americans of all ages get the information that they need to adopt healthy diets and also encourage activity--physical activity.

Ultimately, the Committee's work will result in an advisory report to the Agriculture Secretary, Tom Vilsack, and the Secretary of Health and Human Services, Tom Daschle.

We have a new Administration, but the path forward that supports the work of the 2010 Dietary Guidelines Advisory Committee remains consistent and committed within USDA and HHS, in line with the Departments' mutual interest in providing dietary guidance for Americans to support health and help reduce the risk for chronic illnesses, such as obesity.

I thought I would also recognize

that, while I am here representing USDA, Rear Admiral Penelope Slade-Sawyer is also representing HHS.

Now the role of the Departments is to facilitate the Committee's potential application of their work for federal nutrition policy. This Committee is governed by the Federal Advisory Committee Act, or FACA.

FACA was established to assure that the Advisory Committee does certain things, and that is to provide advice that is relevant, objective, and open to the public; act promptly to complete their work, and comply with reasonable cost controls and recordkeeping requirements.

Therefore, each public meeting has been and will continue to be announced in The Federal Register through a public notice. As part of the open, transparent process, the meetings of the full Committee are open to the public, and any deliberations that occur

between meetings-- such as those in topic-specific subcommittees-- are brought back to the full Committee at a public meeting such as this.

The public also has opportunities to participate in the process by providing written comments to the Committee through our online public comments submission database at www.dietaryguidelines.gov. For this meeting, The Federal Register notice also announced the opportunity for the public to present brief oral testimony before the Committee, which we will hear during this morning's session.

In addition to these rules of FACA, I would like to also review some rules of engagement for the Committee. The Dietary Guidelines Advisory Committee members will refer any individuals who contact them personally to solicit information about their work on the Committee to the Dietary Guidelines Management Team. Committee members are not able to give presentations as a member

of the Committee about the Committee's work or speak as a representative of the Committee, as this would be inconsistent with the Advisory Committee operations and would preclude the requirement that the Committee's work is transparent to the public.

At this time, I would like to make a few announcements before turning the floor over to the Committee Chair, Dr. Linda Van Horn.

Following the meeting, the meeting minutes will be posted on the dietaryguidelines.gov website.

Then, also, I would like to add, as a reminder, please remember to turn off your cell phones during this meeting.

Audio and video taping and photography are not allowed, as this would be disruptive to the meeting.

There are a number of other housekeeping reminders that have been provided to you at the registration desk on a green

handout, and I suggest that you look at those.

I would like to now turn the proceedings over to Dr. Van Horn, Chair of the Dietary Guidelines Advisory Committee.

Thank you. I look forward to a productive and engaging meeting today. Thanks.

CHAIR VAN HORN: Thank you, Rob.

Good morning to the Committee members of the Dietary Guidelines Advisory Committee, support staff, and the public attendees.

Since the first meeting of the Dietary Guidelines group in late October, the Committee began their difficult task of identifying the issues that warrant a scientific review of the literature.

I would like to review the subcommittees.

First, we have Fluid and Electrolytes, which has been renamed to the Sodium, Potassium, and Water subcommittee, and

is chaired by Larry Appel.

Next, Nutrient Adequacy is chaired by Shelly Nickols-Richardson.

Energy Balance and Weight Management is chaired by Xavier Pi-Sunyer.

Carbohydrates is now renamed Carbohydrates and Protein subcommittee, chaired by Joanne Slavin.

Ethanol is chaired by Eric Rimm.

Fatty Acids is chaired by Tom Pearson.

Food Safety and Technology is chaired by Roger Clemens.

And the Science Review subcommittee is chaired by myself.

The goals for each of the topic area subcommittees to accomplish in preparing for this public Committee were to begin formulating scientific review questions and identify questions of high priority, and to propose areas where presentations from outside experts are needed to fill major information

needs.

In working toward these goals, the group has identified several cross-cutting areas as well as areas that require additional discussion to define the scope of the tasks to be undertaken.

These cross-cutting issues include macronutrient distribution. This cuts across carbohydrates, proteins, nutrient adequacy, and energy balance. Liquid versus added sugars, which cuts across carbohydrates and protein and energy balance. Alcohol intake, that is including nutrient adequacy and energy balance. Probiotics and prebiotics, which cut across carbohydrates and protein and food safety technology. Fish consumption, which cuts across fatty acids and food safety and technology. Dietary patterns-- again, involving carbohydrates and protein, nutrient adequacy, energy balance, and fatty acids.

So we are looking at what randomized trials have been performed, setting

short-term and long-term benefits, and risks of specific diets such as the Mediterranean Diet, very low fat diets, high protein/low carbohydrate diets, et cetera.

Then satiety that cuts across energy balance and carbohydrates and protein.

So we are interested in what are the effects of saturated versus monounsaturated versus polyunsaturated fatty acids on satiety, and what are the beneficial or detrimental effects of omega-9 fatty acids as compared with omega-3, omega-6, et cetera.

The Science Review subcommittee has been working to provide clarity to the scientific approach, so that each of the subcommittees can proceed forward, reviewing the literature in a consistent, evidence-based, and transparent way.

On the agenda for this meeting, we have public oral testimony which will take place this morning. After lunch, we will hear presentations from Alanna Moshfegh from the

Agricultural Research Service, Sue Krebs-Smith from the National Cancer Institute on data available on distribution of usual intakes of nutrients and food groups in the United States.

Those presentations will be followed by updates to the MyPyramid Food Intake Patterns, presented by Trish Britten of the Center for Nutrition Policy and Promotion.

After the data presentations, we will begin our topic area discussions with the Sodium, Potassium, and Water subcommittee.

Tomorrow we will cover the remaining topics, including the cross-cutting issues.

I would like to now begin the public oral testimony section of the meeting. Receiving comments from the public is a significant part of the overall process used for the Committee's work in developing our scientific advisory report, as well as in the federal government's work in developing

nutrition policy.

We received 58 submissions for public oral testimony from individuals and representatives of groups. We have time today to hear the first 45 individuals who submitted testimony, which we have confirmed with them. Numbers 46 through 58 are kindly on standby. Should time permit, we will continue sequentially by number with individuals on standby until 11:30.

Individuals providing public oral testimony are asked to come to the front row in groups of five, as instructed by the staff person down in front. Staff will call the presenters to the microphone by number. The presenter should state their name, affiliation if any, and city and state.

When the timekeeper says, "Please begin," you will have a green light on the timer, and your three-minute timeframe has begun. When 30 seconds remain, the green light will change to yellow. When the light

is red, your three minutes are up, indicating that you must wrap up your comments and return to your seat. We are really trying to get those 46 through 58 in today.

After providing your comments, you may be seated anywhere within the auditorium dedicated for the public.

With that, may we have our first speaker, please?

You may begin.

DR. JOHNSON: Good morning.

I am here to tell you that adding a little spice to your life could add to your life.

My name is Guy Johnson. I am Executive Director of the McCormick Science Institute in Hunt Valley, Maryland.

We believe that increasing the herb and spice content of the American diet has a potential to contribute to public health. This is hardly a new idea. Herbs and spices have been used for the health benefits

since antiquity. In fact, Charlemagne in the 9th century said, "An herb is the friend of physicians and the praise of cooks."

I'm here to tell you that modern science is beginning to confirm those health benefits. For example, in vitro data show that, gram for gram, herbs and spices are by far the most potent antioxidants in the food supply, and clinical studies funded by the McCormick Science Institute are showing that at least some of those spices are beneficial to humans as well.

Emerging data show that spices and herbs are concentrated sources of potent bioactives that may reduce inflammation and cardiovascular risk disease.

Sounds like a food group to encourage to me.

Other guidelines where herbs and spices may come into play are the weight management guideline. There's evidence to suggest that red pepper and capsaicin-

containing spices contribute to satiety and may bolster a basal metabolic rate.

Herbs and spices have been recommended for years as a way to help people lower the sodium content of the diet.

We are funding research to see if herbs and spices can actually increase the acceptability of fruits and vegetables to pre-schoolers, thereby bolstering the potassium intake. What a gift that would be.

Even food safety has places where herbs and spices can contribute. There's evidence to show that the addition of herbs and spices can impede the formation of heterocyclic amines during grilling.

In summary, spices and herbs can add to the healthfulness of the diet without adding calories or any nutritional downsides. We believe it is time to add a little zip to the American diet in 2010.

Thanks so much.

MS. HOWES: Thank you.

Speaker No. 2, would you please come to the microphone?

You may begin.

MS. KRAUTHEIM: Good morning.

My name is Ann Marie Krautheim. I'm a registered dietitian and Senior Vice President of Nutrition Affairs with the National Dairy Council.

Thank you for this opportunity to share why dairy is good for life.

Today let's focus on three key points.

One, why this is an historic opportunity.

Two, dairy's unique nutrient package.

And, three, why leading health authorities recommend three to four daily servings of dairy.

Let's get started.

First, this is an historic opportunity to change the course of America's

dietary patterns by encouraging the consumption of nutrient-dense food first. Why? We have seen a growing increase in the consumption of high-calorie, yet nutrient-poor foods, often at the expense of nutrient-dense foods.

This chart from an article in Nutrition Today on the role of dairy foods in the Dietary Guidelines demonstrates this alarming trend. As you can see, adolescents over the age of eight through the age of 18 consume less than 8 ounces of milk each day, while consuming over 19 ounces of soft drinks daily. Recommendations that encourage nutrient-dense foods first, including low-fat and non-fat dairy, can help to reverse this alarming trend.

This brings us to our second point. Dairy foods offer a unique nutrient package. While calcium is the most recognized dairy nutrient, dairy foods also contain other essential nutrients, including potassium,

phosphorus, magnesium, zinc, protein, vitamins A, D, and B12, and riboflavin. Simply put, dairy foods are uniquely nutrient-dense.

If dairy foods are not included in the diet, calcium and potassium are severely compromised. For those who are lactose-intolerant, we have dairy options: lactose-free milk, cheeses, reduced fat and hard cheeses, as well as yogurts.

Finally, leading health authorities recommend three to four servings of dairy daily. This is because people have better nutrient intake, better diet quality, and improved bone health and reduced risk of chronic disease.

The dietary approaches to prevent hypertension eating plan does recognize dairy's role in blood pressure. Milk supplies the top source of potassium in the American diet. Potassium is known as a blood pressure regulator, but what is not as widely known is that a potassium-rich diet blunts the effect

of sodium on blood pressure. DASH researchers see better results when dairy intake is higher.

MS. HOWES: Thank you.

MS. KRAUTHEIM: Thank you for this opportunity to talk with you today.

MS. HOWES: Speaker No. 3, please.

You may begin.

MS. SNYDER: Hello, and thank you.

My name is Ceci Snyder, Assistant Vice President for Consumer Marketing at the National Pork Board in Des Moines, Iowa.

The National Pork Board represents 70,000 U.S. pork producers and is funded by the Pork Checkoff Program.

As a registered dietitian, I know we all recognize that Americans are eating too many calories and, at the same time, eating too few key nutrients. In order to improve this dilemma, the National Pork Board encourages the Committee to focus on the benefits of choosing a variety of nutrient-

dense foods within and among the basic food groups.

Americans are not overconsuming meat. Rather, they are underconsuming key nutrients that are found in meat, such as iron, B12, potassium, and phosphorus.

Analysis of MyPyramid food group servings using NHANES data shows that less than half of the population consumes the recommended 5.5 ounces of meat or meat-equivalent.

The recent the IOM report on the School Lunch Program states that 75 percent of school-age children are not meeting the MyPyramid recommendations for the meat and beans group.

Additionally, recently-published research in The Journal of the American Dietetic Association shows that Americans in general do not consume the most nutrient-dense foods in the basic food groups, offering an opportunity to educate and encourage Americans

to make smarter food choices.

For instance, many people don't realize that a 3-ounce serving of lean beef or pork provides the same amount of protein as a cup and a half of legumes but in half the calories.

Calorie-for-calorie, lean red meat is a nutrient-dense choice. A serving of roasted pork tenderloin is an excellent source of protein, thiamin, vitamin B6, phosphorus, and niacin, and a good source of riboflavin, potassium, and zinc.

A serving of lean beef is an excellent source of protein, zinc, B12, selenium, and phosphorus, and a good source of choline, niacin, B6, iron, and riboflavin.

Both lean beef and pork offer these key nutrients in a single serving with less than 160 calories.

And although no one food can remedy our nation's obesity epidemic, research has consistently shown that protein plays a

unique role in satiety. Recent findings also show that higher protein intake preserves lean mass when calories are restricted. Lean body mass preservation can help sustain basal metabolic rate, which may help in long-term weight maintenance.

Protein intake is also essential to help prevent and treat sarcopenia, a disease which will grow in significance as our population ages.

While we all agree Americans should eat more fruits and vegetables, there are certain nutrients like iron and zinc which are more easily absorbed from animal foods rather than plants.

In summary, the published science supports lean meat's role in a healthy diet.

Thank you.

MS. HOWES: Thank you very much.

Speaker No. 4.

You may begin.

MS. LEVIN: Okay. Good morning.

My name is Susan Levin. I'm a dietitian at the Physicians' Committee for Responsible Medicine.

Every five years since 1980, the government has given new health and nutrition advice to the American public through the Dietary Guidelines, and every year since then, the American public has become markedly more overweight and obese.

The Guidelines were originally written with healthy people in mind, but today only a minority of Americans fit this description. That is largely because our ever-growing appetites for cheap, fatty foods have made us one of the most overweight and chronically-ill countries in the world.

Almost 81 million Americans have at least one form of cardiovascular disease, and diabetes rates have gone through the roof. One in three children born in 2000 will develop diabetes at some point in his or her lifetime. The NIH stated earlier this week

that 13 percent of adults have diabetes.

The average American now eats more than 200 pounds of meat per year, approximately the double global norm. We eat about 30 pounds of cheese per year, three times as much as we did in 1970.

Both of these animal products are high in total fat, saturated fat, and cholesterol, and completely devoid of fiber, all areas to be focused upon, according to previous Dietary Guidelines.

It is time for the Guidelines to take direct aim at the diet-related diseases that claim millions of American lives each year. To do that, they should support low-fat diets-- about 10 percent of calories from fat-- for the prevention and treatment of disease.

They also need to include more information on the benefits of plant-based diets. Vegetarian diets should be touted as the ideal, and let people deem how they want to adapt this healthful way of eating to their

own lifestyles.

Science supports a low-fat, plant-based diet for optimal health. In fact, the ADA states that well-planned vegan and other types of vegetarian diets are appropriate for all stages of the life cycle and offer a number of nutritional benefits.

The ADA's position paper was published in 2003 and references over 250 studies and papers. The studies continue and show that these types of diets still prevent type 2 diabetes, cardiovascular disease, and some types of cancer.

Guidelines should rely solely on evidence-based research and disregard any special interest groups. It is possible to set the bar as high as the science dictates, and it is critical that the USDA acknowledge America's current state of health and rewrite the Dietary Guidelines for the majority of Americans-- those who are overweight or obese.

Making these revisions will not be

easy. Real innovation never is.

Thank you.

MS. HOWES: Thank you.

Speaker No. 5, please.

You may begin.

MS. YOUNG: Good morning.

I am Mary Young, a registered dietitian and Vice President for Nutrition with the National Cattlemen's Beef Association, funded by America's beef farmers and ranchers.

We thank you for the opportunity to participate today.

For nearly three decades, public health and government guidance have called for Americans to reduce their total fat, saturated fat, and cholesterol. Improvements in food industry practices are central to achieving these goals, and the red meat industry has met this challenge.

Today lean red meat is widely affordable, available, and popular with

consumers. Quite simply, today's red meat may not be what you think it is. In fact, today's pork is 30 percent leaner than 30 years ago, and beef is 20 percent leaner than 14 years ago.

Beef and pork producers have utilized feeding and breeding techniques to produce leaner animals, and recently market basket research reveals that beef and pork in the meat case have less than zero inch fat trim, practically devoid of external fat. This is a dramatic improvement since the 1980 edition of the Dietary Guidelines, when average fat trim was half-inch. These significant changes in the industry have resulted in at least 35 cuts of red meat that meet government guidelines for lean.

Frankly, there is a common misperception that only poultry provides lean options, but here's a fact you may not realize: when comparing lean protein options such as pork tenderloin, sirloin steak, and a

skinless chicken breast, all have less than 2 grams of saturated fat per 3-ounce serving, demonstrating that both white and red meat provide lean options. In fact, all of the numerous lean beef and pork cuts, on average, have only one more gram of saturated fat than the leanest chicken cut, a skinless chicken breast.

These are not obscure cuts hidden in the meat case. In fact, consumers are choosing leaner cuts in the grocery aisle. Fifty-five percent of pork sales and 65 percent of all beef muscle cuts sold at retail meet government guidelines for lean.

Red meat's fatty acid profile also requires clarification. Despite the common reference that animal fats are saturated, nearly 50 percent in red meat are monounsaturated, and one-third of the saturated fat in beef and pork is stearic, which have a neutral or cholesterol-lowering effect.

A serving of lean red meat is a good or excellent source of 10 essential nutrients and only 154 calories and 2 grams of saturated fat. Given this nutrient contribution and the dramatic changes in the leanness of the product, it is essential to rethink red meat's important contribution to healthy diets.

Thank you.

MS. HOWES: Thank you.

Speaker No. 6, please.

You may begin.

DR. BARNARD: Good morning.

I am Neal Barnard, Adjunct Associate Professor of Medicine at the George Washington University and President of the Physicians' Committee for Responsible Medicine here in Washington.

As nursing babies taste their first solid foods, rice cereal goes down well and fruit is well-accepted, too. But, eventually, well-meaning parents put a little

chunk of meat into the baby's mouth, and the infant promptly pushes it back out, and it rolls down the baby's bib. The parents push the meat back in, and the baby spits it out again. And the battle of wills continues until the baby relents and meat becomes a permanent part of the diet, in much the same way previous Dietary Guidelines have pushed meat into our collective mouths and scientific studies keep pushing it back out again.

Prospective studies, including the Adventist Health Study and others, show that controlling for other lifestyle factors, people who eat meat have shorter lifespans and greater risk of common illnesses, particularly cardiovascular disease, compared with vegetarians.

But past Dietary Guidelines have suggested instead that choosing lean meat is as healthful as avoiding meat completely, and every five years the Committee has shoved meat back into our Guidelines, and research is

spitting it out again.

Clinical trials confirm that people who merely limit meat intake following the National Cholesterol Education Program Guidelines, for example, reduce their LDL cholesterol levels by only about 5 percent. A vegetarian or vegan diet reduces LDL by anywhere from 13 to 37 percent, depending on the overall makeup of the diet.

The preventive power of a meatless diet against heart disease, weight problems, diabetes, and other conditions exceeds that of other diets. The same is probably true for cancer. The AICR report indicated that red meat is a convincing cause of colorectal cancer, with no entirely safe intake level.

Similar issues apply to dairy products. Certainly, people who get less than, say, 600 milligrams of per day, do well to increase calcium intake. But green vegetables, beans, and other foods provide highly-absorbable calcium, and they deserve

emphasis.

Prospective studies confirm that milk-drinkers have no better bone development early in life and no fewer hip fractures later in life.

If we were to skip meat and dairy products, what would happen to our overall nutrition? Well, studies show that omnivores who switch to vegan diets improve their nutrition, reducing their intake of fat and saturated fat and cholesterol, increasing fiber and many important nutrients.

So let me suggest two points that should be emphasized in the Guidelines.

First, individuals who avoid meat enjoy health benefits compared to those who include even lean meat.

Second, making vegetarian and vegan foods part of children's routines, including school lunches, is an important way to reduce saturated fat, increase fiber, and improve overall nutrition.

MS. HOWES: Thank you.

DR. BARNARD: Thank you.

MS. HOWES: We appreciate your comments, Doctor.

Speaker No. 7.

You may begin.

DR. HILL: Good morning.

My name is Jim Hill. I am Professor of Pediatrics and Medicine at the University of Colorado, Denver. I'm currently serving as the President of the American Society for Nutrition, or ASN, and I am pleased to be representing the Society here today in presenting its initial thoughts to this Committee.

With a membership of more than 3500 scientists, ASN is the premiere research society dedicated to improving the quality of life through the science of nutrition. We are proud of our members who are serving on this Committee and those who have served on past committees.

First of all, ASN would like to offer itself and its members as a resource for you as you move forward with your evaluation of the science. Our members have a wealth of experience from molecular biology to clinical nutrition research. We can assist in identifying subject matter experts to brief you on topics as necessary.

In May 2007, Dr. Janet King, Chair of the 2005 Dietary Guidelines Committee, and other members of that group, sent a letter to HHS and USDA. ASN endorses the following recommendations set forth in this letter:

The translation of the Advisory Committee's report into the government Dietary Guidelines report should be transparent. The Committee should be informed about the translation and the content in the final report before it is released and given an opportunity to review it.

Food accessibility, marketing, economics, and culture should be considered

when reviewing the science supporting the next set of guidelines. These factors have a significant influence on food intake and health behaviors, and lack of sufficient consideration of them in previous Dietary Guidelines may, in part, explain why so few Americans follow them.

A focus group of guideline users from such sectors as the food industry, medical, and public communities, as well as the general public, could be convened to review the Guidelines before they are released and provide input.

Non-evidence-based approaches must supplement the systematic review that is critical to evaluating the science. Such approaches should include food modeling. This is necessary for adopting the recommendations to fit the needs of subpopulations such as vegetarians, those with lactose-intolerance, children, older adults.

The following areas should be

addressed: nutrient density, especially beverage; health-effective protein sources; nutritional supplements; specific functional foods or food components.

Lastly, we endorse the Physical Activity Guidelines for Americans that are an important accomplishment and one we applaud. However, we would love to see a unique set of guidelines that encompasses both dietary and physical activity recommendations. To separate the two not only diffuses the message, but could confuse the public.

Thank you for this opportunity.

MS. HOWES: Thank you.

Speaker No. 8.

You may begin.

MS. PIRELLO: Good morning.

I'm Christina Pirello. I host Christina Cooks on National Public Television, and I hold a master's degree in food science and nutrition, and I'm frustrated.

After more than 20 years of

teaching healthy lifestyle classes, I have seen our country grow fatter, less healthy, and certainly less fit.

Healthcare is on everyone's mind these days. Costs are out of control, but they're right in line with our out-of-control decline in health. The simple truth is, if people changed their diets, healthcare would reform itself. With cancer, diabetes, heart disease, and obesity on the rise, we need to wake up and smell the toast.

Industrial food production has created a global desire for cheap, empty calories. The stranglehold that certain advertisers hold over consumers has made shopping a shell game that nobody can win.

America's health will only get worse as they grow more brainwashed and more confused. Advertisements show slim, fit people eating the very foods that we all know will turn them into overweight, sick, pharmaceutical-dependent wrecks.

Decades of inappropriate information, given in the name of market, have literally murdered Americans' health for profit, and it's impossible to present objective guidelines when that information is sponsored by special interest groups who do not have the health of America in mind.

It's time to stop kidding ourselves. Honey Nut Cheerios are not natural whole grain, Coca-Cola is in no way nutritious, and hormone-fed animals are in no way natural meat sources.

Truly healthy guidelines are necessary to meet the urgent challenges of our time. With rising energy costs, climate change, food costs rising, diminishing water supplies, and an exploding population, quality, not just quantity, have to rule the Guidelines.

We must encourage the consumption of vegetables, fruits, beans, and whole unprocessed grains, and discourage the

consumption of saturated fats, sugar, and junk food.

The new Dietary Guidelines must reflect our commitment to reverse the catastrophic epidemic of disease we face, including more information on the benefits of vegetarian and vegan diets, and placing the focus on them for the role they play in the prevention and even treatment of many conditions.

While other things have been linked to Americans' sort of loss of health, the frequent consumption of plant foods has also been identified as a factor for increased longevity. Loma Linda, California, has been declared an official blue zone, an area where people live long, healthy, and productive lives, and where the lion's share of the Seventh-day Adventist population eat a nutrient-rich vegan diet.

And finally, the most inconvenient truth of all: rising animal costs for food

take 10 times the water to produce animal protein versus vegetable, so our environment can't take it.

It's up to you to help us create guidelines that will make America healthy.

Thank you.

MS. HOWES: Thank you very much. Speaker No. 9, you may begin.

MR. ABELMAN: Good morning.

Steve Abelman from the March of Dimes.

Madam Chairperson, members of the Committee, we appreciate the opportunity to speak before you as you deliberate over the content of the advisory report for the 2010 Dietary Guidelines for Americans.

The mission of the March of Dimes is to improve the health of babies by preventing birth defects, prematurity, and infant mortality. Thus, we promote healthy nutrition for women of child-bearing age to help have a healthy baby.

Since the early 1990s, the U.S. Public Health Service and the Institute of Medicine have recommended that all women of child-bearing age consume 400 micrograms of folic acid daily to reduce the incidence of neural tube defects, such as spina bifida.

We have encouraged women capable of having a baby to consume a multivitamin containing folic acid, and to eat foods that have folic acid in them. But according to the latest findings from a March of Dimes survey conducted by the Gallup Organization, less than 40 percent of women of child-bearing age say they take a daily multivitamin supplement containing folic acid.

Other studies show that most women do not achieve the recommended amount of 400 micrograms of folic acid by eating naturally-folate-rich foods. Therefore, enriched grain products like breads, cereals, pasta, and rice offer a viable option for women to help them get the folic acid they need, enriched grain

products that are fortified with folic acid, which helps to prevent these serious birth defects of the spine and brain.

While we agree that 100 percent whole grains are important and an excellent source of micronutrients and fiber, the current Dietary Guidelines suggest that half of grain consumption should be in the form of whole grains. These Guidelines also say that the remaining servings can come from enriched or other grain products.

Since the FDA in 1998 mandated that any grain and cereal product containing the label enriched be fortified with folic acid, the CDC has reported that the incidence of these birth defects dropped by 26 percent. This is still well short of the 2010 national health objective of reducing the occurrence of spina bifida by 50 percent.

The FDA's decision to add folic acid was a victory for mothers and babies. It's rare that we get the opportunity to

prevent thousands of babies being born with disabling or fatal birth defects with such a low-tech means.

Therefore, the March of Dimes Foundation encourages the Dietary Guidelines Advisory Committee to maintain the current balance between the whole grains and enriched grains in the 2010 Dietary Guidelines for Americans.

Thank you.

MS. HOWES: Thank you. Speaker No. 10, you may begin.

MS. ROSA GONZALEZ: Good morning.

My name is Rosa Gonzalez, and I am a concerned citizen from Fredericksburg, Virginia.

A couple of months ago, I was diagnosed with metabolic syndrome. I weighed over 225 pounds, and I was told I had diabetes, high blood pressure, and I was on the verge of taking five different pills.

I was assigned to meet with a

dietitian, who told me I had to follow the Dietary Guidelines that included dairy, meat, and, of course, fruits and vegetables. I indicated to her that I was interested in following an alternative diet, which was vegetarian, that I had read could improve my diabetes.

With her mixed blessings, I followed this diet, and was able to lose almost 100 pounds. I improved my diabetes. My A1C went from 15 to 5.4. I am no longer diabetic. My diabetes is in remission.

My cholesterol went from 215 to 137. My vision changed. I had to get new eyeglasses. My thyroid, which I had suffered from for numerous years, reduced three different times. My dosage is down three times. My blood pressure, which was 140 over 80, is now 102 over 63.

So I'm living proof that Americans can do this if the Dietary Guidelines are there that provide alternatives.

I was very disappointed that my dietitian did not support me, and now she's all for it, and is proud of the fact that I was able to accomplish this.

Thank you.

MS. HOWES: Thank you.

Speaker No. 11, please. You may begin.

DR. POPPER: Thank you for inviting me today.

My name is Pam Popper. I'm the Executive Director of the Wellness Forum in Columbus, Ohio. I'm a naturopath and nutritionist, and we help people to reverse degenerative disease by making diet and lifestyle recommendations, and helping them to accomplish change. We also operate a foundation that goes into schools and works on improving school food and children's health.

It is quite clear to me that the reason we have such a health crisis in this country is based on food intake. When people

come into our office, we put them on a near-vegetarian or vegan diet, and their health issues start to resolve and they lose weight. And I'm talking about serious conditions: multiple sclerosis, coronary artery disease.

And I'm not the only practitioner accomplishing these types of results. I have provided numerous references in the packet that I gave to the lady at the desk.

The problem, and the one that we're here to discuss today, is the current Dietary Guidelines really don't make recommendations consistent with the diet that produces these outcomes. There's too much allowance for animal foods and dairy products and fats and oils and refined foods, which we know lead to the creation of degenerative disease.

I would ask the Committee to really think about looking at some of the myths that perpetuate bad diets, one of which is that we don't know what really constitutes

the best diet for humans, but I think the research is quite clear: plant-based diets are better for human health.

Another is that people won't adopt this type of diet, so why bother to tell them about it? But my experience is completely different. When we talk to people about the dangers of the American diet, and we show them how to adopt a near vegetarian and vegan diet, a lot of them do it.

And this may sound counterintuitive, but the bigger changes they make, the more likely they are to be compliant, because big dietary changes result in big health changes, and that's a motivating factor for people to continue their good dietary habits.

Still another myth is that children won't adopt this kind of diet, but they will. When we educate kids in schools, and we do staff and teacher training, and we educate parents, kids make healthier choices,

even when bad choices are available.

