UNITED STATES
DEPARTMENT OF AGRICULTURE

In the Matter of:)
)
DIETARY GUIDELINES ADVISORY)
COMMITTEE)
)

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Monday,
September 28, 1998

Economic Research Service

1800 M Street, N.W.
Third Floor, Auditorium
Washington, D.C.

The meeting in the above-entitled matter was convened, pursuant to Notice, at 9:13 a.m.

DIETARY GUIDELINES ADVISORY COMMITTEE MEMBERS:

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Ithaca, New York

RICHARD J. DECKELBAUM, M.D.
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JOHANNA DWYER, D.Sc., R.D.
Tufts University
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SCOTT M. GRUNDY, M.D., Ph.D.
The University of Texas Southwestern

Medical Center at Dallas
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DIETARY GUIDELINES ADVISORY COMMITTEE MEMBERS (Continued):

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Department of Nutrition and Food Sciences
The University of Vermont
Burlington, Vermont

SHIRIKI K. KUMANYIKA, Ph.D.
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University of Illinois at Chicago
Chicago, Illinois

ALICE H. LICHTENSTEIN, D.Sc.
Jean Mayer USDA HNRC on Aging at
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ROLAND L. WEINSIER, M.D., Dr. P.H.
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University of Alabama at Birmingham
Birmingham, Alabama

PARTICIPANTS:

EILEEN KENNEDY
USDA, Deputy Under Secretary
Research, Education and Economics

SHIRLEY WATKINS
USDA, Under Secretary
Food, Nutrition and Consumer Service

LINDA MEYERS
Acting Director, Office of Disease Prevention
and Health Promotion

Senior Nutritional Advisor
to the Assistant Secretary
for Health and Surgeon General

PARTICIPANTS (Continued):

J. MICHAEL McGINNIS
Scholar-in-Residence
National Academy of Sciences

SHANTHY BOWMAN, Ph.D.
USDA, Agricultural Research Service

CAROLE DAVIS, M.S., R.D.
USDA, Center for Nutrition Policy and Promotion

P R O C E E D I N G S

9:13 a.m.

DR. KENNEDY: Good morning. My name is Eileen Kennedy. I am Deputy Under Secretary for Research, Education and Economics in the Department of Agriculture. I am delighted to be here this morning. And on behalf of Secretary Dan Glickman, Secretary of Agriculture, as well as friends and colleagues at both the Department of Agriculture and Department of Health and Human Services, I am delighted to welcome you to the first meeting of the Dietary Guidelines Advisory Committee.

The Department of Agriculture and Health and Human Services jointly sponsor this activity every five years. It is once again time to look at the scientific evidence and decide whether, based on that scientific evidence, the Dietary Guidelines need to be revised.

I thank all the members of this prestigious committee. I realize how busy everyone is. And it reminds of what we always say in the Department: When you want something done, who do you ask? You ask busy people. So thank you.

Fortunate for me, this is my second time through directly involved with dietary guidelines. And one of the

things we took very seriously, we in USDA and HHS, was the recommendations of the prior committee.

And one compelling plea from that committee was that they needed more time. And I think as a testimony to the -- how serious we took those recommendations, we are in fact starting this process earlier, giving us the opportunity, if we need to, to have more meetings. And we think the slow, deliberative process attests to the seriousness of what we are about to do. And I think it's a sign that you USDA and HHS are committed to this process.

I am happy to see so many friends and colleagues in the audience. We have representation from academia, industry, trade associations, consumer groups. In response to the Federal Register notice which was put out, we also have received a surprising number of very thoughtful comments which have been shared with the Committee on issues that we -- we need to consider. And, again, I think this reflects the interest in the whole process.

Again, I think, reflecting the commitment of this Committee, we are fortunate today to have ten of our members present at this meeting. And Dr. Tinker will not be able to joint us today and indicated that at the point when she accepted to be on the Committee and also indicated that if

that was a particular constraint from the Committee, she would step aside. So we knew from the beginning she wouldn't be here today.

But let me just say a few words about Dr. Tinker. Dr. Lesley Fels Tinker manages the Nutrition Intervention and Dietary Assessment Unit of the Women's Health Initiative Clinical Coordinating Center of the Fred Hutchinson Cancer Research Center. She has a variety of other hats she wears. She serves as a member of the Cancer Prevention Research Program within the division of Public Health Sciences. Dr. Tinker also serves as an affiliate assistant professor with the Department of Health Sciences at the University of Washington.

Her specific areas of research have focused on fiber and nutritional requirements of diabetes, and she has worked as a nutrition consultant and clinical dietician. Dr. Tinker is a member both of the American Dietetic Association and the American Diabetes Association.

Now I would like to ask the members of the Dietary Guidelines Committee to introduce themselves, indicating their institutional affiliation and a sentence or two about their area of specialty. For those in the audience who are interested, I think it's Tab A has short bios on each of the

Committee members.

And with that, Dr. Garza, would you please lead off.

DR. GARZA: Thank you, Dr. Kennedy. And I was asked to ask each of the Committee members to please speak into the microphone because our comments are being recorded, both by a sound system, but also with a transcriber. You can tell that both departments are quite interested in saving all of your comments for posterity. And so we want to make sure that we don't lose any of the nuances. So we will have both a written and an oral transcript of -- of your comments.

My name, as Dr. Kennedy said, is Cutberto Garza. I am at Cornell University where I am on the faculty of Nutritional Sciences. I chaired that department for about ten years and have recently been named Vice Provost for the University as my present post. I have had a longstanding interest in maternal-child health, on nutrient recommendations not only for that age group, but more generally.

And in that capacity, I also chair the Food and Nutrition Board. And I know we have at least two other members of the board, and it's always -- I can tell you it

will be fun working with them and with the other members of the Committee that I have had an opportunity to work with in the past. So why don't we move to Suzanne Murphy.

DR. MURPHY: I am Suzanne Murphy at the University of California at Davis, although I have joint appointments also at Berkeley and San Francisco. And I direct the EFNEP Program for the state of California. I am also a researcher, very interested in diet and health generally, and I do a lot of work with dietary assessment methodology and food composition data.

DR. WEINSIER: Roland Weinsier, Chairman, Department of Nutrition Sciences at the University of Alabama at Birmingham. My research interest is primarily in the area of obesity, energy metabolism in this field; serving on various advisory committees such as to the NIDDK, Federal Trade Commission and several other groups.

DR. JOHNSON: I am Rachel Johnson. I am from the University of Vermont in Burlington, Vermont. And my research interests are primarily in the area of pediatric nutrition, energy metabolism and the use of national nutrition survey data. Thank you.

DR. STAMPFER: Meir Stampfer, Professor of Epidemiology and Nutrition, Harvard School of Public Health.

My main interests are chronic disease epidemiology, nutrition in adults. We follow in our research group about 250,000 men and women with dietary data to look at their outcomes.

DR. KUMANYIKA: I am Shiriki Kumanyika from the University of Illinois at Chicago. There I head the Department of Human Nutrition and Dietetics, and I am a professor of nutrition and also a professor of epidemiology in the School of Public Health. I was a member of the 1995 Dietary Guidelines Committee, so I am a return visitor to this process.

I have been a member of the American Cancer Society and American Heart Association Dietary Guidelines consensus panels. Also, I chair the National Nutrition Monitoring Advisory Council and do research on diet and chronic diseases, particularly on obesity and with particular interest in obesity in older -- in African Americans and older adults.

DR. DECKELBAUM: I am Richard Deckelbaum, head of the Institute of Human Nutrition at Columbia University. And my own research interests relate to cell biology of lipids and lipoproteins. And as well, being a pediatrician, also I am involved in research programs relating to risk

factors leading to chronic diseases in the pediatric age group. And I have been in guideline committees of the American Heart and other organizations; and most recently, guidelines which try to bridge guidelines -- unify guidelines from the pediatric to the geriatric age groups.

DR. DWYER: I am Johanna Dwyer. And my interest is in lifestyle -- or, I'm sorry, life cycle-related nutrition and also lifestyle to some extent. My work right now involves chronic disease, particularly renal disease and quality of life issues, both in that and in aging.

I'm a professor at Tufts University Schools of Medicine and Nutrition, and also a senior scientist at the USDA Human Nutrition Research Center on Aging. And I have served under Dr. Garza on the Food and Nutrition Board for a couple of terms. And I am serving under Dr. Murphy on the uses of the Dietary Reference Intake Committee. And that's been a wonderful experience.

DR. GRUNDY: I'm Scott Grundy from the University of Texas Southwestern Medical School in Dallas. I am the director of the Center for Human Nutrition there. My research interests have been in the fields of effects of different kinds of dietary fats on metabolism as well as obesity and its metabolic complications.

I am particularly interested in the field of cholesterol and have worked with the American Heart Association and the National Cholesterol Education Program, and then more recently I have also been on the Food Nutrition Board and the DRI Committee for developing new RDAs and DRIs.

DR. LICHTENSTEIN: My name is Alice Lichtenstein. I am at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University and also in the School of Nutrition and the Medical School. My area of research is in lipids, fat, dietary fats and lipoprotein metabolism, and more recently isoflavones. I serve on the Nutrition Committee of the American Heart Association and share the industry Heart Association Nutrition Committee panel of the American Heart Association.

DR. KENNEDY: Thank you. Clearly, we have a rich diversity of expertise reflected. And for Dr. Kumanyika and Dr. Garza, I don't know whether you think you are being rewarded or punished, but we appreciate your doing a second tour of duty on this. It is a lot of work.

Before I move on to the next section, I would like to acknowledge our four co-Executive Secretaries who already have done a tremendous amount of work. And without them,

this meeting today wouldn't have happened: Dr. Linda Meyers from HHS, Kathryn McMurry, Carole Davis from Center for Nutritional Policy Promotion and Dr. Shanthy Bowman.

It is now my pleasure to introduce somebody that I was fortunate enough early on in our tenures at the Department of Agriculture to work with closely with. And lest we think that all the wisdom regarding nutrition comes from on high, i.e., federal government, Shirley Watkins is one of these individuals who not only has had a federal perspective, but well beyond that has had the opportunity to put dietary guidelines into practice.

And I learned an enormous amount from her work in Tennessee in looking at from the particular point of view of the school meals program in Tennessee, how you use administration regulation policy to really move forward an agenda to the benefits of the public health of children.

We're fortunate that she moved from Tennessee to Washington. Their loss; our gain. It is that -- with that I would like to now introduce Shirley Watkins, Under Secretary for Food, Nutrition and Consumer Service who will administer the oath of office to the Committee.

MS. WATKINS: Thank you, Dr. Kennedy, and good morning to all of you. Good morning. Well, I can

understand that it is a Monday morning and I know that you are all excited about being here. I can tell by the smiles on your faces that you are just so excited about the week ahead and all of the accomplishments that you are going to make this week.

Like Eileen, I would like to just give you a big welcome from Dan Glickman, the Secretary of Agriculture. Eileen and I both have mentioned this meeting to him. And he is also very excited that you are here.

This is a very distinguished panel. And I am delighted that you are going to be working with us and you accepted this opportunity so graciously. I know for many of you, it is going to take a lot out of your week being here with us.

But we sincerely appreciate the efforts that you are going to put forward as you help us think through the changes, if any, that need to be made in the dietary guidelines. You are all recognized experts in nutrition and health. And we deeply, deeply appreciate your commitment and your mission and your commitment to our mission for both HHS and USDA.

We also want to stress that both USDA and HHS work as partners in this effort. Because of our strong

commitment for both families' and children's health, this is a combined effort. It's a concerted effort on our parts for both government and the community organizations to put forth a successful attempt at looking at the Dietary Guidelines. And we look forward to the stimulating and effective working relationship that's going to take place.

I also would like to thank Carole, Shanthy, Kathryn and Linda for the support that you have given prior to this meeting and the support that you will give during the meeting and all of that that will go on after the meeting. There is a lot of work that will go on and we deeply appreciate your efforts.

The Dietary Guidelines is actually the cornerstone for all of the federal nutrition policies that we have to implement. Regardless to where you are, at the local, state or federal level. We see this as the cornerstone of what we are going to be doing. And it is awfully, awfully difficult for us to do our work without having that cornerstone there to help us put all of our efforts into place.

One of the roles that I have to play this morning is to administer the oath of office. And what I would like for you to do is all of the Dietary Guidelines Advisory Committee members to please stand and take your oath of

office.

Whereupon,

THE DIETARY GUIDELINES ADVISORY COMMITTEE MEMBERS having been first duly sworn, assumed the oath of office of the Dietary Guidelines Advisory Committee.

MS. WATKINS: Thank you very much. Would you all give them a round of applause for that.

(Applause.)

MS. WATKINS: They really did not realize they were going to have to do all of that.

This morning, one of the opportunities that I would have would be to introduce Dr. David Satcher, the Assistant Secretary for Health and Human Service and the Surgeon General. Unfortunately, Dr. Satcher is on his way to eastern African. But here is our one and only faithful servant, Linda Meyers.

Dr. Meyers, would you come on behalf of HHS.

DR. MEYERS: Thank you. Good morning. I am Linda Meyers. I am the Acting Director of the Office of Disease Prevention and Health Promotion, and the Senior Nutrition Advisor to the Assistant Secretary for Health and Surgeon General. And I am pleased to join my colleagues at USDA, Ms. Watkins and Dr. Kennedy, in welcoming you.

As Dr. Kennedy indicated and Ms. Watkins reenforced, today's meeting continues a longstanding commitment to a collaboration on nutrition policy between HHS and USDA. We appreciate USDA's taking responsibility for administrative management of this round of the Dietary Guidelines and we are pleased to be a partner with them in this activity.

Now, on -- I have been asked to welcome you on behalf of the Department. And so on behalf of the Department and the Secretary and the Assistant Secretary for Health and Surgeon General, welcome. Thank you for accepting the call to serve on this Committee and best wishes for your task ahead.

Actually, I am sure you, and I know Assistant Secretary for Health and Surgeon General, David Satcher, and certainly I wish that he could be here today in person. As Ms. Watkins indicated, he has been asked on very short notice to -- by the Secretary to represent the Department on a team that is going to Kenya and Tanzania in follow-up to the recent bombing. And so he is on his way there now.

He asked that I ask you, Mr. Chairman, if it is permissible for him to come and talk with the Committee at one of your future meetings.

DR. GARZA: Not only would it be permissible, but we would welcome it obviously. That would be great.

DR. MEYERS: Thank you. I will relay that. The Surgeon General, who is actually going to be the federal official I think most intimately involved with the Dietary Guidelines in HHS, has identified six priority areas for his office and his work on behalf of the American people. Two are related to his trip to Africa: Increasing attention to global health concerns and their effects on the American people, and leading the national response to health consequences of bioterrorism.

You may have heard him talk about the others: Enhancing mental health; eliminating disparities in health among racial and ethnic groups; assuring a healthy start for every child; and helping the American people take personal responsibility for their health. Your task is an important contributor to several of these goals, which are actually departmental goals as well, especially the last one.

As you know, the Dietary Guidelines Bulletin is an easily understood statement of policy, at least we hope it is easily understood. And it forms the basis of the nutrition programs for both departments. That means that these statements and the accompanying text are a framework

for all the dietary guidance and nutrition education material prepared by the Department of Agriculture and the Department of Health and Human Services. It is also used as a consumer education tool, one of many, and provides practical advice for dietary patterns of Americans.

You are about to play a crucial role in the development of these guidelines. Your charge is three-fold: First, to review the 1995 edition of the Dietary Guidelines in relation to current scientific and medical knowledge on the relationship between diet and health; second, to determine whether compelling evidence exists that warrants revision of the seven statements or the accompanying text which we refer to collectively as the Dietary Guidelines; and third, to recommend in a report to the Secretaries of Health and Human Services and the Department of Agriculture any specific revisions you recommend along with the rationale for those recommendations.

If Dr. Satcher were talking with you, I'm not sure exactly how he would say it. But based on seven months working for him, I am sure he would eloquently include the requests that you be driven by the science; that you address the most important public health priorities; and that make sure that what you say resonates with the American people.

So as you deliberate, I encourage you to put a high priority on ensuring that the proposed statements are scientifically sound in light of a broad base of evidence including consumer research.

Because you are continuing the tradition of a scientifically credible document, the gold standard, to use Secretary Shalala's words, it's critical that changes be based solidly on new evidence or on compelling reinterpretation of existing evidence with the burden of proof on any proposed revisions.

As you deliberate, I encourage you to stay focused on determining what should be the few most significant, science-based dietary guidelines for the nation, those that will have the greatest impact on the health of all Americans. This will clearly be a challenge because the field of nutrition, as evidenced by -- by your membership here, is very broad and encompasses many perspectives.

As you delve into the scientific literature and craft your revisions and recommendations, I also encourage you to remember that the resulting guidance must be easily understood and translated into action by the American public.

Once you've submitted your report to the

Secretaries of Health and Human Services and Agriculture, the departments will very closely consider your proposed revisions and jointly issue the Year 2000 Dietary Guidelines for Americans. Now, having said all that about change, I do remind you that you also have the option to recommend no changes if you deem existing guidelines to be still appropriate and consistent with the current evidence.

You are appointed to this Committee because you are highly respected by your peers for your depth and breadth of scientific knowledge. You are recognized for your abilities to communicate clearly and to achieve consensus. And you are recognized for your commitment to promoting public health.

You have an ambitious task before you. I think I speak for my colleagues when I say we think there is no better qualified team of scientists to advise the departments on these guidelines, and we look forward to listening to your deliberations and receiving your recommendations.

And I am now delighted to hand the meeting over to the Chair, Dr. Garza.

DR. GARZA: Thank you, Dr. Meyers. Well, I -- thank you, Dr. Kennedy. It is indeed a privilege to be part

of the Dietary Guidelines for the year 2000. Somehow, it has -- it has quite a ring when one -- when one phrases it in terms of the new millennium. And I am certain that all of the other members of this group share that sentiment. We are proud to take up the charge given to us by the Secretaries, and are fully committed to carry it out.

The important -- it's difficult for me -- and I know I can't be too objective -- but it's difficult for me to overstate the important role which nutrition will play in assuring the next generation of healthy people, as I think the Surgeon General has -- has often stated in terms of health goals for the country.

It is my personal view that we have correctly left behind a medical system that had enormous incentives to over-treat. But there is a growing proportion of the American public that is becoming concerned because we seem to be constructing a system that has enormous incentives not to treat.

And there are some of us that would like to see a health system built using the momentum for change which we are now witnessing, that has enormous incentives to minimize the need to treat. And it is this minimizing the need to treat where I think nutrition will be terribly important in

terms of health promotion and disease prevention.

I am very pleased to be able to work on this important mission with the co-Executive Secretaries, the staff, and look forward to the preparation of a new report should we deem it necessary to bring about any changes.

At this time, I also want to thank the Agriculture Research Service for taking up the administrative responsibility for this round, and thank the Economic Research Service in whose facilities we are for hosting this meeting.

Now, I am also very pleased, as I look out at the audience, there are many, many friends, some I recognize. I want to welcome each of you. It is encouraging for all of us to see such wide interest in the Dietary Guidelines.

We certainly look forward to working with you throughout this process, whether it is two days long because at the end of this session we decide we can all go home, or whether in fact it is -- it is longer than that. In either case, we will -- there will be future opportunities for you to comment. At this present meeting, however, we will not be taking any oral comments from the audience.

Okay. There will be an announcement before the next meeting in the Federal Register that will include, I

hope, an announcement that in fact we will be taking oral comments.

You have the option, however, throughout the process, obviously, to send in written comments. These should be sent to Dr. Shanthy Bowman. We ask that you please not send them directly to committee members because assignments may be shifting and she will be in a much better position to be able to direct your written comments to the appropriate individual.

I want to review very quickly the agenda for the meeting. For those of you in the audience, there are extra copies of this agenda on the table outside if you would like to pick one up, assuming you may not have one.

Now, the first -- the first two presentations on the agenda are intended to provide a context for the task that we are going to undertake. I am very pleased that Dr. Michael McGinnis will be joining us -- or has joined us today and will be providing a historic overview of the Dietary Guidelines.

Dr. Kennedy will then discuss the uses of these guidelines with us to help us understand the important role they play, not only in federal policy, but throughout the entire food sector. The remainder of the day, we are going

to focus on updates and discussion of the individual dietary guidelines with presentations by various committee members and some follow-up discussion. We will also discuss the issues of interest that may not be included in the guidelines that perhaps we have to -- we have to also consider.

On the basis of this, we may be able to determine if there is sufficient new information that warrants further revision and review of the guidelines or, as was pointed out by Dr. Meyers, we may all decide to go home because, in fact, we feel that the Dietary Guidelines as presently constituted, are adequate to the task for which they were formulated.

We are going to adjourn today about 5:00 p.m. and then start tomorrow at 9:00 when we will continue with our presentations of these issues. And we plan to adjourn by approximately 12:15 tomorrow afternoon. Are there any comments on the agenda? Now, that's a very brief overview. We will be taking up a matter of time tables and procedures, as well. Okay.

Then let's continue then with -- with Dr. McGinnis' presentation. I believe all -- all of you are familiar with him. He was Deputy Assistant Secretary for

Health -- or Disease Prevention and Health Promotion and Chair of the Health and Human Services Nutrition Policy Board.

What many of you may not fully appreciate though is that Dr. McGinnis was instrumental in initiating the Dietary Guidelines for Americans and oversaw the preparation of many of the subsequent, if not all the additions. I don't know. Maybe it was all, Michael. Somehow that makes him seem much more elderly than he is.

DR. McGINNIS: A lot of light-years here.

DR. GARZA: That's right. During his tenure, he was also responsible for the Healthy People initiative, the Surgeon General's report on nutrition and health, and the much cited McGinnis and Foege article on the actual causes of disease.

As I think of public health figures in this country -- and I don't mean to be patronizing or to embarrass Michael -- but it is difficult to think of another person that has had more of an impact on the way we approach issues of this type. And so that we are very fortunate that he has come today.

He is presently a scholar-in-residence at the National Academy of Sciences. And that obviously I think

will increase his wisdom, at least that's what I'm told as I walk through those hallowed halls. Michael.

DR. McGINNIS: Well, thank you very much, Bert. That was a very, and far too gracious introduction.

Mr. Chairman, distinguished colleagues, it really is a treat for me to be here with many -- so many young friends of such longstanding duration. You see, as I get more grey hair, I have to go to great lengths to avoid using the word, "old". But I do see as I look around the room some very close colleagues from whom I have learned a great deal over the -- over the years.

And I was impressed with the match between the experience of those of you who are on this Committee, the tremendous talent that is being brought to bear on this task and the magnitude of the challenge that you have. Your chairman brought that home all the more acutely in -- in a rather intimidating fashion when he indicated in effect that you are about to set out the Dietary Guidelines for the next thousand years with the turning of the millennium.

It's, of course, a very special treat for me to talk about the historical context of the guidelines. And as a good historian, I undertook a little archeological dig and pulled out a few relics that I will display from time-to-

time in the course of my few minutes here. And I will keep it relatively few because you've got to get to the real work of the agenda which is looking to the future and not the past.

But let me begin by simply underscoring what you've already heard from Shirley Watkins and Linda Meyers in very nice introductions to -- to the nature of the charge before you. Yours is quite simply a vital task for the health of the American people.

As the 1988 Surgeon General's report on nutrition and health, the first and at this point the only Surgeon General's report on nutrition and health said, "Ten years ago, for the two out of three adult Americans who did not smoke and did not smoke excessively, one personal choice seems to influence long-term health prospects more than any other: what we eat." And the Dietary Guidelines serve as the vehicle to inform and direct those choices; hence they are central in every possible fashion to the health prospects of the American people.

The notion of developing dietary guidance is certainly not novel. We could go back to the Greeks, but I won't. I won't even go back as far as 1894 when USDA's W.O. Atwater suggested as a personal observation -- I should

emphasize the personal observation component; not official policy at that point -- officials in those days were a little more free to express their opinions in an unfettered fashion.

And his opinion was that a healthy diet would have to be about 15 percent calories from protein, 33 percent calories from fat, and 52 percent calories from carbohydrate. I also won't belabor the mid-1950s developments when USDA recommended the four food groups.

Rather what I will do is start with 1977 and the dietary goals of the Senate Select Committee on Nutrition and Human Needs, the McGovern committee. I do that not only because that committee's reports provided a strategically important transition from one approach to nutrition to another, from an approach to nutrition that focused on reducing nutritional deficiencies to one focused on reducing the burden of chronic disease among the American people; but also because it's -- when I first entered the nutrition scene from a policy perspective and, therefore, have more first-hand knowledge about the developments in the intervening period.

The McGovern committee report was issued in January of 1977. This is it in its Congressional record

format. And it recommended that the American diet be increased in carbohydrates to 55 to 60 percent of calories; that dietary fat decrease to no more than 30 percent with a reduction in the intake of saturated fat and, indeed, recommended approximately equivalent distributions among unsaturated -- monounsaturated fats and saturated fats for that 30 percent target; that cholesterol intake decrease to 300 mg per day, sugar intake to 15 percent of calories, and decreasing salt intake to three grams per day.

The McGovern committee goals were met with a great deal of controversy, as you all know, both from industries that were affected, either pro or con, as a result of the issuance of the goals, and also from the scientific community, in particular with respect to questions of the supportability of the specificity, that is, the numerical targets that had been included in the McGovern committee report.

In part, in response to the challenge of that report, in part, in response to the challenge of the controversy, in part, in response to some fundamental obligation of the scientific community, Dr. Julius Richmond, who was Dr. Satcher's predecessor -- in fact, the only previous combined Assistant Secretary for Health and Surgeon

General -- asked his friend, Jules Hirsch, who was then in the leadership of the American Society for Clinical Nutrition, if he could pull together a group representing the scientific community from the ASCN membership and look across the board at the literature and develop a way of characterizing that literature in a systematic fashion.

The results of that effort were published in December of 1979 in the Journal of Clinical Nutrition, and I think represented a very major contribution in the following sense: Not only did they cast their net widely to look at the influence of a variety of factors, nutritional factors on health outcomes, that is, to do it in an integrative fashion as opposed to an isolation, but also in their -- in their attempt to quantify the strength of scientific opinion; not to quantify targets, but to quantify the strengths of convergence of opinion in the scientific community about the ties between various candidate nutritional patterns and health outcomes.

As that process was underway, its progress was drawn upon by the development of the 1979 Surgeon General's report on health promotion and disease prevention, Healthy People. This is the first Healthy People report. As you have heard, we are -- we have now passed Healthy People 2000

and are in the process of developing Healthy People 2010.

But in this first Healthy People report, the Surgeon General's report on health promotion and disease prevention, there were some general directions, not quantified goals, but general dietary guidelines included to draw the attention of the American people to some of the possibilities that might be obtained by faithfulness to certain guidelines across a whole population.

With the fact that there had then been issued within a relatively short period of time a statement of Congress, a summary by the scientific community as represented by one scientific organization, and a general statement of one departmental agency, the Department of Health, Education and Welfare at that time, then arose naturally the question, "What about an administration-wide policy?"

There are two agencies within the federal government with vital mandates, historic mandates in the area of food and nutrition policy. And they are the Department of Agriculture and the Department of Health and Human -- Health, Education and Welfare, and now Health and Human Services, and isn't there an obligation, again, to provide a contribution that speaks with one voice.

That obligation in the growing interest among all parties concerned to develop a response, if you will to the quantified targets of the McGovern committee stimulated a meeting in which I participated in 1979 in the offices of Carol Tucker Foreman, then the Assistant Secretary for Food and Consumer Services, the Department of Agriculture -- a meeting that included Carol Foreman and her research counterpart, Rupert Cutler, and her nutrition advisor, Mark Hegsted, from the USDA side; and from our side, Dr. Richmond, Assistant Secretary for Health, me as Deputy Assistant Secretary for Health, Don Fredrickson, the Director of NIH at that time, and Don Kennedy, the Commissioner of the Food and Drug Administration.

And we talked for about an hour or so about ways in which we could fashion a joint approach to this challenge. And I believe it was Don Fredrickson who said, "What we need at this point in time is not dietary goals in a quantified sense, but dietary guidelines for the American people." Mark Hegsted and I were then given the charge of carrying forward an effort, drawing from the best of the scientific resources in both departments.

And to make a rather long story rather short, with a fair amount of -- of furious activity, but activity

undertaken in an informal fashion and with considerable input in particular from NIH and FDA, a draft set of dietary guidelines was developed by the two departments and issued in this brochure very attractively designed by USDA graphic specialists. This is the original version of the Dietary Guidelines.

In fact, I noticed as I was digging these out of the -- the archives of my library, that it was issued by Patricia Roberts Harris and Bob Bergland who were the two Secretaries of the Department at that time. And somehow, I got them to sign it. I didn't -- I don't even remember them doing that.

But they were the two Secretaries who issued it. And the curious thing to me at least, and although probably not to those who are much more steeped in the nutrition wars of the day, was the furor that was unleashed with the release of these relatively innocuous statements.

We were attacked from all sides, from the commodity groups, the industries whose economic vitality were being -- vitalities were being threatened, from the scientific community who -- some of who were claiming that the scientific basis for the development of dietary guidelines had not yet reached the point of maturity.

And in fact, on that count, the National Research Council, my -- the organization with which I currently associated, issued in very short order this little publication toward healthful diets which basically said we don't have the scientific basis for dietary guidelines. Go figure.

In any event, the -- the furor that was created with the release of the guidelines was soon followed by an election which -- in 1980 which yielded a change in administrations and assaults of a little different sort, of a political variety, on the guidelines when the administration actually changed. I won't go into the various political discussions in that respect.

