Morning Day 2
https://youtu.be/KOv_fvCiOlg

Dr. Janet de Jesus: Good morning. I'm pleased to welcome everyone to the third meeting of the Dietary Guidelines Advisory Committee on Day 2. I'm Janet de Jesus from the Office of Disease Prevention and Health Promotion at the Department of Health and Human Services.

It is my pleasure to welcome our morning speaker, Admiral Brett Giroir. He is the 16th Assistant Secretary for Health at the US Department of Health and Human Services.

He serves as the Secretary's principal public health and science advisor, senior advisor for HRSA, CDC, SANSA, and Chief Opioid Policy Advisor. He also oversees the Office of the Surgeon General and the US Public Health Service Commission Corps.

[0:00:59] His office leads many critical national initiatives, including a historic new plan to end the HIV epidemic in America, the Physical Activity Guidelines, the revised Common Rule, an across-agency effort to improve the outcome of patients with Sickle Cell disease.

Previously, Dr. Giroir served in numerous leadership positions in the federal government, and in academic institutions. Most notably, he was the first physician to be appointed as an office director at the Defense Advanced Research Projects Agency.

As a pediatric critical care physician, Dr. Giroir cared for critically-ill children for 14 years. He continues to bring that hands-on patient-centered perspective to his work as Assistant Secretary for Health, where his primary goal is leading America to healthier lives.

Please join me in welcoming Admiral Giroir.

[Applause]

[0:02:00] ***Admiral Giroir:*** Well, good morning, everyone, and good morning to everyone who's watching us in the virtual space. I love introductions like that, because the introductions are longer than my remarks are supposed to be, so it—

And I'm always very jealous about the Department of Agriculture, because they really have wonderful architecture and historic buildings. So, it's really great to be here.

I am really here because, primarily, I want to thank the members of the committee. I really do. We had such a long period of time going through the process to understand how this committee would work, to receive nominations, and I can tell you that, when I met with Secretary Azar and Secretary Perdue in his office, talking about the committee, we were floored by the credentials and the passion and the

commitment that all of you have. So, I think this is—this is the rock star committee, Advisory Committee, and we really appreciate your work.

[0:03:02] I know how much time you have to put into this. I think a lot of people understand the time commitment that's involved, but I don't think people understand the physical stresses of all the travel and the work that you need to be through, but I think also, people don't realize it's a little bit emotionally stressful, and I felt that when I was on advisory committees, because what you do really affects millions of lives over the next few years, and the issues are not easy, they're really rough science engagement, but they're so very important.

So, the main reason I am here is to really thank you. So, I do appreciate that.

I also want to thank all the staff who put this together. This is not an easy lift by any chance. So, if you're a staff member either at USDA or at HHS who's worked on putting this together, stand up, please.

[0:03:58] [Applause]

So, my office is primarily responsible for leading America to healthier lives. We try to provide the roadmap for being healthy, whether that's vaccine policy, whether that's the elimination of oral hepatitis, very recently, the Physical Activity Guidelines for Americans. So, we are all about prevention and keeping people healthy.

And every single time I talk, I talk about the dynamic duo of nutrition and exercise, and that really is the foundation of all health, in my mind.

You look at our expenditures now, $3.6 trillion in the United States, $6 trillion by 2027, almost 19 percent of the GNP, 90 percent of our expenditures on chronic conditions.

I'm a pediatrician, as you heard, and of course, I'm extraordinarily thrilled that we're able to move into the newborn to 24-month age group, and also, pregnancy and lactation.

[0:05:04] But you look at some of the estimates, today's two-year-olds, it is estimated by the time they're 35, 60 percent of them will be clinically obese. Our country cannot survive 60 percent of our 35-year-olds being clinically obese, with the long tale, not only of obesity, cardiovascular disease, hypertension, and diabetes, but we now know that so many forms of cancer are linked to improper nutrition and obesity.

So, our country cannot survive this. If you look today, 3/4 of our 17 to 24-year-olds could not meet the standards for the military if they applied to it, 3/4. About 1/3 of that is obesity and physical fitness, about 1/3 of that is education, about 1/3 of that is substance use disorder.

So again, there is no way our country's going to survive unless we get to some of the root causes.

[0:05:56] The promising news, though, the promising news is, I know that with the appropriate guidelines, it can serve as a basis for all of us to move forward. I know that by good nutrition, even the estimates right now, that about half of all cardiovascular mortality can be averted. We also know that between easy things like vaccination, elimination of smoking, and appropriate nutrition, we can prevent 42 percent of all cancers right now.

That's what we know about, and I bet as things move forward, we'll learn more and more about the prevention that we can get.

I am very excited about new cell therapies for cancer, but I really want to put the National Cancer Institute out of business, and I think we can go a long way with that by just doing the kinds of things that you recognize.

So again, I do want to thank you for all your work. I want everyone to know that, even though the schedule hasn't been right that I've been able to be here on the previous meetings, that we spend a lot of time, a whole lot of time at the level, at my level and at the level of the Secretaries, trying to understand what you're doing, hearing about what you're doing, trying to facilitate your work, and I just want everyone to understand that, as we say, we got your six, right?

[0:07:13] We've really got your back, we want you to do the best job possible, because so many important things depend on the outcome of this, of this committee.

Nutrition really is the foundation. I'll say the dynamic duo of nutrition and exercise together really has such profound affects.

Oh, I forgot the one I really wanted to talk about, which is my new latest kick, is we're learning more and more, as you know. About every month, there's a new great article. This is not my field. But the impact of nutrition and exercise on neurodegeneration.

This perhaps, to me, is one of the most exciting areas, because, yeah, I turn 59 next week, so I'm getting up to the age group where you start worrying about these things, but if you look at the epidemiology of the aging population, and the fact that we don't have—we really don't have a paradigm for neurodegeneration.

[0:08:05] But what we do know is if you don't smoke, if you don't drink excessively, if you have exercise, and you have a good, healthy nutritional program with high-quality diet, you can reduce your risk by about 60 percent. If there was a pill that reduced your risk of Alzheimer's by 60 percent, it would sell $10 trillion tomorrow.

So, I look forward, as we open the aperture on what nutrition can do for us. Food is medicine, both preventative medicine as well as healing medicine if you're sick.

And again, I want to thank you so much for your time, your commitment, your passion, and anything you need, we're there for you. So, thank you very much. I appreciate it.

[Applause]

Dr. Barbara Schneeman: Thank you very much for those comments. I know the committee appreciates having the support of both USDA and HHS as it moves forward with the work, and the importance of the work.