Last but not least, I'd like to address a very important myth, which is that little changes result in health change, and they don't. People come into my office, they've been trying to change their diet for a long time without success, but when we address the totality of their diet, the good changes in health status begin to emerge.

So in closing, I'd like to propose that the revision of the Dietary Guidelines for Americans be based on the preponderance of the scientific evidence, which is that a plant-based diet is best for humans, and that those be translated into clear recommendations to adopt such a diet, and we ignore a lot of the special interest groups that I'm sure will be hurt, in the interests of public health, which is being hurt daily by the current state of affairs.

Thank you very much for the opportunity to talk to you today.

MS. HOWES: Thank you.

Speaker No. 12, please. You may begin.

MS. VAN ELSWYK: Good morning.

My name is Mary Van Elswyk, and I'm representing Martek Biosciences.

Thank you to the Committee for this opportunity.

As the Committee considers the Dietary Guidelines, it will be important to recognize the availability, sustainability, and quality of various food sources. This will be particularly important with regard to rich sources of long-chain omega-3 fatty acids or n-3 LCPUFA.

The current Dietary Guidelines suggest that consuming two fish meals per week can help reduce the risk of cardiovascular disease mortality in at-risk adults. Data from cardiovascular studies published since the 2005 Dietary Guidelines now provide strong evidence for the primary prevention of

cardiovascular disease, as well.

Additional data from RCTs further suggests that n-3 LCPUFA equal to or greater than 500 milligrams per day may significantly reduce blood pressure and heart rate in the general population.

In addition, the evidence in support of DHA omega-3 for neurocognitive health continues to grow. The 2005 report recognized the increased need for various nutrients in population subgroups, but failed to recognize the importance of DHA omega-3 among pregnant and nursing women, women of child-bearing age, young children, and the elderly.

Evidence published since the 2005 Dietary Guidelines provide strong observational support indicating that n-3 LCPUFA may increase the cognitive function of adults over the age of 50, and overwhelming support from both RCTs and observational studies regarding DHA supplementation during

pregnancy, and increased gestational duration and improved neural development of infants and young children, particularly with regard to vision-related outcomes.

Current expert group recommendations include consumption of at least 200 milligrams of DHA per day during pregnancy and nursing from low-risk sources such as low-methylmercury fish and dietary supplements from marine algal oil.

Meeting this recommended intake in theory is achievable and safe if women are knowledgeable about high-DHA, low-toxin fish, and are willing and financially able to consume fish. In reality, this becomes difficult, requiring a high level of knowledge and competence regarding seafood sources, and the willingness to incorporate these sources in the diet on a regular basis.

As we look to expand our consumption of DHA omega-3, it will also be important to consider the sustainability of

fish. According to recent figures from the FAO, more than half of all fisheries worldwide are being fished at or beyond their maximum biological capacity.

Recognizing the intakes of even just two fish meals per week may be difficult to achieve or sustain, the Dietary Guidelines should consider fortified foods and dietary supplements as part of their recommendations.

Thank you.

MS. HOWES: Thank you.

Speaker No. 13, please. You may begin.

MS. NINA GONZALEZ: Okay. My name is Nina Gonzalez, and I'm a junior at Stafford High School in Fredericksburg, Virginia. I'm part of the Commonwealth Governor's School, which is kind of a magnet program of the school.

And as part of our research, we enact culminating regulation, which is where you take four years of your high school career

and you dedicate it to a study. So I dedicated mine to finding vegetarian options in our cafeteria.

I became a vegetarian about three years ago. And I noticed that at our cafeteria we didn't have meatless options. And I talked to a bunch of my fellow peers, and there was a need for it. So I met with the County Nutrition Director, and he was a little bit hesitant, but I encouraged him to look into it because there was a need.

So we had a meeting at our school, and we had about 30 kids who were interested. And so we talked, and we had taste testings. And fortunately, I succeeded and we got vegetarian options into our menu.

And I encourage you to look into this because, as part of when you add food to the lunches, you have to go through the Pyramid, and they have to meet several regulations. So I see that there is wide acceptance of this, and I had kids stop me in

the hallway thanking me for this, because it was something that they really had -- it was a variety.

So I encourage you to evaluate this and look into various additions to the Food Pyramid, and perhaps at least just mention that a vegetarian option is an option, and that it should be included in there and mentioned.

Thank you.

MS. HOWES: Thank you.

Speaker No. 14, please. You may begin.

MS. LEAHY: Good morning.

My name is Cheryl Leahy. I'm the General Counsel at Compassion Over Killing, which is based here in Washington.

I believe the Dietary Guidelines for Americans should promote a more vegan diet or plant-based diet. The benefits of especially low-fat, plant-based diets include lower rates of heart disease, certain cancers,

diabetes, obesity, that some of the other speakers have mentioned today, and other killers which are all epidemics and increasing with the decreasing health of the American public.

Just to take a few examples, plant-based diets strongly correlate with dramatically lower heart attack risk. A study published in Nutrition Today on endurance showed that the average endurance was nearly three times higher when the subjects were fed a plant-based diet than when they were fed a high meat diet, and nearly 1.5 times better than a mixed diet from plant and animal sources.

Plant-based diets have no cholesterol, and a significantly lower amount of saturated fat than the current Guidelines allow and current actual diet consumption reflects. Cholesterol rates are directly correlated with consumption of saturated fat, as well, and blood cholesterol, of course.

And in addition, public sentiment is moving more and more toward plant-based diets, for reasons of health. Also environmental protection and animal mistreatment issues.

Animal agriculture, from the environmental side, is the largest consumer and polluter of water, for example. It's also extremely inefficient, requiring seven to 10 times the amount of grain and water per unit of meat than if you were to feed the grain calories directly.

Pesticides are more concentrated in typical animal flesh products than in plant-based products, which is obviously also a major concern for health.

And the public has become concerned with the cruelty endemic in the way modern agriculture chooses to raise and kill animals. Investigation video footage has shown numerous instances of severe neglect and abuse, painful and improper slaughter, and

other problems which have increased public awareness of this issue.

So the popularity of vegetarian and vegan diets has only been increasing and will likely continue to increase. Just this month, a study was published saying one in 200 kids are vegetarian, which that number may be, in fact, significantly higher.

Current subsidy programs really don't reflect any priority on eating plant-based diets. And so eating vegetarian and vegan should be actively promoted in the Guidelines to help encourage policy changes in that direction and practical changes among the public in that direction as well.

Thank you.

MS. HOWES: Thank you. Speaker No. 15, please.

You may begin.

MS. ZOELLNER: Good morning.

My name is Jamie Zoellner, and I'm an assistant professor and registered

dietitian from the University of Southern Mississippi.

I'm here today to represent the voice of residents who live in the Lower Mississippi Delta Region. As many of you may be aware, the Delta is a rural area, one of the most impoverished regions in the United States, with extensive health and nutritional disparities that have been documented.

My research efforts have focused on exploring issues related to health and nutrition literacy in this area. About two years after the 2005 Dietary Guidelines and MyPyramid were released, we conducted a cross-sectional study in the Mississippi Delta. Our objective was to examine the nutritional literacy status.

When provided with four graphics and asked to identify the most recent picture promoted by the 2005 Dietary Guidelines, only 12 percent could identify the newest mypyramid.gov. So 12 percent could identify

that graphic two years after its release.

Participants trusted information from doctors and the television the most, and the internet the least. Overall, the internet was the least trusted and least used source for seeking nutrition information.

We found rates of limited health literacy among Delta adults were higher compared to other national surveys. Results also suggested that nutrition literacy status had important implications for acquiring and trust of nutrition information.

So while the dietaryguidelines.gov and mypyramid.gov are fabulous websites, and for the mainstream population, electronic health communication is very exciting, please remember that you and I may live in a world of Wi-Fi and Blackberries, but people in the Delta don't. As a matter of fact, many of them don't have computers in their homes, or in their schools, or have infrastructure in their communities to support internet access.

The most basic component of nutrition literacy is the ability to obtain nutrition information. If we are concentrating our efforts on putting these messages in places that aren't accessed or trusted by those who may need them the most, then we're fighting a losing battle.

As an advisory committee, I know you have many difficult tasks in front of you. I hope one of your priorities is considering this need to better disseminate culturally-appropriate dietary guidance messages in hard-to-reach, health disparate populations, which includes culturally-appropriate communication channels.

Based on our research in the Delta, I'm fearful that relying on the internet as a central mode of nutrition communication will only widen the nutritional disparity gaps in this region.

Thank you.

MS. HOWES: Thank you. Speaker

No. 16, please. You may begin.

MS. DiSOGRA: Sure. Good morning.

I'm Lorelei DiSogra. I'm the Vice President for Nutrition and Health at United Fresh Produce Association. We're located here in Washington, D.C.

I'm sure this committee is well aware of the health benefits of a diet rich in fruits and vegetables. So I won't go there.

I would say that our organization strongly supports the fruit and vegetable recommendations from the 2005 Dietary Guidelines. However, I do want to make three recommendations to this Committee.

The first one is to please provide very clear and strong - stronger - advice that might motivate people to actually change their behavior and eat more fruits and vegetables than what we saw in the 2005 version. Terms like, make wiser food choices, and, foods to encourage, are very, very vague, and just don't do anything in terms of motivating

anybody, including policymakers, to pay attention to this. So I encourage you to make strong, clear recommendations that are going to motivate the public to make some changes.

Secondly, in preparation for the 2005 Dietary Guidelines, a team of us at the National Cancer Institute in the Five-A-Day Program worked for quite a long time to come up with some overarching statements that could apply to fruits and vegetables, and I would ask this committee -- and I'm sure you've already looked at it -- but I would ask this committee to look at Table A2 in the 2005 Dietary Guidelines, and see how anybody could make any sense out of fruit and vegetable recommendations.

So I'm asking you, at the end of your deliberations on 2010, is to take a look at this, and see if you can't make any overarching recommendations about fruits and vegetables. The statement that we came up with at the National Cancer Institute back in

2005 was, half your plate should be fruits and vegetables. So think about something like that. That considers that the glass of milk is off to the side. So half your plate, I would ask you to consider something like this.

Thirdly, I would like to say that, where you're operating right now in your recommendations, you're going to come into a whole different arena in terms of nutrition. Nutrition, the importance of nutrition, the importance of nutrition in prevention, has changed in this town in the last eight days.

You know, it's amazing that you could have Secretaries Daschle and Vilsack meeting before they get confirmed to talk about nutrition and prevention and the role in health reform.

So I would ask this committee to think about the policy implications of your recommendations, and again speak very strong and clear and loudly to the policymakers in this town.

Thanks very much.

MS. HOWES: Thank you. Speaker 17, please. You may begin.

MS. McGUIRE: Good morning.

I'm honored to have the opportunity to speak to the committee today.

My name is Jennifer McGuire, and I am a registered dietitian with special expertise in nutrition communication. I work for the National Fisheries Institute, McLean, Virginia, and spend much of my time following the steady stream of scientific studies about fish and its health benefits. But this science will be submitted to the Nutrition Evidence Library and speak for itself.

Instead, today I am going to focus on nutrition communication, because scientific studies are meaningless to the average consumer unless their findings are clearly communicated via simple and caveat-free recommendations about what to eat.

The amount of seafood Americans

eat is low. While the average person eats more than enough total protein, fish contributes only 3.5 percent to this total. For perspective, meat contributes 24 percent, and cheese alone contributes 8.6 percent. Worse, there are subpopulations that eat even less than average fish. Pregnant women in this country eat just 1.89 ounces of seafood per week.

The most popular and often least accurate source of information about seafood is the media. Here are two examples of scientifically-incorrect statements countless Americans heard or read in the last month:

First, in The LA Times, from an article about the effect of eating fish on brain development, a physician explains that, "Fish are not the only good source of omega-3 fatty acids. Significant plant sources of the nutrient include flaxseed, walnuts, pecans, cauliflower, broccoli, et cetera." -- with no differentiation between short- and long-chain

omega-3s.

Next from Good Morning, America, as part of a story about the effects of eating fish on a middle-aged man, Diane Sawyer explains, "Albacore tuna should be limited to one meal a week. Fish lower in mercury, shrimp and salmon, two meals a week." -- with no mention that this FDA advice is not for middle-aged men, but for pregnant and nursing women and young children.

Clear, unequivocal recommendations in the Dietary Guidelines are needed to combat this type of misinformation about eating fish. To end up with these explicit recommendations, the Committee must keep these three points in mind:

First, the Committee's recommendations must be based on science and scientifically-measured outcomes.

Second, FDA released just last week a draft report on the net effect of eating fish. I implore you to adopt FDA's

holistic approach in your own review of seafood science, because when we talk about whole foods, nutrients like omega-3s and elements like mercury don't exist in a vacuum. The Committee must understand that studies calculating the effect of eating fish on the brain or heart include a built-in risk/benefit equation. This liberates you to communicate using net, outcome-based recommendations without caveats.

Lastly, please consider the challenge posed to you at your first meeting to identify two or three dietary changes that Americans could make immediately that would most greatly benefit your health. Fish certainly qualifies as one of these changes.

Thank you.

MS. HOWES: Thank you. Speaker No. 18, please. You may begin.

MS. TERNUS: Thank you. Good morning.

I'm Maureen Ternus. I'm a

registered dietitian and Executive Director of the International Tree Nut Council, Nutrition, Research, and Education Foundation, or INC NREF, in Davis, California.

And on behalf of INC NREF, I'd like to thank you for the opportunity to provide comments today on the health benefits of nuts.

INC NREF is a non-profit organization. We represent nine different tree nuts.

While the FDA-qualified health claim for nuts and heart disease recommends one-and-a-half ounces of nuts per day, few people actually consume this amount. In the 2001/2004 What We Eat in America NHANES survey, 34 percent of those surveyed consumed nuts, but most only ate about three-quarters of an ounce, roughly half of the recommended amount.

Why should we consume more? Since the publication of the 2005 Dietary

Guidelines, there has been a dramatic increase in the number of studies showing the positive role of nuts in reducing the risk of cardiovascular disease and diabetes and their positive effect on weight and satiety.

Thirty-one randomized clinical trials have provided further evidence that nuts can help reduce the risk of heart disease. In 25 of these studies, nuts significantly lowered both total and LDL cholesterol, and in 13 studies increased HDL.

In a pooled analysis of four U.S. epidemiologic studies, those who ate the most nuts, about one ounce five or more times per week, had about a 35 percent reduced risk of coronary heart disease.

When it comes to diabetes, emerging research suggests nut consumption may have a significant impact. The Nurses' Health Study indicated that frequent nut consumption - again, about an ounce five or more times per week - was associated with a 27

percent reduction in relative risk of developing diabetes compared to those who rarely or never ate nuts.

Acute feeding studies have demonstrated the ability of nuts, when eaten with carbohydrates such as bread, pasta, and rice, to depress post-prandial glycemia.

With regard to weight and satiety, more than 12 epidemiologic and clinical studies show that nut consumption is not associated with higher body weight. In fact, in a recent NHANES analysis which is being prepared for publication, nut consumers had lower BMIs than non-nut consumers.

Possible reasons: the satiety value of nuts, incomplete fat absorption - the fat in nuts doesn't appear to be fully absorbed - and a potential increase in resting expenditure with chronic nut consumption may contribute to the less-than-predicted weight gain.

Approximately 60 percent of nuts

are consumed as snacks, and data show that many people obtain about a quarter of their calories from snacks.

Finally, if we could just replace some snacks high in refined carbohydrates with nuts, we could have a positive impact on the nutrient density of the diet, and on reducing risk of chronic illness.

Thank you.

MS. HOWES: Speaker 19, please.

MS. BANVILLE: Good morning.

My name is Anne Banville, and I'm with the USA Rice Federation, a trade association representing producers and millers of U.S.-grown rice. We're here in the Washington area.

We appreciate the opportunity to make three points today.

First, USA Rice's consumer education promotes increasing daily whole grain consumption. The popularity of brown rice has grown dramatically in the past five

years.

We believe the focus on whole grain consumption, as important as it is, should not come at the expense of enriched, fortified grains, since they are a primary source of folic acid in the diet. Folic acid fortification has produced dramatic results, and the rice industry is proud to participate in a program that has vastly improved infant health.

The National Council on Folic Acid believes that the risk of serious birth defects can be reduced by up to 70 percent if women of child-bearing age were consuming 400 micrograms of folic acid each day. What a victory that would be, 70 percent.

Having required the grain companies to enrich and fortify their products, it would be a disservice to both the public and grain companies to in any way imply that those products are to be avoided. It also would not serve the goal of harmony of

food guidance between USDA and HHS that the 2005 Dietary Guidelines helped address.

My second point: in our experience, the role and benefit of carbohydrates in the diet is still misunderstood by the majority of consumers, and most don't know the difference between simple and complex carbs. We urge that the 2010 Dietary Guidelines include education on why the body and brain need carbs to function, and also that not all carbs are created equal. It's added fats and sugars, not carbs, that are the issue.

Finally, knowing the number of calories needed each day is an important part of healthy eating and weight management. We urge a Know Your Numbers campaign in the 2010 Dietary Guidelines. The goal would be for consumers to be aware of daily calories he or she needs. This surely would be an important step in the right direction for healthier eating.

Thank you.

MS. HOWES: Thank you. Speaker No. 20, you may begin.

DR. GEIGER: Good morning.

My name is Constance Geiger, and I'm a registered dietitian and President of Geiger and Associates, and a Research Associate Professor at the University of Utah.

I'm here representing the American Dietetic Association. I'm a Director-at-Large, ADA's Board of Directors, based in Chicago, Illinois, and I am presenting these comments on behalf of ADA and my fellow members, 68,000 food and nutrition professionals.

The American Dietetic Association is the world's largest organization of food nutrition professionals. We are committed to improving the health of Americans through food and nutrition strategies. We seek to advance the scientific basis of the Dietary Guidelines, and to facilitate consumer

communication and implementation of your core messages.

Today I am discussing three points:

First, ADA recommends 10-year intervals for issuing the Dietary Guidelines, which is consistent with the issuance of other public health guidance. Issuing the Dietary Guidelines every five years does not provide adequate time to conduct and review emerging nutrition research, nor does it provide enough time to effectively roll out and communicate key information about the Guidelines to consumers. It seems like we were just here for the 2005 Guidelines. So a 10-year interval would strengthen the research basis, the implementation and communication, and the impact and evaluation of the Guidelines.

Secondly, the Guidelines should focus on food-based recommendations and meal patterns. While it's technically true all foods can fit with careful planning, some fit

more often than others, and some fit very infrequently, especially when you get to my age.

Overweight and obesity continue to be major health concerns for our population. These conditions are often accompanied by inadequate nutrient intake.

So we really need to consider research on meal patterns. Nutrient density and physical activity need to reviewed and reflected in the Dietary Guidelines, and the recommendations should provide guidance on the types and amounts of food people should consume and should limit as the basis of their dietary intake.

Third, consumer research should be considered along with scientific diet and nutrition studies. Fewer than five percent of Americans consume diets consistent with the Dietary Guidelines.

So in conclusion, a 10-year interval would allow for a full analysis of

the data, and then systematic reviews of literature and evidence analysis of key questions from both scientific and consumer research are vital for a strong Committee report.

We commend USDA and HHS for their commitment to the Nutrition Evidence Library and their support of Evidence Analysis System as the basis of the Dietary Guidelines for Americans.

Thank you.

MS. HOWES: Thank you. Speaker 21, please. You may begin.

DR. LEWIN: Good morning.

My name is Alex Lewin with Center for Science in the Public Interest here in Washington, D.C.

We congratulate the great work USDA and HHS did on the 2005 Dietary Guidelines, and recommend seven ways the Committee could strengthen the current recommendations.

First, the salt guideline, while currently quite good, should do even more to alert Americans to the risk of consuming excess amounts of sodium, how much sodium is in processed and restaurant foods, and the daily limit for sodium.

Second, the Dietary Guidelines should continue to encourage Americans to switch from refined grains to whole grains. The Committee should do more to clearly steer consumers towards whole grains, and away from foods that only appear to be whole grain.

Third, the Committee should provide strong advice about three crucial contributors to excessive calorie intake: soft drinks, large portion sizes of calorie-dense foods, and restaurant foods.

Soft drinks are the No. 1 source of calories in Americans' diets, and the only individual food linked with obesity. The Dietary Guidelines should provide clear and practical advice for how to limit the intake

of sugary beverages.

Portion sizes have grown over time, especially at restaurants, and studies show that, when adults and children are served more, they eat more. The Dietary Guidelines should include strong advice about why and how to choose sensible portions.

Studies link eating away from home with higher calorie intakes and obesity. Americans are eating out about twice as much as in 1970, providing about a third of the calorie intake for the average adult or child. The 2010 Guidelines should include a separate guideline on the importance of healthy eating when eating out, and give clear advice for helping people limit their intake of calories, saturated and *trans* fats, sugars and sodium at restaurants.

Fourth, the sugars guideline should provide a quantitative recommendation for added sugars intake using the MyPyramid quantitative limits for refined sugars intake.

For example, for a 2,000-calorie-a-day diet, people should consume no more than about 40 grams of refined sugars per day.

Fifth, the Guidelines should establish a quantitative recommendation for *trans* fat. Now that the nutrition facts labels are required to list *trans* fat, consumers need to be able to use the updated label to better understand how much of their daily maximum for *trans* fat is contained within a food.

Seventh, we also recommend that the Committee evaluate the evidence linking food dyes and behavior. A meta-analysis done in the U.S. and two British studies provide evidence that dyes impair children's health.

Given the sky-high rates of obesity and widespread prevalence of diet-related health problems, the agencies need to undertake a much stronger and comprehensive effort to support Americans' efforts to eat healthily.

Thank you for the opportunity to share our views today.

MS. HOWES: Speaker 22, please. You may begin.

DR. GREGER: Hello.

My name is Michael Gregor. I'm the Director of Public Health and Animal Agriculture at the Humane Society of the United States here in D.C.

Thank you for this opportunity, and thank you for the important work that you're doing.

I'd like to just highlight three recently-published studies in the peer-reviewed literature.

The first, last April, egg consumption in relation to cardiovascular disease and mortality. The Harvard physicians studied 20,000 male physicians, followed for an average of 20 years, and those eating just a single egg a day or more was associated with significantly increased total all-cause

mortality, meaning eating one egg a day or more significantly associated with living on average a shorter life.

Eggs are, of course, a primary source of dietary cholesterol in the American diet, and the CDC estimates that more than 100,000 Americans are sickened every year by egg-borne salmonella. Yes, the 2005 Guidelines warn against raw eggs, but common preparation methods, over-easy, scrambled, and sunny-side-up, according to a recent article in the August issue of Poultry Science, are insufficient to eliminate the salmonella threat.

The second study I would like to highlight, published last month in the Proceedings of the National Academy of Science, Hedlund's Group at UC-San Diego concluded that the incorporation of N-glycolylneuraminic acid into human colon cancers, retinal and skin cancers, and breast cancers, facilitates tumor progression. The

only source of this carcinoma-promoting substance is the consumption of meat and dairy products.

So I think the Committee should consider promoting legumes as the preferred source of protein, lacking dietary cholesterol and animal fat, obviously, and as a bonus, the fiber, folate, and phytonutrients.

And finally, the last study, another 2008 study, in light of the obesity epidemic here in the United States, a study co-authored by a Cornell Professor Emeritus of nutritional biochemistry, T. Colin Campbell. These were patients, overweight patients, encouraged to eat a diet of whole plant foods, and they achieved a weight loss of 24 kilograms at the two-year follow-up point. So that is unprecedented, more than 50 pounds of healthy sustained weight loss, one of the reasons perhaps why the longest-running study on vegetarians in history, the California Seventh Day Adventist study, found that those

eating vegetarian lived, on average, 10 years longer than the general population, in fact, the longest-living formally-studied population in the world.

So I encourage the Committee to continue to extend their recommendations toward an even more plant-based diet.

Thank you.

MS. HOWES: Thank you.

Speaker No. 23.

You may begin.

MR. BISCEGLIE: Good morning.

My name is Rob Bisceglie, and I am the Executive Director of Action for Healthy Kids, a national, grassroots, non-profit organization focused on addressing the epidemic of overweight, undernourished, and sedentary youth by improving nutrition and physical activity in schools, funded by former Surgeon General Dr. David Satcher.

I will confine my remarks today to two primary points. The first is related to

the importance of nutrition, specifically breakfast, as well as physical activity, to learning, and the second to the importance of stressing foods of high-nutrient density.

First, there is a growing body of evidence demonstrating that children who eat poorly or who engage in too little physical activity do not perform as well as they could academically. In a study published just last year of more than 5,000 children, an association was observed across multiple indicators of diet quality with academic performance. That's from The Journal of School Health.

We urge this Committee to consider incorporating a recommendation that encourages school-age children to eat a healthy breakfast each day. We at Action for Healthy Kids have demonstrated that participation in such programs can be enhanced with relatively small financial investments.

For example, the Ohio Action for

Healthy Kids team has distributed $25,000 annually in school breakfast mini-grants, ranging from $500 to $1,000, to provide schools with funds for school breakfast program startup, expansion, marketing, and promotion.

As a result of the mini-grant funds and the associated technical assistance, school breakfast participation in Ohio increased 15 percent in 13 months.

In our experience, the return on investment for breakfast initiatives makes them a wise dedication of time, energy, and resources.

We believe that this Committee will have a tough time identifying other simple, actionable, affordable pieces of dietary guidance that have the potential impact of this simple recommendation. Everyone should eat a good breakfast.

Similarly, we hope that this group will reinforce the position of the 2005

Dietary Guidelines Committee and, more recently, the 2008 Physical Activity Guidelines for Americans, that physical activity plays a profound role in health.

My second main point relates to the continued need to encourage consumption of nutrient-dense foods. We are particularly concerned about the disproportionate effect of poor nutrition on low-income communities. We continue to seek best practices on ways of reaching through schools, communities, and parent groups, youth who are malnourished, sedentary, and overweight.

To the extent that we can deliver positive messages about foods to encourage specifically fruits, vegetables, whole grains, and low-fat and non-fat dairy, and that we can deliver culturally-appropriate and good-tasting foods from those categories to youth in these settings, we believe we can make a meaningful difference in lifelong eating patterns.

Thank you so much.

MS. HOWES: Thank you.

Speaker 24, please.

You may begin.

MS. KATCHER: Hi. My name is Heather Katcher. I work with the Washington Center for Clinical Research, but I was asked to speak today on behalf of Barbara Wasserman, who was unable to be here due to icy road conditions. She is a doctor in Howard County, Maryland, and Chair of the Howard County Nutrition and Physical Activity Coalition.

As the Committee is aware, 16 percent of children and adolescents are overweight or obese, and in Howard County, Maryland, where Dr. Wasserman is from, 31 percent of children and adolescents are overweight or obese.

So she sees to a higher degree the medical problems related to obesity, including cardiovascular disease, high blood pressure, type 2 diabetes, and certain types of cancer.

Dr. Wasserman urges the HHS and Department of Agriculture to incorporate into their policies the many scientific studies that demonstrate the benefits of plant-based diets and the dangers associated with high consumption of animal-related foods, meaning meat and dairy.

She says that now is the time for a groundbreaking 2010 Dietary Guidelines similar to the 1954 Surgeon General's report on the danger of tobacco use. Further delay is putting millions of Americans at risk of various chronic diseases.

She urges the Committee to consider a few scientific publications. One is the China study by Dr. Colin Campbell that has epidemiologic evidence of lower colorectal cancer with a plant-based diet.

A second is a low-fat vegan diet improves glycemic control and cardiovascular risk factors in individuals with type 2 diabetes. This is by Bernard, et al., in

Diabetes Care 2006.

The study showed that glycemic and lipid control in type 2 diabetes improved with a vegan diet and ADA diet, but improvements were greater with a low-fat vegan diet.

Third are studies by Caldwell Esselton in Preventive Cardiology 2001, showing that a plant-based diet was able to prevent, arrest, and reverse coronary artery disease.

And fourth is the report by the American Institute of Cancer Research and World Cancer Fund that demonstrate that excess body fat increases risk of numerous cancers.

So just to conclude, Dr. Wasserman says, as a physician concerned with the obesity epidemic in my community and the rising rates of obesity-related chronic disease, I request the Dietary Guidelines Committee to prepare guidelines that address the needs to reverse obesity by focusing on a low-fat, plant-based diet and minimizing

intake of animal-based foods and processed foods high in fat and sugar.

Thank you.

MS. HOWES: Thank you.

Speaker No. 25.

You may begin.

MR. BAKER: Good morning.

My name is Charles Baker, Executive Vice President and Chief Science Officer at the Sugar Association, a non-profit organization headquartered here in Washington, D.C.

The Sugar Association represents U.S. sugarcane and sugar beet growers and processors. It was established in 1943 to educate the public about sugar and its role in nutrition, balanced diets, and healthy lifestyles.

Based on the sum of the scientific evidence, we support sugar as a safe, natural, beneficial food ingredient. We welcome this opportunity to present these remarks.

The Association shares the Committee's concern about the rising rates of obesity and its detriment to overall health, especially among children. The Association respectfully reminds the Committee that a focus on restricting dietary sugars as the remedy is as flawed as a singular focus on dietary fads of the 1990s.