I will only say that within that relatively short period of time, the guidelines had become so well entrenched that even rather strong political interest in killing them were unsuccessful and very shortly laid to rest.

And from that point on, the two departments have maintained a very important leadership position in working with you and the scientific community around the country to try to ensure that the Dietary Guidelines meet their full potential in education, in food labeling, in research and in monitoring, and they do shape our perspectives on each of

those dimensions.

The only sustained political endeavor that has shaped the course of the Dietary Guidelines since then was found initially in some wording in the appropriations language in the early 1980s that required the two departments -- or directed; required may not be quite the right word if it's appropriation language as opposed to a statute -- that -- that directed the two departments to convene a dietary guidelines advisory committee to ensure that the capture of outside advice was formal and structured, and not just informal. Hence, the Dietary Guidelines Advisory Committee.

The first one was established and was very helpful in the development of the 1985 Dietary Guidelines in which relatively few changes were made, but which were issued with -- with much less controversy, either from industry or from the scientific community, indeed, with formal expressions of support from those groups.

The Dietary Guidelines Advisory Committee -- the second Dietary Guidelines Advisory Committee was also established to assist in the preparation of the 1990 version of the Dietary Guidelines and held similarly to the basic principles that had been set out in the guidelines,

introducing a couple of changes which were I think notable.

One was the introduction of a quantitative element with a recommendation of 30 percent of calories for fat and the other was a change in the suggested weight tables that were used. And that change resulted in a fair amount of discussion and was a focus also of discussion in the 1995 Committee.

In 1990, the -- Congress' interest in this enterprise became formalized with the passage of Public Law 101445, with the formal direction of the two departments to issue these guidelines every five years, a pattern that had been followed informally up to that point.

And as a result, the Dietary Guidelines for Americans have moved with only minor changes from a contentious document that provided -- to one that provided the statutory basis for federal initiatives in education, research, monitoring and -- and food labeling.

Because the process had worked well in 1990, the two departments used essentially the same process beginning in 1994. And the 1995 edition was released by Secretary Shalala and Secretary Glickman on January 2nd, 1996 during the partial government furlough. Once again, the basic principles of the previous editions were reaffirmed. There

were a number of changed based on the current science. I'm not going to go over them because you will be doing so in your discussions.

You have the benefit of two members of the current committee who served on that one -- the last one, your chairman and Dr. Kumanyika -- nice to see you Shiriki -- except to note that I thought the biggest difference from the previous edition was the renewed focus on the health benefits of decreasing sedentary activity by increasing moderate physical activity.

That's an important issue that we'll have to continue to emphasize as we reach out to enhancing the health of the American public. It's very difficult to separate out physical activity patterns from nutritional intake, that is, is part of the formula is the basic laws of thermodynamics.

There is no question that as you grapple with your task in the coming months, you will be confronting many thorny issues. I am not going to go through them all. I will just highlight three that will certainly come up in the course of your discussions.

One is how you deal with weight, both with respect to the appropriate ranges that you signal for the American

people, and with respect to the various weight reduction claims that are made on a seemingly daily basis and certainly fill our bookshelves around the country.

There is in some sense some obligation to at least consider those issues that are confronting the American people. You will also have to surely be contending with how you deal with the different types of fats and the scientific evidence that is arising in that respect. And clearly, you will be contending with issues of how you deal with supplements.

It, frankly, is no longer sufficient to use the throw-away line that we get enough from the variety of foods that we eat. We need to probably state a little more directly what the science tells us in that respect. At least it is clearly on the minds of the American people.

But I am slipping beyond the boundary from the past into the future. And so I'll stop at that point. Merely thank you for the opportunity to be with you as you begin your effort to craft Dietary Guidelines for the year 2000 and wish you God speed in that effort. Thank you.

(Applause.)

DR. GARZA: Does anyone have any questions of Dr. McGinnis?

As you were speaking, I was reminded of -- of a list of five "Cs" that I always -- that come to mind when -- when we do things like this. And it seems to me that whether we choose to change or not to change, that you can -- not changing will in itself represent changes of this Committee and that regardless of what we do, it will be somewhat controversial. I don't think that these have ever escaped controversy.

And those are my first -- that because of this, eventually there will be some confusion. No matter how much effort we put in to being clear, there is always an element which is the third one largely because it is complex. I mean, we have to be able to dispel an enormous amount of information and make it understandable and applicable to every day life. And that is an enormous task.

But the saving grace of change, controversy, confusion and complexity is that it is always challenging. And that is what I think keeps us at the helm. Thank you very much for that background.

Now we're going to turn to a very important piece which is, well, why do we do this. Hopefully, not because people will put them on the shelf, but because they are used. And Dr. Kennedy will review those uses for us.

DR. KENNEDY: Thank you. I always enjoy hearing Dr. McGinnis talk about the historical perspective. And one message I took away just then is one can look at history in a variety of different ways. But in my mind, one way of looking at forces which have changed history is the theory of charismatic personalities.

And if you have people who want to do the right thing, it gets done. I think that's a clear example with enormous forces which would have said Dietary Guidelines would have never happened. We have people like Dr. McGinnis, Carole Foreman and Dr. Hegsted in government. So it -- it made it happen.

Both Dr. Meyers and Shirley Watkins have talked about the Dietary Guidelines forming the basis of federal nutrition policy. And I would like to -- to talk a little bit about what the means to us. Let me just kick off with a recent event before I go through the cadre of ways in which it is actually used.

I -- again, I was taken, Michael, with your comment about some of the toing-and-froing between USDA and HHS, HEW in the early years of the Dietary Guidelines. I was delighted on June 23rd in a White House ceremony when President Clinton signed into law our new Agriculture

research bill passed by -- we are the Department of Agriculture -- signed by the President, but passed by the Congress, the House of Representatives Ag Committee as well as the Senate Ag Committee. And I keep underscoring ag.

In this new bill, there are six emphasis areas for research in which we aggressively need to charge ahead. And lo and behold, one of those six emphasis areas is nutrition. So I think if people are in this for the long haul, we begin to see progress.

If you look at the progress in some of our nutrition programs, I take as the -- again, one -- one key benchmark, the 1969 White House Conference on Food, Nutrition and Health, another charismatic personality, Jean Mayer, who not only had an agenda of bringing people together; but you look at the enormous pay-offs as a result of that conference, pay-offs for the American public because it was a -- in addition to talking about the science, there was a very action-oriented agenda.

So after that '69 conference, we had nationwide expansion of the Food Stamp Program, nationwide expansion of the school lunch program, creation of the school breakfast program, WIC emerged. We had the Nutrition, Education and Training Program, EFNEP. A whole variety of programs came

forward which were serving an identified need in the American population which was defined, measured problems of under-consumption and nutrient inadequacies.

As we have had those cadre of programs being successful, we now realize that the nutritional needs of the at-risk groups, which I'm going to talk about in a moment, really have shifted from on average being ones that are exclusively ones of under-consumption and nutrient inadequacies, and they really have shifted into issues of diet quality, diet chronic disease issues. And so a part of that shift is having us in government look at what should we be doing in the context of programs that serve the public.

So in thinking about Dietary Guidelines being our guiding nutrition policy, we look at the variety of ways that Dietary Guidelines really are a living document. And let me start with within the USDA programs, the cadre of nutrition programs which have emerged over the past 30 to 50 years.

The Food Stamp Program at the moment serves about 21.4 million people monthly. We have the school lunch program which on average on any given day serves more than 26 million meals to students. We have the school breakfast program which is serving about seven million breakfasts

daily.

There is the WIC Program where the high point thus far has been about 7.5 million individuals participating in a given month. And the latest statistics indicate that about 45 percent of infants born in the United States at some point during the first year of life are on WIC and approximately one out of four pregnant women in the United States are on the WIC Program.

We also have other USDA Programs: the Commodities Supplemental Feeding Program, the Food Distribution Program on Indian reservations, Child and Adult Care Food Program, the Summer Food Service Program, the Emergency Food Assistance Program. And if you take -- each of those are important, but albeit smaller programs -- that adds an additional six million people who are served by those programs.

So when you look at these programs and then begin to think about, well, the HHS component, clearly a very important program -- nutrition program out of HHS that serves the elderly, the Congregate Nutrition Program as well as Meals on Wheels, both rely on Dietary Guidelines.

The collective of these nutrition programs I used

to say serves one out of ten Americans, then I started saying one out of nine. My notes say one out of six. I think we're heading towards one out of five served by one -- one out of five Americans served by one or more of these programs. And so clearly, the reach of the Dietary Guidelines are enormous.

As we've moved through the various additions of the Dietary Guidelines, we in government have been looking at ways of taking the essence of the Dietary Guidelines and incorporating them into the operation of the different programs. And there are a variety of ways this is done. This is done via legislation, via regulation and via some administrative changes that go on in the program.

Shirley mentioned the school programs. In 1994, the Department published the School Meals Initiative for Healthy Children which required the Department to ensure that all school meals met the Dietary Guidelines for fat and saturated fat.

And I think the controversy with these Dietary Guidelines never quite goes away because I was participating in a hearing up on the Hill the day before these regulations guiding the School Meals Initiative were to go final. And I was not the witness of record. I was there with the Under

Secretary from the Department.

And some questions began to emerge about the appropriateness -- this is 1994; not 1969 -- the appropriateness of the Dietary Guidelines to basically guide the content of school meals.

And one after another of the questions were ala do we really know enough, do we really know enough to think about improving the nutritional quality of school meals based on Dietary Guidelines. I've actually used a tape of this in some graduate courses that I've done.

But this happened to be picked up on C-Span. And I had it at home once. And my what have must then been a six or seven year old, my son was looking at this tape which was pretty boring to a kid. But of course I came on and it was a little bit, marginally more interesting. And he's looking at this tape and then he turns to me and he says, "Mom, why is that congressman yelling at you?".

So I think -- you know, I think it's -- again, I think it's an example of where we not only have to be guided by the science, but we have to make darn sure that we are as a community clear on what we do with the information in operationalizing it. I think we in the Department are proud of that initiative and we want to have the school meals as

responsive to the nutritional needs of American children.

We also, in addition to in schools, the direct service kinds of activities, are very engaged in thinking about the companion piece which is the nutrition education/nutrition communications piece. So the Dietary Guidelines are the underpinning of all our nutrition education activities. But in schools, programs like the Nutrition Education and Training Program and Team Nutrition, both of which are geared to motivating children to make healthful food choices.

Let me talk a little bit about the -- the Food Stamp Program because it is the largest of our nutrition programs and is the key program which addresses household food security, household nutrition security.

The nutritional basis of benefits of the Food Stamp Program is something called the Thrifty Food Plan. The Thrifty Food Plan is a market basket of foods that, on the one hand, makes up a nutritious diet, but does so in a way that can be purchased at a relatively low cost. The market basket includes foods from all food groups.

The Thrifty Food Plan is a critical component of our food guidance system. And research that is in the final stages at the Center for Nutrition Policy and Promotion is

updating the Thrifty Food Plan to: 1) meet the nutritional needs of the target population, relying of course on the now DRIs.

It is looking at the actual consumption patterns so that you're deviating to the smallest extents possible from typical consumption patterns. But it is also looking at the Dietary Guidelines as the third underpinning in revising the Thrifty Food Plan.

We are glad to see in the Department that in addition to looking at the emphasis of the Food Stamp Program on increasing purchasing power thereby increasing food security in the household, for the first time, nutrition messages based on the Dietary Guidelines will also be printed on Food Stamp coupons.

And these messages are tailored to help Food Stamp recipients choose a healthful diet. Is that all we're doing on nutrition education for Food Stamp households? No, but it is one component. And we're looking at how we bring all of these components together.

We have a variety of other nutrition education, nutrition community -- nutrition communications activities within the Department, hopefully to have multiple reenforcing messages. The Community Nutrition Action

Program is one of many of USDA's nutrition education promotion projects.

This program provides information that allows communities to look at ways of improving the nutrition experiences for children. And, again, here the main messages in this community nutrition education program derive from the Dietary Guidelines -- they are built on three of them -- a message which emphasizes variety in the diet; add more fruits, vegetables and grains to the diet; and construct a diet lower in fat.

There are many more nutrition education programs in the Department and all of them are -- all of them in government, not simply USDA -- rely on the Dietary Guidelines as their guiding force in thinking about message development.

Eating for health is one of the seven priority areas identified for improving nutrition in the United States. And this, in fact, is one of the nutrition action themes for the United States that came out in our post-International Conference of Nutrition documents. So we again are looking at ways of very aggressively looking at the variety of programs we have to carry out nutrition education, nutrition promotion.

I think it clicked a while ago that with the resources we have in government, we clearly need to think about partnering. And no longer are we in the days where public sector can do even the lion's share necessarily of nutrition promotion. So we are involved in a series of public/private partnerships which we see as very positive, again, using the Dietary Guidelines as the basis for crafting messages, crafting the intervention.

One that I think has been quite successful that emerged a few years ago is the Dietary Guidelines Alliance where USDA and HHS are liaisons to the activity, but you have private sector industry groups, consumer groups, professional organizations looking at speaking with one voice in promoting the Dietary Guidelines in very creative ways. And the two particular aspects of the guidelines that underpin the messages in the Alliance are variety and physical activity. We would like to see more of that.

Finally, and by no means least since this is probably one of the better known activities out of government, the Dietary Guidelines very specifically influence our food guide pyramid. And the food guide pyramid is a very thoughtful, rigorous activity, again, looking at what are the, at any given point in time,

consumption patterns in the U.S. population; what are the nutrient needs of the population; but also, how does one incorporate the Dietary Guidelines into the food guide pyramid.

And my statistics are probably out of date, but I used to say 68 percent of Americans are aware of the food guide pyramid. That number is probably much higher. And lest the committee that is sitting here this morning think their activities are limited to the United States, I was delighted about two years ago when the Minister of Health from the government of Chile invited me down to Santiago, Chile to launch the Chilean version of the food guide pyramid.

And the government was very gracious in acknowledging the amount of work and the amount they drew upon the U.S. activities, the U.S. work that went into our USDA, U.S. food guide pyramid, although they did say they've improved upon ours. I think that's the test of sort of when you become the grandfather of the product. It always gets improved upon in the next generations.

But they relied heavily on the work that went into ours and, again, very aggressively promoting that Chilean food guide pyramid to do the same kinds of things we do in

the U.S. which is using that as one jewel in the crown for nutrition promotion.

That was a very quick run-through on some of the very diverse and important ways that we use the Dietary Guidelines. And as we charge ahead in other nutrition-related activities in government, we will continue to use the Dietary Guidelines as the nutritional basis of how we proceed.

I look forward to these meetings because it gives me an opportunity to sit back and really hear people who are experts in their particular area of research talk about the emerging science and how we -- we need to incorporate this into a very action-oriented agenda.

So for me, this isn't work; this really is pleasure. And with that, I want to welcome you all again, both on behalf of the Department of Agriculture and the Department of Health and Human Services. I am delighted to be there and I look forward to a lively deliberation. Thank you.

(Applause.)

DR. GARZA: Are there any questions of Dr. Kennedy? Shiriki?

DR. KUMANYIKA: You mentioned the Chilean

guidelines and it reminds me to -- to wonder if our charge includes any global responsibility as we go forward because the issues are -- everything is globalized and certainly food is. And we have recently aligned, at least from the NIH point of view, aligned the weight standard more closely with the standard being used by WHO rather than having different cut-offs for BMI.

So I'm wondering as we go forward with this if we are to think about how what we come up with match evidence from all over the world in what's happening to other populations.

DR. KENNEDY: Well, I think what comes out of this Committee clearly has many unanticipated uses. I had no idea in the last Dietary Guidelines Committee that we in fact would have such a -- an interaction with our sister country and South America. I am taken by the question which the bulletin starts off with, "What should Americans eat to stay healthy?".

Well, I mean, in many respects, that question could be, "What should people eat to stay healthy?". So to the extent that a lot of the work that comes out of this Committee really has ramifications for broad guidelines in other countries, I would think countries would avail

themselves of the very deliberative process which comes out of this Committee.

I know there has been some discussion, and I think Dr. Garza has been involved a bit in this, on the -- from an international perspective, UN agencies in trying to look at global dietary guidelines. That's limped along a bit. I don't think they've moved as fast as they would have liked.

But I think the science that the Committee will be looking at is not simply restricted to scientific information coming out of the U.S., but really is the well-done research, the well-done science out of a variety of countries. And I think there are lessons to be learned there.

I think the difference, Shiriki, will be as you look at translating it to specific dietary patterns in Country X, there may be some tweaking that's needed. But, again, I think the broad information that gets reflected in the technical report that will come to the two Secretaries and even what we do without bulletin has ramifications for other countries.

DR. GARZA: Any other questions? I just had one comment that while Eileen went over the various federal uses, I want to remind the Committee that, in fact, the

Dietary Guidelines serve as a document for a much broader base.

I am always amazed when I look at figures by the Economic -- from the Economic Research Service which shows that if you look at food from the farm to the fork, so to speak, that in fact that food represents anywhere from 20 to 25 percent of our GNP. That is almost twice the size of all of medicine. And so it's not surprising that whatever we do is to some degree controversial because, in fact, it has a potential of impacting an enormous sector of the economic activities in this country.

So then on that note, let's break. We will come back in about ten or 15 minutes and start with some of the presentations from each of the Committee members. Thank you.

(Whereupon, a brief recess was taken.)

DR. GARZA: Okay. As we outlined very briefly at the -- in this earlier section, we're going to begin reviewing issues that require evaluations. We're going to try to focus over the next -- the remainder of this morning's session on those salient changes that we feel we ought to consider.

It isn't the purpose of this discussion that we're

going to enter in to reach consensus on any of these issues. I want to make that very clear. What we would like to do is to review the salient science that argues for either keeping the guidelines where they are or, indeed, suggesting potential changes.

After we catalogue the science, then we will be in a better position tomorrow to take a formal vote as to whether or not the Committee will continue or whether we would disband because we feel that, in fact, the present guidelines are adequate.

Now, towards the end of today's meeting and certainly tomorrow, we will also be taking up additional issues that we feel we need to be able to look at. Based on all of this, if -- if we decide to continue, then we will try to -- to think about working groups that we would divide ourselves into. So as you hear these discussions move forward, then I would urge you to start thinking about that group in which you would be most interested in working.

Now, this doesn't mean that if you become part of a group, call them A or B, whether it be for an existing guideline or a new issue the group wants to consider, that you would not have any input into the other guidelines.

All of the discussion, recommendations,

deliberations of each of these groups would have to be brought before the full Advisory Committee because, indeed, the report will be the Committee's report. It will not be a series of working group reports. And so then in that sense, all of us will have a very strong input I hope into each of the deliberations of all groups.

Now, over the past few weeks, I have talked to some of you. I haven't had an opportunity to sit down with all of you. We are going to try to hold approximately three meetings over the next year. As you hear the various guidelines and issues discussed, try to keep that -- that framework in mind with the idea that, in fact, by the -- about 12 months, about October of '99, we would have held three meetings, drafted our recommendations, and these would have moved forward to the Department.

Now, in -- in this -- in trying to meet that 12-month framework, we don't have to do that alone. We're going to have lots of help. I've been assured of that by both -- by both of our co-Executive Secretaries. The staff is going to provide support because the working groups may decide they want to work together, either coming together physically or arranging conference calls.

Whatever mode of operation the various groups want

-- want to adopt, you will have staff available to each of the groups to help with the organizational task of getting those groups together. The staff will also assist each of the working groups in putting literature searches together, in compiling data, and in helping write the reports.

Now, I would like for you to keep the following framework also in mind. Carol Suitor who is in the back of the room is also going to be part of the staff. Carol has a lot of experience in working in these sorts of reports as do members of the staff that you met earlier today.

And there is -- there are two options. One is each of the groups can choose to write their reports and write -- write the pros and put all that together, or to develop detailed outlines of the reports and then have those outlines fleshed out by staff. They can come back to you; you can then edit them in a way that you feel is most appropriate. The same would hold true for the actual recommendations of changes to the guidelines itself in terms of the booklet of the guidelines.

Now, the reason for my asking you to consider having the staff do a lot of that type of writing is that in -- in the past what we've had is individuals within the Committee become so engrossed in the semantics that we've

spent more time discussing semantics than the substantive changes that need to go into the report and the science that compels it. And I would much rather have your attention given to the science that compels keeping a guideline or changing it than arguing about the nuances of words that -- and the perceptions that consumers may have of one word or another.

Now, that doesn't mean that your input will not be important to that. Obviously, it will be. But I want us to focus on the science. That's -- that's your advisory role. That also is a key -- a key word that I think will be very difficult for us to keep in perspective. We do have an advisory role.

I wish I could tell you that the Secretaries will march to the beat of the drums we decide to sound. But we -- they can theoretically take our recommendations and thank us and go their own way. I would hope not and certainly it is the experience of this Committee that that has not been the case. They have always listened very carefully. But we do have an advisory role versus a direct on-line authority to the rewriting of the document. Okay.

That means we need to do two things. One is provide guidance for the actual booklet that will go out to

the consumers. But provide a detailed rationale for recommendations for change that we've made for it. Generally, the onus on us are much greater if we want to change something than if we want to keep it. At least that's been my experience. Keeping something unchanged doesn't seem to require the same degree of discussion and documentation.

In discussions with several of you, you have asked me for how we are going to go about documenting though changes that we may want to suggest. That I hope we will get to discuss also perhaps tomorrow; definitely before we leave, because there are two extremes. One extreme is that we can use an evidence-based approach and document literally every article that may show up on a search as to the reasons why we decide to keep it or reject it with some very clear criteria.

Given the breadth of the Dietary Guidelines, trying to do that in its most rigorous fashion probably would be very, very -- well, it not probably -- it would be extremely difficult for us to achieve. On the other hand, we just can't say, "Well, we recommend this change because we got up on Wednesday morning and thought it would be great." That's not going to be acceptable either.

And so somewhere between those two extremes, you're going to have to identify that happy medium of making sure that we present people with a very clear target. What I mean by that, it's a target that they can very readily embrace because they agree, or a target that will lead them to disagree but not because they just disagree, but understanding clearly what the basis for the decision that we've taken may have been and that they can then either do research or marshall argument against it. But the clearness of the target, the transparency of it is terribly important.

We're thinking of also possibly within our next meeting being around January or February. And it would be at that time that we would invite oral comments from the public so we can have the benefit not only of written comments, but also some oral ones as well. We probably as I say would meet then twice after that with subcommittees or working groups meeting throughout that period with the final documentation being available for final review and adoption by October.

That's the framework that I would like you to think about as we begin to lay out the issues because at the end of this, you may decide there is just so much work, there is no way we can get it done by October unless we get

resources A, B or C in place, or you may say, "Gee, you know, we could probably do this by March." And I guarantee that both Linda and Eileen would probably be very pleased to hear that. Or you may say, "Look, we've looked at the science and we can really conclude this by the end of tomorrow", which I think would be very surprising to a number of people.

But in terms of framework that is very general, and we can get to the specifics tomorrow after we -- after we go through each of the guidelines and additional issues, do you have any questions just in terms of just general process and framework? Richard?

DR. DECKELBAUM: Two questions. One in seeking help in doing our parts or different sections presuming it will be continued past tomorrow, you might use, you know, available resources within the departments. But as well, we would call upon -- we could call upon individuals that work with us. And I -- are they acknowledged at any point if people outside the Committee contribute towards providing some of the data or helping formulate -- is there an acknowledgement for this contribution?

DR. GARZA: It would be acknowledged in the report.

DR. DECKELBAUM: Right.

DR. GARZA: And to that degree, staff would be -- would be keeping records of anyone that would be contacted. Now, if you contact someone and don't let staff know, then obviously it is very difficult to make that acknowledgement. So that we urge you to make sure that if you reach out to someone and they provide you with either information or advice, that you let the staff know so we can make sure that they are acknowledged.

Also, if at the end of today's session or tomorrow's session or during the times that the working groups meet it is clear that we would benefit as a group by inviting a scientist to come before the group and make a presentation on a -- on an issue that is particularly complex and you want to have that individual provide a summary or perhaps even a point of view, then that would also -- that also is possible.

DR. DECKELBAUM: The second question is, is it within the charge of this Committee to identify areas where there are major gaps that exist in terms of scientific basis for certain areas of recommendations and to identify research needs?

DR. GARZA: Yes. And that can be -- take various

-- various forms, Richard. One is in terms of the science itself or perhaps even in terms of the application or in terms of the way we formulate the Dietary Guidelines.

There was a strong recommendation made at the last time the Committee met to make sure that as each of these guidelines was being developed, that the USDA or -- and the HHS, but I think it was primarily USDA -- bring together focus groups of consumers to make sure that what we were intending to communicate was actually being communicated because to scientists, something may be terribly clear and transparent. But you test it with a consumer group and oftentimes we are surprised because their understanding of what we were trying to say is very different from the intent.

So there are all types of research we can recommend, either research of that type or the more traditional laboratory-based because we need information.

Shiriki?

DR. KUMANYIKA: My question is how -- is there anything we can do or how can we increase the likelihood that the recommendations, even if they are not changed, will be more acceptable to the scientific community. I am concerned that there are some recommendations that probably

I don't think should change and maybe the Committee would decide wouldn't change, but they are hotly debated nevertheless.

And I am wondering if it is either in the format of the report or in the way that we go through our deliberations to reaffirm recommendations if we don't think they should be changed to strengthen the base so that we can reduce the sort of free-for-all that might take place, you know, because of different vested interests and so forth.

DR. GARZA: That's a very important point and I would ask each of the different groups that as you think about the guidelines that are being formulated, if there is a need, either at the end or in an information-gathering stage, to take advantage of one of the scientific meetings, I mean, APHA, ASNS, ASCN, to either at the end of the process explain why in fact we took the positions that we did, or in fact have either workshops or symposia at those -- at those different scientific forums, that that would be possible. Certainly, that is a very important avenue we have available to us.

Other times if -- if in fact Committee members at the end of the process would like to put together a summary document expressing at least your view of it and writing it

up in your respective journals, then certainly you have that -- that -- that opportunity as an individual scientist. I mean, it wouldn't come out of this group, but that's another avenue that is always open to Committee members.

Are there other -- Johanna?

DR. DWYER: -- heard of that's -- if the Committee decides to go ahead, it would strike me that it would be useful to present at scientific meetings. The first one that I can think of is probably ADA and then APHA follows very closely on its tail.

The -- the other thing that might be useful is to have a very brief presentation that was a summary of what was said today with overheads or something so that everybody is singing from the same hymnal. And it would seem to me that if that is the will of the group, that we need to return to that at the end of the day tomorrow.

DR. GARZA: Let's bring that up again because certainly having the scientific community come along with this group is very important. I urge you as you think about that to not forget that this process is aimed primarily at providing consumer support in making dietary decisions and having -- so that the documentation in the Committee report is obviously a scientific one.

The booklet is not intended for an audience of scientists. So keep that in mind. And at times, we tend to confuse the two and that's important that we not. But we'll bring it up tomorrow because it's -- there are important meetings coming up as Johanna says.

DR. LICHTENSTEIN: How much flexibility is there to change some -- the format? I mean, it seems that it's been very consistent that there are ten guidelines. And I don't know if there were -- sort of ten was the magic number. But in some cases, one -- oops, seven, seven guidelines.

DR. GARZA: We could increase it to ten. there is some historical experience with that.

DR. LICHTENSTEIN: Yes, I guess. But it seems to be relatively consistent throughout the various iterations of it. And in some cases, one could think of different ways of grouping various things. So are we going to get any idea of, let's say, what the impact would be of making a more radical change as opposed to fine tweaking?

DR. GARZA: We could advise any of the above. I think it was Kuhn who once said that consistency was a hob-gobbling of little minds or something. So we don't have to be consistent about that. We do have to be right. And so I

-- if by being consistent we'll be wrong, then let's not be consistent. But we do need to be right.

And if we need to go down to five guidelines, that's what we would advise the departments to do. If we need to go up, you know, then we just increase the number. But keep in mind that, you know, it has to be something that the public will be able to deal with effectively. But we have all of those avenues ahead of us.

Any other -- okay, then if not, we'll start with Suzanne Murphy who is going to take us through the first guideline. The format will be, we'll have ten to 15 minutes of presentation with about ten or 15 minutes of discussion. Remember, it is -- it is to catalogue issues; not to reach consensus.

DR. MURPHY: Well, thank you for the opportunity to talk about what actually has been a topic I've been interested in for a long time, dietary variety. And I was very pleased to be given this one of the seven guidelines because I thought, hey, for once, I got the easy job. I didn't take the very hardest one. And this should be very noncontroversial and very straight forward. I don't even need 15 minutes.

Well, so I pulled out what I thought were my best

references on dietary variety for five of them and read them over, and quickly changed my mind. I said, oops, things got a lot more complicated since I last looked at this topic.

And then Dr. Bowman did a literature search for me and I noticed even after narrowing down all the key words as best she could, there were 1,300 references. Now, I'm not going to stand here and tell you I've read those 1,300 references. Most of what I'll say is based on a much smaller number. But obviously it's a topic that has some complexity.

And I thought in the few minutes that I have today, I'll sort of bring some of these issues to the group and then we can discuss them some more afterwards. I have a few transparencies, mostly to make sure I don't miss any key points.

(Overhead.)

Just to remind you, a variety guideline is the one that's sort of in the center of all the circles. In other words, it's presumably the one that sort of holds the seven circles together. It is the key component. And in the way the book is -- has been organized, it is the opportunity to present the food guide pyramid.