[0:09:05] So, I'm pleased to welcome you to day 2 of our meeting. Oh, great.

And I'm welcoming both the people online as well as those of you in the room, and loyal Mets fans, who I'm sure would rather be watching the Dietary Guidelines Advisory Committee than the World Series.

But so, just to remind you of the purpose of our public meeting, this meeting three for the Dietary Guidelines Advisory Committee. We are describing the status and providing updates on the work of subcommittees for the full committee discussion and decisions.

The subcommittees have been reviewing evidence and providing advice to this parent committee, and each subcommittee conducts its work together between meetings, but all the decisions going forward are made by the full committee in its public meetings.

[0:10:10] So, the updates to be—that will be discussed in the presentations, they were discussed yesterday and will continue today, are any of the substantial updates to the 40 protocols that were discussed at meeting two, so any of those revisions.

We are doing discussion and deliberation on 19 new protocols that have been developed by the subcommittees.

And we're able to then review evidence that is available, that some of the subcommittees are bringing forward for the committee, although most findings are still to come, but we are starting that process of looking at the evidence and developing conclusion statements.

So again, just to remind you that all of the information is available on DietaryGuidelines.gov.

[0:11:03] So all of the protocols that we will be talking about are being posted on DietaryGuidelines.gov. So, by going to the website, identifying the questions, and then from those questions that are of interest to you, you can find the protocols, and also on that website, you can track the progress of the committee as it moves forward with the work.

So, in yesterday's discussion, we had a presentation to look at the NESR approach to the synthesis of evidence, since that is the phase that the committee is moving into as it implements its protocols, and

we heard the subcommittee updates for the Dietary Patterns subcommittee, the Dietary Fats and Seafood subcommittee, Beverages and Added Sugars, and we also moved from today's agenda, the Frequency of Eating subcommittee report, so we had that report yesterday.

[0:12:04] And then, we had the opportunity for committee discussion, and it was a good opportunity for the committee to start thinking about and discussing the overall format of the report as we move forward, and the notion that we're using a life stages approach as we report our findings to the Departments.

So, for today's agenda, we're almost finished with the opening remarks, and we will continue our subcommittee updates, starting with the Birth to 24 Months subcommittee, and Birth to 24 has been working with Dietary Patterns, so we're going to have a bit of a joint report, and then the Pregnancy and Lactation subcommittee, and then the Data Analysis and Food Pattern Modeling working committee, followed by committee discussion, closing remarks.

[0:13:01] And just to remind folks, we announced yesterday, and I'll note it again now, that we're expecting to do all of the subcommittee reports before having to take the lunch break. So, we will probably be ending at the lunch time today. That's what we are anticipating for today's agenda.

And the agenda doesn't show a break, but we will try to work in a break, since it can be a long morning.

And finally, let me remind you that if the public listening to the presentations, if you have comments that are specific to the new protocols that are being presented and discussed today, it's most helpful for our work if they can be submitted by November 7 so that they can be considered before we start implementing the protocols.

[0:13:59] However, the comment period remains open throughout the committee's work, ending in 2020, but for those protocols, November 7 is the important time.

So, those are my remarks for opening. I'll just ask the committee if you have any questions or comments you want to raise at this point?

We're ready to go. Okay.

So, Dr. Dewey, do you want to—okay.

Dr. Kathryn Dewey: Thank you very much, Barbara. I first want to thank the members of this subcommittee that are very dedicated and hardworking, it's been a real pleasure to have our weekly conference calls, and the staff that has supported us, which are also amazing. And in particular, I'd like to thank Elsie Taveras, because I was not able to be here for the July meeting, and she was very good at presenting our protocols at that time.

[0:15:03] I'll tell you the punchline here. We don't have any conclusion statements yet, but we have made a lot of progress, and we have been working very hard on both developing and implementing all the protocols.

There are many protocols available on the web, but I wanted—I went through and looked at, well, how many questions or relationships are we actually trying to look at in terms of conclusion statements? And I think it's at least 50. So, you can imagine how confusing it can get.

And that's just the ones that our subcommittee is looking at for this age group. As you'll see in a moment, the other subcommittees are also working on issues related to this age group.

And the other aspect, even though it is many, many relationships we're looking at, we are really only scratching the surface of the issues around feeding infants and toddlers, and for the most part, the questions we're looking at relate to what to feed, and we aren't going to be able to really address the issues of how to feed, for example, issues like responsive feeding.

[0:16:01] But that's work for the future.

So, I'd like to start by explaining that the Birth to 24 Months topics are being addressed actually by four different subcommittees, as shown here. And on the next slides, I will describe the B24 topics that are addressed by these different subcommittees, and I'd also like to point out that all this information is available on DietaryGuidelines.gov.

So, in our subcommittee, this is one of the slides that shows the ones that we are working on directly. That includes the recommended duration of exclusive human milk and/or infant formula feeding, as it relates to five different categories of outcomes, and I won't read through all of them. But just to point out, that one of those is micronutrient status, and that actually encompasses six different nutrients, so there are many questions embedded within that particular topic.

[0:17:04] And then, for the frequency and volume of human milk or infant formula feeding, we're looking at how that relates to two of those five outcome areas – micronutrient status and growth, size, and body composition.

And then, for the third topic shown here, the overall question is how do dietary supplements from—either supplements or fortified foods relate to three different outcome domains – nutrient status, growth, size, and body composition, and bone health. And there are four nutrients, as shown here, that we are focused on in terms of supplements or fortified foods.

Now, in terms of complementary feeding, we also have quite a suite of questions we're examining that look at how both the timing of introduction of complementary foods, and the types of complementary foods are related to outcomes in five domains, shown here.

[0:18:06] And again, for the micronutrient status domain, we actually are focused on six different nutrients. So, there are multiple questions embedded in that.

Now, in addition to the work that our subcommittee is doing on complementary feeding, the Data Analysis and Food Pattern Modeling subcommittee is going to be directly tackling these questions of whether USDA food patterns can be established based on relationships identified. Will they meet nutrient recommendations? And is there evidence to support supplementation or fortified foods to meet those nutrient needs?

We haven't really started tackling that yet. I think Regan will mention that a little later.

Then, in terms of beverages, our subcommittee is looking directly at how beverage consumption relates to growth, size, and body composition.

[0:19:01] And actually, the previous Pregnancy and Birth to 24 Months work encompassed some of this systematic review process, because they're included, beverages were included within the complementary feeding exposures.