The Association's written comments document published evidence showing body weight is independent of sugar's intake in young children, adolescents, and adults. Targeting one nutrient class is not the magic bullet for achieving the true remedy, which is caloric balance.

The Association also respectfully reminds the Committee that nutritional adequacy is determined by the totality of one's diet, not how much or how little a single diet component like sugar is present.

The Association's written comments also cite a body of peer-reviewed evidence

confirming the ineffectiveness of applying a simplistic, a priori mathematical construct like micronutrient displacement as a comprehensive measure of dietary quality.

Taken as a whole, our grandmothers had it right. Their advice to eat a little bit of everything, then go outside and play, recognized the central importance of moderation, portion control, and daily activity and healthy lifestyles. Their common sense recognized all calories are discretionary.

In conclusion, the Association acknowledges the enormous responsibility of providing Americans with nutrition advice. The Association respectfully asks the Committee to maintain the scientific integrity of the Dietary Guidelines for Americans process by de-emphasizing an inordinate focus on a single nutrient like sugar.

Please remain committed to basing dietary recommendations solely on a critical

analysis of the body of peer-reviewed, published data. Translating basic dietary data into effective policy and successful consumer education materials requires complete objectivity.

Thank you.

CHAIR VAN HORN: Thank you.

I would like to thank our first 25 speakers for wonderful presentations.

We will now take a 10-minute break.

(Whereupon, the above-entitled matter went off the record at 9:26 a.m. and resumed at 9:45 a.m.)

CHAIR VAN HORN: Presenter 26, please come forward.

MS. HOWES: You may begin.

DR. HERSHAFT: Good morning.

My name is Alex Hershaft. I am the founder and President of FARM, a national non-profit organization based in D.C. advocating for healthful diets since 1976. We

are funded by public contributions and we have no industry affiliation.

Our nation is in the throes of an unprecedented epidemic of obesity and the attendant scourges of heart disease, stroke, cancer, diabetes, and other chronic diseases that each year cripple, then kill, nearly 1.5 million Americans.

These afflictions have been linked conclusively with consumption of meat and dairy products by more than a dozen scientific panels upon review of hundreds of scientific studies.

And it is no wonder as these products are laden with saturated fat, cholesterol, hormones, antibiotics, pathogens, and salt.

This appalling diet is shaped largely by the political might and the advertising dollar of the meat, dairy, and other processed food industries. Its impact is particularly acute on our nation's School

Lunch Program, where the fare is driven by the availability of cheap meat and dairy surplus commodities, where early dietary patterns become lifelong addictions.

The new administration was voted into office on a platform of change. Dietary Guidelines for Americans 2010 should reflect the spirit of change. They should be based on best science alone, not a mixture of science, dietary traditions, and political expediency.

If your interpretation of nutritional science tells you that a diet of vegetables, fruits, legumes, whole grains, in essence, a vegan diet, is best for the health of American people, your guidelines should clearly state that.

Please spare us the condescending advice that a properly-planned vegan diet may provide the necessary nutrients when you should be telling the American people that no amount of planning can prevent the health scourges of a meat-and-dairy-based diet.

MS. HOWES: Thank you very much. We need to move on in the interest of time. We appreciate that.

Presenter No. 27, please.

You may begin.

MS. DESHAY: Good morning.

I do not come to you as a scientist or someone with great ability as far as the statistics are concerned. I come as a citizen of the United States, and primarily want to share with you from my own personal experience that a vegan vegetable diet is one that would help our country as far as our total cost of health, as far as maintenance of preventing of diseases, and maintenance and promoting health.

I happen to come from a family where my mother is 1 of 13, and we have no other diseases in the family that have been identified other than cardiovascular problems related to hypertension. However, the one person who has chosen to take a vegetarian, a

vegan diet, has remained living until age 93, whereas the remaining group of the 13 have all died from ages 35 to 40 of cardiovascular problems.

The one that is living happened to be my mother, and she became a vegetarian only because I, as her daughter, had read that a vegan diet was best.

Now when we look at the global context, having lived in West Africa and most of the continent, we as Americans are transporting to other countries the concept that, to be affluent, one should eat more meat. It is time for us to accept that, if, indeed, we believe the scientific materials that we have developed, if, indeed, we believe that we are the leaders, then it is time for us to insist and make certain that our pyramid says a vegan diet, a vegetarian diet is the diet that will maintain, promote health and prevent diseases.

Thank you.

MS. HOWES: Speaker 28, please.

You may begin.

MR. HANNEMAN: Good morning.

I am Dick Hanneman, President of the Salt Institute. We have a commercial interest here. We represent salt producers.

I wanted to share with you, though, our strong embrace of strong science, and had submitted a couple of slides that I intended to illustrate my oral remarks. Unfortunately, I am told we are not going to have a chance to do that. So I will refer to them, and there are handouts I have given to the staff. It is a little less comfortable not talking with the slides.

But the point I would make is that evidence-based medicine doesn't mean just finding evidence to support the conclusions that you have, but to start with the rules of evidence and only use those that should apply.

We also think it also ought not to be talking about the biomarkers, the

intermediate variables, but rather health outcomes. So cardiovascular mortality, in this case, and other health outcomes.

In that regard, there are a couple of papers that were just produced in the last couple of years, one just last week. It would illustrate what I think is the kind of evidence you ought to look at.

Now we have known for 100 years that we would treat high-risk groups with low-salt diets. Most of you who would be physicians would recognize that a congestive heart failure patient would be, in fact, advised to go on a low-salt diet, but it was on the assumption that that would be healthy. Now we have two studies that examine it, both of them produced by Pontera and Group. I just wanted to quote, although I will leave the studies as well with you, what they said.

"In normal sodium diet compared with low-sodium diet in compensated congestive heart failure, is sodium an old enemy or a new

friend?" The conclusion was, "The results of the present study show that a normal sodium diet -- improves outcome in sodium depletion, has detrimental renal and neural/hormonal effects with worse clinical outcomes in compensated CHF patients. Further studies are required."

Yes, further studies are required, but the Dietary Guidelines Advisory Committee recognized that it kind of overreached in 1995, and the 2000 Guidelines took a step back on the area of fats. We encourage that to be done here.

Also, we have talked about satiety here. It is quite clear now that taste is not the modulating influence, but, rather, salt appetite is, again, hardwired in the brain, a study which we have submitted to you by Geerling and Loewy out of Washington University of St. Louis, which we commend to you.

Thank you very much for your

attention.

MS. HOWES: Thank you.

Speaker 29?

You may begin.

MS. MATTO: Good morning.

I am Michelle Matto, a registered dietitian with the International Dairy Foods Association, based here in Washington, D.C. IDFA's 220 dairy processing members represent more than 85 percent of the milk-cultured products, cheese, and frozen desserts produced in the U.S.

We were pleased that the 2005 Dietary Guidelines recommended three servings of dairy per day for most Americans and designated dairy as a food group to encourage. We believe that both of these recommendations should be carried over into the 2010 Guidelines. Dairy foods are a nutrient-dense choice and a major source of calcium, vitamin D, phosphorus, riboflavin, vitamin B12, protein, potassium, zinc, magnesium, and

vitamin A in the American diet.

In addition to the role of dairy products in building strong bones, research has also demonstrated benefits of dairy products for hypertension, weight maintenance, insulin-resistance syndrome, and type 2 diabetes.

Dairy foods provide a unique and diverse nutrient package. Many other substitutes do not provide the same nutrients or with the same bioavailability as dairy products. For people who are lactose-intolerant, reduced-lactose or lactose-free products are the best option since they will contribute the same nutrients as regular dairy products.

In addition to those dairy products that are specially formulated to reduce lactose, there are also dairy products that are naturally low in lactose, particularly cheese and yogurt. Through the processing of yogurt and cheese, the lactose

content in the finished product is reduced, and many lactose-intolerant individuals find they can consume these foods without discomfort. Since yogurt and cheese are naturally low-lactose dairy foods that provide many of the same nutrients as milk, they are often the best choice for consumers who want to avoid lactose.

In the report of the 2005 Dietary Guidelines Advisory Committee, the Committee advised that added sugars could be appropriate when added to nutrient-dense foods such as dairy foods and beverages to increase palatability and consumption of these foods.

In conclusion, we would recommend that this Advisory Committee make the following recommendations: recommend at least three servings of dairy per day; encourage consumption of nutrient-dense foods, including dairy products; encourage lactose-reduced dairy products as an alternative for those avoiding lactose; and specifically allow for

discretionary calories to increase consumption of nutrient-dense foods like flavored milks and yogurt.

Thank you.

MS. HOWES: Speaker No. 30, please.

You may begin.

MS. FAGA: Thank you.

Good morning.

I am Betsy Faga, President of the North American Millers' Association here in Washington, D.C. NAMA is the national association for the wheat, corn, and oat-milling industry. So, of course, we are interested in the grain-based foods portion of the Dietary Guidelines and know that they have long recognized the importance of grain-based foods in healthy eating, and, more recently, in the 2005 Guidelines, certainly talking about the importance of both enriched and whole grain products -- the enriched grains, for their folic acid, thiamine, riboflavin,

niacin, and iron, and the whole grains for their fiber and numerous other vitamins, minerals, and phytonutrients.

Science continues to support that consuming of both enriched and whole grains is good for you. Each offers a unique set of benefits. It is important to know that enriched grain products represent approximately 92 percent of the total wheat flour that is milled in the United States. Therefore, one cannot be forsaken for the other.

The milling, baking, and food processing industry has responded to the recommendations of the 2005 Guidelines with more and better-tasting whole grain foods that are found now on the grocery shelf. Consumers will continue to see new products as innovation continues within our industries and products come to market.

As you know, in 1998, the FDA mandated that folic acid be added to enriched

grain products, and as the gentleman from the CDC indicated, it estimates that about 1,000 babies are born each year without neural tube defects, which is about a 26 percent increase in the healthy babies that are born, something that we all pride ourselves in.

We encourage consistent messaging as you look at the Guidelines. FDA mandated the inclusion of folic acid, and CDC has a universal flour fortification initiative, so that the 2010 Guidelines, we believe, need to be consistent and looked at in the context of the FDA and CDC initiatives.

We appreciate the opportunity to be engaged in the Guidelines process that you are following and the very scientific approach that you are taking.

Thank you for this opportunity.

MS. HOWES: Thank you.

Speaker 31, please.

You may begin.

MR. McBURNEY: Good morning.

I'm Michael McBurney, head of Scientific Affairs, DSM Nutritional Products, Inc., in Parsippany, New Jersey.

Thank you, Committee, for serving and thank you for hearing me. My message is simple. Include fortified foods and supplements in your guidance.

With more than two-thirds of Americans overweight and obese, half of them not exercising regularly, the 2005 Dietary Guidelines recommended that people eat fewer calories, be more active, and make wiser choices.

Research shows that they are trying to do that, to eat less and reduce their energy intake, but this is challenging to accomplish this and obtain the essential nutrients unless they consume fortified foods or take a daily vitamin.

Earlier today, we heard about the importance of breakfast is the most important meal. It is not surprising, given that it

consists of fortified dairy products, fortified cereals, and orange juices.

So I encourage you to really think about leveraging consumer preferences for taste, convenience, and safe foods, and engage the food industry and supplement industry to address those shortcomings. Whether they are a vegan, an omnivore, or a meat-lover, there are solutions. The industry is here to help you, and we can make encouragements so that we address those deficiencies.

In my letter that I submitted earlier, I talked about vitamin D and the fact that our status of vitamin D, there's research showing it has declined over the last decade. We can address these. We have an opportunity to do that in the food and supplement industry and, with proper guidance from you, Americans can be better-served.

Thank you.

MS. HOWES: Thank you.

Speakers No. 32 and No. 33 are not

present. We will move on with speaker No. 34, please.

You may begin.

MS. HOBBS: Good morning.

My names is Suzanne Havala Hobbs, and I'm a registered dietitian and faculty member in the Gillings School of Global Public Health at the University of North Carolina at Chapel Hill. I'm also a nutrition advisor for the Vegetarian Resource Group, a non-profit educational organization that works with individuals, food companies, professional associations, and others to disseminate accurate information to the public about vegetarian diets.

Thank you for this opportunity to provide oral testimony today. In considering revisions for the 2010 Dietary Guidelines, I, like so many of the presenters so far this morning -- it seems about half -- encourage you to put more emphasis on choosing a more plant-based diet.

A plant-based diet is an eating pattern characterized by a foundation of whole grains, dried beans, fruits, vegetables, nuts and seeds. These foods are nutrient-dense and confer significant advantages in the prevention of cardiovascular disease, hypertension, obesity, cancer, and type 2 diabetes.

A plant-based diet is not necessarily vegetarian, but the majority of research on the health effects of plant-based diets has been conducted on people following vegetarian diets. For example, research in the U.S. and the U.K. found that vegetarians had lower death rates from cardiovascular disease and lower rates of fatal heart attacks than non-vegetarians. Vegetarians had lower blood pressures and lower rates of hypertension than non-vegetarians.

Vegans -- and that is vegetarians who avoid all animal products -- had the lowest blood pressures and the lowest rates of

hypertension compared to lacto-ovo vegetarians, fish-eaters, or meat-eaters.

In a Seventh Day Adventist population with a generally healthy lifestyle, type 2 diabetes was twice as common in non-vegetarians when compared to vegetarians.

A study in the U.K. found that overweight or obesity was twice as common in non-vegetarian men and 1.5 times as common in non-vegetarian women when compared to vegetarians.

Vegetarian diets with an emphasis on plant foods have been used successfully to treat cardiovascular disease, type 2 diabetes, hypertension, and obesity. These results suggest that, while not every American may choose to follow a vegetarian diet, significant health benefits can be achieved by a movement toward a more plant-based diet.

In addition to more explicitly supporting a plant-based diet in the 2010 Dietary Guidelines, I urge the Committee to

clearly present health concerns related to excessive consumption of red meat and processed meats. The AICR recommends that red meat consumption be limited to not more than 300 grams per week, little, if any, of which should be processed.

Develop new food groupings that don't place plant-based protein sources like dried beans on par with foods like red meat that can be high in saturated fat and devoid of fiber.

Similarly, recommendations should emphasize varied and good sources of calcium and other key nutrients, rather than focusing on a single food such as milk and its variations. Milk plus salt equals cheese; milk plus sugar equals ice cream, et cetera.

MS. HOWES: Thank you.

MS. HOBBS: Thank you.

MS. HOWES: In terms of time, we need to move on to the next presenter. Thank you very much.

Presenter No. 35, please.

You may begin.

MS. GRIFFEN: Thank you.

My name is Adriane Griffen. I am the Director of Health Promotion and Partnerships for the Spina Bifida Association.

The Spina Bifida Association, or SBA, urges you to consider updating the 2010 Dietary Guidelines for Americans by adding a specific recommendation of at least 400 micrograms of folic acid for women of child-bearing age and incorporating messages about the importance of folic acid consumption into the press releases and other collateral materials associated with the release of the new Guidelines.

SBA serves 250,000 Americans living with the challenge of spina bifida, which is the nation's most common permanently-disabling birth defect. Since 1973, the Spina Bifida Association has been the only national voluntary health agency dedicated to both

promoting the prevention of spina bifida and to enhancing the lives of those affected.

One of SBA's most vital functions is to communicate to the 65 million women of child-bearing age the importance of taking folic acid every day to reduce the risk of birth defects like spina bifida by up to 70 percent.

We are proud that SBA also serves as the administrative agent for the National Council on Folic Acid, which leads the collaborative effort between national health organizations like ours, government, and industry to educate women of child-bearing age about the importance of taking folic acid.

Since 1992, the U.S. Public Health Service, the Centers for Disease Control and Prevention, and organizations like SBA have recommended that women who could possibly become pregnant take 400 micrograms of folic acid every day.

In 1998, as you have heard from

others, the FDA added a requirement that folic acid be added to food products like enriched flour, bread, and grain products. These foods were chosen for fortification because they serve as staple products for the U.S. population, and we know that fortification has been effective in reducing the birth defects outcomes for most, for about 26 percent.

However, only a third of U.S. women right now are getting the folic acid they need on a daily basis. So, as such, we believe it is imperative that the 2010 Guidelines include messages and information about the importance of consuming a variety of folic acid-fortified foods from a varied diet and including the value of taking a daily vitamin for women of child-bearing age.

We want to thank the Dietary Guidelines Committee for hearing us today, and we also request these messages about folic acid consumption, again, appear in the collateral materials such as the press

releases regarding the disseminations of the new Guidelines.

Thank you.

MS. HOWES: Thank you.

Speaker 36, please.

You may begin.

MS. KAPICA: Hi. I'm Cathy Kapica, Vice President of Global Health and Wellness at Ketchum, providing comments on behalf of the Canned Food Alliance, whose primary mission is to serve as a resource for information on the nutrition, convenience, contemporary appeal, and versatility of canned food, including fruit, vegetables, beans, lean meats, seafood, and poultry.

The Canned Food Alliance strongly urges the 2010 Dietary Guidelines for Americans continue to include and promote canned products that are consistent with the overall dietary recommendations. Since the 2005 Guidelines were issued, there have been a number of studies confirming the benefits of

canned foods. Here's a quick summary of some of the information. References are included with the written comments.

Consumers want more choices to help them meet their nutrition goals and are relieved to know that canned fruits and vegetables can count toward these goals. Fresh does not always mean more nutritious. All forms -- canned, fresh, and frozen -- of fruits and vegetables provide needed nutrients to the diet.

The canning process locks in nutrients at their peak of freshness, and due to the lack of oxygen during the storage period, canned fruits and vegetables remain relatively stable up until the time they are consumed and have a longer shelf life.

Studies confirm that canned foods are comparable to cooked, fresh, and frozen varieties in their nutrient contribution to the American diet. Some canned products actually contribute more health-promoting

antioxidants than their fresh counterparts.

Canned blueberries have more anthocyanines compared to the amounts found in fresh and frozen. Half a can of canned tomatoes provides almost three times as much lycopene as one medium, fresh, uncooked tomato.

Mild heat treatment of carrots and spinach, as used in commercial canning, enhances the bioavailability of carotene. Canned pumpkin contains higher concentration of betacarotene than fresh pumpkin. The absorption of lutein in corn is also enhanced by the heat of the canning process.

The ingredients you choose, not the form of the ingredients, are what really determine a recipe's nutrient content. From a nutrition and sensory standpoint, recipes prepared with canned ingredients and those prepared using fresh and/or frozen ingredients rate comparably.

Canned beans, fruits, and

vegetables provide a number of key nutrients, including potassium, magnesium, folic acid, and iron. Canned seafood provides an excellent source of protein, B vitamins, and omega-3 fatty acids.

Canned fruits and vegetables are affordable. Canned fruits and vegetables don't contribute significantly to America's sodium and sugar intake. In fact, all canned fruits and fruit juices contribute less than 2 percent of added sugars in most Americans' diets, and vegetables contribute less than 1 percent of sodium.

Canned fruits and vegetables are safe. In a review of over 5300 foodborne-related outbreaks and over 150,000 cases of illness, commercially-produced canned fruits and vegetables did not directly account for a single foodborne outbreak, even though the produce category was linked to large numbers of foodborne illnesses.

MS. HOWES: Thank you for your

presentation.

MS. KAPICA: Thank you very much.

MS. HOWES: Speaker 37, please.

You may begin.

MS. RUHL: Good morning.

My name is Catherine Ruhl. I'm Associate Director for Women's Health Programs at the Association of Women's Health, Obstetric, and Neonatal Nurses. We are members of the Steering Committee of the National Council on Folic Acid, and I represent the National Council today.

Folic acid is a B vitamin necessary for proper cell growth. It helps to prevent certain birth defects such as neural tube defects which occur very early in pregnancy, often before a woman knows she is pregnant.

The National Council supports the recommendation in the Dietary Guidelines for Americans to consume 400 micrograms of synthetic folic acid daily, either from a

multivitamin or from fortified foods. As has been mentioned previously, this daily dosage can reduce the risk of having an NTD-affected pregnancy by up to 70 percent.

The most common NTDs are spina bifida and anencephaly. Spina bifida is a serious birth defect in which the spinal cord does not form properly, which can result in paralysis and weakness of the lower extremities. Annual medical and surgical costs for those with spina bifida in the U.S. exceed $200 million.

Anencephaly is a fatal condition in which the skull does not develop properly or, in some cases, not at all. These infants, if born alive, die soon after birth.

The Healthy People 2010 objectives have a target that 80 percent of non-pregnant women of child-bearing age will consume at least 400 micrograms of folic acid daily. This target has not been reached, and it is one reason why it is important that we

encourage the Dietary Guidelines to continue the folic acid recommendation.

Since the 1998 mandate for fortification of certain grain products, as has been mentioned, there has been a threefold increase in American women's blood levels of folate, according to the NHANES data, and neural tube defects have decreased by 26 percent.

However, it is not thought that this increase is due to supplement use because that has not been reported to have increased. Therefore, NCFA definitely advocates that the recommendation is maintained for the daily 400 micrograms of synthetic folic acid.

In my personal experience as a nurse midwife for 20 years, I have seen that women readily accept the advice to consume folic acid when educated about its benefits. I have also seen the enormous emotional and financial impact on families. We should take every opportunity to reduce and prevent these

serious birth defects.

Thank you.

MS. HOWES: Thank you.

Speaker No. 38, please.

You may begin.

MR. SHAO: Good morning.

My name is Andrew Shao. I'm Vice President, Scientific and Regulatory Affairs, for the Council for Responsible Nutrition. I appreciate the opportunity to provide these oral comments to the Committee today.

CRN is a Washington, D.C.-based trade association representing the dietary supplement industry. Our members include some of the largest, most well-known manufacturers of dietary ingredients and dietary supplements.

First, I want to remind the Committee that dietary supplements, as the name implies, are supplements to, and not substitutes for, a good, healthy diet. Survey after survey after survey, as we have heard,

have shown that Americans continue to come up short when it comes to achieving the recommended intakes for a variety of nutrients. This is especially true, as we know, for certain subgroups of the population, such as women of child-bearing age, pregnant women, and the elderly.

We encourage the Committee to consider the positive public health implications of recommending a simple, inexpensive multivitamin to fill essential nutrient gaps such as for vitamins E, C, and A, where consumers continue to fall short.

Americans also have inadequate intakes of calcium, magnesium, potassium, fiber, vitamin D, and long-chain omega-3 fatty acids. Obtaining adequate amounts of vitamin D and long-chain omega-3s from diet alone may be difficult, if not impossible, making supplementation an important and viable option.

We encourage the Committee in its

evidence-based review process to consider the totality of the evidence, including observational data that demonstrates a consistent relationship between adequate intake of these essential nutrients and reduced risk for chronic disease.

Observational evidence supporting the appropriate use of dietary supplements to complement a healthy lifestyle that includes a sound diet and plenty of exercise should be given adequate weight by the Committee in the same way observational evidence serves as the basis for recommendations for fruit and vegetable intake.

We support the Dietary Guidelines. We are pleased that the current 2005 edition recognizes the important role of dietary supplements as a tool for helping people improve nutrient intake.

We encourage the 2010 Committee to consider some modifications that would further clarify the important role of dietary

supplements.

Thank you.

MS. HOWES: Thank you.

Speaker 39, please.

You may begin.

MR. DALAL: Good morning.

I am Saurabh Dalal from the local area. I thank you for the opportunity to provide testimony.

These comments are presented on behalf of three non-profit, volunteer-driven organizations: the Vegetarian Union of North American, the Vegetarian Society of D.C., and the International Vegetarian Union. So there's no surprise what the theme of my comments is going to be.

Vegetarian foods offer powerful advantages for humans and can be nutrient-dense. A large number and wide variety of scientific studies have shown that well-planned vegetarian diets support good health for all stages of the life cycle.

Many nutritionists and other health professionals recognize that a well-planned, low-fat vegetarian diet, and preferably a vegan diet that consists of no animal products, is the best diet for humans. Animal products are the main source of saturated fats, as you know, the only source of dietary cholesterol, and contain no fiber, often resulting in high cholesterol levels and variety of diet-related diseases.

Preventing and sometimes reversing heart disease as well diabetes, preventing several types of cancer, lowering blood pressure, and helping manage weight are among the many successes of such a diet.

We urge the Advisory Committee to clearly emphasize plant foods and alternatives to meat, dairy, and eggs. A wide variety of plant foods consisting of whole grains, whole fruits, vegetables, legumes, nuts, seeds, and fortified cereals, and fortified plant milks can ensure a healthy, well-balanced diet.

Naturally and strongly-colorful vegetables and fruits should also be emphasized for their antioxidant and phytonutrient value.

There's a few points I will highlight.

A diet drawn from varied plant sources easily satisfies protein requirements without the potential for protein excess. Animal proteins, being more acidic, force calcium out of the body, thereby promoting bone loss. Many plant sources of calcium exist with absorption being high. Excellent examples are dark, leafy greens like collard greens and kale. Calcium from plant foods would increase the intakes of boron, vitamin K, and magnesium, helping reduce the risk of osteoporosis.

Also very important in regard to these basic food groups is that each serving of leafy greens counts as a serving from the calcium-rich foods groups and the vegetable

group, which shows the versatility of plant foods.

Irons plentiful in beans, whole grains, and fruits and flax seeds and flax seed oil are good sources of omega-3s.

Eating patterns are changing, and the diets of a great many are more plant-based than a decade ago. Those moving away from animal products must be supported with guidance that includes alternatives to animal foods and cow's milk. So we urge the Advisory Committee to clearly incorporate even more plant foods, specifically a well-planned, low-fat vegan diet into the Dietary Guidelines 2010.

Thank you very much.

MS. HOWES: Thank you.

Presenter No. 40.

You may begin.

DR. KRIS-ETHERTON: Thank you for the opportunity to present the views of the American Heart Association.

I am Penny Kris-Etherton, Distinguished Professor of Nutrition at Penn State, and I am a member of the American Heart Association's Nutrition Committee. I also served on the 2005 Dietary Guidelines Advisory Committee.

The American Heart Association is committed to promoting healthy eating plans. It has long been a top priority of the Association.

In this regard, AHA has established a series of dietary, physical activity, and weight control guidelines, such as the Association's Diet and Lifestyle Recommendations, which were most recently updated in 2006. AHA firmly believes that better food habits are essential to cardiovascular and overall health.

AHA has a number of recommendations we would like the Committee to consider when developing its report. These are described in detail in our written

comments. I would like to highlight a few of them today.

First, the Dietary Guidelines should set a limit on intake of added sugar. No more than one-half of discretionary calories should come from added sugars.

Second, the Committee should place an increased emphasis on the consumption of fish and describe it as an important source of protein.

The Guidelines also should emphasize plant sources of protein such as legumes and beans. Other protein sources should be very lean and extra lean.

Third, to encourage consumption of healthier fats such as omega-3s, the Committee should recommend consumption of 250 to 500 milligrams of EPA and DHA per day, which equates to approximately two servings per week of oily fish.

In addition, the Committee should request that the IOM update its DRI

recommendations on essential fatty acids.

The Committee should tighten its recommendations for saturated and *trans* fats. Saturated fats should be less than 7 percent of calories, and the *trans* fats recommendation should be revised as low as possible, but no more than 1 percent of energy.

Fourth, the Committee should recommend a significant reduction in sodium to 1500 milligrams per day, the amount recommended in the 2005 Guidelines for Salt-Sensitive Populations. With the hypertensive African-American, middle-aged, and older adult populations now constituting a majority of Americans, the 1500 recommendation should be expanded to the entire population.

The Committee may want to consider recommending a two-phase sodium reduction, such as 1500 milligrams by 2020 with an intermediate goal of 2000 by 2013.

MS. HOWES: Thank you very much

DR. KRIS-ETHERTON: Thank you for

the opportunity to present AHA's comments.

MS. HOWES: Speaker 41, please.

You may begin.

MS. MONCRIEF: Thank you.

Hi, and thank you for considering our recommendations for the 2010 Dietary Guidelines.

My name is Dawn Moncrief, and I'm the Director of Well-Fed World, a non-profit campaign based in D.C., promoting the plant-based solutions to improve public health and increase global food security. So, obviously, very well-represented here today, our views, so, hopefully, it will encourage a fresh look at the benefits of plant-based eating.

One of the things I wanted to point out, as you already know, but re-emphasize, is that heart disease, cancer, stroke, and diabetes are America's top killers. Diet-based solutions, such as reduced meat consumption, vegetarianism, and veganism, have proven to drastically reduce

these and other chronic diseases that afflict millions of Americans annually.

As such, the benefits of plant-based eating should be clearly delineated to increase public awareness and to counter public misperception.

Fiber- and antioxidant-rich foods, particularly fresh, whole fruits and vegetables, protein-rich legumes, and whole grains, should be further promoted and encouraged, as their positive connections with health have been well-documented through countless research and science-based studies.

The flip side is also true. Research is clear about foods that show detrimental effects on health. Foods that are refined, processed, sugar-laden, or high in saturated fats should be strongly discouraged. In particular, a multitude of research shows a well-established connection between foods of animal origin and negative health outcomes.

Dietary recommendations about

animal-based products such as meat, eggs, and dairy, which contain saturated fat and cholesterol and are 100 percent devoid of fiber, should be avoided. We should encourage limiting and avoiding them altogether.

Recommendations should also be basic enough so that people who are not food-savvy can understand them and sophisticated enough for health-conscious consumers. As such, details should be provided within each option in each category.