Now, I know initially the food guide pyramid was

an outgrowth of the Dietary Guidelines. And Dr. Kennedy mentioned the statistic that 68 percent of consumers at least know what the pyramid is. I would suggest to you a far smaller number know what the Dietary Guidelines are.

And in the classes I teach and the groups I work with, the pyramid is really the graphic and the concept that consumers remember. I teach a lecture occasionally on an introductory nutrition class where there are typically 500 or 600 students.

And when I ask them if they are familiar with the food guide pyramid, usually about 80 percent of them raise their hands. When I ask them if they've seen the Dietary Guidelines, I get blank stares. So clearly the food guide pyramid has been a very useful tool for consumers.

And I think that now we see that the variety guideline is an opportunity to present that in the context of the Dietary Guidelines. But it's not clear to me which is the tail and which is the dog anymore because I don't -- I think we have to remember that the food guide pyramid has been an enormously successful tool. And that my indeed be one of the issues we want to consider in talking about how this guideline is presented.

The third thing that I just want to mention at the

beginning is that the simplicity is very appealing. Eat a variety of foods is sort of something no one could argue against, right? I mean, it's -- it's really very simple. And indeed I believe I'm correct in saying it is the only one of the seven guidelines that has not changed by a single word in the four previous editions.

So obviously there has been a lot of consensus about this guideline. And perhaps that is because it is so simple and so easily grasped.

But then we have to ask ourselves, "How is variety defined?". Maybe we'll put it --

(Overhead.)

And again, when I first started thinking about this, I said, well, gee, everybody knows what variety is. But as a matter of fact, it is not easy to operationalize variety. By nutritionists, we really have two different definitions that we use of variety.

Perhaps the most common one is to use it interchangeably with the concept of consuming servings of food that in effect correspond to those recommended by the food guide pyramid. And in some ways, that's more of a dietary score or a food group score. But it's used interchangeably with variety. And, indeed, the concept of

variety that has been presented in the past is the concept of food group variety.

But there is a second and perhaps more comprehensive definition of variety. And that's food item variety. In other words, within the food groups, are you consistently consuming the same food. So within the fruit group, do you always eat apples or do you change off among different fruits within the fruit group.

The second concept has been more difficult to quantify. But as many of you know, there has been what I think is an important effort on the part of USDA to develop a healthy eating index. And I was pleased to be involved with Dr. Kennedy in the initiation of that project several years ago now.

And the group that developed that came up with a scheme for defining food item variety. It was basically based on food commodities. And in my opinion, for the first time, we had the opportunity to look at national survey data and try to look at least at perhaps epidemiologic sort of data on what the relationship was between variety and various health outcomes.

So the book as it stands now talks about both kinds of variety. But the first kind is really the focus.

And the concept of consuming different foods within a food group is addressed rather briefly in the current booklet.

Now, the question I would have is does the concept that we nutritionists have of variety match how consumers see variety. And I'm not aware of much work that has been done to answer that question. And I would certainly be very interested in hearing more about a consumer perception.

And it is my understanding that there have been or will be some focus groups conducted. But that might, indeed, be a helpful piece of information to guide us on whether we're actually getting a useful concept across to consumers.

(Overhead.)

When we were asked to give these short presentations, the letter from Bert I assume said, "What is the change in the science base? Is there any new evidence that the Committee should begin to consider as in regard to this guideline on variety?".

And so I went through some of the references and I've summarized sort of four points, none of which really is new, although there is additional information available now that confirms what was known from some of the earlier studies.

The first is that I see a clear link between diets which conform to the food guide pyramid and improved nutrient intake. You can certainly show that people whose diets follow the recommendations from the food guide pyramid for the number of servings have higher nutrient intakes than those whose diets do not.

There has been a variety of information published. But just to mention one that was done by Cox, et al. recently looking at children. And I thought that was nice that there is now some more information on children's diets.

But toddler diets that followed the food guide pyramid recommendations, this group found the correlation between the -- an index of nutrient intake and food group servings was 0.74. Now, that's a correlation that I would be very pleased to find in a lot of what I do. So it looks like there is a fairly clear link between the food guide pyramid and improved nutrient intake.

The link between variety, however, within the food groups and nutrient intake is less clear. And I actually did not find very much information. And I would perhaps put it forth as a research need to ask the question, "If you control for diets which conform to the food guide pyramid, what is the additional increment of variety within food

groups in contributing to nutritional adequacy?". And I found very little to indicate that there was an additional contribution, if you will, from this second type of variety; that is, within group variety.

And given our charge to rely on science, I would say we may have some difficulty in justifying simply because there is not a lot of information available on this second type of variety. Intuitively, it ought to be there. Actually, I have found very little published that shows it is there.

The third point is that variety of either type, in other words, within groups and between groups, doesn't seem too closely linked to fat intake. In other words, people who eat a variety of foods do not necessarily have lower fat diets or lower cholesterol diets or lower saturated fat diets. There is some scattered information on an inverse link, but it's fairly weak in my opinion and fairly sparse.

And the fourth point which is really the important one I think is what is the evidence of an association between variety and chronic disease because that's really what the Dietary Guidelines are for, to reduce the risk of chronic disease.

And, again, there has not been a lot of really

solid research. And what is available, of course, is epidemiologic. But Ashima Kant in her group, which I think has done a lot of interesting work on dietary diversity as she calls it, and in this case diversity is food group variety -- her group does find a decreased risk of heart disease, for example, with an increase in food group diversity. So there is some evidence that variety at least of the type of following the food guide pyramid does result in a decrease in certain types of chronic disease.

(Overhead.)

The last thing we were asked to address was potential changes in the guideline. And I have three that I think we might wish to discuss. One is to clarify perhaps what we mean by variety. And although the last committee decided not to quantify things very much, it's a possibility at least to come up with a more concise definition of variety. And I think it is something we should at least consider.

For example, the Healthy Eating Index gives maximum number of points if a consumer reports 16 different foods across three days. Now, these are like food commodities. So if you had mashed potatoes and french fries, those aren't two different foods. But if you have

apples and oranges, those are indeed two different foods.

I tried to find my reference from -- on the Japanese guidelines. Maybe someone else will remember what it is. But in Japan, they have a specific number that they recommend. And I remember being impressed by how high it is. I believe it is 30 different foods every day, 30 different foods every day which is interesting and, if you will, a -- something we could all think about.

The second possibility is to consider whether we would like to look at a guideline that more specifically says something about the food guide pyramid. If by variety we mean follow the food guide pyramid, should we just say that? And I think, again, that's something that should be considered.

And finally, if indeed we are going to focus on the food guide pyramid, does that mean that the variety of foods guideline could perhaps be combined with the grain, vegetable, fruit guideline in some way?

So I will leave you with those three possibilities and open it for discussion.

DR. GARZA: Any questions for Suzanne?

DR. DWYER: Suzanne, I'm not sure I understand the third point. Could you say that -- could you elaborate a

little?

DR. MURPHY: It sort of follows I guess from the second point. If we -- if we decided that eat a variety of foods should be changed to follow the food guide pyramid, would that not subsume the current guideline on eat plenty of grains, fruits and vegetables because, after all, that's the base of the food guide pyramid.

DR. KUMANYIKA: When you looked into Ashima Kant's work, I'm wondering if you came to the conclusion, as I did with one of the papers, that the variety is a proxy for getting fruits and vegetables; it's not -- I mean, in other words, the people with the lowest variety were also the people who didn't consumer fruits and vegetables essentially. And it was poverty-related in part.

And so when you're saying combine with the grain, vegetable and fruit guideline, but I wonder if it is actually a marker for quality and the fruits and vegetables are the last frontier, if you encountered that and thought about it.

DR. MURPHY: As I recall, her varieties or diversity score was just whether people had at least one serving from each of the five pyramid groups. So I think it was a fairly simple score that went from zero to five. And

I had not seen the correlation of her score with fruit and vegetable intake. I would assume that because that's only two out of five, that it would be associated with it, but not necessarily the same as.

But, yes, that's certainly a possibility. And of course, any time you're looking at epidemiologic data which is what she was doing, there is the whole issue of whether you've adjusted appropriately for all the confounding variables. And I think that's -- although she did indeed adjust for a wide variety.

I think although her papers were very interesting, that it would be important to have additional research in that area that would confirm or at least support her findings.

DR. KUMANYIKA: I have another question if --

DR. GARZA: Go ahead.

DR. KUMANYIKA: A related question, I'm thinking about the analysis. I don't remember it too well. But where when looking at who are the people who actually have like one -- you know, was it all -- was it one of any foods or were there certain foods that were likely to be the ones omitted in people who had a low number of servings.

But the other issue is mortality because some of

their epidemiologic analyses look at mortality as the outcome.

DR. MURPHY: Right.

DR. KUMANYIKA: And there was kind of a brouhaha at one point in the Public Health Association about whether we knew enough to tell people it was good to eat fruits and vegetables; whether, in fact, mortality is the right outcome for Dietary Guidelines. So we might throw that into the hopper of questions to --

DR. MURPHY: Okay.

DR. KUMANYIKA: -- to ask about them. I mean, several things affect mortality besides whether you eat your variety. But --

DR. MURPHY: Right.

DR. KUMANYIKA: -- is it chronic disease or is it mortality and how are we going to weight that evidence?

DR. MURPHY: She does have a paper on heart disease as an outcome. But you're right, it is mortality from heart disease. So I don't think she looked at just morbidity.

DR. DECKELBAUM: In terms of increasing the variety, let's say, even in a single food group, right now things are defined in terms of servings. So even if we

followed the guidelines, if you got towards the Japanese model and we provided all these as servings, we would be in trouble in terms of its caloric intake.

So if there is a goal towards increasing variety, there might be some thought placed on, you know, combining variety to within a single serving, mixing two or three vegetables together as a serving, approaches like that because to get up to 30 servings --

DR. MURPHY: And -- and of course, I don't think the Japanese guideline is 30 servings. It just says eat 30 --

DR. DECKELBAUM: Thirty foods.

DR. MURPHY: -- foods. But -- but you raise an interesting point and one that occurred to me also, that are we encouraging over-consumption in some subtle way with this guideline. And, again, I think consumer perception would -- would be interesting to know. Yes.

DR. JOHNSON: I think Richard has raised a really important point though that we should think about which is portion size and the American public's perception of a normal portion size. After spending a year in Europe, I mean, there is just no comparison with what an American considers a portion size of a muffin or a soda or -- with

what many other countries in the world I think consider portion size. I do think that is an area of concern that we need to think about.

DR. STAMPFER: Could you just give your opinion as to whether you think the -- there is any value in promoting variety beyond just promoting more fruits and vegetables? Sort of pursuant to your third point, is -- is there a value in variety beyond that for the American diet?

DR. MURPHY: I think the fruit and vegetable concept is a key one because the food guide pyramid is somewhat vague on promoting specific fruits and vegetables. And I think previous committees believed that the variety sort of encompassed the idea that when we say, "Eat five a day of fruits and vegetables", we really don't want people to eat five servings of potatoes and apples every day, day after day after day.

And so if we want people to eat dark green vegetables and yellow and orange vegetables and so forth, maybe the variety concept will push people in that direction.

So, yes, it is important for fruits and vegetables. I would argue that it's probably important for grains, as well, because that is the driving force toward

whole grains at this point. As the Dietary Guidelines stand, we don't really have a big focus on whole grains. And so variety you would hope at least includes for most people a mix of refined and less refined grains.

Those are probably in my opinion the two major things that variety addresses.

DR. GARZA: We should ask the staff to look at or researchable topics that could be accomplished -- tasks rather that could be accomplished within the framework that I outlined that would help us evaluate various questions that have come up and questions that you have raised.

DR. MURPHY: Yes. I think there are -- and thank you for giving me an opportunity to state my opinion on this. Because the Healthy Eating Index has been developed for the national surveys, particularly the CSFII, we do indeed have a variety score, if you will, that's now associated with each person that participated in the CSFII.

And Shanthy and I talked a little bit about the possibility, because she was very involved in some of the analyses with the HEI, of looking at how variety per se, that component of the Healthy Eating Index is related, for example, to nutrient intake. And I think that might get at some of the other questions that have come up.

If you control for fruit and vegetable intake, is there an additional effect of variety? If you control for eating the number of servings specified by the food guide pyramid, does that component of the Healthy Eating Index actually contribute any more?

To my knowledge, that has not been done. And I would be very interested in seeing it done.

DR. GARZA: Do you think it is doable within the framework that we're now --

DR. MURPHY: I do. I do.

DR. LICHTENSTEIN: I think with respect to variety, it should even -- the consideration should even be extended beyond the grains and the fruits and vegetables because you can even think within the meat and legume group that you've got, fish with the omega-3 fatty acids as opposed to somebody that's consuming beef all the time.

And if you go into the dairy group, then you've got milk that's contributing D whereas the other dairy products are contributing other good things, but not that. So I think it probably needs to be considered for each group.

And I also think there is some work from out of the Netherlands suggesting that individuals that consume --

and this goes back to the energy issue that individuals that consume a wide -- a very wide variety and a lot of foods versus few foods do end up with a higher energy intake which, again, goes back to defining what variety means with respect to serving sizes versus just numbers of foods; you know, the arbitrary thirty.

DR. MURPHY: Yes. I think that's a good point; that the analyses one would do should control for energy intake because obviously people that eat more food generally tend to eat a greater variety of foods. Good point.

DR. GARZA: Thank you very much. Well, we're going to move on then to the second guideline. And I don't think there are -- there is a public health concern that is greater -- there are certainly others -- than -- than the one of an increase in the obese population within the U.S. And to help us through this guideline is Dr. Weinsier.

DR. WEINSIER: (Slide.) The issues that I've tried to raise for this brief period of discussion are the following. There has been a lot of information that has come out of the past several years in the area of energy metabolism and obesity. So I can't cover it all.

But some that I think we need to look at as background, the weight gain trend, body weight mortality

rates. These are fairly well given. But then the roles of metabolism are genes, diet and physical activity on the weight gain trend is a very, very important area.

And that -- regarding that issue, I refer back to the current dietary guidelines, the statement that as people lose weight, the body becomes more efficient at using energy. I don't know exactly what was intended there, but the implication that metabolism plays a role in the rising prevalence of obesity needs to be considered carefully: Are we in fact more efficient after we lose weight such that post-obese, normal weight people are predisposed to obesity?

The second category, designation of overweight and obesity. Should we consider use of the BMI, the Body Mass Index? Should we consider use of the weight circumference? Currently, the guidelines refer to waist/hip ratio and in a nonobjective or non-quantitative way state, "Look at this waist/hip ratio to see if your abdomen is larger than your hip circumference."

And finally, weight loss approach and goals, what weight loss approach should be taken and what should be our goals. Currently, there is a statement in our guidelines under Dietary Guidelines to "reduce caloric intake, eat less fat and control portion sizes." I think we need to

consider this as an issue to reconsider whether we want to focus primarily on fat and portion size.

And finally, exercise goal. As Dr. McGinnis said, exercise is inherent in this whole issue and can't really be separated. So back up real quick.

(Slide.)

Under "Background: Weight Gain Trend", this goes pretty much without saying that if we look in the red category -- I don't have a pointer here. But this is -- in the early 1990s, we see that there has been a marked rise in both men on the left, women on the right and the prevalence of overweight and obesity as defined by Body Mass Index.

(Slide.)

So it's pretty well established that something has been happening since the late '70s to the early '90s, that there has been a fairly dramatic, approximately a 31 percent increase in the prevalence of obesity in men and women.

(Slide.)

Is it associated with increased risk? I think most people would agree that there is increased risk of all causes of mortality related to Body Mass Index as shown here in studies by Joanne Manson, reported in New England Journal of Medicine, '95, that if we look at relative risk, it is a

fairly steady rise throughout the spectrum, low BMI down to 19, although we have the BMI as being greater than 32.

(Slide.)

But perhaps a more controversial issue is that third category I put: "What is the role of metabolism, genetics and the etiology of the weight gain over time?" This study gives us a chance to look at post-obese individuals. These are individuals who are studied when their Body Mass Index was high and studied again after they were reduced to a normal Body Mass Index and normal body weight, and then pair-matched with never obese control subjects.

Those in red have a positive family history as well as a personal history of obesity. Those in yellow had no family history of obesity and no personal history of obesity.

And then we tracked them over four years with no guidelines in terms of diet exercise. And as you could have predicted yourself, the predisposed or obesity-prone individuals have pretty much as a group put back all of their weight whereas the never obese controls after four years stayed never obese.

None of these individuals in the yellow category

rose to the obese category. A few in the post-obese, obesity prone category stayed normal weight. But on average, the weight difference was approximately nine to ten kilograms in between these two groups at the end of four years.

Metabolically, what's going on here that might predispose them to this weight gain? As suggested in the Dietary Guidelines as I read them and at some scientific presentations, people have suggested that there is something in our genes or inherent abnormalities in our metabolism that predispose this group.

And in fact, if we go back and look at the metabolic rates of these two groups which we see here, resting energy expenditure numerically is identical between the groups. Even adjusting for slight differences in body composition, fat and fat-free mass, they are still essentially the same. Thermal cofactor food as a percent of caloric intake, 8.8, 9.8, these are not significantly different between the two groups nor is fuel utilization, is fat oxidation or carbohydrate oxidation notably different between the two groups.

In addition, if we look a correlation between metabolic predictors of the four-year weight gain, there is

no significant correlation in any of these categories of energy expenditure at rest, after eating a meal or fuel utilization in terms of prediction of the amount of weight gain.

(Slide.)

There have been six studies to my knowledge in reviewing the literature that have looked at alterations in energy metabolism as predictors of weight gain prospectively. Two of those were in children and four in adults. Basically, what I want to point out here because I can't review all this literature is that they looked at resting energy expenditure in five of those studies. And four of the five found no predictive relationship between resting energy expenditure and weight gain over time.

One, the Ravussin study and Pima Indians was suggested, but only accounted for -- low resting energy expenditure only accounted for about a third of the 13 kilogram weight gain over a period of about two years of follow-up. So this is questionable.

None of the studies looked at activity-related energy expenditure. Thermic effect of food was looked at in two. Neither was found to be predictive.

Total energy expenditure -- total 24-hour energy

expenditure was predictive in two cases and not in two other cases. The fact that two were predictive in terms of total energy expenditure whereas resting does not tend to be predictive suggests that maybe there is something in the activity category that may be predisposing, i.e., less activity-related energy expenditure may predispose to weight gain. So let's just keep that in the back of our minds.

Now, in terms of diet, this solid line shows the increasing prevalence of overweight and obesity since the late '70s to the early '90s. I have shown in the dashed line the increased frequency of use of low calorie products. These are low sugar, low fat, but overall low calorie products as a percentage of the population.

So we've risen about four-fold -- slightly over four-fold increased frequency within the U.S. of use of these low calorie products. So we're using more of the products that we're trying to encourage people to use, but frequency of obesity is still rising.

(Slide.)

If we looked at the prevalence of overweight -- I already showed this -- it's increased about 32 percent in both women and men. Average Body Mass Index has increased about five and three percent in those groups respectively.

But if we look at data that are useful for reference, population-wide, survey trends state in terms of fat intake -- this is slightly out of focus, but I can't adjust it here -- average fat intake as percent of total calories, it seems to have fallen if we use USDA nationwide consumption -- food consumption survey data.

So if, in fact, fat intake has gone down and, in fact, as the data suggests, total calorie intake has gone down but certainly not up, then how do we explain the rising prevalence of obesity? Now, my first reaction is don't believe the data -- don't believe these data.

But in fact, if we look at data in Great Britain, they show the same thing: Average energy intake has gone down; prevalence of obesity has gone up. If we look at prospective studies in children in France, same picture: Average energy intake has not gone up; prevalence of obesity has gone up. If we look at data in children in the Bogaloosa study in Louisiana, same picture: Energy intake prospectively, ten year period of time, is going down; prevalence of obesity is going up.

All of the major prospective studies seem to give the same picture. We seem to be doing the right thing from a dietary standpoint, yet we're getting fatter. What are we

missing here?

(Slide.)

And that brings me to the other point, the possibility that physical activity may play a role. And in fact, if we look at weight rebound, individuals -- remember, we saw the post-obese normal weight individuals compared to the never obese controls. And we followed them four years. What predicts weight gain? Regular physical activity by self-report suggests a much lower rate of weight gain compared to those who are physically inactive.

A very large study of 12,000 individuals in Finland shows the same picture, that people who are more physically active gain less weight over time. It's more predictive and more consistently predictive of weight gain than energy intake.

(Slide.)

So in concluding on those four points, the role of genetics, recent trend toward increase in obesity prevalence cannot be due to changes in our genetic makeup. Mostly likely, it reflects the influence in environmental changes on our gene expression. Simply put, our genes permit; but the environment determines if we become overweight or obese.

(Slide.)

Regarding abnormalities in energy metabolism, normal variations in energy requirements may influence our tendency toward weight gain. It is unlikely, however, in my view on reviewing the literature that significant variations exist in energy metabolism which by themselves explain the onset of obesity and the rising prevalence over the past few decades.

(Slide.)

Third, with regard to diet, the trend toward decreasing fat and calorie intake in Westernized countries has not prevented the rise in obesity prevalence. It is unlikely that diet is the sole or primary factor accounting for the rising prevalence of obesity if these data are correct.

That's not to say that diet is not important and I'm not trying to say that. We could argue that if we were not as adherent to some of these dietary changes, the prevalence of obesity would have risen much faster.

(Slide.)

With regard to physical activity, reduced total daily -- not just exercise and recreation -- but reduced total daily physical activity may well be the most important current factor contributing to weight gain in Western

populations. We don't have the direct data to confirm this. This is more by deduction.

(Slide.)

Then we skip to the second category of things I wanted to mention briefly. BMI as an index of obesity, should we consider it for the guidelines? These data are taken from the NHLBI Clinical Guidelines Report that just came out a few months ago. And they classified normal weight as 18.5 to 24.9 Body Mass Index. Overweight is 25 to 29.9. And obesity is 30 or above.

(Slide.)

The use of BMI makes sense. Body Mass Index correlates very well with adipose tissue. There is some variation for any one individual, sure. But population-wide, there is a nice correlation, 0.96.

(Slide.)

In addition, should we consider weight circumference? According to the NHLBI guidelines and a substantial body of evidence, weight circumference separate of the waist/hip ratio, waist circumference is independently predictive of disease risk such as diabetes, dyslipidemia, even cancer. The guidelines recommended men 40 inches, women 35 inches.

(Slide.)

And then if we take those same set of guidelines, the NHLBI guidelines and look at disease risk, what they've shown -- and the only point I want to make here is you see the relative number of arrows pointing up in terms of disease risk of diabetes, hypertension, cardiovascular disease -- that it rises not only as body mass index rises -- my pointer is slowly dying -- but also at least in the moderate degrees of overweight and obese category, there is a separate effect of weight circumference.

So if you have moderate degrees of overweight obesity plus you have increased weight circumference, you have increased your risk. We may want to consider guidelines such as these.

In terms of treatment -- now I'll bring us down to the bottom category of my initial overview. The treatment algorithm recommended by the NHLBI: 1) Assess risk factors if the person is overweight or if they have increased waist circumference. Then initiate treatment if: 1) they are overweight and have two risks; overweight defined as BMI of 18.5 to 20 -- to 25. Increased waist circumference and two risk factors, consider treatment. Or if they fall in the obese category; i.e., a BMI of greater than 30.

Consider pharmacotherapy as an adjunct only if the BMI is greater or equal to 30 without risk factors or disease. Consider if the BMI is great or equal to 27 with risk factors or disease.

(Slide.)

Now, one other aspect of treatment, certainly as it relates to diet, that I think is an important issue and to consider, and I relate it here, the comment in our current guidelines to reduce caloric intake, eat less fat and control portion sizes.

This particular study has in my mind resolved a major issue that has raised -- that was raised about 20 years ago in terms of what is the major content or aspect of the diet that predisposes certain individuals to overeat in calories.

The objective of this study that was just reported this year was to examine the effect of energy density of meals, i.e., the caloric content of meals, independent of fat content on an ad lib caloric intake. these women, 18 normal weight women, were encouraged and allowed to eat as much food as they wanted over the course of two days, a very short-term study. They were given free access to diets that were either high, medium or low in energy -- energy density,

but similar in fat content over the two-day period.

Graphically what we see in terms of the weight that they consumed, i.e., how much food did they consume over the two days, the cumulative intake and food intake into three categories of low, medium and high energy density was essentially identical.

In other words, they ate to a feeling of fullness not knowing what the calorie content of the food was, whether it was fat, sugar or otherwise. But look at the same graph in terms of energy intake and replace weight of food consumed with the number of calories consumed.

So now we have energy consumed over the two days. Now you start to see the differentiation where at the highest intake, the dashed line is high energy dense meals. The dotted line are the low energy dense meals.

Individuals were equally content in terms of their degree of fullness and palatability ratings of all three categories of foods. They could not tell which were high and low fat foods, but they ate considerably different caloric intakes such that the conclusion from this study and supports a number of other previous studies is that subjects consumed similar amounts of food, but more calories on high, medium versus low energy dense meals.

And look at the difference: 1,800 on the high energy dense versus 1,376 kilocalories per day. So what's that a difference of, 424 calories per day difference without even trying. Without even thinking about the calorie content of the food or trying to restrict intake, they had comparable feelings of fullness.

The implications: Energy intake is determined by weight of food consumed rather than palatability of fat content; hence, excessive energy intake and weight gain is more likely with high energy dense, i.e., high calorie meals.

(Slide.)

And the last two slides which should be our weight loss goals. I'm not prepared to say. I'm going to step in some soft sand here and maybe even quicksand because I don't really think there is solid data to tell us what we should say. We need to think about it.

The current concept, and as reported in our guidelines here, is to aim for a loss of five to ten percent of your initial body weight. So if we're overweight or obese, aim for a five to ten percent loss. I don't know if there is solid foundation for this recommendation. I'm not convinced there is.

The weight control registry which looked at 784 individuals who maintained at least a 30-pound weight loss for one year has recently reported -- this just came out last year -- that their average loss was 30 percent of initial body weight. I don't know what their goal was, but it raised the question in my mind, people who do well, this registry, are all people who did well and survived at a consistently low body weight after losing weight, they probably set their weight loss goals much higher.

Some recent data from Tom Wadden suggests that most individuals entering weight loss programs will not be satisfied with a goal of five to ten percent. It's probably closer to three times the ten percent.

(Slide.)

With regard to physical activity goal -- this is my last slide -- current concept, American College of Sports Medicine recommends exercise goal of at least 1,000 kilocalories per week. This is a modest increase in physical activity-related energy expenditure.

The Weight Control Registry, their average -- their average activity expenditure was 2,825 kilocalories per week. This is in contrast to a goal of at least 1,000. So there are 2.8 times that. Seventy-two percent of the 784

individuals exceeded the above goal. It raised the question in my mind, are we being aggressive enough or are we simply setting guidelines that we hope will be more appealing to people who have not been successful.

(Slide.)

So those are my concluding -- my concluding points would be three: 1) In terms of predisposing factors, inherent metabolic and genetic factors are probably not in my view major contributors to weight gain, certainly the recent trend. Diet obviously plays a role, but I think physical inactivity is especially important and needs close examination.

Secondly, appropriate indices of the relationship of weight and health. We might want to consider the body mass index and instead of waist/hip ratio, consider waist circumference.

Third and last, in terms of the approach to prevention and treatment over overweight and obesity, let's consider the caloric content of food. Rather than focusing on a calorie level, think in terms of focusing if the diet is basically composed of low energy dense foods, fruits, vegetables, whole grains, it is probably going to be a lower caloric intake.

Finally, consider and reconsider our goals of five to ten percent weight loss and the level of physical activity. Thanks.

DR. GARZA: Questions?

DR. JOHNSON: I would like to address the issue of when you were talking about I think it was national survey data, looking at reductions in energy and fat. And there are certainly people in the audience that more intimately know the recent USDA CSFII survey than myself.

But my understanding from that survey -- and some of it may be due to improved interviewing techniques which are hopefully helping to alleviate our nagging problem of under reporting. But they do show increased energy intakes in most age and gender groups, and slightly increased total fat intake.

But it -- the outcome of that is a reduction in percent calories from total fat. So the sort of broadly publicized idea that Americans have lowered their fat content is not really true. As a percentage of total calories, yes. But it is because total energy intake has increased. Am I correct about that more or less?

DR. LICHTENSTEIN: Yes.

DR. JOHNSON: Okay.

DR. WEINSIER: Yes, there are a number of data sets. And I think we need to -- if we want to deal with this issue at all, we need to consider it very carefully. And there are others who are more expert in this than I.

However, the national -- the nationwide food consumption survey data have had the advantage, as you are aware, of the bridging study, 1988, allowing for a -- some level of continuity and consistency in the method of comparing which the NHANES, for example, did not have. So that we can look at the 1978 data versus the patterns in the late '80s and the early '90s.

So we have to look very carefully and be aware that all of these are by self-report. All of these have shortcomings. But there does appear to be consistency across population groups, i.e., some within the country, France and Great Britain. So I think we have to keep our level of suspicion high, although I don't know what the bottom line answer really is.

DR. DWYER: Thank you, Roland. I really enjoyed that presentation. I'm all for the BMI and waist circumference. I think those are both useful.

On the caloric density study of Pell, that is certainly interesting, too. The great question, of course,

is in the conclusion whether on a two-day experiment, one can -- can say that the regulation of food intake is going to be regulated on bulk. I mean, that's a really old idea as you well know.

But the idea that there may be misses in -- in judgement, particularly -- or in sort of the regulation depending on caloric density I think is valid. And of course, alcohol would be another one that might go into that next because it's a high caloric density thing. And they are just difficult to regulate.