And again, the Data Analysis and Food Pattern Modeling subcommittee will be examining other questions related to this. How does beverage consumption by infants and toddlers relate to achieving nutrient and potential food group recommendations?

Then, in terms of added sugars, the Data Analysis and Food Pattern Modeling—sorry, it says B24 and/or Beverages and Added Sugars committees at the top there, will be looking at how added sugars relate to three different types of outcomes.

[0:19:59] And the Data Analysis and Food Pattern Modeling subcommittee is looking at how added sugars may relate to achieving nutrient and food group recommendations, and whether certain amounts of added sugars can be accommodated in a healthy diet while still meeting food group and nutrient needs.

Now, the top question there, again, is related to the previous work that was done, because sugar-sweetened beverages were part of the beverages that were looked at. So, that is a significant proportion of the added sugars that children in this age group are exposed to.

Then, in terms of types of dietary fats, the Dietary Fats and Seafood subcommittee is looking at how dietary fats relate to four different types of outcomes.

[0:20:53] And in this age group, the literature on some of those longer-term outcomes is probably very scant, but in terms of neurocognitive development, that's an area where there is probably a lot more to work with.

Then, in terms of seafood, the lead subcommittee is—we're still kind of working out who's doing what, but the Dietary Fats and Seafood will probably be taking the lead on how seafood consumption in this

age range relates to neurocognitive development and risk of cardiovascular disease, and I think we'll be working closely with that subcommittee on those questions.

Now, what I'd like to do at this point is tell you where we are with the human milk and infant formula protocols, which were presented in July, and those are being implemented. And these protocols either had no revisions, or very minor revisions that won't result in substantive changes to the reviews.

[0:22:00] So, we won't spend committee time going over those minor changes, but please note that all the protocols are available at DietaryGuidelines.gov.

But one item that we do want to report to the committee is that we discussed the parameters around how the studies define food allergy. We decided that it was best to review studies in which food allergies were diagnosed based on fairly rigorous criteria, gold standard being food challenged, but also making room for studies that included both food sensitization as well as some other evidence, such as a history of clinical reaction.

The Pregnancy and Lactation subcommittee is also discussing the exact wording of that second criterion, and so, we're—we still may have a few wording changes to put there, but that's the basic principle.

[0:22:56] And that aligns with the methods that were used in the existing review from the previous project that we are updating.

So, we would now like to update the committee on our progress in implementing the protocols presented in July, and the first good news is that the literature search is complete. We actually used two different literature searches for the human milk and infant formula reviews, and one was from the Pregnancy and Birth to 24 Months project, and the other was new for the current 2020 Dietary Guidelines Advisory Committee.

So, you may recall that, across the committees, some of the work we will do will involve updating the existing NESR systematic reviews, and in our subcommittee, those existing reviews are from the Pregnancy and Birth to 24 Months project, which was completed just prior to the work of this committee.

[0:23:57] So, during that prior project, the search for human milk and infant formula literature captured over 35 years' of research from January 1980 to March of 2016. And it included human milk and infant formula literature relevant to our current work.

Systematic reviews were completed for food allergies and atopic allergic diseases, cardiovascular disease outcomes, and diabetes outcomes.

And systematic reviews were planned but not completed for growth, size, and body composition, micronutrient status, and developmental milestones.

And the second literature search, which was recently conducted, captures literature from January 2016 through last month, and this search allows us to update the existing reviews with evidence from the last three years, as well as examine nearly 40 years of evidence for our new reviews.

[0:24:57] Now, two NESR analysts independently screened the literature search results using the inclusion and exclusion criteria that we presented in July, and data are being extracted from the studies that met our inclusion criteria.

We decided to start with a systematic review examining the relationship between the duration, frequency, and volume of human milk and/or infant formula consumption and micronutrient status, and we think that this will be one of the smaller bodies of evidence.

So, as you can see here, there are currently between 0 and 10 articles included for the various nutrients of interest, which include iron, zinc, iodine, vitamin D, vitamin B12, and fatty acids. These numbers may change slightly, because the NESR analysts have not yet finished their manual search, which involves using the references of the included articles as an additional source of articles to screen.

[0:26:00] However, due to having no articles, or a very small number of articles for some of these nutrients, we anticipate that we will probably have insufficient evidence to determine the relationship between duration, frequency, and volume of exclusive human milk and/or infant formula consumption with some of them, but not all of them.

Our other important set of questions revolves around nutrients from supplements and fortified foods. And again, those protocols were presented in July, and they are in the process of being implemented.

As with our human milk and infant formula protocols, these protocols had either no revisions or minor revisions that won't result in substantive changes to the review, and they are available at DietaryGuidelines.gov.

And just to remind you, the specific nutrients that were focused on here are iron, vitamin D, vitamin B12, and omega-3 fatty acids.

[0:27:02] The literature search for the systematic reviews is in the final stages of development and will be run very shortly.

In addition, we've been meeting with the other subcommittees to discuss cross-cutting topics that are relevant to this age group.

In particular, with the Data Analysis and Food Pattern Modeling subcommittee, we've discussed the availability of data for this age group, and actually looking at three sub-age groups, 0-6 months, 6-12

months, and 12-24 months, because of the differences in infant feeding recommendations and dietary patterns during those periods.

We've also discussed the minimum sample size that we might need and the feasibility of stratifying by the main milk source, human milk or infant formula or both, to examine food group and nutrient intake at 6-12 and 12-24 months.

[0:28:05] We've also tried to grapple with the issues around adequacy of information on human milk nutrient content, as well as discussed, the identification of priority nutrients for this age group.

And after I finish, Regan will be presenting more about what that subcommittee has been working on for this group.

With the Dietary Fats and Seafood subcommittee, we've discussed the developmental outcomes in the age range of 0-2 years, and we are currently working with them on developing the protocols for Birth to 24 Months.

So, our next steps will include continuing to implement the protocols we developed, which are listed here once again, and we will also continue working across the subcommittees to have conversations about the cross-cutting topics relevant to this age group.

[0:29:04] Finally, we will develop the remaining protocols, which are updates to existing systematic reviews about complementary feeding. As you may remember, those were tackled in the previous Pregnancy through Birth to 24 Months project. So, we've held off on finishing any further work on those protocols in order to focus on getting the first reviews completed, that I've already shown you.

So, I'd like to, again, thank all the members, and the really terrific support staff. There's no way we could have gotten to this point without their very, very hard work. So, thank you very much.