For example, fruits and vegetables are best when they are whole, fresh, or frozen, and variety is important. People should eat their colors. Specify this.

Plant-based proteins and calciums such as soy, legumes, and nuts are not only adequate, but are superior in some respects, in that they also provide fiber, good fats, a wide variety of micronutrients and antioxidants, and advantages over animal-based options.

A positive step in this direction would be to rename the categories. If you want people to eat calcium, put calcium and list dairy as one of the calcium options along with the other options, such as soy and green, leafy vegetables. Name the category protein instead of meat, and put the other options in there. That way, we are more clear for folks.

MS. HOWES: Thank you very much. We have to move along for time.

MS. MONCRIEF: Okay. Thank you very much, and please let science lead your decisions and not the special interests.

Thank you.

MS. HOWES: Presenter No. 42, please.

You may begin.

MS. SMITH: Thank you.

Good morning.

I am Ilene Smith, Senior Vice President and Associate Director of the Food and Nutrition Practice of Ketchum, an

integrated communications and marketing agency with a history of over 40 years of helping companies and commodity boards promote sound nutrition messages.

As a registered dietitian and communications professional, I work with food organizations to deliver messages that help consumers overcome dietary shortcomings.

In 2008, Ketchum commissioned a global study called, Food 2020 to shed light on consumers' chief food concerns today and how they expect those to shift over the next decade. I will focus my remarks today on what we learned from the U.S. consumer. We hope that this information will help guide the Committee deliver recommendations in a manner consistent with consumer expectations.

The results show that consumers clearly consider health and well-being a top priority with food as the gateway to wellness, and painted a picture of consumers wanting more -- more information, more choices, more

accountability, and more control.

Some key findings include:

Not surprising, taste, quality, and price are still the top considerations in choosing food. Health benefits follow these. When you remove cost from the equation, taste was the top barrier to healthier eating.

The implication here is that it will be challenging to affect consumers' eating habits for the better if we continue to de-emphasize taste in favor of optimal nutrition. We need to keep in mind that, when we tell consumers to eliminate or reduce fat, sugar, and salt from their foods, what they hear instead is that they need to eliminate taste.

Consumers also want to know more about their food, what's in it and where it comes from, and are eating with a conscious. Sixty-seven percent of U.S. consumers want to be able to recognize all of the ingredients on a food label. Thirty-seven percent want foods

to be made with as few ingredients as possible.

They also want more of a say in how their foods are made, the amount of artificial ingredients and additives used in their foods, how animals used for foods are treated, how land is used to make and grow food, and how agricultural workers are treated.

The implication and opportunity for the Dietary Guidelines is to encourage consumers to select foods based on more holistic criteria than nutrients alone.

The research also provides some indication of where the Guidelines should head in 2020. When consumers were asked to project what factors will become more important to them in that year, nutritional value and health benefits moved up the list in priority.

As you can see, the consumer sees food in a broad scope and manner. Keeping this issue in mind when deliberating nutrition

science, it is our hope that this holistic view will help encourage compliance with the upcoming 2010 Dietary Guidelines.

Thank you for this opportunity.

MS. HOWES: Thank you.

Speaker No. 43 is not present. We will move along with speaker No. 44.

You may begin.

MS. HAMLIN: Chicken nuggets, mozzarella sticks, pizza, cheeseburgers, and hotdogs. I'm Amie Hamlin. As Director of the New York Coalition for Healthy School Food, I visit many cafeterias, and it is unbelievable that these regular menu items are described as balanced and nutritious and that they meet the Dietary Guidelines for Americans.

Many entrees have more sodium than a child should eat for the whole day. Canned vegetables end up in the garbage. The majority of children of color either cannot or will not be able to digest the milk and may be suffering in school because of it.

The majority of school meals are not health-supporting. Since school meals are to be consistent with the Guidelines, we recommend these changes, meat and beans group, change the name to the protein group, with legumes and other plant proteins as the primary source. Animal proteins should be listed as optional or infrequent.

Plant proteins lower cholesterol and cancer risk, and animal proteins cause them to rise. There's a clear relationship between animal product consumption, heart disease, and cancer. With recommendations to encourage more fruits, vegetables, and whole grains, we need to add plant-based entrees to that list.

Dairy group, change the name to the calcium group. It is a mistake to focus so much on dairy when people in the U.S. cannot digest it, including the majority of people of color. The possible connection of dairy to prostate cancer and other health

problems means it is time to change the focus away from dairy.

Research does not support that dairy prevents osteoporosis. Osteoporosis is the result of a number of lifestyle choices, and reliance on dairy products is an oversimplification. The Guidelines should point out the other factors that contribute to osteoporosis. The calcium group should feature high-calcium foods and calcium-fortified non-dairy beverages as the healthier choices.

We must also take into account that raising animals for food contributes more to global warming than all transportation combined, and we should not be making recommendations that are unsustainable.

Grains group, we should not lump together refined and unrefined grains. The recommendation should be for most grains to be whole.

Fruits and vegetables, let's

suggest that people dramatically increase their intake of all whole fruits and vegetables, especially leafy greens. Let's tell people what we know.

As fruit and vegetable consumption increases in the diet, chronic diseases and premature deaths decrease, and the excess consumption of animal products has been repeatedly shown to be dangerous. Let's actively discourage consumption of animal products and processed foods.

The 2000 Guidelines stated that most of our calories should come from plant sources. This was removed for 2005. Please add that statement back, emphasize it, and make it very clear that the majority of heart disease, type 2 diabetes, and certain cancers are preventable with diet.

It is a free country. People can choose to eat how they want, but, please, let's tell them real truth, the kind that is not paid for or influenced by the food

industry.

With our new President comes much hope. On behalf of the New York Coalition for Healthy School Food, it is our hope that the Dietary Guidelines for Americans, which school meals are based upon, can reflect dietary recommendations that result in good health and are expressed in a way that is easy for Americans to understand.

The top recommendations we would give are as follows, dramatically increase whole unprocessed foods of plant origin, especially fruits, vegetables, and legumes, and plant-based entrees.

Dramatically reduce foods of animal origin.

Dramatically reduce processed foods.

Thank you.

MS. HOWES: Thank you.

Speaker 45, please.

MR. PHILLIPS: Good morning.

MS. HOWES: You may begin.

MR. PHILLIPS: Thank you.

I am filling in for Dr. David Katz of the Yale University Prevention Research Center. My name is Chris Phillips, and I represent NuVal LLC, the independent nutritional scoring company formed a year ago to bring to market what we truly believe could become the universal standard for clear, consistent, consumer-directed guidance on nutrition -- one number, one decision, one food at a time.

The full volume of information that appears on the nutrition facts panel and the ingredients statement is run through an exhaustive algorithm developed by a dozen of the nation's leading experts on nutrition, computes a score 1 to 100, ultimately, for every single one of the more than 50,000 food and beverage products available today in the average U.S. supermarket.

Three key points underlie my

remarks here today.

First, while dietary guidance historically has been provided at the level of the whole diet, most food choices are made not with an overall plan in mind, but simply with one product at a time.

Second, truly effective dietary guidance may need to encompass both the whole diet and the specific food choices that become the diet.

And third, a flurry of systems claiming to offer guidance at the level of the individual food choices is currently populating the marketplace, and warrants scrutiny and assessment by a body of this nature.

Consumers aren't just politely asking for food guidance today. They are demanding it. The proliferation of food-scoring-assisted programs over the past year in this country isn't just some, me too marketing phenomenon. It is a direct and very

real response to the overwhelming consumer need for nutritional clarity.

As I said, I am filling in today for Dr. David Katz of Yale University. He is the principal inventor of the algorithm called the Overall Nutritional Quality Index, or ONQI, which is the underpinning of the NuVal system.

My main objective here today is not really to push the NuVal system, though it should come as no surprise that we believe ours is singularly the best. Nothing comes even close to the breadth and depth of our scientific model, both in terms of the nutritional variables that are measured and the enormity of the food supply we are scoring. It is also the only system that includes in its calculation the relationship between nutrients and health outcomes.

We see our system as a turnkey solution, a universal measure that can drive consumer awareness and shape their dietary

habits. But, frankly, whether it is NuVal or another deserving system, all that really matters in the end is that consumers are finally able to rise above the clouds of confusion and see, with confidence and clarity, the nutritional value, or not, of the food they are buying for their families.

I would like to encourage the Dietary Guidelines Committee to look closely and critically at all these systems, including ours, consider how the right holistic approach can actually work in tandem with the Guidelines, enhance their effectiveness and bring them to light.

By giving consumers the vital information they need in plain English or simple arithmetic, we finally help move the needle on better nutrition. In other words, consumers need something more actionable and in no better place than right at the point of purchase.

I would like to leave the

Committee with a short list of questions and observations.

Could a subgroup of the Committee be assembled to look at the nutrition-profiling systems and offer the public some advice about the good ones and their value and use?

Could the Guidelines consider systems that help people make good choices within food categories? The Dietary Guidelines address categories of foods and overall dietary pattern, but people choosing bread or salad dressing cannot do so based on dietary-level guidance. They need food-level guidance as well.

And could the Committee consider addressing relevant principles for food-level guidance to help the public choose among the proliferating systems?

And finally --

MS. HOWES: Thank you for your comments.

MR. PHILLIPS: Okay, thank you.

MS. HOWES: We need to continue on.

MR. PHILLIPS: Thank you very much.

MS. HOWES: Thank you. We have your written statement.

At this time, we are delighted that we will be able to go into the alternate group of presenters.

Guideline Committee, in your books they are listed as standby 1 through 13 on the list. If you're following, for the public, they will start with No. 46.

At this time, may I please have Mindy Kursban to the microphone?

MS. KURSBAN: Good morning.

My name is Mindy Kursban. I'm here as an individual asking to support three recommendations. I would first like to share my personal experience.

I grew up eating the standard

American diet. Fast foods several times each week; Sunday mornings of eggs and bacon; every lunch and dinner centered around a meat dish.

I was 40 pounds overweight by the time I was 17 years old. At that time, I began searching for information about losing weight and being healthy. Today my weight is where it should be, my cholesterol is 148, I take no medications, I have no health issues, and have been vegetarian for 17 years and vegan for 11.

In contrast, my father, who never changed his eating habits, has had two heart bypass surgeries, several angioplasties, takes numerous medications to control his blood pressure, cholesterol, and other chronic conditions, and has been diagnosed as pre-diabetic.

I point this out to show that choosing a healthy diet, regardless of family genes, can prevent the majority of chronic diseases that are now prevalent in epidemic

proportions in this country, and to serve as an anecdotal example of what the scientific studies we've heard about today, I'm sure you all know about, support.

My personal involvement with the World Nutrition is that I served for eight years as General Counsel and Executive Director of the Physicians' Committee for Responsible Medicine and the Cancer Project, two organizations that are spearheading progressing efforts for using nutrition as a tool for preventive medicine.

Based on this background, I believe it is not only the plant foods I include in my diet, but the unhealthy animal products that I have excluded from my diet that keeps me so healthy.

The three recommendations I ask you to include in the 2010 Dietary Guidelines are the following.

First, include information on the benefits of following a vegan diet and

strongly recommend this eating style for everyone.

Second, include truthful and accurate information about the health risks of all meats, which includes beef, pork, chicken, and fish, and stop recommending their consumption. They should be optional at best.

Third, remove the recommendations that Americans consume dairy and stop allowing this as a food group in the Pyramid. Dairy products are healthy if you are a calf. Otherwise, it is fundamentally illogical, and also against an increasing amount of scientific evidence being published, that humans need to consume the mammary secretions of another species to be healthy.

Thus, the four food groups should be fruits, vegetables, whole grains, and legumes, which not only provide adequate amounts of calcium, but also many other nutrients that are equally important in our diet, such as vitamin A, vitamin C, vitamin E,

magnesium, potassium, fiber, and the list goes on.

Thank you very much for the opportunity to speak today.

MS. HOWES: Thank you.

Alternate No. 2, Kathleen McMahon.

You may begin.

MS. McMAHON: I am Kathy McMahon, Director of Nutrition and Scientific Affairs for the William Wrigley, Jr., Company, a subsidiary of Mars, Incorporated, located in Chicago, Illinois.

I am here to discuss the potential role of chewing gum in the Dietary Guidelines. There are two areas that we propose chewing gum can be considered for inclusion in dietary guidance. First, in the reduction and prevention of dental caries and, second, as a tool in weight management.

In the reduction and prevention of dental caries, we request that the Committee consider the addition of chew sugar-free gum

after eating when you can't brush, under optimizing oral hygiene practices in the carbohydrates section. The body of evidence clearly shows that chewing sugar-free gum provides functional oral health benefits. Sugar-free chewing gum is unique because it is non-cariogenic and it acts through stimulation of saliva at about 10 times what is normally found in the mouth.

Stimulated saliva leads to neutralization and buffering of plaque acids, oral clearance of sugars, acids, and food debris from the mouth, and remineralization of tooth enamel.

Several randomized clinical trials demonstrate the benefits of chewing sugar-free gum in cavity reduction. As an example, a two-year randomized clinical trial was conducted in Hungary with almost 550 children ages 8 through 13. The treatment group chewed three pieces of sugar-free gum each day for two years, one piece following each meal,

while the control group chewed no gum. These researchers found a close to 40 percent decline in dental caries in comparison to the control group.

In recognition of the strength of the body of research evidence globally, 17 dental associations, including the World Dental Federation, have recognized the scientific evidence behind the benefit of chewing sugar-free gum for oral health. The American Dental Association, known for its stringent policies, awarded its Seal of Acceptance to sugar-free gums in 2007.

A second consideration, chewing gum can be a strategy to help manage calorie intake and weight management. Chewing gum can serve as a substitute for a high-calorie snack and as a small calorie savings each day that can make an impact in decreasing total calorie intake over time.

Sugar-free gum is only five calories per serving and is consumed in small

amounts. The reference amount is only 3 grams.

It is found in many dietary plans, and there are three studies supported by the Wrigley Science Institute that demonstrate the role of chewing gum in short-term hunger and appetite control. Results indicate that chewing gum hourly after lunch for three hours helped reduce energy intake of an afternoon snack. Hunger and desire to eat were significantly suppressed by chewing gum.

In conclusion, chewing gum can play a role in dental caries prevention, and in weight management, because of its lower calorie content, can fit well within the dietary guidance and discretionary calorie limits.

Thank you.

MS. HOWES: Thank you.

Standby No. 3, Julie Obbagy.

MS. OBBAGY: Hi. My name is Julie Obbagy. I'm a registered dietitian as well as

the Director of Scientific Affairs for the Soy Foods Association of North America.

The Soy Foods Association of North America appreciates the opportunity to comment on the development of the 2010 Dietary Guidelines for Americans and urges the Committee to reference soy foods more prominently in the final report.

Soy foods are a healthy choice for all Americans. Soy foods contain significant amounts of key nutrients that Americans are advised to consume more of and are low in nutrients that Americans should be consuming less of.

For example, fortified milk, the most popular soy product consumed by Americans, is a high source of calcium and vitamin D and a good source of vitamin A, as defined by the FDA. It also provides protein, iron, and potassium.

Whole soybeans or edamame are high sources of fiber, magnesium, potassium, and

calcium.

In addition, soy foods are cholesterol-free and low in saturated fat and calories.

Soy foods fit into nearly every category of USDA's MyPyramid, including milk, vegetables, meat and beans, greens, and oils, and can help Americans in meeting federal dietary recommendations.

Soy foods contain high-quality protein with all nine essential amino acids and can meet the needs of children and adults when consumed as the sole source of protein.

According to the FDA protein quality determination method, soy foods are the only plant-based protein equivalent to eggs and milk.

A 2007 evidence-based review and a more recent clinical study find that soy protein is as good as other protein sources for promoting weight loss, and that including soy in the diet is a strategy for weight

management.

Soy foods contribute to overall health for Americans throughout the life cycle. In 1999, the FDA approved a health claim for soy protein in coronary heart disease. In 2008, four evidence-based reviews confirmed that soy protein lowers total and LDL cholesterol.

The American Institute for Cancer Research's 2007 report found that a plant-based diet which includes soy foods can help reduce the risk of developing cancer.

More recently, clinical trials exploring the role of soy in protecting against breast cancer and prostate cancer have shown promise.

The American diet continues to broaden to include more culturally-diverse and nutrient-rich foods. A variety of affordable soy products provides choices for Americans seeking more plant-based options because of cultural, religious, health, or medical

reasons.

A recently-released National Health Statistics report found nearly one in 200 American youths reported practicing a vegetarian diet.

In 2008, 28 percent of Americans consumed soy foods and more than a third consumed soy products at least a few times a week.

We strongly recommend that the 2010 Dietary Guidelines reflect the changing dietary preferences and needs of the American public, and urge you to feature soy foods more prominently in the 2010 Dietary Guidelines for Americans.

Thank you.

MS. HOWES: Thank you.

Standby No. 4, Eva Rand.

You may begin.

MS. RAND: My name is Eva Rand. I'm a registered dietitian. I work for a team of 20 primary care physicians in Bethesda,

Maryland.

Everyone agrees the obesity epidemic in our country is out of control. On January 9th of this year, the National Center for Health Statistics informed us that the number of obese Americans now exceeds the number who are merely overweight, based on body mass index. That equals 34 to 33 percent, respectively, from data collected in 2005 and 2006.

With the rates of heart disease, cancer, diabetes, and numerous other serious conditions and illnesses with strong links to diet, it has become apparent to me that the Food Guide Pyramid is simply not a useful format for helping Americans determine what and how much to eat.

As a registered dietitian having counseled thousands of patients over the years, I can tell you virtually none of my patients has extracted any useful information from the Pyramid. Virtually none of them has

gone to mypyramid.gov to learn how to make personal use of the Dietary Guidelines.

I believe that is because the Pyramid, a triangle really, is simply a format that is unappealing to people. They don't know how to translate the information packed into the Pyramid into something useful for themselves. The one exception is the inclusion of the person running up the steps that was put in 2005.

What I propose is scrapping the Pyramid altogether and replacing it with something that I have found works far better. Let me call it "The Food Guide Plate". This is a much simpler approach that even children can grasp immediately.

People simply want to know, what should I eat? Whether it is for breakfast, lunch, or dinner, they find it too confusing to translate the information from the Pyramid into something they can immediately use at mealtime, whether at home or when eating out.

And few people have the time or interest to search through the Guidelines book or website to find the answers.

The second proposal I would like to encourage is to devote more attention to plant-based diets. There is ample evidence that limiting or avoiding meat, poultry, fish, and dairy promotes health and longevity. Perhaps this diet is not for everyone, but encouraging Americans to begin the process of moving away from our typical meat-based fatty diet toward a healthier plant-based diet just makes sense.

The health rewards of doing so are enormous, as I see every day in my practice. People lose weight automatically. High blood pressure drops. Blood sugar levels improve. Cholesterol improves. People are able to lessen or entirely get off their medications.

And a plant-based approach could be combined by my healthy plate concept that I described in the beginning of my talk.

Thank you very much.

MS. HOWES: Thank you very much.

Alternate No. 5 is not present. So we will move on to Alternate No. 6, or No. 51, if you are following on your schedules.

DR. EASLEY: Good morning, Committee members.

I am David Easley, MD, from Louisville, Kentucky. I am a physician and psychiatrist in private practice with the Center for Cognitive Therapy.

Thank you for allowing me to come here today and speak.

The Guidelines Committee, of course, needs to address all components of the diet, but the evidence from the Department of Agriculture and its development from 1840, when the nitrogen, phosphate, and potassium led to abundant agriculture success and Lincoln starting this Department, and then in 1930 food processing began, which removes potassium and substitutes sodium in all

processed food.

The difficulty is that humans are unable to remove sodium in excess of twice the potassium in grams per day through the kidney. The process leads to intracellar loss of potassium throughout the body.

The cardiovascular effect is a reversible effect that causes tightening of muscles and causes impotency in men, and failure to respond to insulin, and obesity. But in the human brain, the effect of low intracellular potassium is irreversible, and this irreversible loss in children in mirror cells causes autism, in adolescents and school-aged children being fed the modern diet causes attention deficit disorder and behavior problems, and in the elderly, feeding them a diet high in sodium, low in potassium of processed food causes Alzheimer's.

These illnesses must be addressed immediately by the Guidelines by this committee.

Thank you for your attention.

MS. HOWES: Alternate No. 7, Kathy Hoy, please.

You may begin.

MS. HOY: Good morning.

My name is Kathy Hoy. I'm with the Produce for Better Health Foundation in Wilmington, Delaware.

Thank you for the opportunity to speak on behalf of the Produce for Better Health Foundation.

PBH is a non-profit, consumer education foundation whose purpose is to motivate people to eat more fruits and vegetables to improve public health.

Fruit and Veggies: More Matters, formerly the Five-A-Day Program, is the nation's largest public/private fruit and vegetable nutrition education initiative, with Fruit and Vegetable Nutrition Coordinators in each state, territory, and the military.

PBH is a member and co-chair,

together with CDC, of the National Fruit and Vegetable Alliance, consisting of government agencies, non-profit organizations, and industry, working to collaboratively and synergistically achieve increased nationwide access and demand for all forms of fruits and vegetables for improved public health.

PBH commends USDA, HHS, and the Dietary Guidelines Advisory Committee for their important work on the development of the 2010 Dietary Guidelines. Overall, we believe the Guidelines, as they relate to fruits and vegetables, are currently solid.

PBH has no specific recommendations for changes and strongly supports continuing to base the Guidelines on evidence-based science. More of our concern lies in the area of properly translating and communicating these core dietary messages to the consumer.

Specifically, we have three recommendations.

First, emphasize food first. PBH suggests the Guidelines highlight that dietary supplements cannot replace fruits, vegetables, and other whole unprocessed or minimally-processed foods.

Secondly, the 2005 Dietary Guidelines nicely emphasized what foods should be consumed more, but PBH suggests that the 2010 Dietary Guidelines be even more explicit about what should be consumed less. It is our experience that consumers are still not sure what foods contain sodium, saturated fat, or *trans* fats, and that at least several examples should be explicitly identified for them.

Lastly, promotion. PBH encourages the Dietary Guidelines Advisory Committee to recognize that fruits and vegetables are underconsumed by the U.S. public to a greater extent than any other food group; that this low consumption level impacts the variety of fruits and vegetables consumed, the ability to obtain both essential and protective nutrients

in adequate amounts, and the caloric density of the diet.

We encourage maintaining consistency of messaging about recommended intakes to avoid consumer confusion about personal requirements.

While underconsumption of fruits and vegetables is likely the result of a number of factors, fruits and vegetables are clearly not promoted to the extent that other food groups are. This, coupled with excessive advertising of less nutritious foods, lack of fruit and vegetable consumption by role models, and many other factors, impacts overall consumption of fruits and vegetables.

The aggressive promotion of fruits and vegetables should be the shared responsibility of federal and state agencies with health and nutrition responsibilities, non-profit groups such as PBH, industry educators, and individuals.

Given limited funds, even more

coordination among all of these groups to provide consistent messages to consumers is important. The Committee should encourage USDA and HHS to further collaborate with PBH, states, educators, and the industry to promote consistent fruit and vegetable messages, such as, Fruits and Veggies: More Matters, that are consistent with the Dietary Guidelines.

Thank you very much.

MS. HOWES: Thank you for your presentation.

Alternate No. 8, or No. 53, if you are following the list that was distributed, is not here today. So we will move on to 9 or 54.

Becky?

Thank you.

DR. DOMOKOS-BAYS: Good morning.

I am Dr. Becky Domokos-Bays, Director of Food and Nutrition Services for Alexandria City Public Schools in Alexandria, Virginia.

I am pleased to provide comments to the Committee on behalf of the School Nutrition Association and its 55,000 members.

In 1994, the Healthy Meals for Healthy Americans Act required schools participating in the School Lunch or School Breakfast Programs to serve meals consistent with the Dietary Guidelines for Americans. SNA strongly supported this provision then, and we continue to strongly support the use of Dietary Guidelines for Americans today.

Our 55,000 members at 100,000 schools serve 30 million students and over 36 million meals daily. They have the legal obligation to meet these standards and are committed to serving the most nutritious and safe meals possible within our limited reimbursement rates.

Since 2007, in response to requests by the USDA, our members have begun proactively implementing the recommendations of the 2005 DGAs within the current meal

pattern requirements and nutrition standards. For the last two years, most of the attraction with regard to child nutrition has focused on the key issue of nutrition standards.

School nutrition professionals recognize the importance of nutrition and exercise in everyday life. SNA supports Dietary Guidelines that provide consistent standards for schools throughout the country. The Guidelines should allow for a consistent and understandable meal pattern for school meals which are practical and achievable and be applicable to competitive foods sold outside of the meal program, whether in the cafeteria or down the hall in vending machines.

SNA is deeply committed to the Dietary Guidelines for Americans, and we believe that they should be applied to all foods and beverages sold in schools throughout the school day. Foods and beverages available at school can contribute to teaching children

lifelong healthy eating habits. This principle will be accomplished in partnership with school nutrition professionals, teachers, parents, and the broader community.

School meals are a critical safety net for children. However, they are not the only source of nutrition. Meals consumed outside of school hours, on weekends and during academic breaks, should also meet nutritional goals.

Current and future implementation of these updated Guidelines will require a collaborative effort with all stakeholders. We urge the Committee to develop guidelines which will better foster healthy eating habits and behaviors in children both in and out of the school setting.

The school nutrition environment, including facilities, labor, and skill level of employees, varies significantly across the country. Regardless of professional capability and available facilities, we must

provide a nutritionally-balanced school lunch within the current federal reimbursement rate of $2.57.

Within these limitations, we want to work with you for the development of Dietary Guidelines that are both practical and achievable. Standards should be written in plain language, so that people of all capabilities can readily understand them.

As those tasked with implementing the Guidelines, we must also be sure that the meals we serve are attractive to our national student body. The achievement of good nutrition depends on consumption and education, in addition to a carefully-designed program.

SNA looks forward to working with the Dietary Guidelines Advisory Committee as the 2010 Dietary Guidelines for Americans are developed. We will be pleased to participate in any meetings or other activities that the Committee holds, as may be appropriate.

Thank you very much for allowing us to participate today.

MS. HOWES: Thank you.

Alternate No. 10, or No. 55 on your sheet; alternate No. 11, or 56 on your sheets, did not come today. So we will move on with alternate No. 12, or No. 57, Maureen Storey.

DR. STOREY: Good morning.

I am Maureen Storey, Senior Vice President for Science Policy for the American Beverage Association.

ABA welcomes the opportunity to address Secretary Leavitt's request that the panel consider one or two Dietary Guidelines recommendations that would have the greatest impact on consumers' health, especially obesity.

This is a difficult task because good health is not just about diet, but about a lifestyle that includes other health-promoting choices such as physical activity.

Nevertheless, there are two important actions that can be taken to help reverse the obesity trend and to reinforce overall good health of Americans. We would encourage the Committee to reinforce two actions.

Number one, the overarching theme of the 2010 Dietary Guidelines for Americans should focus on the total diet, the importance of physical activity, and the essential role that energy balance plays in achieving and maintaining a healthy weight.

Action two, we encourage the Committee to set a dietary guideline for hydration, recognizing that water is a vital nutrient for sustaining life.

To effectively combat overweight and obesity, the ABA believes that dietary guidance must focus on energy balance, all calories in and all calories out. To that end, we must encourage consumption of balanced, moderate, and varied diets that meet nutritional needs while ensuring adequate

physical activity to maintain energy balance.

Within that context, we do not believe that any one food or beverage should be branded as good and another bad. This is elegantly discussed by Allison and Mattes in an editorial published in The Journal of the American Medical Association last week. There are no simple solutions to the complex issue of overweight and obesity or overall good health, including eliminating a single food or beverage from one's diet.

Second, consumers must be educated on the importance of hydration as part of an overall healthy, active lifestyle. This is important for everyday living and, in particular, when there is an increase in physical activity.

The basic science for the hydration guideline was published in the 2004 report form the IOM on Water and Electrolytes, the International Life Sciences' Monograph on Hydration: Fluids for Life, and the 2007

supplement to The Journal of the American College of Nutrition.

It is now time for the Dietary Guidelines to play an important role in helping to educate healthcare professionals and consumers about the importance of hydration.

In its report, the IOM panel emphasized that water is the most important and most essential nutrient for the body and recognized that all beverages are comprised primarily of water and, therefore, contribute to daily hydration needs of consumers.

In summary, to reduce the trends of overweight and obesity and to achieve overall good health for all consumers, the ABA proposes the following two recommendations that would have the greatest impact on overall health:

One, the overarching theme of the 2010 Dietary Guidelines for Americans should focus on the total diet, energy balance, and

the importance of physical activity in achieving and maintaining a healthy weight.

Two, a guideline for hydration should be included in the 2010 Dietary Guidelines for Americans, with focus on an adequate intake of total water from all beverage sources and within individual energy needs.

Thank you.

MS. HOWES: Alternate No. 13, or speaker No. 58, is not present. So, at this time, I would like to call forth our last presenter, No. 32.

You may begin. Thank you.

DR. ZUCKERMAN: Yes, the good news is I'm last.

I am Dr. Diana Zuckerman. I am President of the National Research Center for Women and Families. Our non-profit center is dedicated to improving the health and safety of adults and children by scrutinizing medical and scientific research information.

In addition, I am a Fellow at the University of Pennsylvania Center for Bioethics.