The weight loss, I thought -- at least some other materials I've read suggest not that five to ten percent be the final goal, but that five to ten percent be a -- an actionable beginning goal in a process that might, in fact, lead to much lower losses.

DR. WEINSIER: Well, you've made a lot of statements. And I have to agree with everything you've said, particularly about the energy density studies. Two days, this is clearly short-term. They are in support of longer term studies, but none of them go for very -- very long.

I would argue, without having the data, that if you kept a person on the lower caloric intake such as that

they -- such that they were losing weight with a high bulk of food, low energy content -- low energy density, with time they would increase the volume of food and try to overcome that. There are probably other mechanisms that are going to kick in over the long term.

DR. DWYER: Yes.

DR. WEINSIER: But the reason I'm in support of these data of Barbara Rolls and Pell is that most of us eat on a short-term basis. In other words, we're eating from one meal to another. And our degree of satiety is based upon the nutrient content of that meal, the caloric content, the volume of food, all of the factors at that one meal, and partly predisposed by the meal that was shortly before that rather than weeks ago. In other words, most of us don't remain hypocaloric for extended periods of time.

So it is short-term data. But these are the best we've got. I think all the data, however, have been consistent in suggesting energy density probably plays an important role in short-term nutrient -- caloric intake. So I think that's as far as we can go.

Lastly, in terms of the five to ten percent, yes, you are absolutely right. The general idea was -- I'm trying to find the wording here -- that this be the initial

step. And I think perspective has been lost on what this five to ten percent goal really means.

"The way it is stated here is weight loss of only five to ten percent of body weight may improve many of the problems associated with overweight." That's the way it's intended. Unfortunately, I think a lot of people think that -- the patients think in my experience that losing five to ten percent will take care of the problem.

DR. GARZA: Let me bring you some perspective, at least from the -- Shiriki can help me. One of the livelier discussions at the last Committee meeting was around this issue.

And what was driving it was the idea that the recidivism rate was so high in terms of weight -- permanent weight loss that it was going to be much important for us to focus on maintaining your weight than trying to get people to lose weight because it was such a losing proposition. Would you care to comment on that?

UNIDENTIFIED VOICE: No pun intended.

DR. WEINSIER: No, that's right. No, that's -- that I think is the underlying philosophy between this five to ten percent and more recently, now, the suggestion that just maintain your weight; don't put weight back on. That

makes sense. If you have a choice of gaining weight versus keeping where you are, fine. What is the weight loss goal, however? Is it to maintain the overweight?

So I think we just need to be clear in the wording and to set realistic, but at the same, goals that are important from a health standpoint. That's why I said I think we are in quicksand here. I don't feel so strongly about this, but I feel -- in terms of what the absolute number is. But I think we have to make sure that we're sending a clear message from a health standpoint.

DR. GARZA: But you feel there are new data that would suggest that, in fact, encouraging weight loss as opposed to marshalling most of our efforts towards the prevention of weight gain or the -- just not worrying about weight loss because, in fact, it's just not going to be healthy people who will go into a yo-yo period of weight loss and weight gain, and that, in fact, our efforts have just been misdirected.

So over the long term, it is best if we can get people to control their present weight; just keep it there without gaining is the point I was getting at --

DR. WEINSIER: Well --

DR. GARZA: -- or is it -- is the database

essentially the same as it was five years ago on that issue?

DR. WEINSIER: Well, we're not going to be able to resolve this in the next one minute that we have left for this. But --

DR. GARZA: Well, is there -- is there data at all? I'm not asking for it to be resolved.

DR. WEINSIER: Not solid data. There are not going to be solid data. But I think this weight control registry is going to make us think because these are individuals who -- and approximately 50 percent initiated a weight loss program that was on their own. The other 50 percent roughly went through some sort of professional program. They set their sights high and achieved a very significant amount of weight loss and maintained it.

You are talking about a very small proportion of the overall population. The point is if the goals are not out there, if people are not challenged, we may not even get the tip of the iceberg in terms of some people who would be successful whether in professional programs or in self-imposed programs. And we may have to accept the fact that only a small percent will be successful. But we've got to set guidelines that would be attractive and realistic to try to help those few.

DR. KUMANYIKA: I was just going to comment on the perspective from the last committee. We were -- we could say that this guideline is a holding pattern. We were hit with the fact that we had -- had been accused of relaxing the standard by using the 27 BMI, that weight had gone up, that there was no evidence that anybody knew how to reduce weight. And the old guidelines said maintain your weight. So that wasn't an option by itself, to say maintain your weight.

And we came up with this extremely awkward wording which we thought was awkward, "Maintain or improve." And then the big concession, as Bert said, was to put the physical activity in there. So the sense that this could be improved, I think you would get a lot of support for.

I do think that we are better able to evaluate the evidence we have because of the NHLBI Committee -- I mean, the -- the evidence that has been pulled together for successive weight loss is at least available now for review. Even if there is not a lot of new evidence, we -- we can make sense out of what we have a little bit better.

DR. DWYER: I would just like to see us come back and revisit this in terms of something that talks about nipping obesity in the bud. I can remember the American

Institute of Nutrition panel about five years ago, Walt Willett and some others mentioned -- it was Joanne Manson's work that had led to it -- that -- that it would be important to emphasize those first five or ten pounds of gain early in adulthood and that the time to focus on this as a problem was not once obesity was established.

So, you know, I'm for looking at not only the maintain issue, but also the anticipatory guidance issue.

DR. WEINSIER: It really is all in the wording. I don't think that we're probably going to disagree much on what the goals are. The goal is to get down to a healthy body weight, if that can be clear, and then say it may have to be approached or ideally should be approached in incremental steps.

You know, there -- it may be just a matter of wording in the issues we have to deal with because I think conceptually we -- we agree on what the healthy aspect is.

Are there other questions?

DR. GARZA: Just one more.

DR. WEINSIER: Yes.

DR. GARZA: Is there additional data on how much physical activity we ought to be promoting? I mean, you mentioned some. Are there -- are there data that would be a

bit more prescriptive in terms of four times a day? Is it six times a day? Is it every day? Is it 20 minutes --

DR. WEINSIER: Not -- not that I've seen unfortunately. As the weight loss goals have been modified, the physical activity goals seem to be modified, too; also decreasing. In other words, let's make it more and more realistic to the point where we're encouraging almost nothing now.

So I think we have to address it. But, no, the answer -- the honest answer is I'm not aware of the alternative; that is, that people are saying we need to be more aggressively. When I talk individually to exercise physiologists, they say, "I'm very discouraged with the direction we're going." We're not being realistic with the people that need to be realistic with themselves. We've got to be a lot more physically active.

The problem is that the constraints of the environment are such that we don't have many opportunities to do much other than recreational activities several times a week at the gym. This is not likely to be the solution when the problem relates -- the problem probably relates to the inadequacy of opportunities to be physically active throughout the day to accomplish usual tasks.

DR. GARZA: And one last question, is there any difference that you would -- differences you would ask us to be particularly concerned about across the various age ranges? Do we -- do our recommendations to children have to be markedly different from the elderly or can we capture most of the advice generically as we -- as we attempt to do across that age range?

DR. WEINSIER: I'm not a pediatrician and there are others that are on this panel that we could bring in to help us with this. But my perspective is that it is probably going to be very, very similar. I don't think we're going to have major discrepancies.

DR. GARZA: At least one pediatrician has raised his hand.

DR. STAMPFER: Not from the pediatric point of view, but from the opposite part of the spectrum, with aging there is a lot of loss of lean body mass. And our study and actually lots of study have found that BMI becomes a not a very good predictor of adverse health outcomes in the elderly, presumably because you -- you gain adiposity and lose lean body mass.

However, the waist circumference does seem to capture at least part of that because you kind of change

your size even though your BMI stays the same.

DR. WEINSIER: Yes.

DR. STAMPFER: So there may be some merit to thinking about something with the elderly. There was -- there is a comment in the guidelines about that.

DR. WEINSIER: Yes. No, I agree with that a hundred percent.

DR. DECKELBAUM: One point relevant to kids is that, you know, a number of studies where, you know, in five or six-year-olds where you change diets and look at different endpoints, for example, different lipid profiles, you don't see very big effects in these trials.

And one of the reasons that's put forth -- and I don't know exactly the scientific basis -- but if you look at the five and six-year-olds, they tend to be physically active. And it's hard to, you know, find large groups of kids when they are very young that are not physically inactive.

So I guess one of the goals is -- is how to maintain what kids naturally do -- most kids naturally do which is being quite physically active. How do you maintain that once they get into school and get exposed to a greater variety of TV?

DR. WEINSIER: I believe there are data that suggests that physical inactivity in children is becoming more and more of a problem. And I think Rachel Johnson has done some of those studies and others who are working with pediatric groups. So I -- I'm not sure I'm a hundred percent comfortable with saying that physical inactivity, if you mean to say this, is not a major issue in weight gain in children. I believe it is from --

DR. DECKELBAUM: It is, but as a group in younger kids, probably the pre-five, they -- they tend as a group to be -- there's not the great discrepancies that you see in the adult population.

DR. GARZA: One last comment. Johanna?

DR. DWYER: Yes, I think we do have to have very different -- aren't the BMIs quite different for children? And I would assume waist circumference would be or we'll end up with, you know, Snow White and the seven dwarfs, these little kids.

DR. WEINSIER: Yes, yes. The NHLBI guidelines refer to adults.

DR. GARZA: It was more the elderly that concerned me for the reasons that Meir pointed out. Okay.

Let's move on then to the third. And Dr.

Deckelbaum is going to take us through the grain product and vegetable/fruit guideline I guess as a summary.

DR. DECKELBAUM: (Slide.) Well, it's certainly a challenge to have to address guidelines relative to the greatest area on this pyramid. And what we're looking at in terms of the food pyramid is the two bases which account for close to 75 percent of the servings and 60 percent or more of the total calories that we're supposed to be ingesting per day. So that's a really major area even though the press perhaps picks on these areas a little more.

This would be the basis of the food pyramid. And I guess we can go to the next one.

(Slide.)

So grain, fruits and vegetables really contain key constituents for a healthy diet. They are generally a source of low fat calories and they provide us with the carbohydrates which are supposed to form the majority of our caloric and energy sources.

They also contain a large variety of the micronutrients, both the vitamins and minerals that we need to consume daily. The vitamins and other compounds such as flavonoids and phytoestrogens that have putative health benefits, antioxidant benefits, et cetera. And clearly, as

well, they are the major source of -- they are the major source of fiber in our diet, another dietary constituent that clearly has health benefits.

And when we look at the impact of grain, fruits and vegetables on health and disease -- and I think that's the reason previous guideline advisory committees have put this at the base. We can see that the benefits cross a large variety of the health and disease sector with good data preceding 1995 for just about every one of these categories.

And as I'll mention in a few minutes, there is increasing data to strengthen this concept in terms of decreased risk of heart disease and stroke, cancer, gastrointestinal disease such as diverticulitis, neurological functioning in the elderly, eye function. And I guess the controversial area remains as to whether these sources of calories are better in decreasing obesity risk than the higher parts of the pyramid. Move on to the next one.

(Slide.)

So this is Dr. Garza's e-mail to me that I've got to address these in 15 minutes. And so that's the big base of the pyramid. Changes in the science-based issues that

require evaluation and potential changes in the guidelines.

And it's clear since we eat a diet that contains a variety of foods that what I'm going to be talking about can't be viewed in isolation only to these food groups because, like the rest of the pyramid, these are interactive guidelines. And clearly what happens in one area of the pyramid is going to impact on other areas of the pyramid, as well.

(Slide.)

So this is my science slide. Shanthy -- so you see we have different styles here. So Shanthy sent me I guess it was that thick -- how thick was the recent literature on fat, just out of interest?

DR. BOWMAN: Oh, it was about a foot high.

DR. DECKELBAUM: Okay. So I didn't measure -- I didn't know how high the fat research -- this is just, you know, the -- the literature searches. So it was only this thick, I guess going back to 1995 or maybe there were a few from 1994, about that thick. So that compares to fat which I would -- that thick?

So the science base, despite forming the base of this whole pyramid, the thickness of the science may be a little less. And that's actually a concern.

But nevertheless, I think that there is some very good recent science that pertains not only to the grain, fruits and vegetables, but to all the groups. And I think that thinks that should be considered at least during our deliberations are some of the advances in nutrient-gene interactions.

So we're turning from the days when a certain carbohydrate would activate or regulate certain carbohydrate-related enzymes and finding out not only that carbohydrates affect lipid-related pathways; but fatty acids and different fatty acids also affect pathways relevant to carbohydrate and protein metabolism.

And major strides have been made in the last very recent years to understanding the exact molecular mechanisms whereby some of the things we eat actually affect very specific mechanisms of gene expression in different areas of the gene, promoters, other areas, et cetera -- splicing, etcetera.

So that this is a key field. And it not only relates to understanding physiology and pathophysiology, but it also relates to other areas which involves genes like DNA damage so that, for example, the -- there is literature accumulating on the ability of antioxidants to decrease

oxidative damage not only to lipids, but also to DNA.

And the big question is what's the role of diet in decreasing the formation of DNA adducts which may be associated with increased risk of carcinogenesis.

I think something that we need to consider as a group are the different responses to diet in racial-ethnic -- different racial-ethnic populations. And Shiriki and I, for example, have been on a previous committee where this was discussed at length and whether some of the changes that we observe are more related to socioeconomic differences in communities as compared to true differences in genetic response. And I think the answer is that both are true.

Certainly, there are certain populations, Pima Indians, who do demonstrate differences in response to carbohydrate intake at an earlier age. We have been accumulating some evidence that Japanese, for example, may be more responsive to dietary fat and saturated fat and cholesterol intake than American children.

Japanese kids' cholesterol levels in urban settings are now higher than American children despite the fact that they are taking in less total fat -- saturated fat and cholesterol.

(Overhead.)

In terms of the health benefit, people sitting in this room have published a number of studies showing marked health benefits of the grain, fruits and vegetable group in terms of reducing the list of diseases that I've shown on the previous overhead. And some of the -- and these, I guess, are coming out -- perhaps every one or two months, we can find another major study showing the health benefits of this -- these food groups and their constituents on decreasing risk of disease.

In terms of health benefits and -- and food groups, we can also consider different components or constituents within an individual food group. I will give you just one example.

We -- Dr. Starc in our group published a paper a couple of months ago showing that if we take children with high cholesterol and when we put them on a fat lowering diet, substitute complex carbohydrates as compared to simple carbohydrates, the usual drop in HDL cholesterol did not occur. So low fat doesn't mean increase simple sugars. If you substitute complex, the HDL cholesterol stayed the same.

In going through the changes in science base, I think we're going here from the molecular to public health and do no harm issues. But I think a major area that we're

going to need to address is the published data, published surveys, different kinds of studies that show by and large that despite the evidence suggesting good health benefits from the current guidelines, there is still poor implementation.

And poor implementation of the guidelines is greater in lower socioeconomic groups; greater in African American populations. And if we have the guidelines, clearly we have to assess the literature that addresses why the implementation is not as good as it really could be.

The good news, I guess, is that in looking at adverse effects of grains, fruits and vegetables, that's where the literature is remarkably sparse because there are not many adverse effects at the base of the pyramid. I guess we could say that taking in too much of the base and its association with obesity or excessive caloric intake could be an adverse effect.

Whether certain populations, people who are already obese or people that are predisposed for certain reasons to insulin-resistance syndrome, might be more adversely affected in terms of carbohydrate intake. It remains to be determined.

One troubling report -- not troubling because it

was a bad report. It was a good report. But Barbara Dennison showed that children who take in more than -- 12 ounces or more of fruit juice per day tend to -- not tend -- are as a group overweight and achieve less heightage growth than kids who are taking in less fruit juice.

So, again, in terms of the food groups and what to choose, is fruit juice a good advice for children. Next slide.

(Overhead.)

And this is my single data slide which I borrowed from a chapter that Dr. Christine Williams from the American Health Foundation wrote. And I paraphrased it. But it just shows sort of barriers to adequate vegetable and fruit intake in a low income WIC population.

And, again, I'm not going to detail this. But if we look at different kinds of behavior, eating vegetables for a snack, eating fruit for a snack, we can see that the percent of the respondents who rarely ate vegetables for a snack or fruits for a snack falls in this column.

And this is sort of a summary of the behavior barriers that these people volunteered. And we can see that in terms of the barriers: "Don't like it", "Takes too much time", "It's too expenses", "Spoils fast", that a lot of

these misapplications or misconceptions could be addressed by better education and other approaches towards populations so that this -- the numbers in this column could significantly diminish. Next slide.

(Overhead.)

So in thinking about issues that this Committee could consider evaluation, what I listed are areas in which I think there is enough existing literature to give a fair chance at a proper evaluation. The bottom of the slide talks about the research needs that we could identify.

But there is certainly emerging data, and we've seen it in letters to the Committee already, as to whether we should be talking about whole grains versus grain. Should we be emphasizing much more whole grain than the other groups of cereals or things which are refined?

In terms of fiber, besides getting clear on terminology, should we be differentiating between -- in messages or application between different types of fiber? Certainly, the carbohydrates which make up the major portion of the base of the pyramid, there is a lot of literature on simple versus complex carbohydrates and their metabolic responses.

But there is increasing data to show that the

types of complex carbohydrates are very important. Whether the carbohydrate comes from a potato which will have a high glycemic index compared to another source which will be more slowly releasable because it's packed in some different kind of granule or it has never been cooked may have major impact on the effects of carbohydrates.

This is going to be a common theme on the excess caloric intake. It is very important to get the message across. Clearly, Chile is an example where there is a huge increase -- substantial increases in the prevalence of obesity in the lower classes. And this is all associated with high carbohydrate intakes.

I mentioned before the need to consider racial-ethnic differences in some of the guidelines. This has been mentioned as well earlier this morning. Should we be evaluating the need for further fortification of the base of the pyramid with certain micronutrients besides folic acid or might it be better to achieve adequate intakes, either just by eating better choices within the base or are we going to have to advise certain segments of the population on supplementation.

(Overhead.)

Finally, special groups, the Committee and the

departments have done terrific work in applying guidelines to schools. And I would suggest that we need more thinking towards changing the approaches in work place cafeterias, hospital cafeterias -- Columbia Presbyterian Hospital now has a Burger King -- and within restaurants themselves, whether we can make some kind of -- if there is enough data to suggest that we might be able to work with restaurant associations in that and fixing things better.

One thing that was missing from the slide -- I just noticed it this morning when I was going over it -- is that I had a little bullet there for industry partnerships. And I think that we're at the time -- and this has also come up this morning that there is no way that this is going to get very, very much better without partnership with industry who are going to be providing the foods that people are buying. The last overhead.

(Overhead.)

So this is really a -- an -- an initial jump into what could be potential changes in the guidelines. And, number one, "Approaches to avoid excess calories", and I don't have the answer. But clearly some segment of this Committee has to think about it in depth. And this is something I know that probably has been thought about in

depth for a number of years. But we should try to get better.

I think in representing the pyramid itself, there has got to be somewhere on this -- this pyramid or in this area, some picture or some kind of graphics where physical activity is linked with nutrition.

I would think that the data on whole grains may be becoming sufficiently strong as to whether we should consider greater emphasis in this in the guidelines. And another area for consideration -- well, if we have poor implementation of the pyramid by itself or through the population, will it be a plus or a minus to have separate pyramids for different groups, different types of populations; a Hispanic pyramid?

Already I've seen pyramids for pregnant and lactating mothers and whether we want to have sort of branched pyramids. And the question is whether this will lead to more confusion or to better compliance. And I don't have the answer.

I would think that we ought to put some effort on how-tos in addition to and -- not really versus -- but eat more of this group, but how to eat more. What are the -- what kinds of ways can we increase, "Eat more of".

And some suggestions that I just thought of could include messages like, you know, "Pack two different color vegetables in your work lunch or your school lunch", "Carry dry fruits with you as a potential snack", "Buy this or that", so that how-to messages are being a little more specific than, "Eat plenty of." It's how to achieve eating plenty of.

And finally, it's interesting when you look at food packaging and food labels. They are out there for everything. And, you know, you buy -- you buy milk and you buy meat portion -- or meat dishes. And we've got very detailed food labeling. When we buy fruit and vegetables, often they are just out there in the fruit and vegetable bins. And there is no real guidance or instructions like we have with the other food groups. So you can't sort of pick up some kind of strange vegetable and get any idea or inkling of what's in it.

So I -- in a separate survey one of our dieticians did, there was a lot of confusion around Presbyterian Hospital as to when vegetables are packed in these sort of ready-to-eat salads. Were these ever washed or not? Do we have to wash them? What do we have to do to prepare these packages that have no labeling on them? They just come in a

zipper-lock, nylon bag.

So either posters next to fruit stands or some kind of way of helping the public understand the base of the pyramid because, in fact, the packaging and labeling of that area, certainly in terms of fruits and vegetables, is often deficient. And we might consider some guidelines along those directions. And I'll open now for discussion.

DR. LICHTENSTEIN: This is sort of where I was thinking there were more guidelines than there actually were. I'm a little perplexed about why fruits and vegetables and grains -- I mean, I certainly can understand why they were combined. However, I'm wondering if it isn't time to reconsider that. And that's because when we think about fruit and vegetable and grain intake, we're never concerned about grain intake. We are sometimes concerned about whole grains versus refined grains.

But the real issue it seems with some of the data from the United States is the fruit and vegetable intake. And I'm wondering if by separating it, more emphasis and focus can be given on that and then sort of more independent ways of dealing with some of the barriers. And we know there are barriers as far as perishability and as far as cost. But a lot of them we can overcome certainly.

And I'm wondering if another potential consideration for changing is actually separating it out.

DR. DECKELBAUM: Well, I'll leave that for the Committee. I'm not going to make the decision on that. But one thing that you did remind me that I did forget to mention which was in my notes is in terms of thinking of where things belong and joining or separating, the beans and nuts being combined with meat and fish. In a number of people that I've spoken to, it does raise some question marks on how to handle this. It is a bit confusing.

So basically I've found confusion among professionals with that guideline.

DR. GARZA: Meir?

DR. STAMPFER: Can I just follow along that line and try to push you one more step? Suppose there were a guideline that was, as Alice is suggesting, fruits and vegetables with legumes in there. Do you think there would be any reason to have a guideline devoted to carbohydrate?

DR. DECKELBAUM: You mean a specific guideline which is --

DR. GARZA: The cereal or the sugar one.

DR. STAMPFER: I'm asking if you think it would be -- if this guideline were altered to just be fruits and

vegetables and legumes, do you think there is enough importance to adding a separate guideline that would be grains and carbohydrate?

DR. DECKELBAUM: I mean, it already exists.

DR. STAMPFER: Right, if it was split off though.

DR. GARZA: If it was split off, you could keep whole grains --

DR. STAMPFER: Just to push you.

DR. GARZA: -- or just drop whole grains and keep whole fruits and vegetables.

DR. STAMPFER: Yes. What's your opinion?

DR. DECKELBAUM: To be honest, if this were a lipid-related question, I would give you a very definitive opinion. And this -- this being a field that I'm -- I'm looking at right now which is fresh -- see, I'm coming from the outside or I would be willing to consider that question. How is that -- how is that for an answer in Washington?

DR. GARZA: Let me go to Rachel and then we'll go to Alice.

DR. JOHNSON: Well, I just -- you mentioned about adding a physical activity something to the pyramid. And I just wanted to point out that there is a physical activity pyramid that has been developed by some private

organization. I could get my hands on it very quickly. But the Committee may want to take a look at that because that has been done. It's a separate one, but it's just for physical activity.

DR. DECKELBAUM: I don't know if it has to be a separate -- a separate one. But somehow, graphically, physical activity has to be shown as part of this reminder because people are aware, as we've heard, of the pyramid. But the link -- the link with physical activity doesn't appear on the pyramid. And it's just as -- the way I would put it is as much as people have become aware of the pyramid, the reenforcement of the link with physical activity I think almost has to be in the -- in the next guidelines.

DR. LICHTENSTEIN: This is a comment about carbohydrate coming also from a fat person. But I think it may be necessary to have some guidance on carbohydrate because I think, as Richard pointed out, the issue of whole grains and the fiber that's associated with it and some of the other potential nutrients versus the more refined in that, you know, one sort of general one that -- that sort of pushed people in one direction or guided them more in one direction than another is probably appropriate.

DR. DECKELBAUM: Well, I would add, you know, getting back to the complex carbohydrates and fiber, I think we could attempt to strengthen the guidelines relative to those points.

DR. GARZA: Shiriki?

DR. KUMANYIKA: I had a comment about the six to 11 because even though the booklet is footnoted, that the six servings are for people eating a lower amount of calories. The pyramid usually appears without the footnote. And I think there is a lot of confusion about what the range means. The base has the largest range for servings. The others are two to three. And so if you get it wrong, the implications aren't as bad.

But six to 11 -- an older woman asked me once, she said, "I would pass out if I ate all that food." You know, it was the first time that I realized that she was reading the 11 servings as being the upper limit of desirable for her. So I'll just add that to the hopper.

DR. GARZA: All right. Then why don't we break for lunch. We're just about three to five minutes over time. That's not bad.

(Whereupon, at 12:35 p.m., the conference recessed to reconvene at 1:52 p.m., this same day.)

A F T E R N O O N S E S S I O N

1:52 p.m.

DR. GARZA: All right. We're going to move on then to the next outline -- the next guideline. We have Dr. Scott Grundy who is going to take possibly the least controversial of all the guidelines for us. I always tease Scott that the difficult I'll try to do myself, but the impossible we contract out. And so we've turned to Dr. Grundy for the impossible maybe.

DR. GRUNDY: I'm supposed to say something about dietary fat and what was said before and what we might say in the future. And I should start out by saying that over the years, dietary fat has gotten a bad name. And this is because it's thought that it may play a role in development of chronic disease.

And the idea there -- even though the body is able to metabolize fat as efficiently as carbohydrate, there's no doubt about that, the idea that has developed is that over a long period of time, that there may be accumulation of small changes that occur as a result of having a predominant fat over carbohydrate or high percent of fat, the small, incremental changes occurring over time may lead to chronic disease.

And some of the diseases that have been implicated are cardiovascular disease like coronary artery disease and stroke, cancer, diabetes. And many of those are also intertwined with the issue of obesity which is a risk factor for all of those complications.

And then the last chronic disease that might be related in some way to the fat-carbohydrate controversy is osteoporosis.

Now, ideally, as pointed out at the beginning, we want to have science-based recommendations. And it is worth while to answer the question or try to address the question I guess of how do you take the science and turn it into recommendations. And that has been a particular contentious issue for -- for fat.

There are several different scientific lines of evidence like animal models, biochemical studies, epidemiologic data, clinical research studies that include human feeding studies and then finally, clinical trials.

And there is a great deal of emphasis now on using clinical trials for evidence-based guidelines. And that would be nice if we had clinical trials to address all of these issues that are being discussed. But unfortunately, they don't exist in the field of dietary fat or if they do,

they are not definitive.

So in a way, we do hope to bring together different lines of evidence of different types and get some congruence to allow us to make reasonable recommendations even though we don't have definitive clinical trials.

I might just mention a few of the issues that are involved. One of the things that I think must be considered always is the difference between recommendations for individuals and populations. And presumably, the Dietary Guidelines are directed towards individuals. But there certainly are population considerations that come into play that have to be factored in and considered in the recommendation.

Now, another issue with regard to fat is whether we're talking about total fat intake or percentage of fat in the diet. There is no question that high intakes of total fat, as well as other nutrients, can lead to obesity and does. But I think a more difficult question is whether the percentage of fat in the diet, and that is the fat to carbohydrate ratio, has an independent effect on the development of obesity or some of these other chronic diseases.

And then another thing that makes the dietary fat

issue so complicated is diet is extremely heterogeneous. We have saturated fatty acids that range from eight carbons to 18 carbons. Not -- all of the effects of these are not identical. Some of them have been worked out; some haven't. But certainly, saturated fatty acids as a group represent a very important issue. And I think we all recognize that. And at the present time, about 13 percent of calories are consumed as saturates.

Now, in monounsaturates, we also have two types. We have the cis and the trans. The cis oleic acid is the major -- actually, the predominant, single most prevalent fatty acid in the diet. It makes up about 15 percent of the calories. And it also comes from animal fat and vegetable fat.

So that's another area that's been somewhat confusing. Some of the epidemiologic data has implicated monounsaturates in some complications. But a lot of that has come in our population from animal fat. And if it had come from vegetable fat, there might be a different interpretation because it is confounded by the saturated fat association.

Trans fatty acids make up about two to three percent of calories. There is a lot of variation in intake

and there has been more interest in trans fatty acid. And we're going to have to pay attention to those.

And then finally, the polys consist of two kinds: again, the 18/2 linoleic acid which consists of about seven percent of calories and comes mainly from vegetable oils. And then there is the omega 3, like the linolenic acid. 18/3 are also called alpha linolenic acid. Then there are the fish oil fatty acids.

And as all of you know, there are strong views that omega 3 fatty acids may have benefits that are under recognized. And certainly the intake is quite low of those.

Now, let me just say a few words about dietary fat in relation to some of the chronic diseases because this is what makes it so interesting and complicated. With regard to obesity, there are three possible relationships that have been identified.

First of all, and undoubtedly, total fat intake being elevated. That means absolute amount of fat undoubtedly contributes to obesity. That means we are consuming more calories than we should be. But the same thing can be said for carbohydrates. So why single out fat as a target and not target carbohydrates? I'm sure that's going to be one of the major areas of discussion.