[0:30:03] ***Dr. Regan Bailey:*** So, I am representing the Data Analysis and Food Pattern Modeling Working Group, and we thought that it would be salient to describe the work that we're doing specific to B24 right after Dr. Dewey's presentation, so it's fresh in your mind, and then we'll talk about what we're doing in the 2+ group after Sharon Donovan talks about Pregnancy and Lactation.

So, I, again, this is the group that I'm representing, with the members listed here on the slide.

Oh, there we go. I was looking at my own computer, which is confusing. As if I'm not confusing enough, right?

So, when we were here in July, we presented the first of five protocols, and we had an asterix around all of those protocols that we had ongoing discussions with the B24 subgroup. So, that's what we're going

to be talking about in the next couple of slides this morning, so how we've extended the work or we're proposing to extend the work to that age range.

[0:31:05] And so, just to be quite clear, we always say the term B24, but it's actually birth to less than 24 months. So, that's something that has been changed in the protocols throughout.

We utilize nationally-representative data sources for the work that we're doing in this group. The life stages that we're talking about, infants and birth to less than 24 months, with exceptions that are noted on certain slides.

We, as Dr. Dewey mentioned, are interested in looking at infants together, and then stratified by primary milk source. So, when I use the word stratified, that is simply to reflect that we're looking at these two groups. We will look at them together and then as two separate groups, by the primary source of milk and in age groups listed here.

[0:31:55] In the 12-24 months, we'll also look at those children who are not receiving formula or human milk as a separate group.

Again, we've discussed at length that we will be utilizing the NHANES data for most of the work we're doing. Given the small sample sizes of birth to less than 24 months historically collected in NHANES, we need to combine five survey cycles. So, we'll be representing 10 years' of data for this age group, and we have data that's available through all of the databases that are listed here. So, we will have energy and nutrients, we will have food groups, food subgroups, and foods as they are consumed by What We Eat in America food categories, and dietary supplements with the database that's available.

Breastfeeding initiation and duration will be collected, or is collected, and will be analyzed through the National Immunization Survey, and that's representative of 2017 to 2018.

[0:32:57] These are some of the key definitions that we're working with, and we have aligned with the B24 group to make sure that we're working with the same kind of definitions.

So, you will see throughout the next couple of slides, CFB. That is used to represent complementary foods and beverages.

Our definitions of infant formula are presented here, so meeting the FDA standards as well as Codex Alimentarius.

Mixed feeding is a term that is defined as having both human milk and infant formula, but not complementary foods and beverages.

And then, exclusive human milk feeding, which Dr. Mayer-Davis described yesterday. And so, our definition is inclusive of the WHO definition of exclusive or predominant.

So, let's jump right in and talk about the food groups and nutrients.

First, we're going to look at the prevalence of initiation and duration rates for breastfeeding.

[0:33:59] We will look at the prevalence of food group intake, mean intakes of food groups and subgroups, as well as food category sources of food group intakes, when that information is available.

So, we thought that the clearest way to explain what we're hoping to do is with this table, and you'll see that this, the columns in this table represent ages in months.

So, for less than 4 months, we will be looking at the prevalence of complementary foods and beverages, as well as 4 to less than 6 months.

And those 6-12 months of age, again, we're going to look at the whole group of infants, as well as stratified by primary milk source for prevalence of food groups and mean intakes of food groups.

And for food category sources, we'll look at infants combined by primary milk source.

And then, for those 12 months to less than 24 months, we will look at that primarily as one group.

[0:35:00] In terms of our analytical framework, we will have the mean intakes of nutrients from foods, beverages, and dietary supplements, usual intake distributions, adjusted for within-person variation, from foods alone, and from foods inclusive of dietary supplements, and the exceptions to the life—the age groupings are listed here, because for the dietary reference intakes, 1-year-olds are in the 1-3 group, so when we're comparing it to the dietary reference intakes, that will be the framework which we are using as a benchmark, and then of course, food category sources of nutrient intakes.

When we're trying to describe the nutrients of public health concern, again, we will be looking at these usual intake distributions, inclusive and exclusive of dietary supplements, compared to the DRI, stratified by infant milk source as previously mentioned.

[0:36:02] When we are trying to evaluate the current dietary patterns and beverage consumption patterns, we will be looking at food group and subgroup intake, and there's an asterix there because not all subgroups are consumed in sufficient—with sufficient sample size to make stable estimates, so when available, we will have subgroup data, but if sample size does not permit, we will have the very high-level food group intakes.

We are proposing at this point, that we will standardize that based on 100 calories. So, with 2 years and older, we have the Healthy Eating Index, which is expressed as per 1,000 calories. Given the much lower calorie intake of this age range, we're at least initially talking about standardizing that to 100 calories.

[0:36:55] In terms of beverage consumption, the percent of infants and young children consuming a given beverage type, the amount that is consumed in ounces, as well as the nutrient and food component contributions from these beverages.

In terms of next steps, right now, what we have is information from foods and beverages. We will move on to be inclusive of dietary supplements, as that data is available. We'll summarize the findings after we finalize the discussions around the table today, and hopefully have some draft conclusions available for you soon. And then, the final piece of all of this is the food pattern modeling.

So, I'd like to thank the support staff – Dr. Panucci, Casavale, Emily Callahan, Cheyenne, and Eve Stoody, as well as the federal data analysis team, who's been providing data to us throughout this process.

So, I think both Kay and I are happy to have questions about either of the presentations here today.

[0:38:01] ***Dr. Richard Mattes:*** So, I understand you're addressing the issue of food allergies. How are you going to interpret the evolving literature on early exposure and risk for allergy, and how are you going to—how are you going to evaluate the different levels of intake relative to that, since it's kind of a new science?

Dr. Kathryn Dewey: Yeah, so the previous Pregnancy to Birth to 24 Months project tackled that already, and the paper has been published that looked at how complementary feeding relates to those—well, human milk and formula, as well as complementary feeding. But the question that you posed has more to do with the foods, the complementary foods.

And there were two experts on that tech that had training and background in that area and did a terrific job with the staff of looking by food, so peanuts, fish, milk, etcetera were all looked at separately.

[0:39:09] And at the time the paper was written, there was enough evidence for peanut to be quite definitive about that issue, particularly the need to introduce that in the first year of life.

And there's emerging evidence for all of those categories, and Ron may want to speak to that.

So, I think what we'll be looking at, when we get to updating the complementary feeding protocols and doing the searches, is what has emerged since the end date for the searches that went into that previous publication?

And there are going to be quite a few for some of those food categories, so we'll have to work at looking at whether there's more evidence and the grade might change.

But we have been looking carefully, both at the timing and the type of food.