There are many important issues that you are going to be dealing with. I am going to focus on two that we haven't heard about this morning, or at least not heard much about.

The first is methylmercury in fish. In 2005, this Advisory Committee's Dietary Guidelines report included information about the risks of methylmercury in fish consumed by pregnant and nursing women and by young children. Your report was consistent with a Joint Advisory by EPA and FDA that had come out the year before.

However, recently, the FDA has come out with a new draft report which has been very strongly criticized by the EPA. It has very major methodological flaws, one might say bizarre methodological flaws. I wanted to encourage you that it not influence your

thinking on this matter.

However, in your 2005 report, you focused on fish generally, and you talked about a limit of about 12 ounces of fish for pregnant and nursing women and young children, when, in fact, really the problem is that certain fish are high in mercury and others aren't. There's no reason why women should be encouraged to eat less fish if the fish they like are low in mercury. The problem is that tuna fish is the most popular fish in America, and albacore tuna is quite high in methylmercury, as is most fresh tuna.

So I urge you, when you are talking about methylmercury in fish, that you distinguish between the fish that are high in mercury and those that are low in mercury -- many are low in mercury -- and have your advice be based on those different kinds of fish.

The second issue is food containers. Bisphenol A, called BPA, is an

estrogen, a chemical that is in the linings of canned food and canned beverages and also in the metal tops of bottled food and beverages, in the lining of that metal top.

The National Toxicology Program of NIH has stated clearly that this chemical, this estrogenic chemical, gets into the food, gets into the beverages, and the CDC has said, yes, it gets into our bodies.

In a new JAMA article, they found that people who had higher levels of BPA in their bodies were more likely to have diabetes and heart disease, even when controlling for obesity. Other studies have found problems with its effect on brain cognitive development and also mood.

So I urge you to really seriously look at this issue. It is an important issue because of these health effects which we don't fully understand yet, but, hopefully, with new research coming out virtually every day, we will understand it some more.

And the last thing I just want to mention is a new study that came out finding mercury in corn syrup. It is too new of a study for me to be able to talk about it, but it is, again, something that I hope you will look at very seriously.

I would be happy to answer any questions.

Thank you.

MS. HOWES: Thank you very much.

This concludes our presentation.

Would the Chair like to address the group, please?

CHAIR VAN HORN: We would like to thank everyone who took time and energy to prepare remarks for today. It has been very interesting to hear all of you, and we really appreciate the additional input into our deliberations.

Because you were all very efficient, we were able to get through the entire list, which is great.

Because we have so much on our agenda, we have decided to move things around a little bit. For the next few minutes before we break for lunch at 11:30, we would like to discuss the use of the Nutrition Evidence Library for the work that we are doing, and have Joan Lyon, who kindly is agreeing to jump in here with about 60 seconds notice, to help us in describing some of the process that goes into the work that we will be doing.

For those in the audience, this Committee has been diligently at work since the last time we convened publicly in reviewing the evidence, and it has been with great thanks to Joan and her team, and all those that you see around us that have been providing the additional help with the evidence base.

So we will take just a few minutes now to discuss further the process involved with that.

Joan?

MS. LYON: Thank you very much, Linda.

Following this public meeting, the Advisory Committee will begin using the Nutrition Evidence Library online portal more extensively. So at this point in time, we will go through the steps in the process and how the Committee will be using the Library, as well as how the staff will be supporting them in this process.

Tomorrow you will hear discussion about the Committee's research question development. You will see PICO charts that they have developed and some that are still under development or exploratory examination.

So, following this meeting, the Committee will finalize the research questions using the PICO process, reprioritize them as necessary.

The staff will upload into the Nutrition Evidence Library system the topic area outline and the templated tasks that are

associated with conducting the evidence review for each question.

The tasks include a conclusion statement, an evidence summary task, development of overview tables, a portfolio of evidence worksheets, as well as the associated literature search and sort plan results.

It was mentioned earlier in the public comment using the steps in the evidence-based review process, and the steps that are being used in the Nutrition Evidence Library are those common to many of the organizations working in evidence-based review at this point in time, including AHRQ, the Agency for Healthcare Research Quality; Cochrane, and others.

The next step in the process will be to continue developing and refining the literature search and sort plans for each question, and the staff will assist the Committee in this process.

Staff will upload the searches and

sort plans to the system. We have a research librarian who has been conducting, and will continue to conduct and document, the literature searches in detail, with assistance from the NEL staff.

The next step the Committee will follow is to sort the literature search results to identify the body of evidence to answer each question. Staff will assist them with a primary sort, which is by title. So when we get the search results, we can go through and eliminate many studies because the title indicates it is just not relevant.

The second sort is by abstract. The staff will use the inclusion and exclusion criteria that the Committee has identified. There is a generic kind of overarching set of inclusion and exclusion criteria looking at timeframe, study population, other criteria. Then there is a question-by-question development or refinement of that inclusion and exclusion criteria. In particular, new

questions may have a timeline that looks back further than the 2004 cutoff date for the 2005 Guidelines process.

So the staff will assist with the primary and secondary sorts of the literature. The subcommittee members or the person designated to handle that topic or question will review the work and then approve it.

At that point, they are approving the articles that will be included for the evidence-based review process. The staff will then take the articles and assign them to evidence abstracters who will be developing an evidence worksheet on each and every study.

Meanwhile, the Advisory Committee will be reading all of the papers. The evidence worksheets are merely to assist them in their deliberation and discussion, and to assist us in developing the overview tables, pulling data fields to support their discussion.

So all of those products will be

input into the system, and maybe I should have mentioned at the outset that we do envision that this work will be accessible to key stakeholders, the American public, once the Committee submits its report to the Secretaries.

Okay. So after the literature search is completed and the papers are identified, the work begins to review the complete body of evidence. As the evidence is synthesized, the Committee will develop evidence summaries and a conclusion statement with rationale. Along with that goes an evaluation of the strength of the evidence to support the conclusion.

Then, finally, the Advisory Committee will develop its recommendation and supporting rationale for the Guidelines themselves, and those will be based on the entire body of evidence, the conclusion statements, and all of the associated systematic review.

CHAIR VAN HORN: Does anyone on the Committee have any questions or, as we have been going through the material, starting with the reading, any issues that you would like to raise to Joan in terms of the evidence review? No?

DR. NELSON: I think that I don't have any real concerns, except some of the questions -- I mean we are starting to get into areas where it is not quite so clean, you know, with behavior, the environment, patterns. I mean it is just not quite as direct.

I think the conversations that I have been having with the NEL personnel and Trish and others, it has actually been a good conversation because we are just going to have to sort of work within the system to develop some of these questions further, so that we can actually start looking at some of these questions in a little different lens. It is just going to be trickier than -- you know,

the exposure is not quite as simple. Necessarily, some of the outcomes may not be quite as simple.

I just think that we are going to have to be tolerant to some ambiguities, and we can interpret the science once we get there.

MS. LYON: This is definitely an iterative process. We can refine the questions, the literature searches and sorts, and the body of evidence to support the question all along the way.

So the key is that we document that, so that it is transparent to our stakeholders, policymakers, to support the Guidelines.

CHAIR VAN HORN: Any questions? Larry?

DR. APPEL: Yes. Two comments.

One, I think we have to really think about this grading of the evidence and its implications. If we are starting from

scratch, the issue is the grading of the evidence and the quality -- the level of the recommendation. In general, we have to do that in -- you know, do we want to go down that path?

But the second is, if we decide to go down that path, then it has implications for what was done in the past. Remember, many of our questions will have been considered resolved. But if we have to then go back and then rate that recommendation on some scale, that is an extra set of steps that I don't think many of us were planning on taking. Some of us have thought that some questions were resolved.

So I think that is actually an important issue to decide.

CHAIR VAN HORN: Yes, I think that the point right now is to look at where the literature was at the time that the last set of Guidelines were developed and where it has gone since then. I think this group has been

concentrating its attention primarily on what has evolved since the last set of Guidelines were developed.

As was pointed out, we are recognizing that it is not all equal. There are certain areas that have had much attention and others that haven't. So trying to apply similar judgment across the entire scope of the Guidelines becomes a bit of a waiting game, waiting from the sense of putting emphasis on one thing over another, when not all evidence is equal in regard to some of these things. But our job is to identify that as well and recognize when there are limitations.

Tom?

DR. PEARSON: You may have mentioned it, but several of us were on several different areas, et cetera. Obviously, there's a variety of stages in this. Is there going to be one easily-accessible master document to tell where we

are with each of them, or do we have to go into the NEL and find that out?

During the question development, the librarian was on and she said, oh, we've already done this, et cetera. I would like something kind of upfront, so that I can decide which one of the places to spend my time in looking at the literature.

MS. LYON: Well, there are several facets, to answer your question.

First, the structure in the library portal will be in an outline format, and you and your subcommittee sets what you want the structure to be. So you can identify your key topics, and the conclusion statements/questions that are associated with that.

Your key Dietary Guidelines management team staff leads for the subcommittees that you are on will be working closely with us, the Nutrition Evidence Library staff, giving progress reports as to

how far along we are in terms of the evidence worksheets to support the body of evidence that you are considering.

So we can give you updates on that. You can enter the system at any time and also see that, and your staff lead can pull together that information for you.

Meanwhile, the full text electronic .pdf's of all the papers are there available for you to read while we are in that development process.

Did that completely answer your question or are there others?

DR. PEARSON: It was kind of a vague question.

MS. LYON: Yes.

(Laughter.)

CHAIR VAN HORN: Other comments from the Committee?

Yes, Rafael?

DR. PEREZ-ESCAMILLA: In terms of the issues that cut across committees and the

prevention of overlap, you know, different subcommittees are looking sometimes at questions that are similar, and we don't necessarily participate in all the subcommittee meetings all the time.

Is the NEL staff going to help mediate, bring it to our attention when overlap happens?

MS. LYON: Yes, definitely, and that probably is one of your next discussions, the cross-cutting questions.

We, as the staff, have been collaborating to identify some of those that seem to overlap for instance, macronutrient distribution is a question that touches many of the subcommittees. So you, as a Committee, need to decide how you want to handle that. Should one subcommittee have responsibility for that question with various health outcomes or facets dealt with within the other subcommittees?

The information is available to

you, and we can link it within the system and pull those questions into the outline for various questions that are relevant. So you wouldn't have to necessarily jump around from question to question to find that.

But I think the key would be to decide who on the Committee has responsibility for at least developing the -- you know, conducting the systematic review for that piece, you know, energy balance or macronutrient distribution and weight, macronutrient distribution, and there's some discussion with fatty acids and carbohydrates, and that sort of thing individually.

CHAIR VAN HORN: Right. I think the cross-cutting issues topic is something we are going to be addressing a little bit, actually, during our working lunch, which is now pretty much upon us.

So I think, with that, we will adjourn for the time being and wish everyone a healthy, nutritious lunch, and return back

at 1:00 p.m.

Thank you.

DR. POST: And if I could remind you, too, to wear your IDs, so that if you are interested in going to the USDA healthy cafeteria, you will be able to enter the cafeteria wearing your ID.

Thanks.

(Whereupon, the above-entitled matter went off the record at 11:18 a.m. and resumed at 1:14 p.m.)

CHAIR VAN HORN: Good afternoon. Welcome back.

We are ready to launch into this afternoon's session.

We have the benefit of hearing from three individuals regarding data that are relevant to the work of this Committee.

I would like to thank those three presenters in advance for the time and effort that went into analyzing these data.

First, I would like to introduce

Ms. Alanna Moshfegh. Alanna is the Research Leader for the Food Surveys Research Group at the Beltsville Human Nutrition Research Center and with the Agricultural Research Service at USDA. In that role, Alanna directs the federal government's National Dietary Survey, What We Eat in America, that is collected as part of NHANES.

With that, I think we will let you go. Thank you.

MS. MOSHFEGH: Thank you, Linda.

I want to thank the Committee for the opportunity to share data on usual intakes of Americans.

For my remarks this afternoon, I will present summary data on usual intakes analyzed from the dietary interview component of NHANES. I will assess dietary intakes in relation to the Dietary Reference Intakes. These are reference standards for optimal health published by the Food and Nutrition Board at the National Academy of Sciences.

The data I will present are from What We Eat in America, the name for the dietary interview component of NHANES. Conducting What We Eat in America has been an ongoing partnership between the Department of Agriculture and the Department of Health and Human Services since 2002.

Each year, two days of dietary intake data are collected on about 5,000 individuals of all ages. The data are collected using a 24-hour dietary recall methodology that was developed by USDA that we call the Automated Multiple Pass Method.

This is a picture of the NHANES mobile exam center that travels to 15 different sites across the U.S. each year. Inside is one of the two dietary interview rooms that you can see on the slide, where the Day One dietary interview is conducted. The second interview is conducted about three to ten days later by telephone.

I want to spend just a few minutes

of my time describing the Automated Multiple Pass Method, or what we will call the AMPM. It is a computer-assisted, five-step dietary interview, as you can see in this slide, that includes multiple passes through the 24 hours of the previous day. The AMPM navigates the interviewer through the recall, poses standardized questions, and provides response options for all the different foods and beverages reported by survey respondents in NHANES.

The AMPM has been validated using a biomarker for energy expenditure. This slide shows the results of the AMPM validation study that was conducted at the Beltsville Human Nutrition Research Center, just outside of Washington, D.C.

We measured energy expenditure, that is shown in the green bars, using a double-labeled water technique on a sample of just over 500 adults and compared that to energy intakes that we measured with the AMPM,

that is show on the blue bars. Overall, the AMPM assessed mean energy intake within 11 percent of energy expenditure in this large and diverse sample.

As with other studies, we found greater underreporting with higher BMI classifications; but noteworthy, though, was that the underreporting was less than 3 percent for normal weight, those being having a BMI of less than 25.

The data I am going to be presenting are primarily from a report that is available on our website, and I believe the Committee has received a copy in advance, and we have made some copies available for you here this afternoon, in case you didn't carry it with you in your suitcase.

It assesses the adequacy of diets for 24 nutrients based on the Dietary Reference Intake standards appropriate for assessing intakes for population groups. We either use the Estimated Average Requirement

or Adequate Intake, whichever is established for the particular nutrient.

The data are based on dietary intakes from nearly 9,000 individuals one year of age and older from the 2001-2002 What We Eat in America, NHANES data.

While there have been two additional dietary data releases from What We Eat in America, one dataset was released for 2003 and 2004, another for 2005-2006, this type of analysis has not yet been completed on those datasets.

Further, I would add that we don't see major dietary changes in the population across the two-year periods of data release. So we believe that these results are a good representation of nutrient adequacy from foods today.

For this report, usual intake distributions were computed using a statistical modeling method that removes the within-individual variation for the age/gender

groups that we studied.

So why is usual intake important? Dietary recommendations are intended to be met over time. So it is usual intake that is needed to determine where the population is compared to a particular standard.

National dietary data are based on a limited number of observations, two days for the What We Eat in America data. It is seldom practical to collect long-term data in these national surveys because of cost and respondent burden. So this statistical modeling gives us a reasonable alternative in order to estimate usual intakes.

These are the nutrients that are included in the report. They are the nutrients for which an EAR or an AI, Estimated Average Requirement or Adequate Intake, have been established and for which food composition data are available.

In addition, in response to the request from the Co-Executive Secretaries, I

will also present data for two nutrients that are not in the report, for choline and cholesterol.

Choline was not measured in 2001-2002. So the data I will present there will be from the 2005-2006 What We Eat in America. For cholesterol, I will present estimates from four years, 2003 to 2006 data.

Now I know you can't see the data on this slide, but I want to take a minute just to orient you to what is on the tables, and particularly distinguish between the tables for the nutrients where there is an EAR versus a table for the nutrients where there is an AI.

This table shows usual intakes for iron compared to the estimated average requirements for iron. The data are reported by 17 age/gender groups and present mean intakes and percentile distributions of usual intakes of iron.

The estimated average requirement

value for each of the age/gender groups we studied is provided, and the percent of the group that has usual intakes less than the EAR.

Now this next table is very similar, but for those nutrients that have an adequate intake, or an AI, in this example for calcium. For those nutrients with an AI, the comparison is based on the percentage that have usual intakes greater than their AI.

Now let's get to some of the selected results. This graph summarizes results on an adequacy of intake for nutrients having an EAR. You can see very small percentages of individuals had intakes below their EAR for carbohydrates, selenium, niacin, and riboflavin.

For this next set of nutrients as well, intakes for a low proportion are below their EAR. Of course, it is important to remember that this graph is looking at all individuals, but let's look at an example

across the age/gender groups.

For this, let's look at phosphorus. We see that close to half of adolescents and teenaged females have intakes that are below their EAR, even though for all individuals it is only 5 percent when we look across the population.

The nutrients of concern, when compared to the EAR, are highlighted on this slide in blue. Most individuals had intakes that were below their EAR for vitamin E, and a third to a half of the population had intakes below their EAR for vitamin C and A and magnesium.

These next slides show the percentage of individuals looking across the age/gender groups for those four nutrients of concern.

The first one you can see here is for vitamin E. Regardless of age, almost all individuals had intakes that were below their EAR.

For magnesium, the percentages of individuals with intakes below their EAR were greatest for teens and the elderly, and the least for young children.

For vitamin A, the percentages with intakes below their EAR were much less for young children and adolescent boys compared to teens and adults. The same was true for vitamin C.

Now let's turn to selected nutrients with Adequate Intakes. Adequate Intakes, as defined by the DRIs are not to be used to estimate the prevalence of inadequacy in a population. So we evaluate these values based on those with intakes at or above their AI.

For calcium, the nutrient at the top of the slide, just under a third of individuals had intakes that were at or above their AI. Females were even less likely than males to have intakes at or above their AI.

For potassium and dietary fiber,

less than 5 percent of the population had intakes above their AI.

For sodium, almost all individuals had intakes at or above their AI, which, of course, is not what we want to see.

For choline, which is based now on the 2005-2006 data, about 10 percent of all individuals had intakes at or above their AI. As with calcium, females were even less likely than males to have intakes at or above their AI.

Now for the last data slide, which is on cholesterol, the analysis is based on the 2003-2006 data on nearly 18,000 individuals. Overall, 35 percent of individuals had intakes above 300 milligrams. A greater percentage of adult males than females had intakes that exceeded 300 milligrams.

The data I presented can be found in a report that is available on the Food Surveys Research Group website. For those of

you in the audience, that is listed here in this slide. The website also has numerous other summarized results from What We Eat in America of NHANES.

Thank you for your attention.

(Applause.)

CHAIR VAN HORN: Thank you, Alanna.

Are there just a few quick questions that the Committee would like to raise while we have Alanna with us?

Yes, Tom.

DR. PEARSON: This is obviously an ongoing survey. One of the things we are going to be interested in looking at is changes over time, up to the point where you have the last analysis.

Is there a way to understand any changes in the nutritional assessment methodologies over this time, so we can be sure there aren't any methodologic pitfalls in terms of the nutritional assessments?

MS. MOSHFEGH: The new method, the AMPM that I spent a little time talking about, was introduced and began in 2002 of NHANES. We believe it is an improved method, and I shared some of the results of the validation study with you.

We see changes in the caloric intake that is reported across Americans. We see that that has gone up over time, but we haven't, in the past recent years, done any research to look at the difference that one would see as you improve methodology, which we always try to do. There just haven't been resources for doing that. We would like to do that, but we haven't had the resources to be able to do it. We did do such a study a number of years ago, back in, I believe it was in the `80s that it was done.

I think the increase that we are seeing in calories is probably from a number of reasons. We are probably eating more food than we had in the past. We also believe the

methodology is doing a better job of capturing intakes.

So I probably didn't give you the answer you wanted to necessarily hear.

DR. PEARSON: Well, just that if we were to look at a change, we would need to put over the proviso that this could have some methodologic and not reality basis.

MS. MOSHFEGH: Yes, it could have some.

I hope you will take comfort in the results of the validation study, and that we feel we have a method that is doing an excellent job in terms of capturing intakes. Certainly, I think anecdotally better than what has been done before. So we are very encouraged that we have that to be able to use now for collecting recalls.

DR. SLAVIN: Alanna, can you talk a little bit about choline? Aren't most of the sources animal sources? I mean, where else do you get that from? Because that

seemed to be really a problem.

MS. MOSHFEGH: Yes, the data was surprising to me, and I haven't spent that much time looking at the sources of where it came from. The choline was a special run that we just did comparing it to the AI, and we haven't looked exactly at the dietary sources.

One of my staff people has looked at and presented a poster on it, and we would be happy to share those results with you. That gives a little more information of that type.

DR. RIMM: It probably wasn't your charge today to present data on ethanol, but I wanted to ask two questions. One is, if you could give us a little background on ethanol in 2001 and 2002?

The second was what you thought the quality of the measure was, given your validation study on other nutrients, that you could speak to how well you thought your new method for assessing diet did at assessing

ethanol intake.

MS. MOSHFEGH: Well, the validation study just looked at energy. I can't answer your first question. I haven't really looked at that. I can go back and give some summary results to you all, looking at that for you.

DR. RIMM: So wait. You answered the question that the validation study only looked at energy, presumably.

MS. MOSHFEGH: Right.

DR. RIMM: But, obviously, the people were self-reporting alcohol who were in that study. Were there differences? You stratified by BMI, but there is also the potential that people who report alcohol underreport, and some of the excess energy or lost energy could be potential underreporting of alcohol at the high end.

MS. MOSHFEGH: Yes. We plan to look at the food intakes by the reporting categories, by the underreporting categories,

and we have not yet finished that analysis.

DR. SLAVIN: And what was the reason for not including D?

MS. MOSHFEGH: Vitamin D is not yet in the survey nutrient database for analysis. It will be in the 2007-2008 data release, which is due to come out in the year 2010. So we are busy working on that right now.

DR. APPEL: I wanted to follow up on the validation issue. Not all nutrients are measured with equal accuracy and equal precision. I know more about sodium than others. I know that, no matter what you say, I am still concerned that it is not right.

Could you give us a sense of which ones are the problems with accuracy? Which ones are the problems with precision? Which ones are the problems with both? So we can put greater/lesser belief in deficiencies. Because I think when you see numbers like 90 percent missing an EAR, you say, well, is that

a problem or is that a measurement issue?

MS. MOSHFEGH: I would love to have the answer to that question. We haven't done any further finite analysis to look at that. It would start first with the foods that are reported across the categories of underreporting, accurate reporting, overreporting. See if we see any differences there. We have not done that analysis.

DR. APPEL: Maybe if you can't do a quantitative, what is your gut sense? I mean there are certain nutrients you just don't believe and other ones you say, yes, we got it. So if you can't do it on a quantitative level, what are your instincts about the ones we should trust and not trust?

MS. MOSHFEGH: I usually don't think of it from the nutrient standpoint. I think of it from the food reporting standpoint, and the ability of respondents to accurately report, accurately remember all the foods that they consumed, and accurately

estimate the portion size.

For those of us that work in nutrition, it is probably not quite as daunting a task, but for a typical respondent I think it is a very daunting task.

While there wasn't a lot of time to talk about the unique features of the AMPM, in developing it we focused very carefully to where we could, if we had information about foods, we wouldn't have to ask the respondent to answer questions to get to that description.

A lot of what Americans consume are from fast food establishments or pre-portioned foods. So we take a great deal of time in developing our database to know what those portion sizes are.

So if someone reported an item that is pre-portioned in the marketplace, and they reported it by the brand name, we generally don't have to ask, well, how much was it, how large was that portion? In our

database, we know that already. We just say, did you eat the whole amount?

So in a long-about way of answering it, I think we are constantly striving to try to help that respondent, first, remember all of their foods, and then help them on the portion size estimation.

We use a large number of food models, where the foods aren't already pre-portioned that they have consumed, to help us in that estimation, and we have done research to test those models that we know they are easy for people to use. We have a booklet that goes home with people when we call them the second day by telephone for collecting that information.

So it is a constant struggle to be sure we are always working on improving that accuracy and improving helping the respondent give it to us.

In terms of the nutrients, I would add that the source of our nutrient values is

from the USDA National Nutrient Databank for Standard Reference. Over the past several years, there has been a monumental effort in taking national samples from across the country and having those foods analyzed in laboratories and taking that current data and incorporating it into what we affectionately call SR.

So I am very comfortable on the nutrient values that are in our database. I think the job that is done there is exceptional.

So to answer the nutrients, I think what the nutrients are in the database is superb. It is just what the respondent can tell us in terms of remembering their foods and the portion size.

Again, I will go back to our validation study, where we were really astounded with the results, particularly for normal weight being within 3 percent of accuracy for energy. But, of course, with

energy, the nutrients travel with those calories, of course.

So that is my gut answer.

DR. NICKOLS-RICHARDSON: So, related to the question of the energy itself, you may have said this and I missed it, these are not reported per thousand calories? So it is not adjusted for energy intake?

So could some of this be a reflection of the variability of total energy intake? Is there some discrepancy in the total nutrient -- and those that are meeting or not meeting EAR/AI based on just sheer energy of the diet?

Did I ask that correctly? Does it make sense?

MS. MOSHFEGH: Yes, there could be. Certainly, from the validation study, we saw that underreporting was more likely for overweight, and there is certainly a greater proportion of the population who are overweight.

So, yes, there could be underreporting in terms of energy, yes. But the EARs for various nutrients are based on the particular nutrient, but, of course, the nutrient comes with the calories with the foods that get reported.

CHAIR VAN HORN: Thank you, Alanna.

I think we need to move along, but that was very helpful. To me, the take-home message here is just the stunning number of Americans who still are well below the recommended intakes of calcium, potassium, fiber, and choline, and the vast majority that eat well beyond the recommended amounts of sodium and dietary cholesterol. I mean that says it very plainly right there.

Okay. Our next presentation is Dr. Susan Krebs-Smith, the Chief of the Risk Factor Monitoring and Methods Branch in the Division of Cancer Control and Population Sciences at the National Cancer Institute.

In that role, she oversees a program of research on the surveillance of risk factors related to cancer, including diet, physical activity, and weight status, methodologic issues to improve the assessment of such factors, and issues related to guidance and food policy.

Her valuable contributions in the area of dietary assessment methodology have focused on developing methods to assess dietary patterns and the usual intake of foods.

Thank you.

Sue?

DR. KREBS-SMITH: Well, thank you.

Good afternoon, and it is really a pleasure to be speaking with you today. I am quite proud to be presenting this latest, most recent advance in the assessment of dietary intakes on distributions of usual food intake and ratios of usual energy intake.

Much of what I am going to be

talking about today will be in relation to the recommendations that are set forth in MyPyramid in the last edition of the Dietary Guidelines. As the 2005 Dietary Guidelines pointed out, these recommendations are very similar to those in the DASH diet, and as recent papers published by our office have shown, they are also consistent with food guides for the general public and various recommendations to control obesity and diabetes, heart disease and stroke, hypertension, cancer, and osteoporosis.

MyPyramid does not provide a single set of recommendations, but, rather, these food group recommendations depend on the appropriate level of energy, and the energy levels, in turn, depend on the sex, age, and activity levels of the individual.

You are going to be hearing more about this in the next presentation from Trish Britten, but I think there are a few of these things about MyPyramid that need to be

understood in order to appreciate the data that I will be showing you.

Another feature to understand is what I might call the Rubik's cube nature of each pattern, that the recommendations for each group are all carefully calibrated to add up to the respective calorie level. Within a given energy level then, eating too much in one area necessarily, by definition, restricts intake in another area. This is an important consideration. There are tradeoffs within.

However, fortunately, this delicate balance of all these food groups within a particular calorie level does not need to be met every day. Rather, usual intake is the key.

Usual intake, as Alanna had mentioned, is the long-run, average daily intake of a nutrient or food. Dietary recommendations are generally intended to be met over time. That would be something that you all might want to consider, but that is

the way we have always assumed it. Diet hypotheses also are based on dietary intakes over the long-term, chronic intake over time.

For that reason, it is the usual intake that is of often interest to policymakers when they are looking at the proportion of the population at or below a certain level of intake, and researchers in examining the relationship between diet and health.

Usual intake assessment based on 24-hour recalls has been a long-awaited measure. National dietary surveys have traditionally used 24-hour recalls for good reason. The 24-hour recalls capture the needed detail, and because they are open-ended, they provide a cross-cultural equivalency that might not be available with something like a food frequency questionnaire.

However, individuals do not eat the same thing day to day, week to week, season to season. Therefore, if used as is,

unadjusted, 24-hour recalls provide only what we call a snapshot in time or, in other words, 24-hour recalls measure dietary intake with some error.

Now Alanna talked about one type of error, under-reporting. I'm going to talk about, describe this other type of error a little bit now.

This measurement error can affect the estimates of the distribution and the regression analyses that would be done with 24-hour recall data.

These curves show the distributions of single-day intakes, the average of two-day mean intakes, and usual intakes. Note that, as there are more data added for each individual, the curve gets taller and narrower. That is because the distributions of usual intakes contain fewer individuals consuming extremely small or large amounts. When you only have a single day of intake, you might have more people that happen

to be feasting or fasting on that day.

Also note that the mean for each of these curves is the same. So, therefore, the mean of the single 24-hour recalls could be used as an estimate of the mean of usual intake. But, from this, you can also see that, with unadjusted 24-hour recalls, that leads to an overestimation of the tail probabilities or the proportion of the population with very low or very high intakes. So this is the problem that we were addressing with our work.