Now, with regard to percentage of fat in the diet, one view holds that just having a high percentage of fat stimulates the appetite and may be a drive for over-consumption of total calories. And there is some animal data to support that idea, although evidence in humans is not very strong.

Then there is the other concept which might be called passive hyperphagia where diets that are high in caloric density just leads to sort of unconscious over-consumption of calories because of the high calorie density of fat and because of some of the fat is hidden in the diet. You don't know that you're consuming as many calories.

So that certainly has been shown to be a cause of obesity in animals. But it has been more difficult to demonstrate that that is true in humans. In fact, I think the evidence is not strong. And partly, the studies have not been done to prove or disprove that hypothesis.

Now, if we look for the evidence -- the actual scientific evidence relating dietary fat and obesity, as I mentioned, animal studies provide some evidence in favor of a high percentage of fat leading to obesity. Epidemiologic data though is confused on this point.

Certainly, as populations become more affluent and

move into cities from the -- from the countryside, they -- and more -- they become more sedentary, but their fat intake also goes up. And they do tend to get overweight. And so fat has been implicated. But I think other factors leading to a sedentary lifestyle must be contributing as well. So it's hard to tease out the effects of fat in epidemiologic studies.

Human feeding studies are actually pretty much negative on this question. Certainly, I think it has now been shown that if fat is substituted isocalorically for carbohydrate, there is no weight gain.

Clinical trials are few and are not definitive. So we can't really say from clinical trials that increasing percentage of fat in the diet leads to weight gain. If -- if there are changes, the ones that are -- the trials that are available suggest only small changes in weight, maybe a kilogram or something like that. So there's -- there's not a major effect. And that's sort of been surprising to some people.

So in summary, with regard to obesity, I think the evidence is marginal at best that a high percentage of fat leads to obesity. And we have to also keep in mind that in the national trend, the percentage of fat in the American

diet has been going down, but body weight has not been going down. If anything, it has been increasing.

I think we have to be careful about the low fat recommendation if we're not precise in how we describe low fat relative to carbohydrate.

Now, turning to dietary fat and coronary heart disease or cardiovascular disease, most of the attention has been given to lipids and lipoproteins. And here is where the heterogeneity of fat comes into play.

For example, we know without any doubt that saturated fatty acids as a group raise total cholesterol and LDL cholesterol level. And this is accentuated by dietary cholesterol and a good reason for including dietary cholesterol in the recommendation along with saturated fat. If you include those together, that would target animal fats more than it would just total fat. So I think consideration ought to be given to placing more emphasis on animal fat as they target rather than total fat.

Now, monounsaturated fatty acids with regard to cholesterol are -- they are neutral in a sense. By convention they are neutral. In other words, they have been taken as the baseline at which other fatty acids are judged. So this goes way back to the time first studies with Keys

and Hegsted.

But I think since that time, we've learned that also they are neutral with regard to not only total cholesterol, but LDL, HDL and triglycerides. So they do provide a good baseline in which to judge the effects of other nutrients.

Now, polyunsaturated fatty acids have been claimed to be LDL lowering. They have also been shown to lower HDL a little bit and even VLDL a little bit. So I guess the question is whether polyunsaturates are essentially neutral or slightly cholesterol lowering. That's not been absolutely resolved. And I think as time has gone on, most investigators in this field are pretty much willing now to include polys and monos under one category of saturated fatty acids and say they have pretty much the same effects.

For trans fatty acids, recent studies have indicated quite clearly that they raise LDL cholesterol, not unlike saturated fatty acids. And thus, this brings attention to hydrogenated oils and whether they are entirely safe. And, therefore, it's likely that we're going to have to take that up and perhaps consider a hydrogenated oil recommendation or certainly strongly hydrogenated fats.

Now, I think the real issue that we have to deal

with in these guidelines is whether -- or how we're going to position unsaturated fats versus carbohydrates. With LDL cholesterol, there is essentially no difference. High carbohydrate does tend to raise triglycerides and lower HDL cholesterol, although Richard Deckelbaum said some studies suggest that starchy foods may not raise triglycerides and lower HDL as much. It's been -- the idea has been around for quite a while.

But the -- you know, many large studies have not been carried out that really document for certain whether there is a difference between the different types of carbohydrates. And we need to look carefully at the literature on that question.

For the scientific evidence relating dietary fat to lipoproteins, we can say from animal studies that low saturated fat/high poly diets lower cholesterol levels from epidemiologic studies, this is where there is confusion and some controversy.

If you look at the Far East where people typically consume low fat diets, there is a low risk of coronary heart disease. If you look at the Mediterranean part of the world where people have traditionally consumed a lot of monounsaturates in the form of olive oil, they also have

just as low rates of coronary heart disease. So it's hard to say on the basis of epidemiologic studies that a low fat diet is preferred over a diet high in unsaturated fat.

Unfortunately, we don't have good solid data from clinical trials that make this comparison. And, therefore, the evidence is available from clinical trials. Most of the studies involve saturates versus polyunsaturates. And there the results are promising that unsaturated fats are protective when substituted for saturated fatty acids.

However, some years -- a long time ago, actually, now -- a definitive, diet hard trial was vetoed by NHLBI and we had drug trials instead because they offered the opportunity to provide a more definitive, immediate answer to the cholesterol hypothesis. And these drug trials have been extremely valuable. They have documented without any doubt that cholesterol lowering prevents coronary heart disease. That is one solid fact we have now.

So I think what we have to do is synthesize that piece of information with clinical studies and epidemiologic studies showing that saturated fatty acids raise cholesterol levels. And linking that with the clinical trials, we can solidify our recommendation for reducing intake of saturated fatty acids.

So there is strong congruent evidence against saturated fatty acids and cholesterol in our recommendations. The no definitive evidence though in unsaturated fat versus carbohydrate specifically related to the coronary heart disease issue.

Well, what are some of the unresolved issues? I might just through out some questions for us to discuss. Has fat been singled out inappropriately as the most important target for reduction? I think we have to reconsider that question. And also, at the same time, has carbohydrate been exonerated at the expense of fats, particularly the right kind of fat. That, too, must be discussed.

Should we allow more flexibility in -- or increased intake of unsaturated oils? That I think deserves more consideration. And another question is, "Should animal fats be targeted more specifically for reduction rather than total fat?". And finally, how are we going to relate micronutrient intake as a whole, both carbohydrate and fat total energy intake?

Now, just a couple of comments about the pyramid. As I looked at it, I thought there might be some changes that might be considered. The carbohydrate base at the

bottom I think is rather large. And like Shiriki said, if people are going to eat 11 servings a day, they're going to take in a lot of carbohydrate as well as calories. And that opens the door to over-consumption of carbohydrates. So that needs to be looked at.

The milk, yogurt, cheese group, I wonder if we might not indicate more specifically low fat dairy products. I'm not opposed to dairy products by any means. But I think they are a wonderful source of protein and calcium and so forth. But the low fat variety might receive increased emphasis.

I also question whether the -- putting the meat, poultry, fish, beans and nuts and oils together in one category was appropriate. And maybe the beans ought to go to the base and the nuts and the oils in a different category with the unsaturated oils.

Where it's mentioned at the top to limit fats and oils, I'm not certain that lumping those two together is the best idea. And perhaps they should be separated and the fats ought to be put -- the animal fats with the -- with the dairy products or something like that to kind of separate out saturated and unsaturated fatty acids. Thank you.

DR. GARZA: Thank you, Scott, for that. Are there

any questions?

DR. LICHTENSTEIN: I have a comment. One is that I think something that is also going to have to be considered in addition to the hydrogenated fat issue is some of these new fats that are coming out that are triglycerides. There are very short chains and then very chains some of which gets absorbed and not.

And right now, somebody told me they are about five calories per gram. But they're going to be labeled as fat. And I think if they're going to be in the food supply -- and I guess they're starting to be introduced as something that we might also have to take into consideration.

I have another comment. I think the point of total fat -- unsaturated fat is important because looking at some data that's available and then going over some data that Dr. Kennedy generated, there has been a decrease in the percent of calories from fat in the diet. And it has only been a proportional decrease in the percent of calories from saturated fat.

And I think that the -- sort of one of the most basic tenants that most nutritionists agree on is that saturated fat increases cholesterol levels. And I think in

a sense by not seeing a disproportionate decrease in saturated fat over the years, we sort of have not quite gotten the message across as we might have.

And I think sometimes people only hear total fat and they don't really hear that saturated fat is sort of more important.

DR. WEINSIER: Two questions. If I understand your concern correctly regarding the base of the pyramid, the grains -- the present grain section, are you suggesting that it is the number of servings -- recommended -- daily servings recommended is the issue with regard to excess energy intake or that grains and cereals should not represent the base of the pyramid because it suggests that a large intake of those carbohydrates is good and you think it could be --

DR. GRUNDY: Both I would say.

DR. WEINSIER: -- result in excess calories?

DR. GRUNDY: Yes, I am inclined to think both. I mean, I think grains are -- are good as for the reasons mentioned. But the -- some of the other things included in there, bread, pasta, rice, a lot of those high carbohydrate, starchy foods, you know, to say that they are the foundation of the diet was of some concern to me.

I think they ought to be integrated in more with the -- I'm not quite sure I know how to do this yet. But they do provide -- it looks like half the diet almost is made of these components which is -- I'm not sure that that's the way -- the message we want to give.

DR. WEINSIER: So if I understand you correctly, if -- if a larger part of the bread/cereal/rice group were -- what -- unrefined --

DR. GRUNDY: Again, say --

DR. WEINSIER: -- whole grain --

DR. GRUNDY: -- if -- let's say, if -- I think Richard's suggestion was put the fruits and the vegetables and the fiber-rich grains together, right?

DR. DECKELBAUM: That was Meir's question.

DR. GRUNDY: Okay. Well --

DR. DECKELBAUM: I didn't answer it.

DR. GRUNDY: Anyway, something like that. And then the -- the high carbohydrate foods and the unsaturated oils, you know, might be sort of on parallel or something.

DR. GARZA: Why don't we try to clear up an important point. And that is that generally, we think of the pyramid and the Dietary Guidelines as two very different -- we hope they're congruent obviously --

DR. GRUNDY: Right.

DR. GARZA: -- but they are different tools. The pyramid follows from the Dietary Guidelines, not the converse.

DR. GRUNDY: Right.

DR. GARZA: So that it's -- the pyramid is based on the recommendations. And I don't -- we can -- we can make suggestions as to how the pyramid might be more congruent with the advice we may give. But I would caution us not to take the pyramid as it is presently constructed as the guidelines -- the same as the Dietary Guidelines. Is that -- is that fair? I'm turning to the government now. It should reflect the guidelines.

DR. GRUNDY: Yes, it should.

DR. GARZA: That's right. It has to.

DR. GRUNDY: And it conveys a message --

DR. GARZA: It has to reflect --

DR. GRUNDY: Yes.

DR. GARZA: -- I mean, the pyramid is based on the guidelines, not the converse.

DR. GRUNDY: And it conveys a strong message. Yes, I think that's right. Yes.Dietary Guidelines

DR. GARZA: We'll have to have another committee.

DR. LICHTENSTEIN: Which is the chicken and which is the egg?

DR. GARZA: No, it's very clear. The egg are the Dietary Guidelines. And the chicken is the pyramid.

DR. WEINSIER: Or the other way around. Bert, could I -- or just to be sure I'm clear because I'm not sure what you're suggesting. Are you suggesting that there is risk of increased -- of excess of energy intake and obesity in the population that bases their diet on grains and cereals?

DR. GRUNDY: No. I'm suggesting that there is danger of obesity, that fails to target both fat and carbohydrate in -- for reduction and puts all the emphasis on fat for reduction in intake in hope that that will achieve a reduction in -- in body weight in the population. That's my main concern.

DR. GARZA: We'll go down here. Meir?

DR. STAMPFER: Yes. I thought that was a great overview and I agree in principle as well as almost all the details. Just one detail to ask you about. Do you think that given the effect of trans on HDL, that trans fatty acids lower HDL as well as raising LDL, do you think that that merits some special distinction above and beyond

saturated fat?

DR. GRUNDY: Well -- you mean that they're worse than saturated fat? I -- I don't know. I think that's probably -- you know, that's the view of some people. It's a question of just how bad is bad. I mean, I -- I'm for reducing the intake of trans.

And I think the one thing though is the LDL in terms of evidence and scientific evidence is stronger than for HDL in terms of a direct relation to atherosclerosis. HDL is linked to atherosclerosis. But we don't know all the mechanisms by which that occurs. So I would give priority to its LDL effects. That's all I would say.

DR. DECKELBAUM: One general comment first is that what we're hearing from Scott and a number of us have said is that, you know, just because we have a food group doesn't mean it's all good or it's all bad. And I think we're going to have to think about, you know, the good carbohydrates and also the bad ones beyond just sugar, you know, which is in the current guidelines. And we're hearing the same for fat.

And, Scott, I would ask you if -- you know, with the recent awareness and marketing now that's available, fat substitutes, is there -- do you see it is the responsibility of this Committee to advise on fat substitutes and where

they stand? Because certainly by the year 2000, they will probably be more -- more popular among certain segments of the public.

DR. GRUNDY: Well, I think fat substitutes are a direct result of the recommendation to reduce the fat, lower percentage of fat in the diet. And I think this is an inevitable result because people like to eat fat. And so what they're doing is they are putting out a product that tastes like fat.

It gives fat characteristics to the food. But, in fact, you're eating a fat-free food product. And, you know, I think that -- personally, I don't think that that's the right route to go down. I think that's the solution to the fat problem in the diet. But, you know, I do think that some comment has to be made about those.

DR. DECKELBAUM: I'll just one other question. I know we're going to be hearing about this later today. But just focusing on fat, do you think that there is a need to reassess fat intake in children over the age of two different from the rest of the population?

DR. GRUNDY: No, I don't think so. I mean, that's been discussed forever. And I think most people who have looked at that very carefully feel that over the age of two,

that the diet for children and adults could be the same basically.

DR. GARZA: Johanna?

DR. DWYER: Scott, could you -- could you speak to the whole issue of the cholesterol remnants and dietary cholesterol? Do you think that that should be left in the guidelines as they are or what?

DR. GARZA: Well, you know, dietary cholesterol is -- raises LDL cholesterol. And what people don't realize, some people say, "Well, it doesn't raise it very much." What is not well recognized is the impact of small changes in serum cholesterol over a lifetime. And the -- there is growing evidence that if you change LDL cholesterol ten mg/dl over a lifetime, you know, that's something like a 25 percent change in risk for coronary heart disease.

So even though dietary cholesterol, the difference between high and low intake may only affect LDL cholesterol six to eight mg/dl, when spread over a lifetime, that has a significant impact. So I've come to the conclusion that we would be wise to keep a low cholesterol intake.

DR. DWYER: Thank you. I have -- I have one last -- do you think it would be better to choose a diet low in saturated fat and cholesterol? In other words, reverse --

what it says now, and you mentioned that the low in fact you didn't think --

DR. GRUNDY: I'm not quite sure. I think that has to be discussed. Low in saturated fat and cholesterol I can buy. Whether you say choose a diet low in fat, I think that issue has to be discussed because I think that is where the confusion comes in and what the implications of say that are, need to be discussed.

DR. DWYER: I think it's important to get some consumer information on that, too; how consumers interpret those two elements.

DR. GRUNDY: I'm not going to say we ought to have a diet high in fat. But to say low in fat, what does that mean? That's another --

DR. GARZA: You -- you preempted the question. I think it's important to have your view or at least how you see the literature right now, Scott, on that issue. Is there enough new data that would suggest that, in fact, we don't have to worry about the total amount of fat in the diet and that we should turn our attention only to the types of fat or are the only choices a low fat or a high fat diet? Is there such thing as an ideal range --

DR. GRUNDY: Right.

DR. GARZA: -- that is different from 30 percent?

DR. GRUNDY: Well, you know, I think 30 percent is a very reasonable compromise and it's one that we've used for a while. But I think if you say you don't have to worry about total fat, I'm concerned about that first message that a high total consumption of fat does provide excess calories.

That's -- and the same way with you can't have a high total carbohydrate because that also leads to a high -- could lead to a high consumption of carbohydrates. So I think the wording is important, how you position those two.

DR. GARZA: Thank you. And Dr. Johnson is going to take another easy one on sugars. Thank you.

DR. JOHNSON: Okay. Thanks very much. And before I begin, I would like to thank Dr. Bowman very much for the literature review that she provided me, as well as Dr. Joanne Guthrie who I saw here earlier. I'm not sure she's here. She is with the Center for Food Science and Applied Nutrition from FDA, and was very gracious in providing me some preliminary data that she had on Americans' sugar consumption. Next slide.

(Slide.)

I thought it would be good to review the current

guideline as it is in the '95 bulletin which is to choose a diet moderate in sugars. And the text states that "Sugars should be used in moderation by most healthy people and sparingly by people with low energy needs." Next slide.

(Slide.)

I think as we deliberate the sugar guideline, we need to be very clear on how the Committee will define sugar. There is a number of definitions out there about what sugar actually is.

In the 1997 World Health Organization report on carbohydrates and human nutrition, they define sugar -- they say that sugars are conventionally used to describe the mono and disaccharides. The terms, "sugar", "refined sugar", and "added sugar", are used to describe purified sucrose.

In the United Kingdom, the Department of Health uses the terms, "extrinsic" versus "intrinsic" sugars, to differentiate between naturally occurring sugars and those which are added to foods.

And the American Dietetic Association's position statement on nutritive sweeteners, they defined nutritive sweeteners to include refined sugars, high fructose corn syrup, crystalline fructose, glucose, dextrose, corn sweeteners, honey, lactose, maltose, various sugars, invert

sugars and concentrated fruit juice.

So as you can see, there is a number of definitions out there about what a sugar is. And in reading the '95 -- the text to the '95 guidelines, I'm not sure that it's clear how the Dietary Guidelines actually define sugar. And I think that's something the Committee needs to think about. Okay. Next slide.

(Slide.)

So how much added sugars are Americans actually eating? And these data come from the USDA continuing survey of food intakes of individuals conducted from 1994 to 1996. In the USDA database, they currently define "added sugars" as, "All sugars used as ingredients in processed and prepared foods such as breads, cakes, candies, soft drinks, jams and ice cream, as well as sugars eaten separately or added to foods at the table."

Note that sugars naturally present in foods such as fructose in fruit and lactose in milk are not included in this definition.

And I've shown here some examples of typical foods within various food categories that contain added sugars. For example, in the grain group, it would be sweetened, ready-to-eat cereal. In the fruit group, it would be fruit

cocktail in syrup. In the milk and dairy group, it would be ice cream. Okay. Next slide, please.

(Slide.)

Oh, this is where I wanted to just show you something here. Okay. This looks at total added sugar consumption in grams for the U.S. population. The total population reported consumption of 82 grams of sugar or 16 percent of total calories. Sugar consumption clearly peaks in adolescence with adolescent boys consuming 142 grams of sugar, or 20 percent of total calorie intake.

(Slide.)

The most important source of added sugars was regular calorie sodas or soft drinks which by themselves contributed one-third of all added sugars. Sugars and sweets were second in importance at 16 percent of added sugars, and sweetened grains were third, contributing 13 percent of added sugars.

I wasn't quite ready. Regular calorie fruit-aids and drinks were also important sources of added sugars. And together, these four food categories were the source of almost three-fourths of total added sugar intake. Okay. Thanks.

(Slide.)

Next I wanted to review some key issues that I think the Committee needs to consider related to sugar. One is sugar and overall diet quality. Some researchers have reported an inverse relationship between added sugars and fats when the two are presented as percentages of total energy intake in the diet. This has been called the fat-sugar seesaw. And investigators have implied that dietary guidelines which recommend the reduction of both sugar as well as fat are mutually incompatible.

The opposing view which is also somewhat widely in the literature is that added sugar actually serves as a vehicle for fat by making fatty foods more palatable. In a study published in The Lancet by Emmett and Heaton, elevated consumption of added sucrose in the U.K. was associated with a higher consumption of fat and a lower consumption of fruit. Next slide.

(Slide.)

Recently, researchers have made links between rising added sugar intake from soda and declining calcium intake. And I will also be addressing this issue later this afternoon when I talk about Dietary Guidelines for children. Soft drink consumption has increased dramatically in the

past decade while consumption of milk and milk products has declined.

Recent changes in the DRIs indicate that Americans should be consuming more calcium, thus the ongoing tendency for calcium-rich beverages to be replaced by beverages high in added sugar is a source of concern. And, again, in my talk later on this afternoon, I will be actually showing you some figures about these. Okay. Next slide.

(Slide.)

It's been suggested that sugar consumption leads to hyperactivity in children. However, an extensive review of the literature which came out in late '95 -- so I wasn't sure if the last committee had -- had reviewed it. I didn't think so since those guidelines were published in '95.

This review in this area concluded that there is little objective evidence that sugar has any significant influence on either behavior or cognitive performance in children. Next slide.

(Slide.)

Controversy surrounds the extent to which sugars and starch promote obesity. According to the 1997 WHO report, there is no direct evidence to implicate either of these groups of carbohydrates in the etiology of obesity.

Next slide.

(Slide.)

Nevertheless, in 1997 -- and Dr. Deckelbaum referred to this study earlier -- Dennison, et al. reported in Pediatrics that obesity was more common in children drinking more than 12 ounces of juice compared with those drinking less juice.

Note that the children consuming excess fruit juice also had a greater percentage of total calories from sugar. They ate twice as much fructose and 80 percent more glucose than children drinking less juice.

And the authors of this paper concluded that parents and caretakers should limit young children's consumption of fruit juice to less than 12 ounces per day. Next slide.

(Slide.)

Dietary sugars are one determinant in the development of dental caries. However, many researchers recently have concluded that they may not be the most important factor in the etiology of the disease. And it has been recommended that a varied diet, oral hygiene and fluoride use is the best preventative approach. Next slide.

(Slide.)

Recently, a prospective cohort study reported an

increased risk of non-insulin dependent diabetes mellitus associated with diets with a high glycemic load and low cereal fiber intake. The authors suggested that grains should be consumed in a, and I quote, "minimally refined form to reduce the incidence of NIDDM."

I think these results need to be replicated as they may be subject to differential under-reporting of foods high in sugar. But we certainly need to consider them.

The World Health Organization did recommend increased intakes of carbohydrate-containing foods with low glycemic intakes for the prevention of NIDDM. Next slide.

(Slide.)

And this has also been aluded to earlier today. In 1996, Hudgins, et al. reported in JCI that the dietary substitution of carbohydrate for fat stimulated fatty acid synthesis and the plasma accumulation of palmitate-enriched linoleic-deficient triglycerides. And they proposed that these changes may have the potential for adverse effects on the cardiovascular system. Next slide.

(Slide.)

More recently -- more recently, this same group of investigators reported that this increase in fatty acid synthesis was reduced by the substitution of dietary starch

for sugar with potential beneficial effects on cardiovascular health.

They concluded that moderately low fat diets which are high in complex carbohydrates rather than simple sugars may be less atherogenic. And this has been suggested also in a recent -- in recent large-scale epidemiological trials in both men and women. Next slide.

(Slide.)

It's been hypothesized that diets high in sugars increase serum levels of glucose, insulin and triglycerides, which have been associated with an increased risk of colon cancer. I actually found three studies. I came across another one after I made this slide.

But in population-based, case control studies, diets high in refined sugar have been associated with increased risk of colon cancer. The two studies up here, one was conducted in southern Italy and the other was done in a large cohort of Iowa women. Next slide.

(Slide.)

Before closing, I think it's important to remember that sugars play an important role in the diet, from the both the functionality and the food palatability standpoint. Drewnowski urges that dietary intervention strategies aimed

at improving overall diet quality need to also consider the sensory pleasure response to food. Next slide.

(Slide.)

In closing, I think the Committee needs to consider these additions to the science base in our deliberations regarding the guideline, "Choose a moderate diet and sugar." I think we have much better data now on the amount and sources of added sugar in the U.S. -- in U.S. diets.

I think we need to look at this inverse relationship that seems to be occurring between sugar and calcium intakes as related to increased soda consumption and decreased milk and dairy product consumption, particularly in children. We need to think about this relationship between juice and obesity in preschool children.

In terms of the glycemic index, I think we need to think about whether eating carbohydrates in a less refined form actually leads to the prevention of NIDDM. We need to ask whether the replacement of sugars with complex carbohydrates leads to a more favorable lipid profile.

And lastly, I think we need to consider that there is some preliminary, not extensive epidemiological data out there relating sugar to colon cancer incidence. Thank you.

DR. GARZA: Okay. Any questions? Johanna?

DR. DWYER: Rachel, could you give me your read on the notion of added sugar? It's always been unsettling to me. It seemed more like a how-to than sort of a -- the cells don't know the difference, do they?

DR. JOHNSON: Well, I think -- I --

DR. DWYER: The teeth show it.

DR. JOHNSON: To me, I think -- you know, when we look at added sugar, I think added sugar that's added in the preparation to food is different from -- maybe not different metabolically, but different in the sense of nutrient density.

For example, when you think about fructose in fruit or lactose in milk and dairy products and how does that differ from added sucrose in soda, for example -- I mean, I think we need to think about the nutrient density or is sugar a sugar? I mean, I don't have an answer. That's why I raised the question about the multiple definitions that are out there for sugar.

DR. DECKELBAUM: When the initial articles came out on the association of high fat and some cancers, they were done -- I think there were case control studies. And then later I think in cohort studies, this claim was

substantially weakened. So are there cohort analyses yet with sugar and colon cancer?

DR. JOHNSON: I didn't -- I didn't find any. In the literature review, we came across those three case control studies. But I didn't see -- I don't know if Meir is familiar any.

DR. STAMPFER: The Iowa women's group.

DR. DECKELBAUM: Sorry?

DR. STAMPFER: The Iowa women's --

DR. GARZA: Use the mike. Otherwise, they can't hear you.

DR. STAMPFER: The Iowa women's prospective.

DR. DECKELBAUM: That was cohort study.

DR. STAMPFER: Right.

DR. GRUNDY: I think the idea that sugar is the drive for fat intake is a very good idea. I mean, many products -- sweet, fat, rich products go together, right? And, you know, I think that that's a really neat idea.

But the other question is in the difference between sugar and complex carbohydrates in terms of their metabolic effects, do you think that those have been adequately resolved? Because once they're absorbed, they both become glucose in the body.

DR. JOHNSON: Right.

DR. GRUNDY: So --

DR. JOHNSON: I'm not a diabetologist. You know, some people say to me, "Well, the so-called glycemic index." I mean, does the body recognize -- is that what you're asking, "Does the body recognize" --

DR. GRUNDY: Well, it's partly that and partly what Richard Deckelbaum raised this morning about if it's consumed in the form of starch, it doesn't raise triglycerides as much and -- and -- or lower HDL. So, you know, what is the mechanism? That's obviously somehow related to glycemic index I guess.

DR. KUMANYIKA: But I think that might also be related to Johanna's question in terms of a difference because of the matrix differences in terms of added sugar versus --

DR. STAMPFER: That was a very nice review. Just a couple of quick comments. One is that our group has followed up on the relation between glycemic index and diabetes. We see it now also in men. And we've taken it -- the next step to look at risk of coronary disease. And there, also, we see a relation that individuals with high glycemic load diet have a higher risk of coronary disease.

On -- I don't know that that's ready for a guideline. But it is further suggestive evidence that maybe the over-emphasis on carbohydrate as being all good, it may be misplaced.

But I wanted to ask you, at the end when you talked about, you know, where -- issues to consider, I was getting the sense that you were considering sort of broadening the scope of the sugar guideline to include carbohydrate quality. Do you think that there is sufficient data to think about that?

DR. JOHNSON: I -- I guess I'm -- you know, I'm thinking about everything we've said about grains and now what we're saying about sugars. I really thought more about the sugar guideline and whether or not -- I think a lot of the controversy, at least what I was hearing, was, you know, do we need a sugar guideline.

And, well, we're not here for consensus today. But my sense after reviewing the literature pretty extensively was I think there is enough information out there that there are aspects of sugar intake that we need to do -- need to consider moderation.

DR. GARZA: And that's very different from the discussion last year when the committee came very close to

just jetisying the sugar guideline because it was -- the -- the preponderance of evidence at that time was seen as coming from caries and that aside from caries, it was difficult to see any other metabolic outcomes that were of significance.

So that if, indeed, the database has changed, as Rachel suggests, then there is going to be a lot of room for discussion actually.

DR. DECKELBAUM: I think what -- what we're really getting at with sugars and these different carbohydrates and glycemic indexes is -- is really rates of absorption and how these differences in absorption affect, you know, other responses -- endocrine responses, insulin, etcetera -- because the bottom line is in terms of the glucose carbohydrates, they're all glucose once they get out of the intestine.

And the other ones, like fructose and galactose, you know, eventually when they're going to be used, go -- go through -- or many of them, you know, they go through glucose pathways. So we're really talking about the effects of how sugars are delivered to the gut and how they are released by the gut.

DR. GARZA: Somebody help me. I'm going to go

back many years into my memory banks. Whatever happened to the body of literature that suggested that, in fact, glycemic indexes or rates of absorption influence not only the insulin axis, but also things like epinephrine and a whole host of other hormones. Is that -- has that never been followed up, those of you that follow this area more closely than I?

DR. DWYER: Isn't that what the metabolic syndrome is?

DR. GARZA: Well, that was -- at one point, that's what it was called. Would any of you like to comment on that or not?

DR. GRUNDY: Well, I think once -- if you have a rapid influx of glucose, that elicits a lot of hormonal encounter regulatory responses. I mean, that's the whole idea, you're right, of the glycemic index.