[0:40:01] Quantity, I think is probably less of an issue in terms of the data that are available for the relationship, but just having it in the diet is part of that issue.

Do you want to add anything?

Dr. Ronald Kleinman: No, I think you've described it really well. Fish and nuts are the others that are probably furthest along at this point. But I don't think there's really any definitive evidence that anyone is willing to put into a guideline at this point. So, I think it's—we'll have to see how that evolves over the next six months.

I think the further question is about feeding—mother's intake of these foods during pregnancy. And so, I guess we'll get to that during that discussion.

But that is something that has changed dramatically since the previous guidelines.

[0:41:01] Are there other questions? Oh, Rick.

Dr. Richard Mattes: For Regan. So, you'll be looking at other beverages. Have you defined which ones? So, the Beverage gang, who we have at this table, and I think there's 28 possible beverages. If you did all pair-wise comparisons, there would be 378 to look at, which is clearly not manageable. So, we're going to have to prioritize some of these. Have you thought about that?

Dr. Regan Bailey: And in the next presentation, I think we have the discrete categories of beverages, but you're right. We're not going, especially in these young age groups, we'll focus a lot on milk and milk substitutes, 100 percent fruit juices, what are the sources of added sugars, but it will be a limited number. I don't—we won't have sample size sufficient to look through all of the different categories.

[0:42:01] Interesting to know you guys are gang. We'll talk about that offline.

Dr. Ronald Kleinman: Are there other comments? Yeah.

Dr. Linda Snetselaar: Just one more quick question. This is Linda Snetselaar. I was wondering, and I think you alluded to this at the beginning of your comments, but I was wondering what you might be doing in terms of looking at food allergies and the ways in which foods are introduced to children eating fresh foods. Will you be looking at that at all?

For example, how to identify an allergy in a child. I think that's changed over time. And I just wondered if you might be looking at that concept.

Dr. Kathryn Dewey: I'm not sure I completely understand the question.

[0:42:56] We have been trying to define the criteria for the search by means of either a food challenge, for defining a food allergy, or a combination of both food sensitization and some sort of clinical reaction.

Is that what you mean?

Dr. Linda Snetselaar: Yes, exactly. Thank you.

Dr. Kathryn Dewey: Okay. And while I have the microphone, I wanted to add one more comment about the types of data that we're going to try to be compiling for this age group, and it had to do with the prevalence of introduction of complementary foods and beverages at 4 months, before 4 months, or at 4-6 months.

We met just the other day, so some of the things that we discussed didn't make it into the slides, but I think it is probably worthwhile to stratify by human milk or formula as predominant milk, even for that outcome, because there's some evidence that the age of introduction of other foods and beverages is probably a bit earlier in formula-fed infants.

[0:44:02] ***Dr. Regan Bailey:*** That's a good point. We saw that in the Fitz 2016 data, so I think we could also examine that very similarly with NHANES data.

Dr. Ronald Kleinman: Any other comments or questions?

A lot to analyze. Alright, is—Regan, are you going to continue, or we're going to go to Pregnancy and Lactation? Okay.

Dr. Barbara Schneeman: And then, we'll take a break after that.

Dr. Ronald Kleinman: Great, alright. Sharon?

Dr. Sharon Donovan: Okay, so good morning. My name is Sharon Donovan, and I'm presenting on behalf of the Pregnancy and Lactation subcommittee, shown on this slide, and like everyone else, I'd like to thank this committee for their hard work, as well as the support staff.

[0:45:08] And I think we've made quite a bit of progress since the meeting in July.

So today, I'll be presenting new protocols, as well the implementation of some of the protocols that we presented in July, and we actually have some draft evidence synthesis, grading and conclusion statements for two outcomes related to folic acid.

So, as a reminder, the committee is addressing three broad topics – dietary patterns, dietary supplements and fortified foods, and maternal diet.

And these are the new protocols to be discussed today, so the effect of dietary patterns on human milk, micronutrient status of the mother, and infant developmental milestones.

[0:45:58] In terms of dietary supplements, we have new protocols for B12, omega-3 fatty acids, and vitamin D. And as was just discussed, new protocols on the impact of maternal diet on food allergies.

So, these are the protocols that were presented in July that we're currently implementing.

So, in addition to the three on the previous slide, for dietary patterns, we're investigating gestational weight gain and postpartum weight loss, and as Kay alluded to, this gets very complicated, because we have a number of nutrients of which have multiple outcomes. I think I counted, we're doing 40 systematic reviews in Pregnancy and Lactation alone.

Okay, so these are still to come. These are protocols in development that won't be presented today. So hopefully, at our next meeting.

[0:47:04] So, these are updates to the protocols that were presented in July.

So, in terms of dietary patterns and gestational weight gain and postpartum weight loss, we modified the inclusion and exclusion criteria for the intervention and exposure to clarify—basically, what was discussed yesterday, in terms of the dietary patterns, that specific macronutrient proportion diets will be included when they fall outside of the acceptable AMDR, and only studies that describe all macronutrients.

Then, in terms of dietary supplements and fortified foods, we had proposed in July to only cover the supplements, and based on feedback from the public, we have amended that protocol for iron to include both supplements and fortified foods.

[0:48:01] So now, I'll move on to the developing the plan, so, the new protocols, and I have a lot of analytical frameworks to present, so you'll see that in terms of like exposures and comparators, there's a lot of repetition, so I'm going to primarily point out the uniqueness of each one so we can get through this a little bit more quickly.

So, these are protocols related to dietary patterns.

So, just to remind you of the definition of the dietary patterns that was discussed yesterday.

So, first, "What is the relationship between dietary patterns consumed during lactation and human milk composition and quantity?"

[0:48:58] So, I'll walk through this one in a little bit more detail, but the analytical—

So, the intervention/exposure is consumption of and/or dietary adherence to a dietary pattern compared to consumption of a different dietary pattern or different levels of consumption.

So, the population in this case is human milk composition, and human milk quantity. So basically, for composition, we're including women during lactation, healthy and/or at risk for chronic disease, but for quantity, we're focusing only on those mothers that are exclusively or predominantly breastfeeding so that we can get more accurate assessments of intake, and they will be healthy or at risk for chronic disease.

So, we have a number of outcomes in this, and we—this was mentioned yesterday, but we will be looking at milk collected after 14 days postpartum, so this is more representative mature milk as opposed to colostrum, so some of the standard macronutrients, water-soluble vitamins, fat-soluble vitamins, minerals.