This is also a problem in studying the effect of diet on some health outcome. If a single 24-hour recall left unadjusted were used in a regression analyses, these analyses would be biased, suggesting a flatter slope to the relationship than was true, and the excess variation around the fitted line would lead to a loss of statistical power.

In 2001, after the release of the 2000 Dietary Guidelines, we published this

special issue of The Journal of Nutrition. It came about as a result of the previous committees having had relatively little information at their fingertips about the diets of Americans and how they related to each of the Dietary Guidelines.

So this supplement was designed to have a paper on each one of the then current Guidelines, which reviewed the methods available to track its progress, provided benchmark data, and identified gaps and limitations of the data for addressing critical questions.

Where available, data systems at the individual, community, and food supply levels were considered, and there is much that is still relevant about it.

In fact, I would mention here that, in looking at the food supply data, using those as one way of looking at these questions, the food supply has had a relatively stable methodology over time. So,

for my purposes, I like to look at the food supply data to examine trends, even though I feel like, when I am looking at the individual survey data, I am getting more details about what individuals eat. So I think we have to draw on all the sources of data that we have.

In any case, a recurring theme among the gaps and limitations of all the papers in this supplement was the inability to assess distributions of usual dietary intake. We were limited by our then current statistical methodology of examining only mean intakes. So we could say something about the average person, but not about the prevalence of intakes above or below a recommendation.

But now we do have the capability to predict usual dietary intake with 24-hour recalls, and we can estimate usual intakes of both foods and nutrients for the population for the purposes of surveillance and for an individual for epidemiologic research.

This work has been carried out by

a team of investigators, shown here, that really is a transdisciplinary team across numerous organizations.

Information related to these methods are available on the website that is noted here. This provides details of NCI's method for estimating usual dietary intakes. It provides tables of intake on foods and on the intakes as ratios of energy intake. It provides some SAS macros for researchers to use if they want to duplicate these or do other analyses, and documentation and references on how these methods can be employed.

Today I am going to be showing you some data from the food intakes tables and the intakes as ratios of energy intake.

Regarding the methods that were used for these tables, we used the 2001 to 2004 National Health and Nutrition Examination Survey, the same survey that Alanna was just talking about. We had an "N" of about 18,000

people, aged one year and older. We used two 24-hour recalls, and we employed the MyPyramid Equivalents database.

This database is an invaluable resource, which has enhanced our capacity to measure dietary intakes compared to recommendations. You are going to learn a little bit more, as I said, from Trish about how the Pyramid works and how food groups are counted, but without this database we wouldn't really be able to measure food intakes compared to those recommendations in the Pyramid.

It is the end result of disaggregating every food mentioned in the survey, thousands of them, into their component ingredients, and accounting for all those ingredients within their respective food groups.

So when we look at tomato intake, yes, it includes those eaten as part of ketchup as well as those eaten fresh, but the

added sugars in the ketchup are also appropriately assigned to the added sugars category.

This method that we have developed at NCI was used for estimating usual dietary intakes.

Next slide.

This full set of tables that is shown here, we have posted to the website for nearly all the food groups in the MyPyramid Equivalents database, as well as other combinations. This full set of tables has been provided to you and is in your notebook under a tab called Appendix.

We are going to show some examples today. That is just there for your use later. Today we are going to look at these tables, this selected set of tables that is under a tab called Food Tables. It comes right after my presentation slides in your notebook. They were selected to show how data could be used to compare intakes to recommendations.

Also on the website is this complete set of tables that relates to the ratio of energy or the percentage of energy from all these macronutrients. This complete set of tables is also in your Appendix, also on the website. The public can go to look at it. We have selected these two tables to talk with you about today, and those are under a tab called Macronutrient Tables. There is one other tab, SoFAAS table, which I will talk about as well in turn.

So just a couple more points before showing you the data, just to reiterate, again, MyPyramid has no single set of recommendations, but, rather, food group recommendations depend on the appropriate level of energy, and the range of calorie levels for sex/age group determines the appropriate energy level along with activity level.

The lowest level of energy corresponds to the sedentary level of

activity, and the highest level of energy at each sex/age group corresponds to a very active lifestyle. That is an important thing to keep in mind.

So there's not really a range for each person. In fact, there is a discreet amount of calories that would be appropriate for each person, depending on what their sex, age, and activity level is.

For the slides that follow, we examine the distribution of intakes relative to the most conservative cut point. So when we are examining the possibility of insufficient intakes, we used the sedentary level of energy, which meant we compared intakes to the minimum recommendation for the sex/age group, and when examining the possibility of excessive intakes, we used the active level of energy, which meant we compared intakes to the maximum recommendation.

So, to orient you to the slides,

we had these sex/age groups, similar to the ones Alanna had, that are used by the DRI tables. The tables include means and percentiles. The percentiles are what is our new capability. They also include standard errors of the mean. Standard errors of the percentiles are not available in the slides in your packet, but they are available on the website, if you want to take a look.

In your packet, under the selected tables on foods and energy sources and SoFAAS, we have highlighted in red the numbers that we want to draw your attention to today.

So, with that, we will begin to start to look at those tables. I suggest, if you want to look at your tab under Foods Tables, you can look along while I make some points about each one of the tables.

Total fruit is measured in terms of cup equivalents per day, and the recommendations range from one to two and a half cups. The highlighted values in the

table that you see represent those which are less than the minimum recommendation for the sex/age group.

Among all sex/age groups intakes up through the 25th percentile or below the recommendations, and for most sex/age groups intakes up through the 75th percentile are below that level. This picture is better for children because they tend to drink more juice than adults do.

Looking at the vegetable subgroups, the vegetable subgroups include dark green, orange, legumes, starchy, and other vegetables. They are measured in terms of cup equivalents per day, and the recommendations are in terms of cups per week.

Your packet of selected tables includes a table for each one of these, except starchy vegetables. But just flipping through these tables, looking at the red, you can get the idea that most people are below the recommendation for these groups for dark green

vegetables intakes through the 95th percentile or below the recommended amount among nearly all sex/age groups.

Looking at the orange vegetables, among all sex/age groups, except one- to three-year-old children, intakes up through the 95th percentile or below the recommendations, again, the minimum recommendations.

The picture is ever so slightly better for young children because their energy levels and, hence, their recommended intakes of these foods is lower. Also, orange vegetables like carrots and sweet potatoes are often among the first vegetables introduced to children.

Legumes and other vegetables are also underconsumed by nearly everyone in all sex/age groups.

Looking at total vegetables, these also are measured in terms of cup equivalents per day. The recommendations range from one

to four cups per day. Total vegetables include all cooked dried beans and peas, and this group also includes starchy vegetables, which are dominated by potatoes. Potatoes and other starchy vegetables are a great source of much needed potassium, but there is no shortage of intake with them.

For adolescents and young adults, intakes through the 95th percentile fall short of the minimum recommendations for total vegetable intake. For 14 to 18 year olds, this is true for intakes through the 95th percentile. This is really interesting, considering that this measure includes vegetables from all sources, even those eaten as French fries and potato chips.

Whole grains: whole grains are measured in terms of ounce equivalents per day. A slice of bread, a cup of ready-to-eat cereal, and so on, count as an ounce equivalent. Recommendations range from 1.5 to five ounces per day. Among all sex/age groups

up through the 95th percentile, intakes are below the minimum recommendations.

The next two tables relate to total grains. The first one is comparing the total grain intakes to the minimum recommendation. The second one is comparing them to the maximum recommendation, in an attempt to see what intakes might be excessive.

But for both of these tables, total grains are measured in terms of ounce equivalents per day. Recommendations range from three to 10 ounces. While the recommendation is that half of the intake be whole grain, most of this intake is non-whole grain.

Among most sex/age groups, intakes are sufficient for most of the population when you look at the first table for total grains. But now when you move to the next table in the packet, you notice the switch in the direction of the highlights. The bolded values are at

the other end of the distribution. This is comparing those values to the maximum recommendation.

We see that, beyond the 90th percentile for all sex/age groups and beyond the 75th percentile, in some cases intakes are greater than the maximum recommendations. These, I will remind you again, are recommendations for active persons. Yet, according to the 2003 to 2006 NHANES, only about 3.5 percent of the population met the then current Physical Activity Guidelines for Activity.

Now there is a provision within MyPyramid for additional servings of food groups beyond recommendations, but these count toward the discretionary calorie allowance, which, as we said, is very limited.

Fish Guidelines. Okay, the previous examples were tables with MyPyramid food groups, of which the population, on average, needs to either consume more or less

of, but there are some foods for which there is a concern about both insufficient and excessive intakes, especially for vulnerable groups. Fish is one such example of this for women who might become pregnant, women who are pregnant, nursing mothers, and young children.

There was a statement in the 2005 Dietary Guidelines Advisory Committee report that the consumption of two servings, or about eight ounces per week, of fish high in EPA and DHA is associated with reduced risk of both sudden death and CHD death in adults. In the final Dietary Guidelines, this was qualified to be in regard to those with a previous cardiac event. But, in any case, there is some standard that could be looked at with eight ounces on the tables.

Then, from another source, FDA and EPA had a report, have their advisory on their website, that women and young children should include fish in their diets and can safely consume up to 12 ounces per week of cooked

fish, suggesting that higher intakes may have some element of risk associated with them.

So, clearly, usual intake is the measure of interest here because it is cumulative exposure that they are interested in.

When I served on a National Academy of Sciences Committee on Seafood Choices, we would have been very happy to have had these intake data on the distributions of fish that you can see in that next table in your packet.

Total fish and other seafood are measured in terms of ounce equivalents per day. Eight ounces per week, just as a reference point, is 1.41 ounces per day. Twelve ounces per week translates to 1.71 ounces per day.

Up through the 75th percentile, adult intakes are below eight ounces per week, if you thought that was the standard to use. But a key point to point out here, I thought

it was of interest, that none of the women or young children showed intakes greater than 12 ounces per week at the 95th percentile. This is all fish and seafood. This isn't just high mercury sources. So I thought that might be of interest, and it suggests that there might be greater concern about whether these groups are getting sufficient benefits from fish than whether they are consuming too much fish.

There are two tables for meat and meat alternates as well. They are measured in terms of lean ounce equivalents per day. This represents the lean portion of all meat, fish, poultry, eggs, soy products, nuts, and seeds. The recommendations range from two to seven ounces.

A key point here, in looking at this table, the first table, when we are looking compared to minimum recommendations, is that individuals may be getting more meat, but not really a sufficient portion of the lean. Because among all sex/age groups,

intakes up through the 25th percentile are below recommendations, and this is also the case for many groups up through the 50th, and for adolescent girls, up through the 75th.

Going to the next page on total meat and meat alternates, where they are compared to the maximum recommendation, roughly 25 percent of adult men and 10 percent of adult women have intakes in excess of the recommendations. Again, it is okay to have more servings from each of the food groups, as long as it fits within the discretionary calorie allowance. Again, Trish will talk with you more about this. But much of this lean meat as consumed comes along with a substantial amount of saturated fat.

Total milk, yogurt, and cheese measured in terms of cup equivalents per day, the recommendations ranged from two to three cups, and intakes are below recommendations through the 25th percentile for children, the 50th for adolescent males, 75th and above for

adult males, and 90th percentile for females in most age categories.

Oils, measured in terms of teaspoons per day, recommendations range from three to 11 teaspoons a day. Among most sex/age groups, intakes up through the 75th percentile are below the recommendations.

In the interest of time, I am going to go kind of quickly over these next couple of categories, solid fats and added sugars. I just want to say that the highlighted values are those which appear to be excessive. They are compared to what we might think of as upper level standards, and that much of the solid fat, from other work that we have done, we know that this largely comes from meats and milks and grain-based desserts. Much of the added sugars comes from soda, flavored drinks, and grain-based desserts.

Let me take your attention to alcoholic beverages. These are measured in

terms of drinks per day. There was a question about ethanol before. We don't have ethanol per se, but we have this for alcoholic beverages, measured in terms of drinks.

Recommendations are up to one drink per day for women and two drinks per day for men. Unlike other components of the diet for which we are more confident that intake over time is what really matters, acute exposure of alcohol is relevant here. One drink on each of seven days is really different than no drinks on six days and seven drinks on one day. So appreciate we are looking at usual intake, and while it meant something different for the other food groups, you can interpret that here.

But that being said, the intakes seemed to be exceeding the recommendations at the high-end tail of the distribution for adults.

Again, to somebody's question about ethanol and whether or not that was

being captured or underreported, I was actually pleasantly surprised to see that there were reports at all, that excessive intakes even showed up on the distribution. I thought they looked anyway reasonable, but we don't have anything to compare it to in terms of validation.

This next slide shows energy from solid fats, alcohol, and added sugars. It is in a category of its own. In the development of the Healthy Eating Index, a colleague, Patricia Guenther, came up with this nice acronym, SoFAAS, to represent the energy from solid fats, alcohol, and added sugars.

It is measured in terms of calories. It represents a large portion of the discretionary calories, but not those discretionary calories that come from extra servings of the food groups. So, in other words, this isn't all the discretionary calories, but it is most of it.

Recommendations for discretionary

calories range from 171 to 512 calories per day. Now look at the calorie levels on those tables, and it is really impressive. I think you see that this is where a lot of the excess calories are coming from.

Among all sex/age groups, 75 percent or more of the population had intakes of these SoFAAS which exceeded the maximum recommendation for discretionary calories, and it didn't count the extra servings from various food groups.

Total fat, going to the next section of the notebook, total fat is measured in terms of percentage of calories. The recommendation is between 20 and 35 percent of calories. At the fifth percentile, none of the sex/age groups had intakes below 20 percent of calories from total fat, but at the 75th percentile and above, all sex/age groups had intakes above 35 percent of calories from total fat.

Saturated fatty acids are measured

in terms of percentage of calories also. Their recommendation is less than 10 percent of calories. The current recommendation is less than 10 percent of calories.

Among all sex/age groups, intakes at the 50th percentile and beyond were above the recommendation, and for some groups, values as low as the 25th percentile were also above the recommendation.

So, to summarize, these data really kind of reinforce the same impression that we had with earlier data when we were able to only look at means and previous examinations of the food supply. But now we have the ability to examine the proportion of the population with various levels of intake to document the extent of what might be dietary problems.

I hope that these and other tables that are on the web will be of use to you in your deliberations. We can say, just to sort of summarize across what we have seen

today, that really a large swath of Americans have low intakes of fruit; vegetables, especially non-starchy; whole grains; milk, yogurt, and cheese; and oils. They have modest intakes of fish. They have sufficient, and in some cases excessive, intakes of total grains, meats and meat alternates. They tend to have excessive intakes of calories from these SoFAAS and from saturated fat.

What none of these tables showed, but what could be examined, are the percentages above or below particular cutoffs. So if there are particular cutoffs that you are interested in, it may be possible for us to prepare and provide that information on the web in time for your consideration. So please let us know.

And that's it.

(Applause.)

CHAIR VAN HORN: Questions for Sue?

DR. PEREZ-ESCAMILLA: I have a

question here.

Thank you for a wonderful presentation. I think this is one of the most useful ways I have seen the dietary intakes of Americans being presented.

DR. KREBS-SMITH: Oh, thank you.

DR. PEREZ-ESCAMILLA: I think it is very clear that people under-report their energy intakes as a function of their body mass index category. But with regard to the macronutrient composition in terms of percent of the calories from fat, from carbs, and so on, do we have the same problem or are those data more reliable across BMI categories?

DR. KREBS-SMITH: We have very little information about nutrients other than energy. Protein has been looked at as well, and there seems to be less underreporting with that. But whether there's differential underreporting by nutrients or food groups, and then according to BMI groups, that is harder to say.

Is that the question?

DR. PEREZ-ESCAMILLA: That was just percent of calories from fat, percent of calories from carbs.

DR. KREBS-SMITH: Right.

DR. PEREZ-ESCAMILLA: Even if the absolute reporting is not accurate, you can still have the composition of the diet being reported accurately.

DR. KREBS-SMITH: Right.

DR. PEREZ-ESCAMILLA: That is what the question is.

DR. KREBS-SMITH: Well, that gets to the question of whether there's differential under-reporting. So if there is under-reporting of energy in general, but if under-reporting was the same across the board, then there wouldn't be any difference. But we suspect that there may be differential under-reporting, and we don't have a way to confirm that. Kind of along the lines with what Alanna was saying, we just have very scant

evidence about this.

We have conducted some studies where we identified low-energy reporters and what we called non-low energy reporters based on what we thought a person's calorie intake should be compared to what their body mass index was. Then we just compared reports to see whether the low energy reporters versus the others reported more often certain foods, whether they reported them with greater -- whether they were more or less likely to report them at all, whether they reported them more frequently, whether they reported them with different portion sizes, and so on.

We saw that the low energy reporters had each one of those kinds of things. They tended to report foods less often or not report them at all, and with smaller portion sizes. It seemed to be across a wide range of foods.

One thing, also, that you might want to keep in mind is whether or not these

people who are being asked to report their intake, if they are overweight, they could truly be dieting at that time. Actually, people who are overweight are more likely to be dieting on any one day, cutting back on their calories. Then they might just be doing it just because suddenly you have brought attention to asking about their intakes, so then they might be under-eating on that day according to their usual. And finally, they might be just underreporting because of this social desirability thing.

One thing that I thought was of interest with the data that I was presenting was the general population is below intakes on all, what we consider, Nutrient-bearing groups, fruits, vegetables, whole grains, you know, even milks and meats to some extent, the lean portion of the meat and the skim milk. They tend to be overconsuming on the solid fats and the added sugars, and this in spite of underreporting.

So if they are under-reporting and we are seeing this, and if social desirability is playing into this at all, then the situation is even a little worse than I showed you. So at least I think we could say that.

DR. FUKAGAWA: That was very interesting and alarming at the same time.

(Laughter.)

But are you able to do subgroup analyses to look at regional differences or differences in ethnic groups in terms of intake, lifestyle choices, vegans versus omnivores, or socioeconomic class, was the other one?

DR. KREBS-SMITH: Those are great questions and all things that we would like to get into. This statistical methodology is very new and very complicated. I didn't want to take time to go into that today, and you didn't need to understand it.

But it takes an incredible amount of computer time to take two 24-hour recalls

on each person and examine the inter-individual variability, and then look at that amongst sets of two in the whole population and try to draw information from that, and model what we expect to be usual dietary intake. So it takes a long time to run. So that is just my reason for why we haven't done it yet.

And I think it takes a substantial sample size. So we might be limited in some of the groups that we could look at. I imagine we could do black, white, maybe Mexican-Americans. I don't know that the cell sizes would be great enough in NHANES in a couple of years, but possibly in four years to do some other subgroups of ethnic groups. Certainly, we have been able to do it by age.

What was your other --

DR. FUKAGAWA: Regional.

DR. KREBS-SMITH: Regional. I don't know -- well, I just don't know about regional differences. No, I didn't think with

NHANES you could look at the regional differences. These are national-level estimates.

DR. FUKAGAWA: Right, right.

DR. KREBS-SMITH: So, yes.

DR. FUKAGAWA: But I just thought if you --

DR. KREBS-SMITH: Right, right, but I think that, because of the way the sample is done, I am not sure that you can look at it by regional differences.

DR. RIMM: Susan, I agree with Rafael, that was really a spectacular presentation, very helpful.

DR. KREBS-SMITH: Thanks.

DR. RIMM: So thank you.

It strikes me that one of the main things that we are struggling with is obesity in this country. Then you presented the data on SoFAAS, that 100 percent of adult males and females under 50 are eating in excess of discretionary calories, which is quite

impressive.

So the question would be, have you looked at this, to give us some guidance on -- is a lot of that coming from added sugars, from alcoholic beverages, or from solid fats? Is there an equal distribution or should we be focusing more of our efforts on one of those three as an area where there is an excess of discretionary calories?

DR. KREBS-SMITH: Oh, okay. Well, the two slides I went quickly over were solid fats and added sugar.

DR. RIMM: Then I missed that.

DR. KREBS-SMITH: So you can take a look at those --

DR. RIMM: Can you pull that? Can you pull discretionary? I guess so. You can pull discretionary calories from that?

DR. KREBS-SMITH: The way I tried to look at those separately was to look at, I think it is grams of solid fat and the teaspoons of added sugars.

There is no particular recommendation for the grams of solid fat and the teaspoons of added sugars, but in the last edition of the Dietary Guidelines, in the back of that there were some examples of how the discretionary calorie allowance might be distributed. It was distributed between those two. Alcohol was just --

DR. RIMM: Very small --

DR. KREBS-SMITH: -- avoided.

So with those examples, which one could chose to have it all from discretionary -- from solid fat or could choose to have it all from added sugar, but, really, that is probably pretty unrealistic because in almost any way you would be eating in America, you need a little bit of the solid fat, so you could occasionally have something other than skim milk as a milk choice, and so on.

So it pretty much split them. I am not sure if it split them evenly in terms of the calories, but we used those examples.

So if you look at the table under the foods section, there is a table on solid fat and a table on added sugars. The red highlights there are the values that are above the examples in the back of the most recent edition of the Dietary Guidelines, if that is not too complicated.

DR. RIMM: Okay. All right. I will have to think through that.

DR. KREBS-SMITH: But that might be some -- yes. But, without a set recommendation, I just used those as examples.

DR. NELSON: I have a quick question.

DR. KREBS-SMITH: Yes?

DR. NELSON: Thinking about the SoFAAS, which are quite profound, this table is pretty profound, and I do also have to say that this is very helpful.

DR. KREBS-SMITH: Thank you.

DR. NELSON: Thinking about the types of foods, is there any sort of digging

deeper into the pattern of eating like snacks or on-the-move or anything? Because I think that there is some evidence that this snacking sort of phenomena of Americans, which is so different than it used to be in the type of -- you know, there's just so many types of snacks that are out there.

I wonder if there is any sense of whether it is meals, desserts, snacks, or foods eaten away from home, or is there any kind of qualitative or, well, quantitative -- because you have it from the actual way that the data is gathered.

DR. KREBS-SMITH: Right. I am not aware of any analyses, though. There may be, but I don't know any to point you to, on where those SoFAAS are coming from in terms of distribution throughout the day.

DR. NELSON: Yes.

DR. KREBS-SMITH: However, we did do an analysis where we looked at foods as -- there are different ways that you can group

foods. You can group foods this way, where all the foods that are reported in the survey are disaggregated to their MyPyramid categories --

DR. NELSON: Right.

DR. KREBS-SMITH: -- and report them that way. You can also look at them the way that they are foods as eaten, we say. The old-fashioned food groups: meat mixtures or breakfasts, and things like that.

DR. NELSON: Right.

DR. KREBS-SMITH: Think about the way that the foods are presented at mealtime or as snack kind of items.

So we did an analysis where we grouped the foods both ways, and we tried to see which of those foods as eaten were the major contributors to these MyPyramid-equivalent food groups.

That was where I sort of slipped in there that a lot of the solid fat was coming from servings of the milk group other

than skim milk, from meats that are fattier meats, but, also, a big portion of grain-based desserts, for example.

So those extra servings of grains that are non-whole grain are also --

DR. NELSON: Cakes or cookies?

DR. KREBS-SMITH: Yes, the cakes, cookies, and so on. I mean there is some grain in there, but it is also supplying a lot of solid fat in that and sugar.

We can supply you with that article, if you are interested.

DR. APPEL: That was great.

Just some questions about missing nutrients. I didn't see *trans*. I didn't see mono, omega-3, omega-6. I know that we don't have recommendations, but even if just for *trans* where they are trying to keep it as low as possible, has that been either --

DR. KREBS-SMITH: I think those are all limitations of the database.

Alanna, can you address that?

I mean *trans*, we don't have a database that has it -- but omega-3 and omega-6 we have? Okay, individual fatty acids, we could look at that.

DR. APPEL: And can you do that for *trans*? I know it has been a problem, or is that the one --

DR. KREBS-SMITH: Well, I think with the *trans*, there isn't a complete database of the amount of *trans*-fatty acids in these foods.

Yes, it takes a lot of resources to complete those databases. We understand that a new thing -- *trans*, even though we have been aware of it for a while, takes a long time to have the additional resources to fill in those holes in the databases.

DR. NICHOLS-RICHARDSON: So when you take the food group information and link it together with the nutrient information, what is your sense of what these two pieces are telling you overall? So, for example, are

there certain age groups or certain genders, or combinations of that, that we need to be concerned about in particular? So when you look at these pieces collectively, what is your sense of, what is it telling us?

DR. KREBS-SMITH: Well, I was focusing mainly on the food intakes and somewhat on the macronutrients.

Linda mentioned that I was involved in some food guidance earlier in my career. So that is the way I am often thinking about it.

But I think of foods as those carriers of nutrients. So I think that, if we can get people eating the right foods, then the nutrients will come along with that.

But things are out of balance. What seems to be out of balance is that we are getting far too many of our calories from these sources of solid fat and added sugar primarily; alcohol is in with that as well. But I think the bulk of the calories are

coming from solid fats and added sugars.

Too few of our calories are from fruits and vegetables and whole grains, and from lean meats and their alternates, and skim sources of the milk group.

DR. NICHOLS-RICHARDSON: And from this, your sense of these pieces, again, do you get the sense that, within given calorie guidelines, energy guidelines, that micronutrient needs can be met?

DR. KREBS-SMITH: Yes. I think that they can. Well, Trish will address that later.

With the development of MyPyramid, I think that they have demonstrated how that can be met with appropriate choices. But I think that the public doesn't quite get this -- I'm not sure if Rubik's cube was the best analogy, but I said that earlier. In my mind, it all has to lock into place.

We have to realize the implications of a choice. You can have a

choice of full-fat cheese for your first serving of milk in the day, but once you have done that, you have just used up a fair amount of your discretionary allowance now. You are not going to have any other serving, anything extra for any other food group or any sugar in your coffee.

That allowance is so small -- I think it definitely can be done, but I think that people need to appreciate how small that allowance is. I don't think people get that. They are certainly not eating that way.

Okay, yes, Larry?

DR. APPEL: Yes, one more question. I am trying to figure out what you have and don't have.

So you gave us an idea of the SoFAAS calories, but are there tables, or ones that are in preparation, of total calories and calories from vegetables, calories from fruit? You have shown us where the worst is, but the distribution of the other food groups? I mean

to look at the whole picture here.

DR. KREBS-SMITH: Right. We haven't done that. It was easy to do with the SoFAAS calories because we could take solid fat and multiply it times nine and the alcohol times seven, and the sugars. There was a constant factor.

So for fruits, if we had the total cup equivalents of fruits, there isn't a constant amount for the calories of that.

So I am not sure how straightforward that would be to do.

DR. APPEL: Yes, I guess the reason I bring that up, in part because the scientist in me says, well, we're distressed; this looks like a bad number. But I would like to see the whole thing add up, to make sure that the calculations are right and that we know that we have a bigger problem than probably any of us thought.

DR. KREBS-SMITH: Yes. Well, what I have done is, back when we first had the

MyPyramid Equivalents database, and we were only looking at the mean intakes, and I looked at what the mean total calorie intake reported in the survey was, and I had the mean number of servings from each one of the MyPyramid equivalents groups, I multiplied it times -- dug into Trish's background information on an average serving from each one of the groups and how many calories comes with an average serving of that, multiplied that out. It pretty much came up to the average calorie intake in the U.S. population, then around 2,000 or 2100 calories. You could see what the average amount was from SoFAAS and that that it all fit.

You could see that this large amount of SoFAAS taken out of the total calorie allowance was keeping them from getting sufficient amounts of fruits, vegetables, grains, and other things; that it does all add up.

So there's a little back-of-the-

envelope calculation.

CHAIR VAN HORN: I want to jump in on that one, only because I had the same question, kind of the flip side of what Shelly was saying.

You know, it is one thing to think about, can we meet nutrient needs? It is another thing to actually use real data and be able to demonstrate to people that, by avoiding certain foods, you don't meet nutrient needs, and, indeed, linking what we all know is true, that you can be overweight and undernourished. To be able to actually use our own data to document that, I think could be very compelling because I don't think people quite understand that concept.

It struck me, as you were speaking about it, and also the prior comments about the overweight being likely to under-report, what we do have, then, is in the normal weight or ideal weight -- I know we have a few out there -- those data should be fairly true.

I mean, to be able to look at who are the winners, what are they eating, and how do they stay that way?

DR. KREBS-SMITH: Right.

CHAIR VAN HORN: To, again, just be able to use our own data to come up with the kinds of comparisons that would allow people to say, wow, you know, if I just ate more fruits and vegetables, I wouldn't have to worry about inadequate potassium --

DR. KREBS-SMITH: Yes.

CHAIR VAN HORN: -- or the things that were so vividly pointed out by Alanna.

You know, to really use the real data to use as a teaching tool.

DR. KREBS-SMITH: Yes. Well, I commend you all for your interest in these data because, as I said, it hasn't always been something that the Committees have looked at. We have been trying, of course, to improve our methods and have more data to provide all along.

But it always seemed to us that it was an important part, an important consideration, how is the population eating, before knowing how it is that you guide them to modify that.

So thank you for your interest in that.

DR. PEARSON: Table 28 obviously uses part of the Pyramid having to do with protein, et cetera. But is there any way that that can be broken out? Obviously, of the quite variable different constituents of that, there is a lot of different things that are of interest for which there are specific --

DR. KREBS-SMITH: Yes.