You know, I've also heard people say that when sugars are mixed in with foods, that blocks the glycemic index, too. You know, I don't know exactly where that stands. But --

DR. LICHTENSTEIN: I've never been too clear on glycemic index. But what about something like apples versus apple juice? In neither case you have added carbohydrate,

but the matrix is different. Is that something to be considered?

DR. JOHNSON: Whole foods versus process foods?

DR. LICHTENSTEIN: Well, yes. If that -- or you just squeeze the juice out of an apple.

DR. JOHNSON: Right.

DR. GRUNDY: Yes. There's no doubt the rate of absorption would differ. If you eat apples, it would be much slower in absorption than if you just eat -- drink apple juice.

DR. LICHTENSTEIN: Now, what happens if you drank the apple juice with whole wheat bread?

DR. GRUNDY: Well, that's what I was saying, that it may block the effect to some extent. Yes.

DR. GARZA: Okay. Well, and we thought this one was going to be the simple one.

DR. JOHNSON: Yes, me, too.

DR. GARZA: Okay. Well, we're going to go now to -- to one that -- that has made the Wall Street Journal, Science all in the last month or so. So Shiriki will walk us through the sodium guideline.

DR. KUMANYIKA: Well, I never thought this was going to be easy. In fact, I volunteered for it because I

knew I was the only person probably crazy enough to volunteer for this one. And I figured I would keep you from having to draft someone.

I am actually very interested in this topic. So I -- I hope that the Committee is up to the sodium guideline this year. I'll just go --

(Laughter.)

-- I'll go through these overheads I've prepared. What I did was to go back to the wording and the statements and the guidelines from '85 forward. The '80 guideline is similar to '85. And I'll point out the changes in wording and where I think the emphasis has evolved, and then talk about the issues related to considering the guideline for revision.

(Overhead.)

In '85, it was -- listed six of the seven guidelines -- listed. And the points made in the text are shown here, that sodium is -- and salt both warrant use for consumer recognition I think; pervasive in foods and beverages. Most Americans eat more salt than is needed. "The major hazard", as the way it was stated in '85, "is related to high blood pressure which affects" -- in that time -- "one in four adults."

Other factors also affect high blood pressure, especially obesity. High blood pressure is rare in populations with low sodium intakes, the epidemiological evidence. And then from trials, severe sodium restriction usually reduces but may not normalize blood pressure; that we can't predict the predisposition. But if we could identify people who are prone to high blood pressure before they get it, then low sodium diets might help to prevent it.

And then I found under the variety guideline, I happened to notice when I went back through a comment that salt and sugar should not be added to babies' food. So it actually was mentioned in a totally different place in that guideline in terms of what would you add to infant food.

So the key points here is that this was almost a hypertension guideline. The motivation was related to hypertension and the evidence for hypertension was listed in support of the guideline. And that's been part of the issue.

And the terms used in the first case were fairly extreme; that this is the major hazard; that a severe restriction which might imply people going down to 500 mg per day or something, however that's interpreted. Next please.

(Slide.)

In 1990, it was listed in the same position, six of seven. And the wording changed. The first wording was avoid too much sodium. Now, it's use salt and sodium only in moderation. One in three adults have high blood pressure. If they restrict their salt and sodium, usually their blood pressure will fall. This is a little bit less extreme than the statement in the first one about severe sodium restriction and the prevalence of hypertension has increased. So more adults in the population are affected.

Other factors, this was -- the statements that continued I didn't repeat. But the wording was slightly changed here. More factors affecting blood pressure: heredity, besides obesity which was mentioned before; an excessive alcohol intake also mentioned.

And these are mentioned to -- with the sense that, yes, salt is important, but we're not saying it's the only thing that causes high blood pressure because a lot of this is somewhat defensive about arguments about why you shouldn't lower salt. Well, we know it's not the only thing, but it is related.

High blood pressure is less common -- this was restated a little bit -- in populations with low intakes

compared to populations with high salt diets. And, again, the predisposition can't be predicted. But now it's become wise for people -- for most people to eat less sodium. So this is less conservative towards a general population.

It has always been clearly relating to hypertensives. And this 1990 guideline makes a generous statement about the population, "Most people should eat less sodium because they don't need that much", and that some of those who would be susceptible to a blood pressure rise will benefit if they lower their salt intake.

And now comes 1995 --

(Slide.)

-- when there was along with sugar, there was an attempt to reduce the number of guidelines to five or four in 1995. And this was one on the hit list along with sugar. "Choose a diet moderate in salt and sodium." The only change in the wording there was because we had gotten into the choose a diet, so why not be uniform and change it from, "Use salt and sodium only in moderation", to, "Choose a diet moderate in salt and sodium."

This time the statement that was added was to point out that there is, indeed, a physiological relationship between salt -- sodium and blood pressure and

body fluids. And that didn't seem to have actually been mentioned in any of the prior booklets. So to acknowledge that this relationship is there and now stronger, most evidence suggests that many people at risk reduce their chance -- this should say chance of developing it by consuming less salt or sodium.

The list of other factors affecting blood pressure has grown. And this guideline was seen as a way to pull in a lot of the other recommendations and show the kind of interdigitation of the different guidelines. So body weight, and then fruits and vegetables was a kind of cross reference to the fruit and vegetable guideline. Potassium in pointing out that fruits and vegetables carry potassium.

Physical activity, because of the weight issue, and alcohol consumption. So you almost have all the other guidelines triggered. The fat ones aren't mentioned directly as other factors affecting blood pressure.

Added in 1995 was a reference to the fact that high salt intake may increase excretion of calcium and, therefore, may increase the need for calcium. This clearly was an attempt to get this guideline away from being a high blood pressure recommendation to a dietary recommendation and talk about possible benefits of reducing salt in a diet.

And that's mentioned in the Committee's report.

This was the -- there was a lot of question about should we try to quantify in 1995. And this was the way it was quantified. A level of sodium intake was not recommended directly. But there was a statement referring to the level on the nutrition facts label.

So indirectly, 2,400 mg is recommended as the upper limit, but it's recommended by referring to prior statements in the nutrition facts guideline. And that, I think, avoided because there wasn't enough -- this Committee last time didn't have the wherewithal to review enough evidence to develop a level to recommend, but felt comfortable tying on to one that was already recommended.

"Consuming less salt is not harmful", can be recommended for the healthy, normal adult. Again, the guidelines are supposed to be directed at healthy, normal people; not people who are under medical care.

So to say that salt reduction is important for healthy, normal adults becomes important because most of the people who are opponents of this guideline acknowledge that it makes a difference for people with high blood pressure, but they do not acknowledge that it is something to be recommended to healthy, normal adults. Next slide.

(Slide.)

Also, for background, I thought I would mention that in the sodium RDA, if you will, in the RDA book, the ninth edition, there were the estimated, safe and adequate daily dietary intake ranges for sodium intake in the ninth edition which were 1,100 to 3,300 mg per day for adults. There were also ranges given for children and adolescence.

Those disappeared from the tenth edition. And the only statement that's made about sodium intake in the tenth edition is that the physiological need with a fudge factor and so forth is around 500 mg per day. And there are comments made about exceptional circumstances and pregnant women I believe. But there is not a recommended intake given. It just says that everybody's needs can be met under normal circumstances with 500 mg per day.

The food guide pyramid has never embraced the sodium guideline. It is probably in the pamphlets, but sodium is not -- the little sprinkles are fat -- are sugar at the top. The sodium is not captured in the graphic which has always been an issue for the pyramid because it doesn't include the sodium guideline.

And I think in the dietary guidance literature, sodium has always been hard to fit into the dietary

recommendations. When you adjust everything else, sodium intake was becoming limiting because of the amount in grain products and so forth. Next, please.

(Slide.)

Okay. So going through a version of the Garza e-mail, should you retain, revise -- what revisions, right? Retain -- and these are questions now and then I will go through some quick answers to these questions. "Was the original evidence sound" -- "supporting the guidelines sufficiently sound?", I think is a question that has to be asked when you retain a guideline or, "Has new evidence reversed the old evidence?".

And I mention that because of all the publicity and controversy about the sodium guideline. I think the Committee has to address these questions even if it's carried over without any change in wording.

"If revisions are to be considered, have any of the basic principles changed?" I just went through these statements about sodium and regulation of body fluids and some of the general case that's built, "And, if so, how?". "Should different people be targeted and who should they be?" "And do we have any new evidence that some people should be targeted or excluded from the recommendation?"

"Do we have any evidence about salt sensitivity and how to identify those people?"

"Then should the recommended intake level be changed?" "Is 2,400 right as an upper limit" and so forth. "And should the means for following the advice change?" And that relates to food supply changes and actually where the sodium is. Can I have the next one, Catherine?

(Slide.)

So the first question, "Was the original evidence supporting the guidelines sufficiently sound?", I, too, got a big printout from Shanthy for the new literature review and I looked through it. I saw -- I mean, I -- there's -- there's new evidence -- it depends on the way you read it, and I'll get to that.

But there is one new study that was not included because the results weren't public, a clinical trial involving a large number of overweight adults with the trials of hypertension prevention II in which I was personally involved. And that study more or less confirmed the results of TOHPI showing that people with high normal blood pressure, in this case, overweight individuals with high normal blood pressure, had a small but statistically significant decrease in the likelihood of developing

hypertension over a 36 to 48 month follow-up period.

So that -- the first trial was in normal -- a mixture of normal weight and high weight people. And this TOHPII was in a high weight group. And some had the sodium intake combined with weight loss and some had it alone. The point being that the effect was there. It's small and it's -- this -- effects with sodium are always small enough to keep a lot of people arguing for a long time. So there was not a dramatic effect there.

And if you believe in the sodium hypothesis, you think that was a positive result. And if you don't believe in it, you will find a way to say it's a negative result. And we're going to have to look at that evidence.

And then there -- the most recent review from the National Heart, Lung and Blood Institute, the Joint National Commission on Detection, Evaluation and Treatment of High Blood Pressure reaffirms the importance of sodium reduction as a part of blood pressure reduction and prevention. And I didn't have a chance to look for the U.K. guidelines, but I believe there is a recent guideline also from the U.K. And I need to check on that.

So if you look for evidence saying that this is sound and studies are coming out, there are also meta-

analyses, you can find them. But you can also find meta-analyses and so forth. And there is a lot of dependence on meta-analyses now suggesting that you don't find the effect or you don't applicability to healthy people.

There is also -- there have also been a few studies published that suggests that reducing sodium increases mortality, either all cause or cardiovascular. They are studies that can be reviewed both ways based on HANES data or based on other populations, none designed to look at the question, but reported and argued on both sides. That's the Alderman -- Alderman papers.

And then I mentioned TOHPII demonstrating the reduction in high blood pressure. And there have been other trials showing the role of sodium in high blood pressure treatment, also. The next one.

(Slide.)

"Have the basic principles changed? And, if so, how?" I think now we are fully into an era where the safety of sodium reduction has been questioned and adverse effects are mentioned. The adverse effects come from those studies on mortality that in fact death is the result of -- is an adverse effect of reducing your sodium.

The other types of adverse effects that are

mentioned are -- can be interpreted, again, in two ways. And this is the -- this whole sodium issue is the one where science gets in the way of making policy. And that's some of the things that have been written because you have evidence, animal studies -- animals in shock have very sharp rises in their blood pressure which is a -- in my view, a reaction -- a normal reaction to stress.

But in people who feel that's an adverse effect of sodium reduction, that is -- this is an adverse effect.

So I've -- I've written a review with Jeff Cutler on the adverse effects literature. And one of the things that should make this Committee think about is that if we presume things are safe, we don't study their adverse effects. So one of the other speakers this morning said -- and we can rest assured we haven't seen papers on adverse effects.

But when you look into the sodium literature, the reason you have any adverse effect data is because they had drugs in the studies or something that caused you to do an adverse effects schedule because people were not thinking that the sodium reduction -- that the dietary changes actually were adverse. And so we are naive on that question

that we're not tracking. And then if someone were to challenge on that basis, there may not be data to examine the question.

So the presumption of safety on sodium has been questioned and there is literature -- small literature on that. It's continued to recommend that only those susceptible to the pressor effects of sodium be targeted or those with established hypertension.

There is not yet a gene for identifying salt sensitivity and there is not yet a field protocol for identifying that or even an office -- clinical office protocol. So the targeting of the general population is based on a public health approach because you can't pick out susceptibles. And it's thought that it's probably a better recommendation for the whole population.

"Should the intake level be changed?" One conclusion that I've come to is that it is useful to state a recommended lower limit just to avoid the idea that people think lower is better; you know, like having zero percent body fat if people have taught you -- no sodium might be good. So to say that a lower limit is probably useful.

The means for following advice should change as the food supply has changed in terms of how sodium is

distributed. There are more products available with low sodium, more types of salt you can add that have less sodium in them and so forth. Next, please.

(Slide.)

These are some other conclusions that I've drawn from looking at the literature. The support for having any sodium reduction recommendation is uneven. And I think that's probably more true now than it was in 1995.

There are a lot of scientists who have read the sort of publicly-argued evidence for and against sodium and are genuinely confused and who have not studied the literature themselves and who are beginning to distrust whatever sort of colleagues they talk to who have one opinion or the other.

Support for recommendation for hypertensives is -- only is more consistent. You can't -- that's one that -- that is -- the effects are larger and less -- less likely to go away depending on the type of analysis.

One of the perplexing issues is that in some age groups, 70 or 80 percent of adults have hypertension. So if you say that it's not for the general population, it's only for hypertensives, and then you look at who is hypertensive, you're almost back to the general population.

The issues seem to be polarized. That's an understatement. Different poles support -- supported by different readings of the same evidence. And I think I have one more.

(Slide.)

So there is a public debate currently high visible. For example, the -- Gary Taubes' article on -- called, "The Political Science of Salt", if you haven't seen it, you might want to take a look at it. And the Committee members certainly should look at it.

And I talked to Mr. Taubes or Dr. Taubes before he -- while he was writing the article. And he -- I was one of the last people he talked to.

He told me that he was writing the article with a bias. He had -- in his review, he had decided that it was -- the reduction of sodium was not a good idea and that he was going to slant the article that way. So he was just really looking for people who could convince him not to do that or give him something else interesting to write.

And it was interesting what he said. He said, "In the early interviews, I was not expressing my bias to people I was interviewing; but now I am and this is the way I see it and that's the way I'm going to write it." And he is

quite a talented writer and is well-known. So he has been very effective in raising this question to a level of at least a debate and perhaps has done more than that on the issue.

There is also new evidence of other ways to reduce -- other ways to reduce high blood pressure. And that evidence lowers the interest in sodium reduction if it is seen as a hypertension guideline because the DASH study, which is the most well-known recent finding with a high fruit and vegetable -- or possibly high fruit and vegetable/dairy product diet, giving the size blood pressure reduction that you usually get only with medications in a short-term study, 11 week study.

So now you have sodium giving very small, only population level mean shifts. And you have a high fruit and vegetable diet giving five to ten millimeters of mercury reduction in blood pressure. And some people say, "Well, why bother with the salt at all", because DASH held sodium intake constant in order to look at the effects of the other -- of the rest of the dietary pattern.

The mechanism for the DASH diet is not understood.

And then the case for sodium reduction still rests primarily on high blood pressure, although calcium-loss and

asthma are mentioned in the literature. And one thing for the Committee to look at is whether there is enough evidence for effect on calcium intake and whether the asthma and salt literature had matured to the point where that could be -- that would be another reason for giving guidance to the public.

And from the -- just scanning the literature review I had, I couldn't tell -- I haven't seen any meta-analyses on bone loss and osteoporosis and so forth. And I haven't seen very much on asthma. You almost have to go looking for the salt and asthma literature knowing it is there before you can find it.

But those are issues that we might want to look at.

I think my conclusion is that the debate or the sort of hearings on this issue that have been called for in this article in Science probably have to happen in order for this Committee to do its work.

I don't see any way without reviewing the evidence and hearing proponents on both sides talk about the same evidence and then using our own heads to evaluate it, that we could come up with the right recommendation. And I don't think we will be just allowed to table this one or pass it

along. You know, we're going to have to debate it.

DR. KUMANYIKA: Johanna?

DR. DWYER: Shiriki, can -- can you summarize since you did a review, what is the mortality association? I don't -- I don't follow the literature and so I don't --

DR. KUMANYIKA: Well, there are a couple of studies. One is a study from Cornell Med. where people who brought in urine -- Michael Alderman brought in -- had urine collected, as far as I can understand, on a protocol that was sodium restricted for -- to come in for a renin measurement. But they had urine collected.

And then they were able to look at mortality from heart disease later on in that study as an opportunistic way of examining this question. And in the men, there was a significant increase in mortality for those who presented urine samples with the lowest sodium.

In the women, the power was lower and the direction of the association in the women actually went in the direction that you would expect with the lower sodium intake having the best survival. But that was a nonsignificant finding. And there have been some editorials written about that, things that weren't measured, things that -- people how had been on medication. So it was

inconclusive.

But the problem with this literature is not so much that the data are inconclusive is that people from different sides of the question simply aggressively read it to support their point of view. So that the confidence in the people that have an opinion is low. I mean, that's because we're reading the same evidence one way or the other.

The other is a recent -- more recent paper that was in The Lancet, an analysis of HANES data using the 24-hour recall sodium which was nonquantitative for sodium intake. And one analysis in the paper, for example, includes as terms in the multiple regression, sodium from the 24-hour recall, sodium from 1,000 calories, and calorie intake all as adjustment terms.

But there is an interpretation that one or more of those coefficients that have sodium showed that there is a direct relationship between -- I mean, an inverse relationship between sodium intake and direct -- right -- the lower the sodium intake, the higher the mortality.

So that's -- I think that -- I know some people are going to write into The Lancet with a commentary on that. So the debate on that one hasn't gone forward. But,

again, it's flawed. The baseline measure wasn't quantitative. There were no urine samples, one measure per person, and no table salt intake in 1971. So -- and those are really the only studies that have looked at mortality at all.

Gastric cancer I didn't mention, but that's another issue that shows up once in a while for review or meta-analysis in the sodium literature. Some, perhaps nitrate, but also -- also possibly sodium as a factor.

DR. WEINSIER: So, Shiriki, your recommendation that we consider the possibility of having a lower recommended range is based on those that you're referring to now or do you have any --

DR. KUMANYIKA: A lower limit.

DR. WEINSIER: Yes, a lower limit.

DR. KUMANYIKA: Not -- not a lower -- that's from my review of the adverse effects literature that some of the criticisms are that people might inadvertently go so low that they actually trigger physiologic responses that are not healthy.

DR. WEINSIER: How low is too low?

DR. KUMANYIKA: Fifty millimoles is usually the level that is mentioned as a lower limit to set for people

not to go below that.

DR. WEINSIER: Are there solid data to support that or is this just a figure that's been thrown out? The reason I ask is because I haven't looked at the literature in a long time, but I do recall a paper studying a sweet potato-eating population -- an otherwise healthy population. These were Highland Papuans whose urinary sodium was as low as one to two milliequivalents per day.

DR. KUMANYIKA: Right.

DR. WEINSIER: That's about 23 to 46 --

DR. KUMANYIKA: Right.

DR. WEINSIER: -- milligrams per day which is extraordinarily low.

DR. KUMANYIKA: One and two milliequivalents. But that literature still stands. But the problem is in making recommendations for the public, when the public is not able to calculate their sodium intake, the concern is raised that people might get down as low as 20. You might get, you know, other types of physiological problems in people who inadvertently lower their sodium intake.

So all of the public recommendations have a big margin of safety around them. So that 50 is just like saying 500 is what you need when you really only need 23

milligrams. So, you know, the RDA says 500 is the need to add a margin of safety. And that 50 is just to say -- give people a ballpark. Even if they are off by 50 percent, they are still at 25.

DR. GARZA: Suzanne?

DR. MURPHY: Thanks. That was a nice overview. I'm a little out of date on this concept of a dichotomy in the population, some people being "salt sensitive" and others not. Does that still hold and is it one in four or one in whatever? And would you bring me up a little bit on that?

DR. KUMANYIKA: Well, it won't be a prevalence figure because the protocols for looking at salt sensitivity are laboratory protocols of, say, putting people on very low and then raising -- giving them 300 millimoles and looking in a very short-term way to see if they respond or having them high and then dropping it very, very low, but like five or ten millimoles.

And it depends on the sample you have in the laboratory, I guess, how many people are sodium sensitive. So I think -- the figure has usually been less than 50 percent. And then the question is what happens to the other people if they reduce their sodium on a quality of life

level. Is it just worth the bother if it's only a few people or is there possibly some harm?

In a distribution of responses, you will see some people's blood pressure will go up because it's variable and then that's used to say that it actually increases blood pressure in some people. So every version of physiology that you can imagine is being debated in the literature on this question, I promise you.

DR. GARZA: Any more questions at this time?

DR. LICHTENSTEIN: I'm sort of wondering -- interested in your comment on this. And reading the commentary that goes along with the guidelines, there is mention of alcohol and fruits and vegetables and potassium and calcium impacting on hypertension; however, it's not reflected in the guideline. And sort of the commentary tends to get lost.

So now with the newer data from the DASH study with the fruits and vegetables and low fat dairy products, I'm wondering whether you think it is important to somehow incorporate some of this information or address it a little bit differently or how to sort of reconcile that discrepancy.

DR. KUMANYIKA: Well, I think that's a good --

that's a good question. And it raises the issue of whether this is a hypertension guideline or a sodium guideline. It's actually meant to be dietary guidance. And I think that's the way the Committee was straining last time to get it out of the sense that this guideline is meant to be treatment of hypertension whereas all the rest of them have to do with what you eat.

So on that basis, you wouldn't want to include that in the statement itself. But it's part of the case that's being built for this is one of several factors that would help to lower the burden and maybe there are some other things that will happen that are positive, too. And it probably won't hurt anybody.

DR. GRUNDY: Actually, I wanted to extend I guess what Alice was driving at. And was any thought given to making instead of a sodium guideline, a mineral guideline that would, say, include potassium and calcium and sodium all in one statement to get an appropriate balance of those three? Because I don't see much about calcium. And, you know, our DRIs are coming out with high calcium recommendations. And how are those going to be reflected?

DR. KUMANYIKA: Well, I don't think there was any thought to including all of them as one guideline. The

potassium evidence never reaches the point where it supports recommendations. So it tends to be carried along as a suggestive -- because the trials of potassium on blood pressure at least don't come out to show that it actually has the effect, at least not consistently enough, to recommend the guideline. That's the same for calcium.

So calcium and potassium and magnesium sometimes are mentioned in the context of the sodium recommendation. But they don't have the same type of evidence. And they have some --

DR. GRUNDY: Well, I was thinking beyond hypertension though, not -- I mean, the sodium being detrimental to osteoporosis --

DR. KUMANYIKA: Well, calcium didn't reach the point of a guideline last time either, although there was some consideration of whether there should be a calcium guideline. But it did not reach the point of being included in the Dietary Guidelines for risk reduction.

So the -- I mean, the answer is yes. Every place -- if you look at the wording, every place you could mention something that didn't reach the guideline level, it was mentioned in the text of the booklet, but not stated as a separate guideline.

DR. GRUNDY: Right. How are you going to get your 1,000 milligrams of calcium from the recommendations?

DR. GARZA: There has been -- let me -- let me just add something because it's a generic issue that we're going to deal with. In the past -- and I don't think that Michael said this -- but certainly if one looks at the guidelines, there has been a strain between avoiding nutrient-specific guidelines and giving broader dietary guidance. And I think we need to be very cautious.

And Scott's comment about the calcium one brought this to my mind because once we begin dealing with single nutrients in dietary guidance, then you soon are going to have to be dealing with many, many more. So in -- in considering sodium, it's been a bit of an anomaly in that regard, as well, that it was nutrient-specific. And that was part of the tension that we discussed last time.

And so that the issue of, well, can we do it in mineral and cover a broader range is something that actually that did not, as I recall, come up. But it's -- it's -- it's sort of that -- it's somewhat of a tight wire act.

DR. GRUNDY: It is. There might be a way of getting around making it sodium-specific. That's what I'm trying to think about.

DR. DECKELBAUM: I would like to second what both of you said because if you look at the discussions from this morning, we've gone from groups to different types of molecules found within the groups. And finally, we get to an atom. And --

(Laughter.)

-- really getting -- really getting specific here. And I think the concept of minerals and somehow finding a way to work with minerals as a group, because some of them are pretty important, might be a good advance for this group.

DR. JOHNSON: I just -- I had two points. But, Shiriki, do you know -- I had heard the DASH study was being replicated with a sodium restriction added. Is that true --

DR. KUMANYIKA: Yes, that's true.

DR. JOHNSON: -- and do we have any idea when those will be --

DR. KUMANYIKA: It will be a while. I think it will be a while. It has been in the field, but I don't know exactly -- it -- it is conceivable because it is a short-term study that it might yield some results while we are deliberating. But they have to repeat it in enough waves to get their end. So I can find out.

DR. JOHNSON: And my other point was I -- I

thought your point about 70 to 80 percent of certain age groups being hypertensive. What I was thinking before that -- prior to that was that with the new NHLBI guidelines, 50 percent of the American public is defined as obese and if that's a risk factor for hypertension, then how does that also factor into the sodium thing?

DR. KUMANYIKA: Yes. I think the 50 percent refers to overweight, not obesity actually.

DR. JOHNSON: Yes, you're right.

DR. DWYER: You know, all I can think of with the -- the mineral -- group of minerals, we could have good ones and bad ones like mercury and lead and --

(Laughter.)

-- and more than the good ones, good cholesterol and bad cholesterol. What I really wanted to ask though was two other more substantive questions.

The first is I can't see a specific recommendation in this, but maybe I'm looking in the wrong place.

DR. KUMANYIKA: In the JNC about sodium?

DR. DWYER: Yes, it doesn't look like there's anything --

DR. KUMANYIKA: Their level is --

DR. DWYER: -- specific.

DR. KUMANYIKA: -- has been 2,400, although I must say they are quite prominent with the DASH diet here. Their recommendation is --

DR. DWYER: What page?

DR. KUMANYIKA: -- on Table 7 --

DR. DWYER: Oh, Table 7, I'm sorry.

DR. KUMANYIKA: -- 2,400 or 2,200. And they -- the last time, it said 2,300. But I think they -- just to bring it in line with the Dietary Guidelines, it says 2,400 now so people don't have to wonder if that one hundred milligrams makes a difference that's in there.

DR. DWYER: And what about the whole chloride question? Has that gone away or did the other --

DR. KUMANYIKA: It seems to have gone away. It comes up once in a while. It came up, we had a presentation about potassium -- potassium bicarbonate as being the relevant form, you know, naturally occurring and that that's why potassium chloride studies haven't shown anything. But it didn't really lead to a particular recommendation.

DR. WEINSIER: Getting back to this issue for just a minute on having another category for an individual nutrient or atom, when we think in terms of the food groups, I mean, for example, with regard to vitamins, and we're

trying to design a dietary plan that would by the nature of the foods recommended account for sufficient intake of the average healthy person of the various vitamins and trace elements.

Would it -- Shiriki, there is a question then. If we were to try to do that for sodium rather than having a separate designated category for it, would a recommendation such as emphasis on minimally processed grains, fruits and vegetables, would that in fact for the average person result in a reasonably low intake of sodium or, in fact, most of the sodium we eat comes from the salt shaker and not from processed foods?

DR. KUMANYIKA: No. No, I think -- I mean, that has -- I mean, I would like to not to venture an opinion on that without looking at some calculations because, first of all, consumers want processed foods for various reasons. And it's very tricky to say -- to give a recommendation -- I mean, there is a practicality issue there.

And most of the sodium is definitely coming from processed foods. A trivial amount now is coming from added salt at the table. More is going to come from cooking. But it's mostly already in the food before people get it unless they have time to prepare foods from scratch.

But then to turn around and give a recommendation for something that is as pervasive as sodium, it's -- because it's so pervasive, it tracks with calories in general. Grain products are major carriers and then some soups and other -- other types of products.

I would like to think that through if there is a way we could merge that into a food recommendation practically, but I'm cautious about doing it.

DR. GRUNDY: But on that point, there is -- I think I learned a long time ago that sodium is divided into thirds. A third is inherent in the food and a third is added at home --

DR. KUMANYIKA: But that's old.

DR. GRUNDY: -- and a third is --

DR. KUMANYIKA: That's old data.

DR. MURPHY: Anyway, it's more or less true I think. Anyway -- but what you're saying is that in the -- in the natural food, there's not a -- you have to add sodium to make it exceed what the guidelines are. So --

DR. WEINSIER: That's what I'm asking.

DR. GRUNDY: Yes, in the natural food, there's about an acceptable amount --

DR. WEINSIER: If the bulk of the food comes from

the base of the pyramid.

DR. GRUNDY: -- of sodium, yes, right.

DR. KUMANYIKA: On the proportions of studies that have been done, Phillip Janes' studies and the U.K. with lithium and so forth, the feeling is that probably only 15 -- ten to 15 percent are coming discretionary to the consumer now and the rest of it is already in foods. So that third-third-third was --

DR. GRUNDY: Added to the food.

DR. KUMANYIKA: It's been processed --

DR. GRUNDY: Yes, in the process.

DR. KUMANYIKA: -- or a restaurant -- there is also a lot of eating out. So by the time that people get it, one way or the other, it's already --

DR. GRUNDY: Right.

DR. KUMANYIKA: -- they don't have that much discretion over it. So we're looking at already prepared or processed foods.

DR. GARZA: Richard?