[0:50:08] One of the aspects of human milk minerals is that they're quite invariable. They're tightly regulated at the mammary gland, with the exception of iodine and selenium, so we're focusing on those two. We're also including some bioactive proteins, where there's data. And again, this was mentioned before.

So, in terms of—these are, as you will see as we go through, these are a lot of our standard key confounders that we are carrying through, so I'll predominantly mention when we have additions to that.

So again, we're using the standard NESR criteria that was described by Dr. Schneeman, and we also are using the criteria for these sets of questions related to dietary patterns that are consistent with the Dietary Patterns subcommittee.

[0:51:03] You'll see that, for a lot of our searches, we are going back to 1980 because this has not been previously included in the Dietary Guidelines, so we're trying to capture a broader database. But again, for this, we're only going to 2000, because as was mentioned yesterday, this is more of a relatively-new type of analysis.

So, these are the types of studies. Again, kind of following the standard NESR inclusion and exclusion criteria, with the exception that, for studies related to human milk composition and quantity, we are—decided to include some cross-sectional studies, because we felt there might be insufficient longitudinal studies to address these questions.

[0:51:58] Okay, so the next analytical framework is dietary patterns and infant developmental milestones, including neurocognitive development.

So again, same intervention and exposure.

You can see the developmental milestones, and we're looking at this related to a couple different outcomes, and they're consistent with what Linda Snetselaar reported yesterday in terms of looking at cognitive, language/communication, movement, motor development, socioemotional, academic performance, ADD/ADHD, anxiety, depression, and ASD.

And we're looking at infants and toddlers, birth—B24, but also, in this case, looking at longer-term outcomes, because a lot of these, particularly language development and academic performance, we'll need to look at later ages.

So, a lot of the same key confounders.

[0:53:01] We're also including aspects that have been known to impact infant cognitive outcomes, which include where they—so family history and diagnosis of neurocognitive disorders, maternal substance abuse. We also have in here things related to parity, child sex, breastfeeding practices, so duration and exclusivity.

Again, standard NESR criteria, and 2000 to, to be determined.

So, the next framework is looking at dietary patterns during pregnancy and maternal micronutrient status.

[0:53:58] Again, same interventions and comparators.

The micronutrient status that we're looking at in the mothers is iron, folate, B12, vitamin D, iodine, and omega-3 fatty acids.

Our population is women during pregnancy, healthy or at risk for chronic disease.

In terms of key confounders, we are—we've added, as a factor to be considered, not as a key confounder, gestational diabetes, because there is some evidence that the metabolism of some of these micronutrients can be different in women with gestational diabetes.

Again, standard criteria here.

So, those were the dietary—the new dietary patterns analytical frameworks. So now, moving on to the relationship between nutrients from supplements and/or fortified foods consumed before and during pregnancy and lactation.

[0:55:07] So, we have five nutrients all together. I'll talk about iron and folate later. We presented those in July and we're now implementing those. But these are the new frameworks – B12, omega-3, and vitamin D. And for each of these nutrients, we're investigating all five of these outcomes, so you can do the math.

Just a reminder of, again, using standard definitions of dietary supplements from ODS and fortification from the FDA.

We also had to define some of the criteria, so because this is including before pregnancy, we considered the time of up to six months prior to pregnancy as being the before pregnancy timeframe.

[0:56:04] Pre-pregnancy BMI is being defined based on health records for up to 1 year before, up to and including the first trimester, because we oftentimes don't have those measurements in health records.

Gestational weight gain, defined according to the CDC.

And again, gestational diabetes, again, diabetes occurring during pregnancy in women not previously diagnosed, and this is consistent with what was used in the Pregnancy/B24 project.

Okay, so now we'll talk about B12 first. So again, we have five outcomes, so I will explain the first one in a little bit more detail, and then just highlight the differences.

[0:56:58] So, this one is on B12 from supplements and/or fortified foods consumed before and during pregnancy and lactation on micronutrient status.

So, we're looking at exposure to B12 either from supplements, fortified foods, or the combination.

Compared to those who are not exposed or exposed to a different level of intake.

So, women before and during pregnancy and/or lactation, healthy or at risk of chronic disease.

For our B12 markers, we're considering B12 methylmalonic acid, homocysteine, and holotranscobalamin in maternal circulation.

We're also looking at folate, hemoglobin, mean corpuscular volume, and red blood cell distribution width.

And our population is women during pregnancy and/or lactation.

[0:58:00] So, the standard key confounders.

For other factors to be considered, we're including substance abuse, alcohol or drug intake, and gestational age. We also, I can point out, we're—as a key confounder, we have vegan or vegetarian diets in here as well for B12.

So, this is the relationship between B12 and risk of gestational diabetes.

So, these are the same. So, in this case, we have intermediate outcomes, which could be reported. We're not using these as diagnostic, basically, the endpoint for diagnosis is gestational diabetes.

We have added a couple additional confounders in a family history of diabetes, or pre-diabetes.

[0:58:59] And under other factors to consider, we have prior history of a large for gestational age infant or enrollment in an intervention-prevention trial.

So, these data will be extracted. They're not considered a key confounder, but we are asking the staff to collect data on this.

This is the framework for B12 on the risk of hypertensive disorders during pregnancy.

So again, we have some intermediate outcomes – blood pressure and proteinuria.

And then, the health outcomes are eclampsia, preeclampsia, and gestational hypertension.

In terms of the key confounders, we are added here, diagnosis of gestational diabetes, because sometimes, these cooccur quite commonly, smoking, history of diagnosis of hypertension or cardiovascular disease.

[1:00:00] Under other factors, we've added also physical activity to be extracted.

This is B12 and human milk composition. It's a little bit more simple.

The only outcome here is B12 concentration in human milk.

And we didn't have any additional confounders or other factors.

Okay, this is on B12 on infant developmental milestones, including neurocognitive development.

So again, these are the same outcomes that are reported previously for looking at the developmental—I'm sorry, dietary patterns in infant neurocognitive outcome.

And again, the outcomes and confounders are very similar to the dietary patterns, except now, the vegan and vegetarian diets.

[1:01:02] So, we've done our best to try to be as consistent, not only internally, but also as we work with other committees.

Okay, so for all of the B12 analytical frameworks, again, the standard inclusion/exclusion criteria.

So, again, the same types of studies, and continuing to include cross-sectional studies only for human milk composition.

And going back to 1980 for these outcomes.

So, now we have the analytical frameworks for omega-3 fatty acids. So, these are basically looking at relationship between the intake and the same five outcomes that I just described. So again, I'll try to go through this pretty concisely.