DR. PEARSON: -- research data, benefit and harm, and et cetera, et cetera.

Can that be broken out so you can look at almost like the quality of that part of the Pyramid from group to group?

DR. KREBS-SMITH: Right. So that is the total meat, poultry, fish? Yes.

DR. PEARSON: Yes.

DR. KREBS-SMITH: In your packet, under the Appendix, you will see the full set of tables, and they are on the web, for others who want to look at it as well.

But I think we have other subgroups --

DR. PEARSON: So that is where it is?

DR. KREBS-SMITH: Yes, so 18 through 28.

DR. PEARSON: So those would add up to form this?

DR. KREBS-SMITH: Yes. Yes.

DR. PEARSON: Okay. Thank you.

DR. ACHTERBERG: Well, again, good data, Sue, and it is going to take some time for us to integrate and synthesize --

DR. KREBS-SMITH: Oh, I'm sure.

DR. ACHTERBERG: -- all of this.

But, as I am glancing through, one of the findings that surprised me from the

previous presentation is what the phosphorus levels were for young girls. I had a hard time understanding that based on my understanding of what these girls typically eat.

So I am wondering, besides looking at it from overweight or underweight in terms of overreporting or underreporting, are there other groups that may have larger errors in their reporting that we need to consider as we interpret these data?

DR. KREBS-SMITH: Wondering whether underreporting varies by different sex/age groups?

DR. ACHTERBERG: Yes.

DR. KREBS-SMITH: I am unaware of any information on that.

Alanna, do you know anything about underreporting by sex/age group?

I am going to turn it over to her.

MS. MOSHFEGH: When you look at the phosphorus data for girls, their EAR is

about twice that of adults for teenaged girls and teenaged boys. So that is one thing that is driving the high percentage that have intakes that fall below their EAR.

DR. ACHTERBERG: Even though they're guzzling soda? I am trying to put this together.

MS. MOSHFEGH: Right. Yes. I mean, so that is one reason why. Also, teenaged girls, their calories are less, obviously, than teenaged boys.

DR. ACHTERBERG: Thank you very much.

DR. KREBS-SMITH: Thank you.

CHAIR VAN HORN: Our third speaker is Dr. Trish Britten, who is a nutritionist and project leader with the Center for Nutrition Policy and Promotion of USDA.

Dr. Britten has been with USDA for nine years. Her major contributions have included leading the development of the MyPyramid food guideline system and conducting

the food modeling analyses used in the development of the 2005 Dietary Guidelines.

Trish?

DR. BRITTEN: Thank you.

I know we are a little pressed for time. So I am going to try to go quickly, but I hope not too quickly. So that we can cover it.

But I am giving a little bit of a different kind of presentation than just data. I am going to give you some background on how the Pyramid and how the original Pyramid and MyPyramid were constructed, and then some of the current research we are doing, the process we are in right now, where we don't have final results, but to let you know what will be coming this spring to you.

Everyone is aware that USDA has a long history of food guidance. For most of its history, this focused on a base diet that would give you the nutrients you needed with no concern for overconsumption.

However, the Pyramid in 1992 was unique in that it focused on a total diet, not just getting adequate nutrients. Of course, we have built MyPyramid on that model.

The original Pyramid set guiding principles for development, and these are unchanged until today. We still use these.

The first three are, it is based on fostering overall health, not one specific disease or lack thereof. It is based, to the extent that we have it, on up-to-date research, so as up-to-date as we can get. And again, it is based on the total diet.

There were principles to make it useful, flexible, practical, realistic. These principles dictate that we use common foods, not a food that might be very unusual, but high in a particular nutrient, that we are flexible in providing all consumers with choices within food groups, not trying to specify food groups so finely that only one food would fit. So we don't have an oyster

group, you know, or something like that. And to make it practical for the whole family, assuming that families eat together. So we would not have different food groups for different ages, that we would have different amounts for the same food groups, so that it would go across.

And the final principle is that it be evolutionary. So that it could be changed with time and it can be updated. That is what we did between the original Pyramid and MyPyramid, and that is what we are doing again now.

The food intake patterns are what I am talking about today. Obviously, MyPyramid has a lot of consumer materials. There is lots of pages of text and guidance, but today I am talking about the underlying what and how much to eat that drive all of that, all of that advice.

These food intake patterns are designed to meet the DRI and the DGA

recommendations, and they are based on 12 different patterns. We have 12 patterns that differ by energy level, and they are designed for varying population groups and different energy needs.

As everyone has mentioned, intakes are to be met over time. So we don't assume that a person needs to eat everything on a daily basis to that exact amount.

The first thing in developing the food intake patterns was to determine nutrient goals and calorie needs. The nutrient goals were the easiest part of the whole thing, is there a DRI? Is there a Dietary Guidelines recommendation?

The calorie needs, we had to ask, what are the calorie needs of various groups in the population? Actually, the DRI also helped us there because they have estimated energy requirements, and we used those equations to determine -- and I am just showing you the men, but we did the same thing

for women here. We said, at each age, what would the EER, the Estimated Energy Requirement, be for a reference size? In other words, a healthy weight, average height person of this sex at different energy levels.

From this, we got this whole range. We did it every year up to age 18 and then every five years from 19 through 80.

But, as you can see, it is not a point, it is a bar. So we go from sedentary to active, and we can see the range of energy needs for a reference size individual.

When we looked at both men and women -- and I only show three-year-olds here, there's also two-year-olds -- all of the energy needs were between 1,000 and 3,200 calories. You have very tall people. You have people that are more than a healthy weight. Their needs would not be maintained on this, but we had to choose some reference sizes.

If you look at a single energy

level -- and I have put a band of 100 calories, around 2,200 in this example -- you can see that it crosses over various segments of the population. This is how we determined whose needs should be met, whose nutrient needs should be met at that energy level.

So here we have fairly active young adolescent males and sedentary to moderately-active older men at 2,200 calories. Some women will also fall under this category.

If you go up to 2,800 calories, then you see that the 2,800-calorie pattern should meet the needs of moderately-active older teenaged boys and younger men.

So this is what we did at each one of the 12 calorie patterns. We determined who fits it, who has the highest nutrient need of all those groups that would fit that pattern. Then we would set that pattern to meet their needs.

In doing MyPyramid, we stuck fairly close to the food groups in the

original Pyramid. We did this because we were being evolutionary. We did do some tweaking, and tweaking is always possible, but we did not spend a lot of time reevaluating and re-assessing food groups.

We then calculated nutrient profiles for each food group. That is where I am going to spend a little time. What is a nutrient profile?

A nutrient profile answers the question, what nutrients would you expect from consuming a given amount, on average, of a food from this group? Because everyone is going to make a different choice in terms of the fruit or the specific vegetable they eat. So how do we calculate that?

If you look just at dark green vegetables and just vitamin A, the vitamin A value differs greatly between half a cup of cooked spinach and half a cup of cooked broccoli.

So then we look at the consumption

of each one of these items. We see that -- and here I summarized all the others, that I just showed you the consumption of the cooked spinach is 15 percent of all dark green vegetables, cooked broccoli is 36 percent.

So then we do a weighted average for each nutrient, where the nutrient profile is the sum of the nutrient contribution of each food -- and this is specific to a nutrient -- times its likelihood of being eaten or the percent of total.

So, for each food, for each nutrient, and each food group or subgroup, we calculate these profiles. This is what we use to build the basis for the food patterns.

It is very important to remember that, as Sue was talking about, when we do these calculations, we have disaggregated these foods. So they are based on nutrient-dense forms of the foods.

If you were looking at foods in the vegetable group, any fat or oil that was

used to fry a vegetable would have been pulled out and assigned to the solid fat or the oil category, and you would just have the basic vegetable. So they are the best-case scenario for the foods in that group.

Then we determined the recommended amounts for each food group. How we construct this is an iterative process. We establish an initial amount. For MyPyramid, the initial amounts were the amounts in the original Pyramid. Then we compare the resulting nutrient content to the goals for that group, which, remember, is the highest nutrient standard for any age group that would need that many calories.

Then if we don't have enough, then we start iteratively changing the amounts that we would recommend. Again, it is that Rubik's cube or that jigsaw puzzle where everything has to fit together. If you increase the amount from one group, you are going to have to decrease somewhere else or, in the end, you

decrease discretionary calories, which is why they are so low.

In selecting groups to increase, we look at a couple of things. One is, where are the nutrients that we are missing? Where is the potassium? Where is the vitamin A?

Then we also look at typical consumption because we do not want to be recommending amounts that are so outrageous that we could not support them at all. We might with some subgroups. We go to two, three, four times typical consumption. We don't want to go to 20, 30, 40 times typical consumption. So that is kind of our limits.

It is qualitative determination. We don't have any standard, we say we will not go above, you know, X times.

Then, as Sue pointed out, the remaining calories, after the nutrient needs are met from each food group, are defined as discretionary calories that can be used in any way the person desires, assuming they have

eaten everything in the leanest, low-fat form.

And you saw the patterns. This is just a sample pattern. One thing I wanted to point out here is that these patterns include amounts from each food group and in some cases from subgroups.

In the grains group, it is recommended that at least half -- so for 6-ounce equivalents, three or more of the ounce equivalents would be whole grains.

In the vegetable group, the vegetable group is a very broad category of foods. To get the nutrients, there are subgroups, and these recommendations are weekly. Asking a person to eat five different types of vegetables every day in small amounts would be pretty impossible. So we make weekly recommendations there, hoping that they will be able to rotate vegetables through the week.

I have some comments about the vegetable groups, too, that we might not get today, but we would like to do some things

with the vegetable group because we have this other category that is pretty much a lot of vegetables in there.

We have an oils allowance. We don't consider oils a food group, but we do have essential fatty acids, that about half of the essential fatty acids come from these oils. So we need to include them. They aren't discretionary. Then we have an allowance for 267 calories for discretionary calories.

What I am going to talk about now is the things that we are doing right now. There's four things we are doing right now. I don't have results for you, a couple of very preliminary results, but I will have the results of this later this spring for your use. These new patterns with updated nutrient profiles will be available for modeling work later on in your process.

Okay, here's the four things, and I am just going into them and talking about

each one.

We never had a nutrient profile for the milk group. We didn't have it because it was felt that skim milk was the best representation for the milk group.

But when we looked at current consumption, we really needed to have a nutrient profile because there's a lot of foods that differ greatly from skim milk that people are eating now.

So we had to identify item clusters. This is where I am going to stop and take a step back and say, what's an item cluster? This is the first place I came upon it.

What is an item cluster? You heard Sue describe how we disaggregate foods. This is how you take a mixed dish, beef stew, which would be a meat mixture or something in foods-as-eaten grouping, and we break it down into its components. It has some meat, some orange vegetable, other vegetables, starchy

vegetable, and refined grains.

You heard about the Pyramid Equivalents database. That breaks it down into the groups. What we do at CNPP is we take that and we pick out the actual ingredient that is in it.

So, for each food, we look at that orange vegetable that is in the beef stew and we say, what is it? In this case, it's carrots.

We look at the other vegetable, quote, other vegetable, that is in the beef stew, and we look at it and we say, what is it? And it is onions in this case.

So we go through each food and identify the specific ingredients. Then we can take all of those specific ingredients and aggregate them into an item cluster.

So we take the cooked carrots from the beef stew, from the vegetable soup, from the carrot cake, from the vegetable lasagna, and plain, old cooked carrots, and hundreds of

other foods literally, probably thousands of other foods, and put them into a cooked carrot item cluster.

Then we assign plain cooked carrots to represent all the cooked carrots that are eaten wherever and however.

Obviously, the other ingredients in all these foods would all go into various different item clusters.

The reason that we needed item clusters and a nutrient profile in the milk group is that, when we looked at consumption of different types of milk -- and this is just the females, but the males are very similar -- if you look at all the bars from the bottom up to the red bar there, that is all the plain milk, fluid milk that is consumed. Then when you look above it, this is cheese, other milk products, yogurt products, things that are consumed that may differ from just the fluid milk.

So, especially when you see that

over 60 percent for young and middle-aged women of all their milk consumption comes from these other foods, we didn't feel that capturing the nutrients in skim milk was sufficient.

So we have developed 65 item clusters, and there is a whole range of things, all different kinds of cheeses and milk and sauces, and ice creams, and things like that.

Then we calculated the consumption of each one of these item clusters, choose a representative food for each one, and calculate the nutrient profile.

Just for your information, this is just the types of milk into various item clusters that are above 1 percent of total consumption. But the one that I find most interesting is this is all the cheeses that are above 1 percent of consumption. Look at the impact of pizza. It is over 10 percent of total milk group consumption, just the cheese

on pizza.

Notice that the top one there is reduced-fat cheese because that is part-skim mozzarella. The other is the Parmesan that is on the pizza.

But you get a huge impact. Then when you start looking at this and breaking it down by item cluster, you begin to see where the cheese is being eaten.

So, right now, what we are doing is we have this consumption work. We are in the process of identifying the best possible representative food that is a low-fat, no-added-sugars form of the food to represent each item cluster. Then we will have our consumption-weighted nutrient profile. We are very close to having that.

The vegetable group, we did essentially the same thing, but we felt the need to expand our item clusters. We had some limitations before in our item clusters. So we are going through the same process.

For example, original item clusters included all green and red peppers together. We know there's some real nutrient differences between them, and red pepper consumption has really increased. So we have separated. Now we have four pepper clusters.

Foods like green beans often included foods eaten in smaller amounts. So we had snow peas, asparagus, okra, and artichokes all part of the green bean cluster. If you had asked me, before we did this, how much asparagus are people eating, I couldn't have told you because it was all clumped with green beans. So we have gone through that and identified it.

We also couldn't have told you exactly how many French fries or potato chips people were eating because it was all grouped with boiled potatoes, which was the low-fat version of a French fry, right? Cooked in water instead of fat.

But now what we have is we have a

separate -- we can show you exactly how many French fries, how many potato chips, et cetera, are eaten. Then we can represent with a low-fat version of a French fry, potato chip.

So what we are doing right now is we are doing that calculation of a consumption-weighted nutrient profile. I don't have it yet because our programmer had her baby six weeks prematurely. So she is on maternity leave. She is coming back in February, folks.

Then we will be able to look a little more closely at the vegetable groups, some things that I would like to talk with more of the Committee about as we go through the spring, which is looking at potential changes in some of the subgroups that might facilitate meeting certain nutrient needs. Let me just give you one example to know what I am talking about.

We have an orange vegetable

subgroup. Consumption is very small, and the vast majority of it is carrots. So we are getting very close to recommending carrots to all Americans, whereas there are other choices that could meet the needs.

We also have this very large, diverse group of foods called other vegetables that includes tomatoes, all tomato products in there. Tomatoes have a nutrient profile that we think is similar enough to orange vegetable, and we are going to look at this closely, that we might be able to make a red-orange group, which would be understandable to consumers and give them a lot more choices, and be able to boost the consumption of those, and get the tomatoes out of that other vegetable group, which people don't understand. So those are the kinds of things we are looking at.

This is the most exciting one. Okay, so everybody who was asleep out there, wake up.

(Laughter.)

We are developing a systematic approach to assigning foods to a specific area within each MyPyramid group. Everybody knows this. Okay?

But what we have said is that the base is wider than the tip because the base represents nutrient-dense forms of foods, and the tip represents those that have more SoFAAS in them. But we have never really told people where foods go and identified them.

What we are doing now is we are doing tiers. We are developing tiers within each of the food groups, so that, when we finish this, we can be able to say, for example, fat-free milk is in tier one. Two percent milk is in tier two. Two percent chocolate milk is in tier three because it has some fat and it also has quite a bit of sugar in it.

Okay, in the grain group, we could say bread is in tier one, pancakes are in tier

two, and sweet rolls are in tier three.

When we do this, we will be able then to identify amounts, proportions, that should be consumed from each of these.

It operationalizes this concept of discretionary calories that is very hard for people to understand and get a hold of when you are talking about actual foods. It will identify those foods that have high consumption and that are high in SoFAAS and provide guidance for within-food-group choices that is very specific.

It is not new to us. This is an NHLBI project that did GO SLOW WHOA Foods. This is a Washington State University project that said build on a healthy base and separated them out.

What is unique about ours is that we are doing it in a very objective way by amount of SoFAAS in each food. We are not looking at a food and saying, I think that goes in the top or I think that goes in the

middle.

We are doing it on single-group foods to start with. We are not trying to tackle at this point in time foods that are such a mix of so many food groups that you couldn't figure out whether the SoFAAS went to the meat in the beef stew or they went to the vegetable or they went to the wherever.

So we are starting with this, and we are starting with food group foods. So we are not dealing with soda yet because we know soda is all SoFAAS.

We are calculating the calories from SoFAAS, and we are identifying test cutoffs, potential cutoffs. Then after we identify these and look at what it is, we will be able to select final cutoffs, and then what would the recommended consumption levels be for each tier.

Now this is all based on preliminary work. Remember, we don't have final, updated nutrient profiles yet. So take

these numbers with a grain of salt because they will probably shift a little bit.

But I think the big message is not going to change. That is that, if you look group by group -- remember, tier one is very low in SoFAAS. Milk, very little consumption from tier one, very high consumption from tier two, and very high consumption from tier three. Most cheese fits into tier three.

Fruit, if people are eating fruit, they are eating it without SoFAAS, very little consumption outside of tier one.

Vegetables, the majority of consumption is in tier one, but we have some substantial in tier two and three.

Meat and beans, tier two is predominant. So there is room for improvement there.

Grains, also, whole grains are more likely to fit into tier two than are refined grains. This is an artifact of the fact that there is so much plain white bread

eaten, which fits into tier one, whereas, tier two, the whole grains are much more likely to be eaten as breakfast cereals, which are likely to have sugar added. So that is why you see that.

If you were to assume that, from education, we would increase whole grain bread consumption, then you would see those numbers shift. Hopefully, over time we will see those numbers shift because that is what we want to do.

But this gives us specific targets for where we want to work and where we want to focus. That is what we are trying -- that is where we are going.

As I said, specific messages, providing feedback to consumers, and then we can, then, look at food choices by tier and determine how it influences overall diet quality. So we could look at HEI scores for people whose food choices were in various tiers, and we can monitor changes over time.

We can see how we are doing.

So these are the four things that we are doing. The one I didn't talk about was just updating the nutrient profiles for all the groups.

That, in a nutshell, is it.

Any questions?

(Applause.)

DR. PEREZ-ESCAMILLA: In terms of the feedback to consumers, do you have some specific ideas as to how the tier information could be --

DR. BRITTEN: How we would feedback information to consumers?

DR. PEREZ-ESCAMILLA: Right, in terms of the tiers. I mean, what are you thinking about?

DR. BRITTEN: Well, there's two ways to think about feedback from consumers. One is, as we are developing the materials to teach these principles or to communicate these principles, that we would get feedback, that

we would do focus group testing, and we would get feedback from consumers to help us make sure our messages were correct.

But then we would look at specific messages that we could give that would help a person understand your choice is toward the top of the Pyramid or too many of your choices in this food group are toward the top of the Pyramid. If you selected these other foods instead, it would drop you. So you could give people advice based on, if they are eating something that would be in tier three, you could suggest getting them down to tier two.

We have interactive tools. What we would like to do is eventually, to build into the interactive tools, we can tell people, here are the choices that you made that are in tier two or tier three, and here's a specific list of foods that you could choose instead that would be in a lower tier.

DR. PEREZ-ESCAMILLA: And do you think it would have any application for food

labels, for actually putting a symbol related to the tier on the food products that people are buying -- eventually? I don't know.

DR. BRITTEN: It could. It could.

One of the things I want to say is this is right now for, remember, foods that fall into a single food group. We have got to look at how we can expand this. This is going to take a lot of synthesis of ideas to see how we can do this for mixed dishes, and a lot of the packaged products have more than one food group. So if you took a packaged dinner, for example, we couldn't do that.

DR. ACHTERBERG: Just commendations for this work. We have needed this for a long time.

I hope that, as these datasets are built, that we can fold them back and integrate them into our other datasets to understand who is eating which from which tier and relate it to the nutrients, and so forth. So I hope, as it is being designed, it is

being designed so we can integrate datasets.

DR. BRITTEN: Yes, yes. Each food that we have is assigned, actually, by its NHANES survey code. So all of those survey codes would have a specific tier assigned to them. So you could analyze that data based on that.

DR. APPEL: Thanks a lot.

At the end of 2005, I barely thought I understood what you were doing. I'm glad you had a presentation today.

So a few questions: one is -- it is a very proximal question -- is that you have food groups, and it is a little bit peculiar. Nuts is a vegetable, nuts is meats and beans.

DR. BRITTEN: It is the beans that fall into two.

DR. APPEL: Yes, but the question I have -- and this is consistent, I think, with some of the comments we heard earlier -- what is the feasibility and implications if we

were to say there should be a category called nuts, seeds, and legumes, you know, at a theoretical level and a practical level?

DR. BRITTEN: At a theoretical level, we have subdivided other groups, and there's no reason we could not do subgroups with specific recommendations, as we have done for whole grains or as we have done for vegetables.

I would caution that we look at it very carefully, how we do it, so that we don't, by implication, suggest that specific percentages come from something like red meat, even though we know we would like to push them away from that.

So we might want to look at a model like whole grains, where we talk about at least such-and-such should come from another. But it is very, very easy to do because it is set up that way already.

However, we have this issue with legumes, that our recommendations for legumes

fall under the vegetable group, even though they can be counted as meat by vegetarians. We keep them in the meat group very specifically to allow them to count as a plant source in that group.

But, for most people, the vast majority of their legume consumption should come as a vegetable. The nutrients are similar. They are a plant food. People see them as a vegetable.

So it has always been an issue. Legumes are a cross-over product. We look at it very carefully, how we make that message.

But, to date, it has been more useful for us to identify them as a vegetable subgroup because we can recommend more.

DR. APPEL: I think this would follow up on something Joanne said at the last meeting. What if the organizing principle became the source of protein, though, you know, meat versus vegetable protein? And also consistent, I think, with what Linda has been

thinking about in terms of health benefits of the vegetable protein. Is that an organizing principle?

You know, you have food groups, you put them together because they are similar. You know, they grow in the ground or you pick them off trees.

This one is organizing principles based on health, which is you have to have so much protein to live, and you have a choice. It is either meat or vegetables or some distribution in between.

DR. BRITTEN: So you are suggesting that it go back to a nutrient system?

DR. APPEL: It might be for just this one -- you know, nothing is ever perfect or absolutely 100 percent standardized, but that seems to be -- there are a few RDs on this, but I remember this very explicitly, that Joanne mentioned this, you know, in how she starts her sources of foods with, where's

the protein coming from?

DR. BRITTEN: Well, all things can be looked at. All things can be looked at.

What we have found is we try to do this as food-based guidance rather than nutrient-based guidance because that becomes a slope of, what other nutrients do you specify to their own food group?

CHAIR VAN HORN: I think, just following up on that a little bit, is of all the things that are confusing to the public, and yet what is very clear in the literature, is that diets that are higher in plant-based protein, vegetable proteins, are associated with lower BMI, lower lipids, lower blood pressure, et cetera. Yet, if you ask the average person, what's a plant-based protein, I'm sure they wouldn't be able to tell you.

So the point is, even I think as Larry points out, even seeing beans next to meats is confusing for a lot of people because they don't know how to make that connection.

I think our goal is to try, using our evidence-based research model here, to simplify for the consumer how to make the choice and apply that knowledge when they actually pick up a food and say, oh, these nuts actually are giving me protein or these beans are giving me protein. So, instead of meat, I should be eating this for lunch.

I think what has come across very clearly -- you see this very clearly with kids -- they understand that cheese is a source of protein. They get that. So they can easily become a vegetarian by putting cheese on their pizza.

But they don't understand the rest of the nutrient adequacy issues that we would want to convey to them. In fact, that leads me to the second point I was going to make, and our group here has heard me say this before.

But in a study we did in adolescents, it became very mind-blowing to us

when we realized that a third of calories came from snacks, desserts, and pizza. To us, what that represents is no longer is the idea of a meal even coming across. So that people don't know you are supposed to have a vegetable and a fruit and a grain, and all of that. It is a food court mentality out there.

So I think what is getting lost, especially in our younger people, is what you need to put into a meal in order to achieve the nutrient adequacy.

So I think, while we are looking at these tiers, if there is some way to help understand that, if you eat from tier one, you know, you can eat the foods you want to enjoy, but there's lower-fat versions or lower-sodium versions, or whatever --

DR. BRITTEN: Yes.

CHAIR VAN HORN: -- you know, to still meet those needs.

DR. BRITTEN: That is a really good point.

I do want to point out that the issue of the meat, the title of the food group is meat and beans group. That was actually done by the 2000 Dietary Guidelines Committee because they wanted to emphasize that beans could fall in, they could be served as a plant protein source. We have kept that name for the group. So we always talk about the meat and beans group.

People do get very confused about it. If somebody has an answer to simplifying it, you know, putting it into one group or the other -- we want people to eat beans even if they eat sufficient other protein sources. We want them to eat the beans for all the other nutrients in them. So it's an issue.

DR. NELSON: Well, a couple of comments.

One quick fix might be having it be the beans, seeds, and meat group. I mean switching the name, so that the emphasis is different, that is one thing.

But I think this is fascinating. I get concerned from the consumer perspective because they already are so confused by what the Pyramid says, that you start adding tiers. That is just a comment.

But one question is, is there any evidence that the Pyramid at all evokes any understanding around calories? To me, the way it is set up is very much more around nutrient adequacy. Thinking about the work that we are doing, and needing to focus much more on caloric intake, I get concerned. I would love to think that there is another way to evoke an understanding around -- and I know we have the runner going up the stairs, but I think it is really around caloric intake, some kind of an icon, some kind of an image.

I am concerned just from the Pyramid -- I think it has done a good job with nutrient intake. I am not sure around just energy.

DR. BRITTEN: Well, the tiers

project is one way we were trying to attack that, is to let people know that there are choices they can make that would be lower in energy from SoFAAS in each group.

And when you saw the data that Sue presented, the SoFAAS is really the elephant in the room when you are talking about excess caloric intake. We are not too worried about people consuming too much from a specific food group. We are concerned about the excess fat and sugar that they are consuming.

That is so huge.

So trying to set up the tiers to make better choices and use that concept, and we have, in all our interactive tools, we have calories, we count calories --

DR. NELSON: Yes.

DR. BRITTEN: -- as well as the groups. We also count calories from extras, which are the SoFAAS, to help them see that.

DR. NELSON: Just one follow-up question about, to that end, this health

communications piece about the research on the influence of the Pyramid on actual food choices. Has anybody really, really tested that in a way, like in the general public with a general sort of reading level?

DR. BRITTEN: We do not have a good, well-designed intervention study that tests across the general public. We have a lot of anecdotal evidence, and we have it incredibly widely used as a part of nutrition education programs that are not just the Pyramid, but they are traditional nutrition education programs where it would be difficult to tease out what the educator is talking about as opposed to just the Pyramid.

So it is something I wish we had an answer to and we don't.

DR. NELSON: And potatoes, at some point we've got to move potatoes out of vegetables or do something with potatoes.

DR. BRITTEN: Potatoes are a nutrient-rich vegetable.

DR. NELSON: I know, but the way that most Americans eat them is not so nutrient-rich is the issue.

DR. BRITTEN: Well, I will give you all the data that we have on our item clusters.

DR. NELSON: Okay. Yes.

DR. BRITTEN: Now that we have separated all those out, I will show it all to you, yes.

CHAIR VAN HORN: Well, I want to thank you, all three of our speakers really, for an incredibly rich afternoon. I think they deserve another round of applause.

(Applause.)

We will now be taking a 15-minute break. When we come back, we will be hearing from our Fluid and Electrolytes Committee on their progress.

Thank you.

(Whereupon, the above-entitled matter went off the record at 3:09 p.m., and

resumed at 3:24 p.m.)

CHAIR VAN HORN: Okay, we need to get started.

So I would like to introduce Larry Appel, who is going to talk about the work that they are doing in the Fluid and Electrolytes subcommittee.

Larry, I will let you go from here.

DR. APPEL: Okay, great. Let's go ahead and start.

I made an error on the first slide. And you always should acknowledge key staff. So Holly McPeak was our senior staff person that's keeping our group together, and besides myself, Tom Pearson and Christine Williams are members of this subcommittee.

So I'm going to divide this -- I mean this is actually a little bit redundant from what I did at the last meeting. So I'll go through the three questions that are in now the sodium, potassium, and water section.

So the first one, the question was, what amount of fluid is recommended for health? And these are the three conclusions.

One, the combination of thirst and usual drinking behavior -- it's hard to hear. There's a lot of noise.

CHAIR VAN HORN: Excuse me. Could we shut the doors in the back? We're having a little trouble hearing up here. Thank you.

DR. APPEL: It's a bit of a distraction.

So anyway, the first conclusion was the combination of thirst and usual drinking behavior, especially the consumption of fluids with meals, is sufficient to maintain normal hydration.

I will just make a comment that, in the IOM Committee on Fluid and Electrolytes, there is uniform agreement that there is no problem that people have alluded to, like chronic dehydration. That's just not a clinical problem with otherwise healthy

people.

The second one is that healthy individuals who have routine access to fluids and who are not exposed to heat stress consume adequate water to meet their needs.