DR. DECKELBAUM: So I guess the question then, Shiriki, is that in a society such as ours where even our basic -- a lot of our basic foods are processed, the only way that a guideline like this could be implemented would be

through a partnership with industry, the food industry, because otherwise the public wouldn't be able to have access to it unless they went out and, you know, grew and processed their own basic products.

DR. KUMANYIKA: Right. I think that's been the feeling. If you look in the hypertension reports and so forth, the idea has been that it's so pervasive and we do want people to eat food, that what we --

(Laughter.)

-- I mean, you can't -- you know, the solution to the dietary guidance is not to tell people not to eat. So the thing to do is to present people with a food supply where it's easier for them to make a nice, wide choice of foods without getting as much sodium.

And apparently, at least the last time I debated any of this with people from industry, there seems to be a point where industry feels that it is not feasible to do that. And so we -- and so that, you know, there is some argument about whether it's necessary to do it because the feasibility and the cost from an industrial point of view is -- may be prohibitive. And that's kind of where we get stuck.

So clearly it's not a behavioral issue only

because you would be avoiding three-quarters of the food that's out there. How to get it done in the food supply is a different issue, but our recommendations are directed at consumers.

DR. GARZA: Meir?

DR. STAMPFER: I'm a little confused. You gave a -- I thought a very even-handed review of a contentious issue. But I was left with some confusion as to where you stand. Do you believe that the -- do you believe that the -- that the evidence on both sides is so strong that we should consider not having any sodium guideline at all or is it just a matter of heat rather than light?

DR. KUMANYIKA: Well, I guess -- I mean, I have a clear bias. Anybody who knows what I've been doing in terms of studies and writing knows that I am definitely a proponent of sodium reduction. I think the guideline is perfectly fine just the way it's written or maybe with some shoring up here and there.

However, I am aware that the ability to create a debate around this is very confusing to the public and to scientists. And because of that, people who already have an opinion on the issue are not credible simply because you can perturb the evidence enough so that people -- people who

otherwise believe in other issues -- for example, you have the American Heart Association where the then-president or retiring president of the American Heart Association sent testimony opposing the Heart Association's testimony on this guideline.

So you can't, when you have --

DR. DWYER: What did the Heart Association and what did --

DR. KUMANYIKA: The Heart Association has a guideline that's, you know, a recommendation for reduction of sodium. And Dr. Oparil wrote, you know, testimony saying that there was no basis for it whatsoever and that she didn't agree with it while she was either in or intermediate past status and that's a credibility problem for us because people who are quite well respected and who have the -- the at least apparent ability to evaluate the evidence take very, very different views. So --

DR. LICHTENSTEIN: I just wanted to make a comment about availability of, you know, low sodium foods and whether we need partnerships with industry. And my impression in my last swing through the supermarket was that they were there; you can get pretzels with sodium, you can get pretzels without added salt. And it's a matter the

industry tends to produce the foods that gets sold the most. That I think they're there.

The issue is whether the recommendation is strong enough to cause people to think about it more and make the changes and whether that's actually valid. But I think that they are out there.

DR. GARZA: Richard.

DR. DECKELBAUM: Yes, but, so you look at -- we look at industry responses, it sort of responds --

DR. GARZA: Do you want to use a microphone. Otherwise, we --

DR. DECKELBAUM: -- if we sort of look back on industry responses with fat, it sort of responded to public demand. And probably where this Committee and the new guidelines are going towards is that someone probably will respond to whatever comes out here. Because right now, you know, except for pretzels and maybe chips, it's not that easy -- it's not that easy to buy -- it's easy to buy a low fat diet. It's not that easy to buy a low sodium diet if you're using processed foods. If you're using processed foods --

DR. GRUNDY: I think it is. I think -- they've got all these low -- you know, reduced fat, reduced sodium

prepared meals and all those kinds of things. Take another look through the supermarket.

DR. GARZA: Johanna?

DR. DWYER: Isn't -- well, wasn't there a year 2000 guideline on this and didn't industry do a fairly good job of reading the guideline, the sodium guideline? Wasn't there something about the number of processed foods? You can speak on it.

DR. McMURRY: The Healthy People?

DR. DWYER: Yes. go ahead.

DR. McMURRY: Are you talking about the Healthy people?

DR. DWYER: Yes, the Healthy People 2000. I thought there was a sodium --

DR. McMURRY: I believe there was an objective --

DR. DWYER: -- in processed food goal. And I thought they met it.

DR. McMURRY: It was for --

DR. MEYERS: I can't remember the exact number, but, yes, it was met or close to it.

DR. GARZA: Shiriki, you indicated that in order for this Committee to do its work, it would be very helpful to -- to either piggyback or be available to -- or be

present in the audience. I mean, some way to be able to hear a debate that you expect to come about some time in the near future. Is there -- is there in fact -- is that just a hope that you --

DR. KUMANYIKA: I don't --

DR. GARZA: -- that you expressed or is there a group that is going to bring together the various points of view in time for us to avail ourselves of that?

DR. KUMANYIKA: Well, I actually -- it may be, because I was talking to someone about the -- the Taubes article. And because the statements are so strong that actually, you know, accuse the Heart, Lung and Blood Institute of going far beyond the evidence and so forth. People are -- some people are thinking that the Heart, Lung and Blood Institute might respond.

However, that institute is considered to be biased. And it might not have the effect that it wants to have. So I'm actually thinking that we might be able to use or might need to use some of our hearing time to see if we can get a presentation of evidence by people who are not known to be on either side where we can evaluate it because we really are stuck on this thing right now with, you know, good guys and bad guys. And there's not -- it's hard to

sort it out.

DR. GARZA: Yes, I think -- I think so, too. We may have to go that route.

DR. DWYER: Could we add the -- that whole glycemic index thing to that, too, because it sounds like some people believe in it and some people wonder about it. Some people like me just don't know what to believe.

DR. GARZA: Exactly. Do other -- do others around the table share that view in terms of the glycemic index issue?

DR. DWYER: Yes.

DR. GARZA: To have a discussion of this -- or have a discussion on the glycemic index issue very comparable to the one that we've been discussing for sodium, to invite somebody in to provide a -- a wider review of the -- of both topics.

DR. GRUNDY: There's two issues there. One is the immediate effect of -- of glucose or different levels on blood sugar levels. That's what the glycemic index is. And then there is the longer term metabolic effects like what Richard is talking about. So those are two different components of that.

DR. GARZA: The two -- the working groups that

would be mostly focused on those two issues need to sit down and think about the people you would invite to such a review and the timing for it.

DR. DWYER: Have you announced the working groups?

DR. GARZA: No. No, you've been awake, Johanna. No. We will be doing that -- finishing that up tomorrow I hope. We -- it would be fair to say we have some ideas based on the discussions anyway.

DR. STAMPFER: Yes, just to comment on that, I think the glycemic index -- I mean, it would be nice to have more discussion on that. But I don't see a parallel in terms of the polarization. I mean, and also in terms of -- it seems like with the sodium, that anybody who has an opinion is suspect.

The glycemic index, I don't think it's gotten that bad. When I -- when I went into it, I didn't believe it. And now I'm starting to scratch my head. I think people are more open-minded about that issue.

DR. KUMANYIKA: Yes, Meir, I'm not so sure because they added a journal and have gotten a whole bunch of articles on one side of it. And apparently, the diabetes people are really quite polarized about that. And, you know, so I would like to hear more as one person.

DR. GARZA: Okay. Well, then let's take a break. We'll be back in about ten or 15 minutes and go to the really easy one on alcohol.

(Whereupon, a brief recess was taken.)

DR. GARZA: Well, we thought that with the end of the afternoon coming, the group would need to be re-energized. And we thought we could do that with the last guideline. And we have somebody up to the task. So, Meir, the program is yours.

DR. STAMPFER: Maybe we're all ready for some alcohol. Alcohol is -- it's unique in the guidelines I think because none of the other dietary -- for none of the other dietary factors do we deal with is there so high a price for excess compared to any other of the guidelines.

But on the other hand, there is strong evidence directly relating intake to clinical outcomes in moderation. Let's see. Are you doing the --

I think -- I think we're all acutely aware of the devastating effect of excess alcohol in our society, disease for the individual who consumes too much, violence, disruption of family and society. And obviously, we want to do nothing in our Dietary Guidelines that would make this worse.

But on the other hand, there are clear benefits of moderate consumption. And the evolution of the Dietary Guidelines over the last several editions have reflected a cautious acceptance of the mounting evidence for this benefit. And I'm going to very rapidly go through some of the recent findings that bear on moderate alcohol consumption with the clear understanding that excess is something to be avoided all the time. Next slide, please.

(Slide.)

This is just to prove to you that there are lots and lots of studies. These are just the prospective studies for alcohol and coronary disease, more than 34. Next slide, please.

(Slide.)

And just to very briefly go over some specific evidence, one of the main arguments against the effect of moderate alcohol was that perhaps individuals who were ill stop drinking and were at higher risk for outcomes and that, therefore, it made it look like those who continued to drink were actually healthier when in fact it was the sick people -- the sick quitters who were at higher risk.

And we addressed this -- Eric Rimm in the health professionals follow-up study, looking at either the total

cohort or individuals with no previous diagnosis relating to cardiovascular disease. And you can see that the findings were virtually identical with decreased risk of coronary disease with moderate alcohol consumption. We don't have heavy drinkers in this cohort.

But you can see quite striking reductions in risk regardless of previous disease.

For the two-drink-per-day category which is in here, a 25 to 40 percent reduction in risk of coronary disease, highly statistically significant. Next slide.

(Slide.)

What about women? We examined this association in the nurses health study and we find the same pattern, albeit with lower levels of alcohol intake consistent with the known metabolism differences between men and women which underlies our current guidelines for lower levels of alcohol consumption in women.

What we see -- this is drinks per week. About -- again, about a 35 to 40 percent reduction in risk of coronary disease with moderate levels of intake.

(Slide.)

What about total mortality? After all, coronary disease is the leading cause of death, but certainly we have

to consider other causes. These are data from the very large American Cancer Society study. And looking at total mortality, one sees relative risks at about a 16 percent reduction in the one-drink-per-day category, 7 percent reduction in the two-drink-per-day category.

This is -- this is in the range of our current guidelines statistically significant reductions in total mortality.

(Slide.)

When one looks at the cause-specific mortality in that same study, what you see is that for coronary disease, moderate consumption is associated with about a 20 percent reduction in death from coronary disease out to as many as four drinks per day. And then it goes up a bit.

Whereas for the other causes of death, there is basically either reduction or no effect up to about two drinks per day. And then accidents and cancer and stroke all tend to rise with increasing consumption. But at the level we're -- our current guidelines hold, you can see that there is no increase in risk of these other causes of death and a reduction in risk for coronary disease.

(Slide.)

In the nurses study, we find the same pattern.

Most of the apparent benefit for total mortality is due to reduction in coronary mortality. For women who did not have coronary risk factors -- and it's not that many women because the prevalence of coronary risk factors is so great, it's actually a minority of women that -- in this cohort that have no risk factors.

But among that minority, one finds no effect either way, adverse or beneficial, for moderate consumption. But with higher levels, there is an increasing risk.

(Slide.)

This -- the next couple of slides just summarize a bunch of studies looking at alcohol and total mortality. This is by daily alcohol consumption. You can see, these are all different studies, different sizes. But, in general, the pattern is reduction in total mortality with moderate levels of consumption and an increase with high levels of consumption.

Here instead of categorizing it as drinks-per-day, the sort of unclear mild, moderate -- usually moderate is, you know, whatever the speaker does and more than that is excess. But here, again, the same pattern emerges. Generally, most studies see a reduction for mild and moderate. And for heavy drinkers, there is an increasing

risk. This is all total mortality.

(Slide.)

Now, there is a strong biologic basis that underlies this association because alcohol raises HDL cholesterol and is very effective in doing that; raises it 8.1, it has effects on hemostasis and improves insulin sensitivity. And there are probably other mechanisms, as well. So this is not merely an epidemiologic finding that is hanging in the air, but it is actually firmly rooted in biological mechanisms.

(Slide.)

For example, here is one of many studies looking at the relation between alcohol consumption and HDL. There is a very strong linear pattern.

(Slide.)

Well, so much for the good news part. What have we learned recently on the adverse effects? Well, in the last decade or so, there has been increasing evidence that even moderate alcohol consumption may be associated with an increased risk of breast cancer. And this, of course, is quite disturbing.

And very recently, there was a pooled analysis of all of the large prospective cohort studies of diet in women

to specifically address this issue and also to try to quantify the level of risk. So this study put together over 300,000 women in different prospective studies. And there were over 4,000 incident cases of breast cancer. So this is when alcohol is assessed before the diagnosis of breast cancer, prospective design.

And in this pooled analysis which I think provides us the best quantitative data that we have, indeed, the result was that alcohol was associated with an increased risk of breast cancer. And this is after adjustment from all the confounding factors that we could think of.

But the magnitude of the increase in risk was perhaps more modest than what some people had feared from the initial studies. So at one drink a day which is our current guideline for women, there was a six percent increase in risk overall for the, say -- one-and-a-half to two drinks a day, there was a 16 percent increase in -- in risk which is obviously a serious concern. But at least it gives a magnitude of an effect to deal with.

And earlier studies had suggested that perhaps the risk might be as high as 30 or 40 percent, even with moderate consumption. So we see now that it perhaps isn't that -- isn't that high. But it's still there.

There is some suggestive evidence that like with colon cancer, women with adequate folate -- that's at least 400 micrograms per day -- may -- may not have this increased risk of breast cancer.

DR. GARZA: Is this postmenopausal or pre- and post?

DR. STAMPFER: This is pre- and post; mostly post.

(Slide.)

What about hypertension? That's known as an adverse effect of alcohol. But in this -- this -- in this study and most other studies, one finds, indeed, an increased risk of hypertension with alcohol intake. But usually it's just at the higher levels. And at moderate levels, there is either a slight dip or no effect of risk of hypertension.

(Slide.)

That earlier data was in women. This is from our health professionals follow-up study in men. Same kind of pattern. Little or no effect in the range of moderate consumption, up to a couple of drinks a day. Over two drinks a day, there was an increased risk of hypertension.

(Slide.)

Now, on the issue about body weight and the effect

of alcohol and weight gain is one that's been well studied or at least studied by a lot of people. And this is just the names of first authors that have looked at the relation between alcohol consumption and body weight.

And generally, I think what my read of the literature is there's not much support for a strong effect either way of alcohol. And weight gain, obviously, alcohol -- alcoholic beverages are a source of calories. And any source of calories can lead to weight gain. But there is no special effect apparently of alcohol as opposed to any other source of calories for promoting weight gain.

(Slide.)

Stroke is another adverse effect of excess alcohol. For total stroke, there is little or not association except a modest increase in risk at high levels of intake. Next slide.

(Slide.)

When one looks at the major types of stroke, for ischemic stroke, this is either embolic or thrombotic, there is good evidence showing no increase in risk with moderate intake. And there is weak evidence suggesting a decreased risk, perhaps along the lines of the decreased risk for coronary disease.

For hemorrhagic stroke, the data are more consistent in showing an elevated risk with higher levels of intake. The adverse dose range is unclear, but appears to be at several drinks per day. Again, with our current guidelines, we're probably below a serious increase in risk for hemorrhagic stroke.

Now, what about different types of alcoholic beverages? This isn't for you to read this fine print; just to read the headline of this review article by Eric Rimm and other colleagues where we looked at beer, wine and spirits for coronary heart disease. And our conclusion was that the reduction in risk of coronary disease was associated with alcohol per se, not with any particular alcoholic beverage.

And the greatest benefit appeared to be the beverage of moderation in that particular society or group of individuals. Whatever the common alcoholic beverage of moderation was, that was the one that was most protective. So some studies find wine more protective. Some studies find beer more protective. Some studies find spirits more protective. So it seems to be basically a moderate intake of alcohol rather than any beverage. Next slide.

(Slide.)

That was the same conclusion that Sir Richard Doll

came to in his review last year in the BMI that the differences for wine or other beverages could be accounted for by differences in the pattern of drinking. So I think the key thing is how the alcoholic beverage is drunk and whether it's the beverage of moderation or beverage of excess.

(Slide.)

So let me conclude here that in the review of mortality, we find that the mortality rates are lowest among men and women who drink one to two drinks per day. And this is -- this is quite a substantial reduction in mortality. And it would be difficult to come up with quantitative data for other guidelines that have such a pronounced and consistent reduction in mortality.

The benefits are strongest among older populations than those with higher risk of cardiovascular disease.

(Slide.)

Now, I thought since we're trying to promote or develop guidelines for the year 2000, it would be fruitful to go back to our predecessors and see what guidelines were available for the current millennium. So I went back to look at -- this is a little delayed. But, you know, this is before word processors.

But the 12th century, the leading physician of the day was Maimoniodes who had this dietary guideline, well-known among physicians that the best of all the nourishing foods is wine and that if taken in the proper amount -- and that's the -- those are the key words here -- it keeps the body in a healthy condition.

Well, of course, that was just one millennium's worth. What about the preceding millennium? Do we have some further wisdom?

(Slide.)

So -- I got the dates backward here. But, again, a little bit late. But this is what Galen had to tell us about his dietary guidelines.

(Laughter.)

And it's really pretty -- it's pretty darn good. And it makes you a little humble. "Abstain until age 21." Oh, well, older a man is -- but we now know that this applies to women, too -- the more beneficial. Old people need it the most. So I don't know how much we've learned in the last couple of thousand years, but that's basically my review.

Now, in terms of -- I just wanted to close with a couple of comments on possible changes in the guidelines.

Actually, I think the guideline is pretty good. There -- the only changes that I would recommend are really basically minor wording changes. I think the thrust of the guideline in spirit is fine as it is.

DR. GARZA: Any questions?

DR. LICHTENSTEIN: In the text, again, accompanying the guideline on alcohol, there's a list of individuals who maybe should not consume alcohol. And I'm wondering if you think it might be appropriate to add to that list women at high risk of breast cancer.

And also along with that in your cohort or another one, has anyone looked really at post-menopausal women, the pattern of body weight gain? And I know that the alcohol and estrogen metabolism has sort of been the link with the breast cancer? Did you ferret some of that stuff out?

DR. STAMPFER: Yes. In our study and other studies that have looked at it, there doesn't seem to be any effect modification by other breast cancer risk factors. So we don't see any interactions. So I think, obviously, we need to include mention of the breast cancer connection and perhaps update it a bit in line with the current evidence.

But it didn't seem to interact specifically with any particular breast cancer risk factor.

DR. DWYER: I, too, had questions about who should not drink. And it seems to me that the elderly, unless I'm missing something, are not specifically included. And yet we know that they have lower body water and maybe they shouldn't -- not drink at all. But the point is that two drinks for a 92 year old who is on six or 12 different medications a day I think is probably a risky business.

DR. STAMPFER: Well, there is --

DR. DWYER: What do you think?

DR. STAMPFER: There is some mention about potential interaction with --

DR. DWYER: Drugs, yes.

DR. STAMPFER: -- medications. In terms of the age, really the -- as far as the epidemiologic literature goes, it suggests that the higher risk -- individuals who are at higher risk for cardiovascular disease stand to benefit the most. And since risk of cardiovascular disease goes up so much with increasing age, they -- they may indeed actually be benefitted more. But obviously, it's going to depend on -- the quantities would have to, you know, depend on lean body mass and absorption, et cetera.

DR. DWYER: Has anybody done a really good study of all of the competing risk factors in people over 65 or 70

looking at accidents, falls, all of the things? Because, again, we're in a category where a lot of people have medications. I mean, they're basically all on medications.

DR. STAMPFER: I -- I would have to go back to look specifically at the elderly, what literature there is.

DR. DWYER: Maybe that's a good thing for -- to get our research people looking at.

DR. STAMPFER: Yes.

DR. GARZA: Meir, in looking at the -- the literature in terms of morbidity and cardiovascular disease, mortality, is there -- are there competing mechanisms or strategies that people could -- could adopt that would yield the same benefit as alcohol -- increased exercise, the reduction of cholesterol levels -- so that those individuals that indeed may not want to accept the risks of -- of abuse, etcetera, would -- would have an alterative or is it so overwhelming that, gee, this is the easiest strategy that anybody could employ?

DR. STAMPFER: Well, no, I think there -- we know lots of effective ways to lower risk for -- for coronary disease. So anyone who, for whatever reason, chooses not to drink alcohol, they're open to the many, many very effective alternatives that could substantially lower risk. So this

is just one of -- one of many.

DR. GARZA: And for those individuals, if you're controlling all risks, is alcohol still an independent risk factor or if you lower your risk below some certain threshold, then those two drinks a day are no longer protective?

DR. STAMPFER: In the epidemiologic studies, it looked like alcohol was protective regardless of other -- the presence or absence of other risk factors. For example, people who were doing vigorous physical activity or controlling their blood pressure, etcetera, still appeared to enjoy some benefit.

DR. GARZA: Scott?

DR. GRUNDY: What is the least amount of alcohol in grams you could take to give this beneficial effect? It seems like it is fairly low.

DR. STAMPFER: Yes, I think it is. It's lower for women than for men in terms of its metabolic effect and also in the epidemiologic studies such that even, say, a half drink a day you could -- you could have a measurable benefit for women.

In terms of grams, that would be about, you know, six grams of alcohol. For men, it seemed like somewhat

higher levels. But even a drink a day is at a level where you would see substantial benefit for coronary disease.

DR. DWYER: Meir, two things. The first is the moderation statement here talks about -- I mean, basically just repeats the guideline and the number of drinks. Have you given any thought to possibly including eating -- drinking with meals as a useful think in terms of moderation? I know if Julia Child were here, she would say that. Her view is that moderation involves a social -- a set of social circumstances. You called it moderation and excess. That it has to do with how you drink --

DR. STAMPFER: Yes, I think --

DR. DWYER: -- and that when you drink when you're eating, the dose is obviously diluted. But it's also --

DR. STAMPFER: That's a very good point. The guidelines -- or the text mentions that. And then the final take-home message talks about drinking with meals. I guess perhaps that could be broadened to food in general. If you're standing up, I don't know if that counts.

(Laughter.)

But actually, in terms of data, there is very little data on it. It's an appealing idea and sort of intuitively, one would want to support it. But there's very

little actual data that's looked at patterns of drinking with meals and without.

What -- what meager data there are do strongly support the notion that drinking with -- with food in a social setting is more likely to -- is less likely to be adverse.

DR. DWYER: Could you also follow up on your interesting analysis, that meta-analysis you just showed us on cohort studies and breast cancer? I was troubled by the relative risk and didn't think it was good news at all what you showed.

DR. STAMPFER: Oh, no. It's not. It's only good news relative to the -- to what some earlier reports had been with substantially higher risks. No, I think this is -- this is a serious issue that needs to be considered. And a woman that wants to keep her risk of breast cancer as low as possible would take this very seriously.

DR. DWYER: Were you able in that meta-analysis to examine associations with hormone replacement therapy and alcohol or with any of the other putative factors that have been implicated or suggested as possibly --

DR. STAMPFER: It seemed to be independent -- act independently.

DR. GARZA: Alice and then Shiriki.

DR. LICHTENSTEIN: Getting back to the elderly, I thought at one point I had seen some data suggesting that they are more at risk for alcohol dependence or alcohol abuse. You know, getting back also to possibly slower rates of metabolism and less lean body mass. Are you aware of anything of that that might cause some cautionary statement with regard to the elderly?

DR. STAMPFER: I am not, but we should -- we should look into it though. I will be by the right time. Shiriki?

DR. KUMANYIKA: Looking at the wording, you were saying some minor changes in wording might be recommended. I'm remembering that there was some concern -- there's always concern with this -- that people will want to start drinking to achieve the benefit.

And if the data are -- primarily are entirely observational, then there's never a comparison of the people who started people in order to move themselves up in a certain category. It's a comparison of people who drink one level versus other people.

And we might be able to change the wording so that instead of saying moderate drinking is associated with a

lower risk in some individuals, to say that in individuals who drink moderately, their risk is lower because as of right now, you could read it ambiguously.

And I think we should bend over backwards not to suggest that we actually have evidence that beginning to drink lowers risk because we just can't tell that. And the trials -- you can't do a trial like this on mortality. But is there any trial data -- I don't remember that you -- that sheds light on this?

DR. STAMPFER: Well, there are no trial data for any clinical outcomes, I mean, like MI or mortality. But there's plenty of trial data on the lipid effects and the blood pressure effects and so on.

DR. KUMANYIKA: Of reduction.

DR. STAMPFER: I mean, all of the -- basically, the -- the clinical trial data all look at biochemical markers like HDL. And they show HDL rises if you randomize people to alcohol. And they show that, you know, effects on fibrinogen and some of the clotting factors and -- so there's -- that's the only clinical trial data. So it's consistent with it, but it doesn't -- doesn't prove that if a group of nondrinkers started drinking, they would lower their risk.

DR. GARZA: Scott?

DR. GRUNDY: What then is the recommendation? It's not -- it seems like kind of a vague -- it's not for or too much against. Is that right? It's sort of neutral, the current recommendation?

DR. STAMPFER: Well, I think people were -- were just being extremely cautious about not wanting to be in a position of promoting more alcohol consumption that might lead to alcohol abuse. So I presume that that was the thinking that led to this -- you know, I think you characterized it well. The wording, "If you" -- "If you drink, do so in moderation", kind of a not even quite neutral sort of semi-begrudging acceptance.

DR. GARZA: The concern, Scott -- and Shiriki can help me along with this, as well -- is that with none of the other guidelines is there a potential for addiction. And so then the very intense discussion was in promoting -- in recognizing some of the health benefits that Meir went over, are those benefits substantial enough to -- to warrant a recommendation, even one as guarded as this, when we recognize the risk of addiction in a significant proportion of the population.

And it's -- we don't have that difficulty with any

-- theoretically at least; none that I'm aware of -- with salt, fruits, vegetables. I mean, you know -- so the addiction, the abuse, the health problems that -- that result from that appear to be very substantial because if one looks at causes of death with cirrhosis and others, I mean, they are still among the ten leading causes of death.

And that's the difficulty that we faced and I assume we're going to come to in this group, as well.

DR. GRUNDY: I share the -- I share the concern and support the basic recommendations. But the way you presented it was a more positive view of the benefit of small intake. You could change the language a little bit to support more moderate intake as a beneficial thing. I'm not saying that I personally support that, but I just think -- and it could be in the way it was presented, it came across a little more positive.

DR. GARZA: And, you know, that -- the -- the presentation went through a lot of debate. I mean, and I think much of that may be in the reader because it was -- I don't think it was the intent to present it positively. The intent was to present it ambiguously so that none of the Committee members would walk out of the room.

DR. STAMPFER: Well, that was sort of the spirit

of these wording changes that I didn't want to get into the specifics of. But the gist of it would be to follow along your suggestion. I mean, if I could be sure that everybody would stick to the guidelines, I would have no trouble saying, you know, go for it. but since we know that some people won't, we have to be prudent.

DR. DWYER: Well, there is the issue of some people regard -- really these are health guidelines. But some people regard it as immoral as well as illegal and fattening. But they do -- I mean, they do so we can't have a guideline that tells people to drink.

DR. GARZA: We never -- we did not go into the morality issue, at least that I remember, because that strays into a lot of values that are more difficult to deal with on a scientific base. But scientifically, it is a measure of concern that in fact there are significant health problems associated with this particular component of the diet. And it is a common component of the diet and one that -- that certainly I think will merit further discussion.

Okay. Let's move on then. Before we get to the issues discussion, we've just gone through the guidelines. And I would encourage each of the Committee members to please write down as specifically as you can without getting

into paragraphs the types of studies that you feel -- or data analysis that you feel we need to think about very carefully so that if, in fact, either staff or others can -- can be asked to do them, they will be available to us by the next time we meet.

We've talked about the sorts of issues that Suzanne raised. We just dealt with another one with Meir in terms of some of the issues of alcohol consumption among the elderly. If there are analyses of these types that can be done within the framework -- the time frame that we're working under, then we need to make sure that we get to those tomorrow and list them in enough specificity for staff.

Okay. Are there any other general comments regarding the issues, data, salient points of the guidelines? Roland?

DR. WEINSIER: Can I raise one? The answer may be obvious to others, but I'm having a little bit of difficulty. When -- when we are trying to set -- we can sometimes use guidelines; sometimes we speak of goals. I presume that we're trying to aim for guidelines that are based upon health and science.

But at the same time, the theme keeps recurring,

yes, but we've got to -- we have to keep in mind that we're dealing with people who have to shop in grocery stores and they deal with convenience and taste and limitations of income, etcetera, etcetera. And then all of a sudden we moderate our recommendation.

DR. GARZA: Now, let's err on the --

DR. WEINSIER: The obvious answer may be there, but I don't see which it is. Should we be trying to keep strictly to what are the scientific data that support a guideline and then let the public deal with, "Well, it's not realistic for me"? That seems kind of extreme, but how do we moderate this?

DR. GARZA: Well, yes, most of the time. What I mean by that is, yes, we ought to let the science drive this most of the time. But how we can't -- we can't do it totally context-free. And so that that -- that will deal with -- with scientific prudence and judgement.

So I can't say, gee, let's -- let's just do the science regardless of where it may lead us because, in fact, we can get to a pretty ridiculous point if we were to do that, if we were to do it totally context-free and decide, for example, that -- that the only calcium source, for example, that -- other than dairy foods may be foods that

are just not very commonly consumed in this country.

And so that if calcium was a concern, then how do we take our dietary patterns into account? That's one example that came up repeatedly during our last Committee meeting.

So there is some context that we have to -- we have to always keep in mind. But I hope that if we are going to err, it's going to be erring on the side of, well, this is what the science shows independently of context. Now, that -- that is a personal view. I don't know whether others on the Committee feel that.