[1:02:00] So, we have exposure to omega-3 fatty acids through supplements, fortified foods, or the combination compared to a different level of exposure.

For our nutrient status, we're looking at fatty acid status in red blood cells and plasma of the omega-3 fatty acids and omega-6 fatty acids. So, alpha-linolenic acid, docosahexaenoic acid, and eicosatetraenoic acid, EPA. And then, linolenic acid and arachidonic acid.

So, in terms of the key confounders, we're including fish and other seafood consumption and obesity status. Again, there is some indication of differences based on maternal BMI, and those were the additions for the omega-3 fatty acids.

[1:02:58] So these, again, omega-3 fatty acids and risk of gestational diabetes.

Very much the same, same intermediate outcomes for the previous nutrients, and the endpoint of gestational diabetes, and again, including fish and seafood.

Here, other factors could be included in an intervention-prevention trial and the large prior infant as well, and family history of diabetes or pre-diabetes. So again, consistent with the other nutrients, looking at these outcomes.

Again, the same, omega-3s and hypertensive disorders.

And omega-3s and human milk composition, and we're going to basically look at fatty acid composition. So not only, obviously, the omega-3s, but the whole fatty acid composition in the milk, where available.

[1:03:59] And this is the infant—so this is relationship between, again, maternal consumption from supplements and fortified foods before and during pregnancy and infant developmental milestones.

So, while the B24 is going to be looking more directly at the intake of the infant, this would be potentially effects mediated from maternal diets through milk.

So again, the same outcomes, including, again, breastfeeding practices, intensity, and duration. So, hopefully being able to pull out exclusive from partial breastfeeding.

Again, same inclusion/exclusion.

So, now we're going to do vitamin D, again, with the five outcomes.

[1:04:56] So, for vitamin D status, I just want to point out that the way we're looking at vitamin D status is 25 hydroxy vitamin D.

In terms of for all of the vitamin D outcomes, we've added basically, as an other factor to be considered, is sunlight exposure and use of sunscreen. So, we know that not all papers will provide that, so we didn't want to include it as a key confounder, but we do want to collect that data when possible.

So, again, very similar in terms of now vitamin D and gestational diabetes.

Vitamin D and risk of hypertensive disorders.

And vitamin D and human milk composition, and in this case, we're trying to capture all of—any or all of the vitamin D forms that could be reported in the human milk.

[1:06:02] And lastly, the vitamin D and neurocognitive development.

So, same inclusion/exclusion criteria.

Just again, these are, as Kay mentioned, available on DietaryGuidelines.gov, so if you want more detail, you can certainly visit those.

So, the last new protocol I wanted to discuss is "What is the relationship between maternal diet during pregnancy and lactation and risk of infant and child food allergies and atopic diseases?" So, this is just one outcome, and we're looking at, again, what is the effect of maternal diet on this?

[1:06:57] So, this is very broad, dietary intake of foods and food groups, either not consuming that food or a different amount of that food.

So, this is going to be a very broad search.

Our outcomes, we have food allergies, allergic rhinitis, and atopic dermatitis. The dermatitis and rhinitis are oftentimes on the atopic march prior to diagnosis of food allergies, but we, as Kay mentioned, had some discussions about including food sensitization on its own, because sensitization alone does not indicate that child will actually manifest an allergic reaction.

So, in terms of outcomes, we have timing of introduction of—or key confounders, I'm sorry, timing of introduction of complementary foods and beverages, types of complementary foods and beverages, family history of atopic disease, and if reported, urban/rural environment, exposure to animals, pets, and farms, because all of those have been implicated in affecting allergy.

[1:08:09] And again, other factors to be considered, could be indoor/outdoor environments, if that's reported, but we're trying to make this a very broad search, because as Rick mentioned, this is a rapidly-developing area, and so, we'd like to try to determine the impact of maternal diet.

Okay, so again, the same types of criteria here.

So, that was the conclusion of all the new protocols, and so, now I'd like to just talk about two where we've actually implemented the plan. So, even though in July, we had done the analytical framework for iron first, we decided to actually start implementing the plan for folic acid.

[1:09:02] So, the questions that we've been investigation is what is the relationship between folic acid supplements, from supplements and/or fortified foods consumed before and during pregnancy on human milk composition and risk of gestational diabetes. So, these are two of the five outcomes that we're looking at related to folic acid.

So, looking at the first question. So, just a reminder of this analytical framework, which was presented back in July, looking at folic acid from supplements or fortified foods or combination on human milk folate composition.

And in terms of—we really didn't have any different key confounders. These are kind of our standard ones.

[1:09:57] So, we, from the search, there were four databases that were searched, resulting in 7,817, which was reduced to about 4,500 after removal of duplicates.

After initial screening, we—of titles, abstracts, and full text, we ended up with 16.

And there were no new articles added.

So, the ones that were then included after going through our inclusion and exclusion criteria, we had four articles, and of those, three were RCTs and one was an uncontrolled before and after study. All four addressed specifically the question as what is the relationship between folic acid from supplements during lactation and human milk folate, so there none that looked at fortified foods.

[1:10:59] So, the sample characteristics of the three randomized control trials, they had, on average, between 14 and 23 per group. They were conducted in the US and Canada. An average age of 33 years, mostly white and high SES for two studies, the other study was in adolescents, mostly white and low SES.

The intervention doses were 300 micrograms, 400 micrograms, and 1 milligram, and also, looked at the 5-methyltetrahydrofolate form as well. They were initiated within 1 week postpartum or 3 months postpartum, and they lasted between 12 to 16 weeks.

[1:12:00] All reported human milk folate concentrations. They also—some reported unmetabolized milk folate, soluble milk folate binding protein.

The uncontrolled before and after study, this was conducted in Japan, of 16 mothers. There was very little evidence or data presented on the participants. They basically just said the women in the study were from the same SES group. So, basically, before and after, they were the same mothers. But it was a weakness of the study.

They gave 1 milligram of folic acid, initiated anywhere between 3 and 25 weeks postpartum, and did—the trial was for 4 weeks.

[1:12:57] So, the studies used slightly different methodological approaches to measure the folate, but none of the studies found an association between folic acid supplementation in lactating women and human milk folate levels, and the actual levels reported were fairly consistent among the studies.

When we began the assessment, the studies were direct and precise, the results were very consistent. We had some concerns regarding risk of bias and generalization, due in large part to the populations were quite homogenous.

So, our—again, these are draft preliminary conclusion statements that moderate evidence suggests the consumption of folic acid supplements during lactation among women in high or very high HDI, high development index countries, does not influence folate levels in human milk.