And third is that purposeful drinking is warranted for people who are exposed to heat, stress, or who perform sustained, vigorous activity.

So these are the deliberations that we had on water. We did an initial literature search. And then we had a conference call with Dr. Mike Sawka, who participated in the Institute of Medicine DRI report, and who is a world expert on hydration.

And he agreed with the conclusion that we reached, didn't even recommend tweaking it. So the consensus was that we are on track.

Now there are some additional plans that I think we need to do just to make

sure. So I think we should do, if there is one area where there might be new literature, where there was some data -- it's not particularly great, but it's on kidney stones. Does increased fluid intake prevent kidney stones? So I think we could do a search on that. Nobody was aware of any ground-breaking study that might change.

And then we are thinking of enhancing the text on a few issues. One is water in the elderly, which came up in at least one public comment, water with meals, the vitamin/mineral content of fortified water, since some are now being promoted as sources of nutrients. And then the recommendation for non-caloric fluid sources, given the other issues of concern.

So I guess what I would do would be to stop there and take questions, and then I'll do potassium, and then I'll do sodium.

DR. SLAVIN: I just wanted to point out that the Carbohydrate Protein Group

is looking at artificial sweeteners, when we would overlap with you probably on that last non-caloric fluids sources. There might be some cross-Committee sharing we could do on that.

DR. APPEL: Yes, it's probably more of -- I'm not sure we're going to be doing a literature search per se, but it's sort of in the context of other chapters of liquid versus solid, as well as total caloric intake. I don't think we mention anything about calories in the chapter.

DR. RIMM: Larry, two things come to mind. One is, I don't know, maybe since I recently read papers on water and bladder cancer, is that -- I don't know -- something else that has been searched or worth pursuing?

DR. APPEL: Yes, I think actually from your shop there might have been --

DR. RIMM: Well, that was one from a while ago, but I know I have seen several others since, or maybe I just have reviewed

them or something. But I don't know if, while you are studying kidney stones, you can add it to the list potentially.

And the second thing was related to a lot of what we talked about today, is just the behavioral aspects of the diet for people who drink more water. Does it replace other things? Does it impact on how you eat or what you eat or satiety? I don't know. Is there enough literature on that?

DR. APPEL: Well, yes, I mean I think there's some --

DR. RIMM: Maybe that's not here.

DR. APPEL: -- acute feeding studies. You know, if you pre-load with water, what is the impact on subsequent caloric consumption? I don't think we've -- I mean we could -- a lot of things are related to energy balance, and not everything should flow towards -- But I mean I think we could do a literature search on these.

These are sort of like

subquestions within the primary question, but I think that'd be reasonable.

Okay, so that's water.

So potassium. So the research question, what are the health effects of potassium intake on health?

And the three conclusions were, first, diets rich in potassium can lower blood pressure and lessen the adverse effects of salt on blood pressure. They reduce the risk of developing kidney stones and possibly decrease bone loss.

You can already see, by the way, that there is, embedded in our recommendations are some tentative words, because the evidence we didn't feel was so strong that you could be definitive on these. And so, when you think about grading of evidence, I mean, sometimes you can do it just by A, B, C, which I actually think would be problematic, or you can use words that I think might be better, because some people might dismiss a B or C

recommendation.

Anyway, so the second conclusion was: in view of the health benefits of potassium and its relatively low intake, at least 4,700 milligrams is recommended. That is the adequate intake level for potassium.

And three, blacks are especially likely to benefit from an increased intake of potassium.

So in terms of our deliberations on potassium, we did an initial literature search, and didn't really find literature that would either enhance or conflict.

You know, the DRI Committee felt that we should be doing trials of increased potassium intake, increased fruit and vegetable intake, as a means to actually prevent osteoporosis or prevent kidney stones, but none of those trials have been done.

We did have a conference call from one of the world's experts in this area, Dr. Curtis Morris, from UCSF, and he felt that the

conclusion was accurate as written.

So our consensus was that, again, similar to water, we'll just add key points to the text.

So our plans are to do a PICO search focusing on blood pressure as an outcome and cardiovascular disease as an outcome, just to make sure we're not missing anything.

And then we are going to, either here or in the sodium chapter, deal with interactions of sodium/potassium as well as the sodium/potassium ratio.

And I think also something that should be done, and whether it's done as part of the Dietary Guidelines or whether it should be done as -- there's also an IOM panel going on concurrently dealing with strategies to reduce sodium.

It's like, if you're going to use salts that replace, that are used as a substitute for sodium, what is their mineral

content? There are a lot of sea salts, kosher salts, other things that have been recommended. And so what is the mineral content?

And I attempted to do that myself over the past few days, and it's very hard to find that data, and I think it would be useful, either in this report and/or the IOM report.

So then I'll open it up for questions on potassium.

CHAIR VAN HORN: I would actually like to jump right in there, since I was on that phone call when we discussed that.

And it's now to me, and I'm sure to the rest of you, after Alanna's presentation -- she showed the percentages of Americans with usual intakes at or above their adequate intakes. And there, right there, is so clearly described, you know, the extremely high intake of sodium and the inadequate intake of potassium that Americans currently

have.

And as you get into this ratio of sodium and potassium, you know, the DRIs are what they are, but they're not necessarily taking into consideration the fact, do we need a compensatory increased intake of potassium because we need to accommodate our extremely high intake of sodium?

And you know, I mean we all would, I'm sure, recommend that people cut down on their sodium, but in the absence of that, the fact that we're also undereating potassium, and obviously it's the fruit/vegetable problem, that is what would help, but right there you see it very clearly demonstrated, that it's a problem of both sides being extreme.

DR. APPEL: Yes. I mean all the evidence points that the two work together, and they basically have sort of like opposite effects 90 percent of the time.

The problem that I think we have

is, you know, if we want to have -- it's hard dealing with interactions in the context of policy recommendations. You know, if your sodium intake is low, then your potassium intake can be low. We can say that, but in terms of like reaching the final conclusion, I think we did a pretty good job.

Let me just go back. When we say that diets rich in potassium mitigate the adverse effects of salt on blood pressure, that gets at the interaction question. But I think we can put some more text in.

CHAIR VAN HORN: You know, to build on the data that we now have in front of us showing just how disparate we are in terms of what we are currently eating versus what we would need to eat in order to really do justice to that statement is really astronomical, I mean as far as actually making that work in the real dietary situation. We are so far away from that.

So you could use real data on a

real diet to document and demonstrate just how far apart those two things are.

DR. APPEL: Okay.

CHAIR VAN HORN: I think that's the point, if I'm not mistaken, that the presentations that we had today, which were all just incredibly valuable, are real-time examples of why the science that we're documenting needs to be very targeted, because the diet that we're eating is totally opposite of what we're discovering. And we've got the real data now to illustrate that.

That's all. That's my suggestion.

Others? Do other people have thoughts?

DR. SLAVIN: I just wonder, like maybe Alanna probably already has this data, where our sodium would come from in the last NHANES, because probably a lot of it came from dairy, didn't it? I mean I don't know. Because we always say fruits and vegetables, but if you look at usual intakes that people

are already consuming, where is it coming from?

DR. APPEL: It comes from a lot of food groups, but actually, the biggest one, or one of the biggest, is sort of this grain and baked good group, because it's used to bake bread. You know, salt is put in as well as sodium bicarbonate.

I think dairy, the GMA, or Grocery Manufacturers' Association, did their own analysis. It hasn't been published. I think I showed a slide last time. In my recollection, it's a little bit over 10 percent.

There's one figure that gets cited all the time, but it just puts processed food together, you know, like 70 percent. It doesn't split it out much more than into the groups that I think we're interested in.

Part of the problem is that there have not been updates on sources of sodium, and not just sort of like food group sources,

but where you're getting it, like at home, and then outside of the home.

And a lot of people, you know, people always say, you know, I go out to eat and I get a huge bowl of sodium, but I don't think there's any documentation out there, even though I think most people believe that is true.

DR. SLAVIN: But it seems like there's been a move in the industry to move away from sodium and towards potassium, and that wouldn't be captured until later, outside of any database.

So as the foods that are available change, you're not going to get that for a while.

CHAIR VAN HORN: I mean, I think the nutrient database clearly can only keep up with the food supply so quickly.

But to answer your question, when you look at the 2005 Guidelines, in Figure 4, they show in a pie chart fashion -- I'm sure

you remember it -- the segments of sodium contributions, and 77 percent come from processed foods.

DR. APPEL: Yes. Well I think that's from the Mattes data, that small study.

I don't know. Is that the very simplistic pie chart with like four or five B-? You know, that is basically old data from about 60 people, and it's very tricky to measure it.

CHAIR VAN HORN: Right.

DR. APPEL: And actually, it's a critical research need. Where is the sodium coming from now --

CHAIR VAN HORN: Exactly.

DR. APPEL: -- given the changes --

CHAIR VAN HORN: Right.

DR. APPEL: -- in food consumption patterns?

CHAIR VAN HORN: Well I would hope, following up on that, that, again,

looking at the 2005 Guidelines and the data and the illustrations that were provided, we should be able to update every single one of those on the basis of what was just shown us today. I mean, that's just beautiful data, and it's much more current. And it can really help to drive home --

DR. APPEL: Yes.

CHAIR VAN HORN: -- the disparate nature of what we're recommending versus what we're eating.

DR. APPEL: What's happening, yes.

DR. RIMM: That was still 2001 to 2004, though.

CHAIR VAN HORN: Yes.

DR. RIMM: I assume that's where the food composition databases are from. I mean I think that's part of the problem is you have to update the food composition databases --

CHAIR VAN HORN: Exactly.

DR. RIMM: -- as well as where the

data are coming from.

CHAIR VAN HORN: Right. That is a problem.

I would hope that, as we are more electronic, you know, it will be possible to upload the new nutrient data more quickly than what was done in the past, but that's a whole other topic.

Anyone else? Comments?

(No response.)

Great.

Okay, Larry?

DR. APPEL: All right. Okay. And here's the third research question. What are the effects of salt, sodium chloride intake on health? And we reached two major conclusions.

First, the relationship between salt, sodium chloride intake and blood pressure is direct and progressive without an apparent threshold. Hence, individuals should reduce their salt intake as much as possible.

And the third is, in view of the

currently high levels of salt intake, daily sodium intake of less than 2,300 milligrams is recommended.

And then two more conclusions: many people will benefit from further reductions in salt intake, including hypertensive individuals, blacks, and middle-aged and older adults.

And I'll just have an aside here that the CDC estimated that this actually is about 68 percent of adults. So we have a recommendation that the 2,300 applies to around 32 percent, and a lower level, 1,500, applies to this group.

And that individuals should concurrently increase their consumption of potassium because a diet rich in potassium blunts the effects of salt on blood pressure.

And so that's the flip side, or I mean both pieces of the interaction.

Okay, so deliberations on sodium. We've had discussions on two conference calls.

There is an IOM study on strategies to reduce sodium intake. I serve on that panel.

And as I mentioned, the 1,500 milligrams applies to -- actually, the number is 68.

Christine has done an initial literature search on salt in children, and she's going to go through that.

So there is, based on the initial two calls, there is potential for the conclusion to change.

First, CVD is not mentioned as an outcome in the conclusion, and I think it should. We'll have to craft that.

Second, the upper limit applies to most adults, based on the 68 percent figure, and there's no statement about children.

So I'll also continue with this, and then take questions.

So rather than having what I call new questions, these are sort of subquestions that probably would be within the same

chapter:

What are the health effects of sodium intake on blood pressure in children?

And secondly, what are the effects of sodium on, not just blood pressure, but cardiovascular disease, stroke, coronary heart disease, left ventricular mass, heart failure, kidney disease, end-stage renal disease, proteinuria, bone mineral density, osteoporosis, gastric cancer, esophageal cancer, and stomach cancer? That is trying to get all your MeSH terms correct and display them here.

And then the last is, what are the health effects of sodium/potassium ratio? There's been some publications on that, including one from our group last week.

So I guess we could discuss everything but that first question about sodium intake in children. Christine's going to present some preliminary findings on that. So I'll open it up to questions.

DR. PEARSON: Larry, I wonder if that IOM study of strategies to reduce sodium might -- obviously, the timing is going to be later, but --

DR. APPEL: It's concurrent.

DR. PEARSON: It's very concurrent, but I mean the question is, could that serve as essentially an implementation partner with this in terms of the Guidelines here then being passed on to there?

DR. APPEL: Yes, I think that is focusing on implementation, and maybe that's a lesson for us as we think about some of the discussion this morning and internal discussions on how to enhance dissemination.

Obviously, this is a single nutrient. It's a bit unusual as a single nutrient, and given sort of the sources of sodium basically in the food supply added by others, not really selected by us. So it makes it a very unusual kind of nutrient where you might take that approach, but I think it's

a lesson that we might want to use.

DR. PI-SUNYER: Larry, let me ask you about question No. 2. It seems to me that it's not clear whether you're talking about, what are the effects of sodium on development of all these conditions, or are you talking about, what are the effects of sodium in the treatment of these conditions? I think the two are quite different, and if you get into treatment, I think you are going to go on forever.

DR. APPEL: I wasn't planning on treatment. I think I'm aware of at least sort of three trials in which cardiovascular disease was the outcome, so taking people who got some type of intervention that involved reduced sodium. I think I presented last time, and two of the interventions were reduced sodium behavior interventions. One of them was a reduced sodium/increased potassium salt, and then they followed people long-term, and they had differences in clinical outcomes.

Those are three trials I'm aware of. And I think we just need to do a search.

They came up, actually, earlier in the comments today, the treatment issue, you know, like use of sodium in people with heart failure. And there was a trial that was published on that topic. I don't think we want to get into clinical populations like heart failure patients, type I diabetics, stuff like that.

I mean, we're not going to have a clinical trial with gastric cancer and esophageal cancer, but I think there have been some reports. It was a diet and cancer report that was completed that listed sodium as a high probability risk factor for gastric cancer, and I think that deserves a look at.

You know, none of the recommendations are based on cancer prevention, but on the other hand, maybe we would flip into that as a recommendation, depending on any new evidence.

They've done all the work, and so we can just copy without plagiarizing.

CHAIR VAN HORN: Are you referring to the AICR report? Is that the one you are --

DR. APPEL: NCRF, right?

CHAIR VAN HORN: Right. Exactly. Because I would agree with you that we should take advantage of that full report, because my recollection of it is that the single most important thing is what we've been talking about all day, which is reduce obesity and reduce weight as being the single most important thing you can do to lower your risk for cancer.

DR. APPEL: Yes.

CHAIR VAN HORN: So as we engage in our discussions here regarding the same kinds of issues, that would appear to be a useful piece of information to include.

DR. APPEL: And as an aside, and it might be relevant to other subcommittees,

is that one, in the last 2005 Committee report, two things happened.

One, if there was what appears to be a strong, evidence-based document that is completed, we used that heavily. We used that for like the fruits and vegetables and cancer recommendations last time.

And the second thing we did was to, in several of the chapters -- I know this was actually a lot in the lipids -- was to just comment on the other recommendations, so that the world realizes that we are not out of the blue on any of these recommendations, not that we're going to reach the same conclusion, but we're often within the same sort of window of either a level or general recommendation.

So that kind of report I think would be useful and probably should get -- actually, I think we got copies of that from after the last one.

CHAIR VAN HORN: If there aren't other comments on that, maybe we can go to

Christine to talk about children.

DR. WILLIAMS: Thank you.

Larry asked me to briefly cover the topic of sodium and blood pressure in children.

And for background, the 2005 DG research questions included the question, what are the health effects of sodium? But the emphasis was on adults.

In the 2010 process, the same research question will address the general population, both adults and children.

And the rationale for addressing the health effects of sodium during childhood and adolescence include an expanding body of scientific literature linking sodium intake with blood pressure in youths.

This will be a subquestion: what are the health effects of sodium intake on blood pressure in children? And in PICO format, it will cover children and adolescents two to 19, looking at dietary sodium,

comparing higher and lower levels of sodium intake, and the outcome blood pressure.

In the United States and other industrialized countries, blood pressure gradually increases through childhood and adolescence, and the rise is about 1.9 millimeters of mercury per year for boys, and 1.5 millimeters of mercury for girls, which is a rather steep increase. In adults, it's only about 0.6 millimeters of mercury. So it's a steep rise in childhood.

This is in contrast to Yanomami Indians in South America, where they don't use salt, and the blood pressure does not increase throughout life. In fact, it remains at levels that are similar to 7- and 11-year-old children in the United States.

So the key thing is, how can we decrease this rise in blood pressure in children over their childhood and adolescence?

Some disturbing information from the literature shows that comparing data from

NHANES III, 1988 to 1994, with NHANES 1999 to 2000, we have seen an increase in mean systolic and diastolic blood pressure in both boys and girls. The mean systolic blood pressure has increased by 1.4 millimeters of mercury, and diastolic by 3.3 millimeters of mercury. And the increases have been higher among minority youth.

Another study has shown that the proportion of children and adolescents who have pre-hypertension or hypertension has increased in children also between 1988 and 1999. And there's an ethnic and gender gap that also appeared for pre-hypertension in >88 and for hypertension in >99.

And this increase in obesity among youth is partially explained by the rise in -- the increase in obesity partially explains the rise in high blood pressure and pre-high blood pressure during this time period.

This is data from the Bogalusa heart study. And you can see, for the dark

green bar, children whose BMI percentile is above the 97th percentile clearly have a much higher risk of high blood pressure, both systolic and diastolic.

We studied more than a thousand pre-school children and found the same relationship, a two to three-and-a-half percent increase in likelihood of high blood pressure, both systolic, diastolic, or both, among children who are obese versus normal weight.

So sodium and blood pressure in childhood, besides obesity, there's evidence that dietary factors, especially a high intake of sodium, affects blood pressure levels in children and adolescents.

And He and MacGregor published a meta-analysis of 10 clinical trials among children and three among infants looking at the effects of sodium reduction in children in 2006. And there are many other observational studies that have studied the link between

sodium and blood pressure in youth, as well.

This is a summary chart of the meta-analysis. And for systolic blood pressure for these 10 trials, which involved about a 42 percent reduction in sodium intake, the reduction was about 1.17 millimeter of mercury for systolic, and 1.29 for diastolic.

Some people would say that this is a relatively small decrease, but if you saw this in a population approach across the whole population, and if it was sustained over time, it could have a significant decrease in overall hypertension among adults and in cardiovascular disease.

Sodium intake among U.S. children is very high. On the left side, you can see the adequate intake levels for sodium for children, between 1,000 milligrams per day and 1,500, and the upper level, 1,500 to 2,300. And in contrast, the actual sodium intake in children today, you can see for the blue ones, which are 2005 to 2006, the values are very

high. And in fact, about 95 percent of 5- to 8-year-olds and more than 90 percent of older children exceed the upper level for sodium intake.

For potassium intake in children, it's very low, similar to adults. Potassium intake, adequate intake for potassium is between 3,000 and 4,700. There's no UL for potassium.

And you can see that the actual intake for children is about 2,000 for young children, 2,300 for younger children. So in fact, less than three percent of children four to 18 met the AI for potassium, and that was for NHANES 2001 to 2002.

So in conclusion, there's a trend toward higher blood pressure levels among U.S. children and adolescents. This was observed for the decade between >89 and >99 to 2000. And this trend, the increase in child and adolescent obesity, explains some, but not all of the trend toward higher blood pressure,

increased prevalence of high blood pressure in youth. And efforts to prevent obesity in childhood will be important in reversing these trends.

But dietary intake, especially of sodium and potassium, has also been shown to have a significant influence on blood pressure in childhood. The dietary intake of sodium in U.S. youth is very high, with the majority exceeding the upper limit, and there is evidence that reducing dietary sodium reduces blood pressure in youth.

Thus, Dietary Guidelines emphasizing reduced sodium intake in children and adolescents could prove to be an important component of public health strategies to reduce hypertension and related cardiovascular disease.

Dietary intake of potassium in U.S. youth is very low, with the majority not meeting the AI. And since diets rich in potassium can lower blood pressure and lessen

the adverse effects of salt on blood pressure, Dietary Guidelines should emphasize increasing potassium intake in children and adolescents through increased consumption of fruits, vegetables, and whole grains.

So the next step will be to conduct a formal literature search on the question, what are the health effects of sodium on blood pressure in children, which, again, is a new subquestion under the main question, what are the effects of salt, sodium intake on health?

The timeframe will probably go back to the 1980s, since there is a lot of important research to be covered, and this is a new question. And again, we'll cover children between birth and 19, even though the Guidelines only refer to children two to 19, and studies in the English language.

Last slide. Thank you.

CHAIR VAN HORN: Comments?

DR. NELSON: I have a question

about going back to 1980. And it's just sort of the food supply was very different, obesity rates were really different. I mean, children were different in 1980 than they -- I just, I wonder about some of the findings in 1980 may be not as relevant as findings in the >90s and the 2000s.

DR. WILLIAMS: Well, I think some of the important studies in the 1980s were actually intervention trials where the data would still be pertinent.

DR. NELSON: Okay.

DR. WILLIAMS: Some of the observational studies, of course, might be different when the intake is different.

DR. NELSON: Okay.

CHAIR VAN HORN: Other comments from the group?

(No response.)

CHAIR VAN HORN: Larry, do you want to incorporate anything from the children's --

DR. APPEL: No, I think we have a few things here. I don't think we have as much as some of the other committees.

And we'd like to -- I think we're in a position, at least with water and potassium, to actually make -- it could be prototypes, if we get those right, and then review those with the whole group. You know, because I think the sense is that those, and particularly those chapters, you know, need some, maybe some updates, and we might want to repackage things a bit differently, and if we agree, then at the next meeting we might say, yes, this is the stamp or the general approach. Others might have those examples, as well.

Sodium is going to take more work because we have literature searches on this topic, on a variety of topics.

DR. PEARSON: Christine, I just was wondering, the whole idea of the effects of salt on health in children, obviously,

children tend to be healthy. But there had been a number of worrisome studies looking at left ventricular mass and aortic stiffness, et cetera, into the adolescent years.

Are you going to include those in terms of -- because these aren't symptomatic issues, but they certainly portend pediatric routes for vascular disease with blood pressure and --

DR. WILLIAMS: There have been a lot of studies looking at cardiovascular risk factors and early precursors of heart disease. I'm not aware of any of those studies that have linked sodium in particular. It's a further step away, but certainly there are related to high blood pressure.

DR. PEARSON: I guess my point is I think we should look at those, because I think those would be probably the more sensitive markers of this thing than maybe even blood pressure. Some of those looked like they were preceding the blood pressure in

some studies, it seemed.

DR. WILLIAMS: We could do that.

DR. PI-SUNYER: Christine, are you thinking of looking at the interaction between weight gain and sodium intake? In other words, we have a lot fatter kids now than we used to. And so --

DR. WILLIAMS: I think a lot of the observational --

DR. PI-SUNYER: In response to what Mim was saying, would there be a different interaction between the taking of sodium according to what your weight is?

DR. WILLIAMS: There have been more recent studies looking at that interaction, and some that deal with overweight teenagers, and changes in sodium sensitivity with dieting. So we will be looking at that.

CHAIR VAN HORN: The dietary intervention study in children, while it was emphasizing lipids and lowering saturated fat

and dietary cholesterol in children, there was one paper that related to the reduced sodium intake of that population and lower blood pressures that accompanied it. It was modest. It wasn't a significant reduction, and that wasn't the target for that study, but it at least illustrated that it can be done.

DR. WILLIAMS: That's true.

CHAIR VAN HORN: Other comments from the Committee?

Xav?

DR. PI-SUNYER: Larry, the other question I wanted to ask you is, what about the elderly as a subgroup? I mean, these are people who have a huge amount of hypertension, a very high prevalence. Their taste buds have dropped off.

Is there special recommendations or anything that should be done on people above a certain age?

DR. APPEL: Well, a few pieces in the puzzle. One, because they are

hypertension, their blood pressure levels are high, and they're at cardiovascular disease. At least if you do the modeling, these are the group that really benefits immediately.

And in all of the analyses that have been done, sodium reduction in the elderly, you get more bang for your buck, and it's immediate. And that's also, obviously, again, the group that has high CVD. I mean you get, you know, this is where you're going to get a lot of benefit immediately.

In terms of the taste issue, I think the plan is to embellish the section that we have on taste. And this might actually be one of those things that bridges the other group at the IOM, because there's an expert, Gary Beauchamp, on this.

But I think we dealt, to some extent, with it in the previous report, but not focusing on the elderly. I mean the general, and it's been a while since I reviewed the literature, but the general

impression is that, within five, six weeks, people get acclimated. But acute reductions in sodium, you know, people don't like it. But gradual reductions over time, plus the acclimation process.

Now is it different in the elderly versus non-elderly? That's, I think, what you're getting at. And we could check that. I don't know the answer to that.

CHAIR VAN HORN: I'm sorry, Naomi?

DR. FUKAGAWA: No, that's okay. Go ahead.

DR. PEARSON: Is the IOM study looking at strategies to reduce sodium in children? Do you know if they're including that? The IOM study on strategies?

DR. APPEL: Yes, the IOM Committee is interested in all stages, and children, yes, you know, that's going to be part of it.

DR. FUKAGAWA: So my comment was just, as I recall, there's a recent study out about sodium intake in congestive heart

failure.

DR. APPEL: Yes. There are actually two recent studies out that I could comment on, one dealing with the heart failure, and the other one dealing with the sodium/potassium ratio. And I can comment on both.

DR. FUKAGAWA: Okay.

DR. APPEL: So there actually has been a clinical trial in the setting of heart failure. It wasn't done in the United States. It was done in, I think it was in Italy. It was a European country.

A very interesting study. They took people with really bad heart failure. I mean, for people who are clinically-oriented, these are people who are taking 500 milligrams of Lasix a day, and they're on a Spironolactone, and they're on an ACE inhibitor. They randomized people to then normal sodium versus low sodium.

So lo and behold, the people that

got the reduced sodium, they did worse. Now why would you say that? Because they are so heavily medicated beyond even what people in the United States are doing. It was an unusual population. It would be like adding triple diuretic therapy, you know.

So I'm getting more familiar with the heart failure literature, and I can tell you there is no other trial out there. So that's the last one standing, but it's in a population and in a management strategy that is very different from what goes on in the United States. So that's the heart failure study.

If you want a copy, I can even provide it to you.

Then last week we published a study from the trials of hypertension prevention, a long-term follow-up study. It was a sodium/potassium ratio.

And as the sodium/potassium ratio increased, so did the risk of heart disease.

But when you looked at sodium/potassium individually, it didn't predict.

But this was in the control group in the TOHP study. So you have to take a step back.

About two years ago, there was a paper in BMJ that followed people who had been assigned to the control group or the reduced sodium intervention, and followed them up to 13 years. And they found a reduced risk of cardiovascular disease by roughly 30, 40 percent. So that's an active intervention versus control, and this paper dealing with the sodium/potassium ratio was just looking at those in the control group.

So if you actually put the two pieces of the puzzle together, sodium reduction reduced cardiovascular disease, and on the basis of the most recent study, you'll get more bang for your buck if you concurrently increase your potassium intake.

And I think that's the story

within that cluster of two studies.

CHAIR VAN HORN: I guess that would have implications, also, again, going back to the data we were just discussing in terms of the inadequate potassium intake that we all have, including children. You know, that the emphasis especially in children and the School Lunch Program, et cetera --

DR. APPEL: Yes.

CHAIR VAN HORN: -- you know, in driving up the dietary sources of potassium. It would seem like a wise move.

PARTICIPANT: I think it's difficult, though, because looking at a lot of the foods, it was commented that most foods only provide about 10 percent of the potassium you need, like even a banana. So it's a difficult task to get potassium up to the AI. So I think we really need a lot of effort on decreasing sodium as well as increasing potassium.

PARTICIPANT: Can I just ask about

active, you know, like adolescents that are very active? And I guess there is some point in your discussion already that there are extreme situations for electrolytes that aren't reflected here.

DR. APPEL: It sometimes comes up, you know that, well, what about people who are really physically active, and they sweat off a storm of sodium? You know, a lot of the populations that are in these extremely low-salt environments, you know, less than 10 millimoles, like the Yanomami Indians, they are very physically active. What it is is that, when they sweat, they sweat water, as opposed to like a saline solution.

And there actually is even a study that varied sodium intake in the setting of a -- and this wasn't physical activity, it was a thermal effect -- kept people in a room that was like 100 degrees, and they fed them different levels of sodium. And then they tested their urine and their sweat and their

feces for the amount of sodium.

And they all ratcheted down on a lower sodium intake. So basically, you have compensatory mechanisms that prevent you from losing sodium.

So getting back to your original point, if people are physically active, and they are routinely physically active on a low-sodium diet, they'll do fine because they will have acclimated.

And we mentioned this in the IOM report. If you have, though, a sudden severe heat stress, and you're not acclimated to that, well, you're going to have problems. But that's sort of an unusual bird anyways, and I don't think we make recommendations for sudden peculiar settings.

CHAIR VAN HORN: Exactly.

All right. Well, everyone has been incredibly attentive, and the information has been rich. And we've really enjoyed hearing from everyone today.

Thank you so much.

We are going to adjourn now, and we'll reconvene in the morning at 8:00 with a discussion on nutrient adequacy.

Thank you.

(Whereupon, the Committee was adjourned for the day at 4:10 p.m. to reconvene the following day, Friday, January 30, 2009, at 8:00 a.m.)

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