DR. GRUNDY: Well, I agree that the science is the foundation. But I think there has been a recurring theme among people in the nutrition field that we need to turn these recommendations into practical food guidelines that people, you know, can use and practice.

And unless we do that, then we're not going any further than a lot of other groups that have given us percentages of fat and percentages of carbohydrate in the diet. So there has to be a translation made here. Am I right about that? Or it seems like that was the --

DR. JOHNSON: Well --

DR. GARZA: Rachel?

DR. JOHNSON: -- I think it's -- I think it's really important to remember what Eileen said this morning in the numbers she showed us. For example, there are current federal regulations that all school nutrition programs follow the Dietary Guidelines. And they're feeding 26 million American children a day.

So clearly what we recommend -- if it's so extreme that it's not practical, those regulations would clearly have to be re-looked at because we can't propose something that can't be applicable to school children in the U.S.

DR. DECKELBAUM: But even with the recommendations and the fact that the schools, say, in New York follow the guidelines, when you look, you know, at cross-sectional studies now at percent of children that actually meet the -- meet the guidelines, it's still fairly -- I can't -- there are a number of studies that --

DR. JOHNSON: -- regulations. But --

DR. DECKELBAUM: No, but this -- there was a reason when this came out about a year ago -- I can't remember; I'll get it for you -- where it still seems to be low. So that, you know, the children are still getting school lunches and a few get school breakfast, but the rest of their meals are taken at home.

DR. GARZA: Johanna and then Shiriki.

DR. DWYER: I share Rachel's concern that we keep in mind taste and culture and these consumer concerns as part of the sort of context of the whole issue.

The other thing that we need to consider that didn't come up at all today was the whole issue of total fat and cancer. We have a national trial that has 35,000 women enrolled. And that seems like that at least deserves mention in our search of the literature.

DR. GARZA: Shiriki and then Alice.

DR. KUMANYIKA: I just wanted to comment on the policy issue. I think it's a two-step process and both steps are very legitimate. One is to come up with the nature of the recommendations based on the evidence in terms of what can be recommended. And then the second step is to see how it applies to a particular group of people. And then there's a science there, too.

One of the things we were aware of last time was that the very prescriptive, negative recommendations may have lost the public entirely. And we can get a rebound. And so we were trying to make the advice seem very positive. So it doesn't mean that we recommend something that's not scientifically sound. But I think it's legitimate and even

essential to then apply other information about the application in getting to the final recommendation.

DR. GARZA: Alice?

DR. LICHTENSTEIN: I have another concern. I don't know exactly where it's in. But I think your example that you brought up about calcium and how do you get it is good because now there is calcium-supplemented orange juice. Where -- where does that fit in? I don't think it's something that we can ignore because it's all over the place right now.

I was riding -- when I was coming down, I saw something in the New York Times magazine section that was for a whole new brand of milk that was now calcium fortified. And I know that we sort of can always get skim milk that has the added milk solids. But there are a lot of foods like this that have -- could potentially have a positive impact on food intake.

But it's unclear how to even make guidance or where to put something, let's say, that's high in calcium now if it doesn't fit in the traditional categories. And I don't know exactly what to do about it and I wanted to bring it up.

DR. JOHNSON: I think, Alice, what you're talking

about is the whole area of functional foods which we probably need to think about.

DR. GARZA: Okay. And that may move us into the next part of our discussion. But before we go there, Roland, I don't know whether that helps because it is -- it is somewhat of a balancing act. And that's what I meant earlier today about complexity.

DR. WEINSIER: I think the answer seems fairly obvious. The reason I brought it up is I've had the feeling from some of the presentations and some of the discussion that we may be thinking first in terms of what would be most appealing and attractive and the accepted most rather than let's look at the science first, as Shiriki said, and then let's back off to make sure that the science of behavior, the science of applicability fits. That's what I needed to hear.

DR. GARZA: Good. Then let's -- let's move on. And the next -- the next phase of our discussion is going to review issues that are not currently covered by the Dietary Guidelines, but merit discussion before we decide whether we want to eliminate some, add some because of those issues. So Rachel.

DR. JOHNSON: Not that.

DR. DWYER: Well, you've answered it.

DR. JOHNSON: Great. Thanks. And thank all of you for sticking with us for this long day. I was asked to address the issue of dietary guidance for healthy children. Next slide.

(Slide.)

There's been a fair amount of debate for those of us who have followed the pediatric literature on whether or not we need separate dietary guidelines for children. And that's what I hope to address today.

The health status of U.S. children has generally improved over the past three decades as evidenced by lower rates of infant mortality and a decline in all of the major deficiency diseases of the past. During the past decade, however, the number of children who are overweight has more than doubled. And approximately 11 percent of children are overweight. An additional 14 percent have a body mass index between the eighty-fifth and ninety-fifth percentile which puts them at increased risk of being overweight.

Thus, obesity is currently a much more prevalent condition among U.S. children including low income children than underweight and growth retardation. In the face of these changes, dietary guidance for children has certainly

broadened from an earlier focus on issues of nutrient under-consumption and deficiencies to include concerns related to nutrient over-consumption, physical activity patterns and the attainment of optimal health for chronic disease prevention. Next slide.

(Slide.)

To date, more than ten scientific organizations have issued dietary recommendations and guidelines for children over the age of two. Recently, the American Academy of Pediatrics Committee on Nutrition recommended that children over the age of two adopt the following pattern of nutrient intake.

I think what really is at all different in their new release from what they had issued in the early 1990s is the fat -- for total fat. They are now saying that it should be no less than 20 percent of total calories. Next slide.

(Slide.)

There has been considerable discussion in the scientific and nutrition community as to the appropriateness and safety of applying dietary recommendations, particularly for fat to young children.

Since 1995 when the Dietary Guidelines were last

looked at, numerous studies have been conducted to assess the feasibility, efficacy and safety of lowering children's dietary fat intake in an effort to determine if the dietary guideline to limit total fat calories to 30 percent is appropriate for children over the age of two.

I will touch on just a few of the key studies in this area.

(Slide.)

Computer modeling studies have proposed changes showing that the RDAs for most -- or DRIs, as they may be -- for most minerals, vitamins, trace elements, protein and energy can be met within a fat-reduced balanced diet without major changes in meal patterns and dietary habits.

Peterson and colleagues recently showed that exclusive use of selected fat reduction strategies such as substituting nonfat milk for reduced fat or whole milk, lean meats instead of higher fat meats, or fat-modified products instead of full fat products can facilitate achievement of the current dietary recommendations for children. Next slide.

(Slide.)

I want to touch on these three studies because in my mind, they probably are the most pertinent to the

discussion today. In the STRIP study, they studied the effect of low saturated fat diets on growth during the first three years of life. And they found that a supervised, low saturated fat, low cholesterol diet had no influence on growth, certainly no detrimental influence on growth during the first three years of life.

In the DISC study, the efficacy and safety of lowering dietary intake of total fat, saturated fat and cholesterol in hyperlipidemic children between the ages of eight and ten was studied. Intervention achieved modest lowering of LDLs over three years. But at the same time, they maintained growth, iron stores, nutritional adequacy and psychological well-being.

In the CATCH trial, which is the Child and Adolescent Trial for Cardiovascular Health, they studied over 5,000 initially third grade students and they lowered their reported -- self-reported energy intake from 33 to 30 percent calories from fat. And again, there was no evidence of deleterious effects on growth or development.

(Slide.)

Well, I thought it would be interesting to look at some population trends here. And there may be a gradual reduction in the percent calories from total fat. But I

think as we've heard today, that may be somewhat due to increased energy intake and only marginally increased fat intake. So there is evidence that total grams of fat is actually slightly increasing.

However, if you are a proponent of looking at percent calories from total fat, the argument has been made in the literature that at the same time, growth retardation among vulnerable low income preschool children has decreased steadily over the past decade. And at the same time, obesity has increased substantially, indicating that lowering percent calories from fat in the diet is not leading to massive increases in growth retardation in U.S. children. Next slide, please.

(Slide.)

So my conclusion is that the body of research evidence now fairly clearly indicates that children can safely consume a diet conforming to the 1995 Dietary Guidelines. And there is certainly no evidence that children's diets -- and this is the important point -- that contain adequate energy and 30 percent calories of -- 30 percent of total calories from fat have any negative health effects. Next slide.

(Slide.)

I wanted to talk about tracking of nutrient intakes in children because I think as we think about whether or not the current or the upcoming Dietary Guidelines can apply to children, we need to think about this issue of tracking.

Tracking is a term to use to indicate the likelihood of a child to remain in a respective rank for nutrient intake in relation to their peers. There have been data from Singer and colleagues suggesting that tracking begins as early as three to four years of age.

Kelder, et al. studied sixth graders until they reached twelfth grade and found that food preferences tracked very well over this time. In addition, milk consumption during childhood seems to affect lifetime milk consumption. And among a sample of elderly adults, the frequency of milk consumption during childhood was found to be the strongest predictor of adult -- of their current milk consumption.

So certainly nutrient intakes or nutrient and food preferences that occur during early childhood do seem to track to adulthood. Next slide, please.

(Slide.)

Hence, it has been suggested that health promotion

intervention should begin prior to the sixth grade before these patterns become resistant to change. Next slide.

(Slide.)

I think in looking at the Dietary Guidelines in children, we obviously need to think about obesity and physical activity. And this has been mentioned already today. Physical activity is clearly an important component of any effort to reverse the trend of increasing obesity in children as well as adults.

U.S. children are more active than adults. However, the overall picture is not encouraging. A CDC survey showed that 48 percent of girls and 26 percent of boys do not exercise vigorously on a regular basis. And at the same time, participation in school-based physical activity is declining.

Daily enrollment in physical activity classes dropped from 42 percent of students in 1991 to only 25 percent of students in 1995. So for whatever reasons, whether it's economics and local school budget cuts, clearly children are participating less and less in phys. ed. at school.

In addition, a quarter of all U.S. children watch more than four hours of television a day. And hours of TV

watched is positively associated with BMI and skin-fold thicknesses. Next slide, please.

(Slide.)

I touched on this a little bit earlier. Recently, the DRIs, the new recommendations for calcium were raised. They were raised by 500 mg for nine and ten year old children and by 100 mg per day for nine to 18-year-old children. And these -- these changes were primarily based on evidence that calcium intakes above the 1989 RDA could increase bone mineral density in children, thus decreasing their risk of developing osteoporosis in later life. Next slide.

(Slide.)

At the same time as the recommendations are being increased, calcium intakes have declined slightly. And this is in comparison with earlier USDA surveys done in the late '80s. Adolescent girls are particularly problematic. And currently on average, their intakes -- their -- the mean intake of 12 to 17-year-old females is only 61 percent of the AI for calcium. Next slide.

(Slide.)

At the same time as calcium intake is declining, milk consumption has dropped markedly between 1977 and '94,

particularly among adolescents, both girls and boys. Carbonated soft drink beverage has increased dramatically. The major changes in beverage consumption patterns of U.S. children occur in the area of soft drinks.

Intake increased from 198 grams per day in the late '80s to 279 grams per day in '94 and '95. And for male adolescents, soft drink consumption has risen to 580 grams a day.

Given that the recent changes in the DRIs indicate that many U.S. children should be consuming more calcium than they currently are, the ongoing tendency for calcium-rich beverages, again, to be displaced by beverages high in sugar is a concern I think. Okay. Next slide.

(Slide.)

My closing thoughts in pulling this together is that a very nice paper done in Pediatrics last year showed that the majority of U.S. children and teens are following eating patterns that on average do not meet current recommendations, the current food guide pyramid recommendations, especially for the fruit, grain and dairy food groups.

The majority of U.S. children do not meet current guidelines for total unsaturated fat. And we talked about

the implication of school meal programs now being in compliance with the Dietary Guidelines. And there are no national nutrition survey data available yet that have been taken since the regulations went into effect I believe in the fall of -- the school year of '97-'98, last school year. So we really don't have good data on how these changes in the school meal programs are impacting the nutrient intake of U.S. children.

Obesity is a critical health problem among U.S. children. And I believe, particularly from the evidence I showed you on tracking studies, that prevention of chronic disease needs to begin early in life. Thank you.

DR. GARZA: Any questions for Rachel? Are there any questions? Comments? Shiriki?

DR. KUMANYIKA: Thank you. I guess the question is what is the question or what's your -- so if the question is should this -- these Dietary Guidelines include more explicit statements to cover children or should we do a separate dietary guidelines for children -- in the view of there are dietary guidelines for children that have bene published -- I mean, I've seen at least one set that's formatted to look like these Dietary Guidelines. Maybe Gerber did it or something. But it's for children. So can

you comment on that --

DR. JOHNSON: The Gerber diet guidelines are for infants --

DR. KUMANYIKA: Infants, right. Okay.

DR. JOHNSON: -- which that's a whole other story. And I've pretty much stuck with two and above. If we're going to address below two years of age, that's another issue I think because clearly their fat needs are high because of rapid growth, etcetera.

I -- maybe I wasn't clear enough that the question I think in reading the -- the text from the last guidelines and in following the literature and being to numerous symposia since then, there has been some discussion that there should be separate dietary guidelines for children; particularly that the fat guideline was not appropriate for children.

I think there has been substantial new evidence since '95 -- the DISC trial, the CATCH trial, the STRIP trial -- that clearly indicate that fat -- it's not fat restriction. Thirty percent fat to me is not fat restriction -- but that 30 percent fat with adequate energy intake is not harmful. Therefore, I guess my take on it is that I don't think we need separate dietary guidelines for

children at this point. But --

DR. GARZA: Roland?

DR. WEINSIER: Yes. Rachel, with regard to I think it was the next-to-the-last slide, one of your own studies or reports suggest that only kids with a source of dairy or milk -- whatever you say -- dairy products in their diet consume enough calcium. What do you feel about -- I know Bert is going to chastise me again for referring to the pyramid rather than the guidelines, but the pyramid has a separate category for dairy. Is that critical for children? Does this need to come out in the guidelines?

DR. JOHNSON: Yes. I think it is critical for children. We've done a study which is going to be published in the next couple of months using USDA survey data looking at beverage consumption patterns of children. Clearly children that select whole milk or even two percent milk have significantly higher fat intakes. And whether that's something we want to look at, we can.

But only those children who consume milk in their diet come close to meeting the calcium requirements. They're not meeting them through other. So if they are consuming any other beverage other than milk -- we looked at -- at the lunch meal. They're not meeting calcium

recommendations without milk in their diet.

DR. WEINSIER: And can I follow up on that?

DR. GARZA: Certainly.

DR. WEINSIER: And the basis for your recommendation that children need to be consuming dairy products is -- is it based solely on reference to the recommended calcium intake or to disease related to use or non-use of dairy products -- disease or health? Can you separate those?

DR. JOHNSON: Well, i guess it is based on the recommendation which in my reading of the literature are based on good clinical studies that show that bone density in children is enhanced when dairy products are included in the diet.

And then there is somewhat of a leap of faith, although there are some longitudinal data to say that bone mineral density certainly -- you know, higher bone mineral density reduces risk of osteoporosis later in life. Is that --

DR. WEINSIER: Can I ask the question in a different way then? Can a child acquire normal adequate bone density without dairy products; i.e. is it required?

DR. JOHNSON: Theoretically, probably yes.

Theoretically. Practically, will children eat enough of other high calcium sources -- is that kind of what you're getting at -- to achieve optimal bone density?

DR. WEINSIER: No, I'm talking about bone mass; not necessarily calcium intake. Calcium balance, yes. I'm talking about calcium balance and bone mass; not specifically calcium intake. So you feel that in this country, it is a -- I'm going to put words in your mouth -- but practically an impossibility without dairy products for them to acquire adequate bone mass?

DR. JOHNSON: If we're making broad population-based recommendations, I would say yes.

DR. GARZA: Richard and then Scott.

DR. DECKELBAUM: In the current guidelines, and I may be wrong, but there's only -- I think there's two areas where children are emphasized and there may be one that I missed. One is weight regulation in children and the other is on the fat diet, advice for children. So those are the two areas where there is -- and growing children and variety.

And given the fact -- if you look at the obesity or overweight statistics, it's -- it's an epidemic in childhood, one decade doubling. And the fact that many of

these children are going to go on to be overweight adults, does it seem prudent in terms of -- and the Committee is agreeing that this is a major concern, is overweight and obesity -- that we might concentrate on that aspect in the pediatric age group, one.

And two, given the fact that we really are -- at least what we're hearing so far is that the current guidelines do fit almost -- just about across the board for children down to the age of two. Should this be more strongly emphasized when we give our report that really the current guidelines are meant for all Americans above the age of two like some other organizations stress?

DR. GARZA: There is such a statement in the guidelines that they are intended for all Americans over the age of two. Something that all of us should remember is that the strategies that we use for -- or that the departments choose for promoting the guidelines, if you're going to use the guidelines to teach children, obviously this booklet is totally inappropriate.

You wouldn't -- you would not approach a ten year old with this booklet. You might choose to do it with a different teaching tool. And so certainly there would -- there is that option. I don't think we necessarily have to

come up with a teaching tool.

We have to make sure, as I think Roland said earlier, that the science for all the age groups that the guidelines are intended to cover is substantial. And if there are exceptions or special caveats, then we ought to point those out where there are clear exceptions.

For example, there are several points where pregnant women are pointed out as a group or individuals that are dieting. I mean, so that as you go through the booklet if there are issues that relate specifically to children that are substantially different from other age groups or other physiological states, we ought to put them -- we ought to make sure they are there.

DR. DWYER: I am curious about -- the LSRO seems to have a number of reports that it hasn't issued. One of them as I remember is one on the dietary -- it's looking at the evidence for dietary guidelines for children. What has happened to that report? Who paid for it and why don't the people who paid for it have it?

DR. MEYERS: We didn't pay for it. So I can answer that. It -- it --

DR. DWYER: And then you can tell me about the formula ones. You're not going to do that.

DR. MEYERS: It was meant -- it was meant to be basically a literature review --

DR. DWYER: Yes.

DR. MEYERS: That would be a basis for this Committee. And Shanthy may be able to give better guidance on exactly where it is. It's in -- it's still in review at LSRO as far as we know the last time we talked with them. And so we will urge them to --

DR. DWYER: When is it coming out?

DR. MEYERS: It's overdue.

DR. BOWMAN: Yes, it's long overdue. (Inaudible.)

DR. GARZA: On that happy note, Scott?

DR. MEYERS: That doesn't work on the Food and Nutrition Board. Sometimes they --

DR. GRUNDY: I wanted to go back to the calcium and saturated fat. It seems like what you've presented is that there is a problem that we have, is how to deal with reducing saturated fat and increasing calcium in the practical diet. And it applies to children, but also applies to adults, as well.

And it's how do we get around that? What about fat-free products with calcium? Will that solve the problem or does it have to be some other -- somehow we have to solve

that problem so we can't say that people ought to eat this and there's no way to do it.

DR. JOHNSON: Right. I -- I think fat-free products are clearly an option. This is very, very anecdotal data. But I know -- I don't have any problem, for example, with flavored milks. And oftentimes the nonfat or half percent chocolate milk are clearly the most popular choice in schools that are offering it. They are wildly popular with the kids. And so there are certainly, you know, many practical options to keep the calcium intake up and still reduce saturated fat.

DR. GARZA: Okay. Other questions? Alice?

DR. LICHTENSTEIN: Actually, I just want to comment on another age group that might warrant similar consideration to children that -- well, this is actually -- I'm going in the other spectrum being colored by coming from an aging institute.

But I think perhaps some attention should be given to evaluating whether there are any special needs for older individuals. That's being done with the DRIs, but I'm thinking of individuals with a high prevalence of lactose intolerance, lower energy needs. And that seems not to have been addressed in the previous guidelines.

DR. GARZA: That's what I mean, that if -- I'm sorry. I guess we're moving on from children. I think that as you go through the booklet, that if there are substantial issues that apply to healthy populations, and certainly --

DR. LICHTENSTEIN: So stating, I think that's one that should --

DR. GARZA: Yes. And then -- exactly. Then -- and we tried. I think that there are specific statements that relate to the elderly in that booklet. Now, they're not -- there may not -- it may not be as complete as we think the evidence now warrants. And we need to make sure that those are included. Roland?

DR. WEINSIER: Tell me when it's a more appropriate time to come back to this issue about dairy products. I'm not just referring to children. I mean for all ages, certainly for adults. The pyramid does include as a separate group dairy products. I'm -- I'm not convinced that the evidence supported being a required component of the average or healthy individual's diet. I'm not saying that it can't be. I'm just not sure that it's required.

And if we're talking about primarily, you know, bone mass, I mean, we know from population data that in other populations, that many groups can achieve maximum bone

mass and good health and minimal fracture risk with relatively low calcium intakes. Sodium intakes tend to be lower; protein intakes tend to be lower; exercise tends to be greater.

So then we have to resolve -- and this gets me back to my earlier question. Is it a practical impossibility, as Rachel is suggesting, and therefore we just go ahead and put it in as saying that it's required, or do we go back to the science and then moderate that a little bit as necessary to make it fit?

DR. GARZA: Remember, and this is not meant to chastise you now, that the pyramid is not part of the Dietary Guidelines. It is a tool the departments are responsible for putting together to apply them. We can in our advice to the -- to the departments I suppose say, "Gee, you know, change the pyramid", but it would --

DR. WEINSIER: Well, that's why I asked where this comes out.

DR. GARZA: -- but that's not -- that's not part of the Dietary Guidelines. I mean, there is no guideline, I think if you go through the guidelines, that says, "Gee, make dairy products a part of every child's diet." Now, if we said that in the booklet, then I don't remember it. I

don't remember it's -- that -- that would be inappropriate.

The pyramid itself is reproduced in the booklet. But it's not -- it is not -- never was adopted or has been adopted as far as I know by the guideline Committee. It was an adaptation by the Department. Some of you could help me with that. Johanna, is that correct?

I mean, I know we never reviewed -- I've never been part of a review team that says, "Well, what do you put in these little blocks?".

DR. DWYER: It's basically based on a lot of science. And, you know, they've done a lot of things. I mean, it gets back to this thing of we could suggest anything I suppose. But, you know, we don't want people to laugh at us.

DR. GARZA: For example, Roland, one of the things that I know that they did for the pyramid was to look at consumption patterns in the U.S. and then try to balance the pyramid based on foods that would reach the RDAs. So that as I understand it, the pyramid is a product of both, first of all, the RDAs because the patterns have to be able to meet those.

Then they -- they constructed it to meet the Dietary Guidelines and to make sure that it applied to most

Americans or if not -- I don't know quite what most would be, whether it was 95 percent. But it was based on a rather detailed analysis of dietary intake data within the U.S. And that was the way the pyramid came about.

And that's why we -- when it was put in the booklet, there was no special review. We could recommend that they omit it from the booklet. It goes from calendar to -- to what Suzanne said because she was suggesting that we make it even more explicit in her presentation.

And so we could certainly go in that direction. We have that option. But I don't want any of you to think that there was a review of this tool by previous Dietary Guidelines committees. That has not been -- at least as far as I know, that has not been the case. Scott?

DR. GRUNDY: I wanted to respond to Roland's comment though. I think throughout the DRI process on developing calcium guidelines, there has been a recurring theme that Roland brought up that population studies don't indicate the need as high calcium intakes as recommended by the DRI process.

And in my -- in my own view of that, the DRI process has gone a long way in overturning that position of the epidemiologic evidence. And I just wonder if that

somehow ought to be presented to this Committee and we ought to have a presentation on that because I don't think that the epidemiologic evidence in, say, the scrutiny that went through the DRI process.

And yet it is brought up frequently in the DRI. I know that they will be criticized. But I think the evidence that they've marshalled is quite considerable.

DR. GARZA: We could do that if at some point the group felt that that would be helpful to its deliberations. We could bring the group that developed some of those recommendations to the group. But I don't think that was the point of Roland's question. I thought it was -- you weren't questioning the -- the adequate intakes of them, the idea --

DR. WEINSIER: I was focusing on dairy products.

DR. GARZA: -- the strategy of achieving calcium intakes is very specific within the pyramid and is that really the only strategy.

DR. WEINSIER: Right, yes. Because otherwise, I don't remember seeing in here an issue dealing with calcium intake. So --

DR. GARZA: Well, we don't. And that's why I was trying to separate the pyramid from the guidelines. I know

that that's --

DR. WEINSIER: But it is woven into --

DR. GARZA: No, I agree. And we can -- we can unweave it because it never went through review.

DR. WEINSIER: No, I understand.

DR. JOHNSON: I think in follow-up to that is that I do have a concern about calcium intakes in children. And I think that as a committee we need to be look at it because there isn't anything in the guidelines. And I'm much more concerned about that than I am the applicability of the fat guideline to children. So I would just like to add my two cents there.

DR. GARZA: No. And I know that that's been -- that was brought up by a number of people whether we should -- we should add statements as to the strategies that could be used to meet calcium needs.

DR. DECKELBAUM: I'll third that. But when you look in the booklet on page five, as everyone knows, we've got the pyramid. And I actually was not aware what you just said. But, in fact, they come from two different areas. But the other thing that we know is that of all the parts of the guidelines or whatever, government information, this is the one that's most widely recognized by the public.

So the question is, is it within our charge to comment on the pyramid, to utilize it in developing some of our recommendations or should we be -- just totally drop it in terms of the guidelines that we're going to be formulating over the next few months.

DR. GARZA: It's my understanding that we can do any of the above. What we can't do is modify the pyramid because it is the result of an internal government process. So that we can't say, "Gee, you know, shift these around", because there is a whole research effort that went into that and a separate review process.

We can say, "Gee, we no longer think for these reasons that it is in keeping with the Dietary Guidelines or accurately represents them, so we want it omitted or changed." And that recommendation can certainly go forward. But we can't say we're going to come up with our own pyramid without going through a similar process. Is that --

And that pyramid was added at the Committee's insistence as a teaching tool as I recall. I mean, it was not part of -- well, it couldn't have been part of the previous one because it wasn't ready. Shiriki? And then Suzanne also has her hand up.

DR. KUMANYIKA: Can we review the guidelines in

concert with the DRIs and the RDA or the DRI process because calcium certain is one that overlaps. And possibly some of the supplement issues with vitamins and minerals will come up, too. And it just seems to me, especially since we have in one body the Chair of two committees that are making guidelines, that we should -- we should make sure that we don't end up in trouble with the RDA.

DR. GARZA: No, no, no. I want to correct it. In fact, Dr. Young is the Chair of the DRI. I do chair the Nutrition Board.

DR. KUMANYIKA: Okay. Okay.

DR. GARZA: At some point, I do have some measure of responsibility, but --

DR. KUMANYIKA: Okay. But not --

DR. GARZA: But, in fact, Johanna and Scott are both on that committee.

DR. KUMANYIKA: And you're not.

DR. GARZA: And I'm -- I'm ex officio.

DR. KUMANYIKA: Okay.

DR. GARZA: Not that I want to disassociate myself from that. But I don't think it's -- it's appropriate that I portray myself as leading that effort either.

We will be coming back to dietary supplements. We

foresaw this being an issue. And in fact, when -- when Shiriki volunteered to talk about dietary supplements, we, again, embraced her volunteering -- I'm sorry, was it --

DR. KUMANYIKA: No, I volunteered.

DR. GARZA: Yes. We -- we welcomed her -- her enthusiasm. Do you want to add anything to discussion since you were arguing for its strong -- the stronger representation of the pyramid?

DR. MURPHY: Well, my arguments are based in large part on its success. And I think as a teaching tool, it is unparalleled quite honestly. And I work a lot with low income families. And I just can't say enough good things about the pyramid.

If it needs to be changed in reaction to the new DRIs and/or the recommendations of this Committee, then I'm sure it will be. There is a process in place. The Yellow Book and Carole Davis is right here with us and can talk about all these things. And -- and clearly there is a process for changing it. But I would argue that that's not this particular Committee's responsibility.

If we decide that there's a basis for changing the milk recommendation, there is science that says children don't need to drink milk. We can certainly say that. But

the number of servings or the specific implementation of that I think is not our -- our area.

DR. LICHTENSTEIN: Might I just say that if we consider the calcium and the milk issue, we shouldn't forget that milk is supplemented with vitamin D and then we would have to go into the impact -- you know, what percent of the vitamin D kids get is from milk specifically.

And Johanna, where -- didn't you publish some reports on children with rickets and a group of individuals that didn't consume dairy products?

DR. DWYER: Well, yes. I was trying to bite my tongue because there are a million Chinese who testified to the fact that you don't have to drink milk to, you know, have bones.

(Laughter.)

But the point is that -- a billion Chinese I guess it is. But --

DR. GARZA: I was going to say that.

DR. DWYER: But the point is that that isn't the issue of what I think we're talking about in the Dietary Guidelines Committee. And so, you know, I guess I want to go back to those seven or eight or ten, however many guidelines there will be and focus on them first and then

get -- you know, go back to those first principles first and then worry about these other things.

But I've never felt that any food with the possible exception of mother's milk is essential for anything. I mean, people can do all sorts of things.

DR. GARZA: Okay. Well, on that endorsement of mother's milk --

(Laughter.)

-- we will end the meeting for today. And we will return to the issues tomorrow morning at 9:00.

(Whereupon, at 5:05 p.m. on Monday, September 28, 1998, the conference recessed to reconvene at 9:00 a.m., Tuesday, September 29, 1998.)

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In Re: Dietary Guidelines
Name of Hearing or Event

N/A
Docket No.

Washington, DC
Place of Hearing

September 28, 1998
Date of Hearing

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