[1:13:58] No evidence is available to draw a conclusion about the relationship between folic acid from supplements consumed before and/or during pregnancy and human milk folate.

And no evidence is available to draw a conclusion about the relationship between folic acid from fortified foods before and/or during pregnancy and lactation and human milk folate.

So, for these later two, we had grade not assignable.

So, the second question, the relationship between folic acid and gestational diabetes.

And the analytical framework consistent with intermediate and endpoint outcomes that we previously presented.

Again, searching four databases resulted in 829 articles, which we ended up with 8 that remained after screening, and only 1 that was included in the final systematic review.

[1:15:03] It was a non-randomized control trial that addressed the question of what is the relationship between folic acid from supplements consumed during pregnancy and risk of gestational diabetes.

It was a large study, over 7,800 participants, conducted in China, mothers between the ages of 20 and 40. non-smokers and non-drinkers.

They gave doses of 0, 400, or 800 micrograms per day. And they based the dose based on genetic polymorphisms of the mothers, and also, the stage of pregnancy. Again, initiation was not clear, because they talked about pre-pregnancy, but then they stated that they recruited the mothers during the first trimester.

[1:15:57] So, as we started looking at the paper, it would have been a great paper, but there was just some concerns about the details.

So, among the women who consumed folic acid supplementation based on genotype and stage of pregnancy, there was a significantly lower incidence of gestational diabetes compared to women who did not consume folic acid supplements. So, 3.2 in the control and .27 in the intervention.

But when we assessed the evidence, there were concerns regarding risk of bias, and we felt there was insufficient evidence to evaluate the directness, precision, consistency, or generalizability of the results.

So, our draft conclusion is that there's insufficient evidence is available to draw a conclusion about the relationship between folic acid from supplements and/or fortified foods consumed before and/or during pregnancy and the risk of gestational diabetes.

[1:17:01] So, grade not assignable.

So, just to conclude, we have, as Kay mentioned also with B24, we've been having a lot of cross-cutting discussions with the other subcommittees. So, we've had some joint meetings, again with Dietary Patterns, Fats and Seafoods, Food Pattern Modeling, and we also provided evidence on the analytical frameworks pertinent to pregnancy and lactation to the Beverages and Added Sugars committee.

So again, I'd just like to thank our committee. We've really, I think made an incredible amount of progress in the last few months, and again, none of this would be done without the support staff, and just really appreciate everybody's hard work. Thank you.

[1:18:03] ***Dr. Ronald Kleinman:*** Does anybody dare to ask a question?

Dr. Kathryn Dewey: We're exhausted.

Dr. Ronald Kleinman: 60 slides. Rachel?

Dr. Rachel Novotny: I'm on this committee, but I was, as I was thinking about it, I'm not clear if there's a need to distinguish or precisely what the distinction is between before pregnancy and pre-pregnancy. It

seems before pregnancy gives an early start date, and the pre-pregnancy gives an end window to the period, but I think they're the same definition, but maybe you—

Dr. Sharon Donovan: We had said—so maybe this is we need to look at the precision of how we're describing it, but we did say that it was six months. So, we're looking in terms of like the supplements and fortified foods. But in terms of like BMI outcomes, that could—pre-pregnancy weight could be up to a year prior to pregnancy.

[1:18:58] ***Dr. Rachel Novotny:*** So, I think in our definition, we said before pregnancy was six months prior, and pre-pregnancy was up until the first trimester, but in fact, aren't they both the same window, whether you're referring—

I mean it's before pregnancy, what are we measuring before pregnancy? It's also BMI. So, before pregnancy BMI, the window would be defined as six months prior to, up to the first trimester, up to and including. And so, would pre-pregnancy BMI be six months prior and up to and including?

Dr. Sharon Donovan: Well, I think in the framework, we said that we would consider pre-pregnancy BMI up to a year, and then up through the first trimester, and I think for the fortified foods and supplements, that was six months, because we thought many women can be taking supplements who are planning to get pregnant, or some nutrients that can be stored, like vitamin D or iron could be influenced.

[1:20:01] But there's so many, so I want to kind of make sure that we can be clear on that.

Dr. Rachel Novotny: I guess what are we measuring before pregnancy besides BMI I guess is the other question?

Dr. Sharon Donovan: Well, for the supplements and fortified foods, if there was evidence of use of those supplements prior to conception.

Dr. Rachel Novotny: I see. Okay.

Dr. Sharon Donovan: So, women who maybe prophylactically or planning to be, yeah, using advice that they should be starting to take folate.

Dr. Rachel Novotny: Okay. Because I think in our key confounders, we have anthropometry before pregnancy, too. And so, that's where I was getting confused as to how we're distinguishing pre-pregnancy BMI and before pregnancy BMI.

Dr. Sharon Donovan: Okay. Yeah, we can look that over. I think that was primarily—

Dr. Rachel Novotny: It's a definition.

Dr. Sharon Donovan: —to capture pre-pregnancy BMI and obesity.

I mean if you're on the committee and it's confusing, then we definitely need to go back and make sure that we're precise in that language.

[1:21:10] I'll make a note.

Dr. Ronald Kleinman: Thanks. Jamy?

Dr. Jamy Ard: Jamy Ard. One quick question. On the key confounders in the analytic framework related to hypertensive disorders, you mentioned that there was the addition of gestational diabetes because of the association between the two. But there was not—you don't have hypertensive disorders in the gestational diabetes analytic framework as a key confounder. Would that—because I can't tell. This is not my area of clinical expertise, but I don't know if there's just a general association, or if it's sort of unidirectional, but just something to consider.

[1:22:07] ***Dr. Sharon Donovan:*** Yeah, so for the gestational diabetes, we do not have diagnosis of hypertension. So, that's something we can go back and look at. I don't think it's a unidirectional. I just think that oftentimes, they're just cooccurring.

Dr. Ronald Kleinman: Steve?

Dr. Steven Heymsfield: A very minor semantic comment. The word statement dietary supplements. In my world, the obesity world, that is a very specific meaning and a regulatory framework, which is dietary supplement health and education attaché. And so, I don't think that's what's meant by dietary supplements here, right?

[1:22:57] From what I see, these are specific micronutrient supplementation. It's not dietary supplements like with various herbal constituents and so on, right?

Dr. Sharon Donovan: No, because we're specifically looking at these five nutrients. So, we're only looking at these five nutrients as supplements or in fortified foods. So, if they were using other, St. John's Wort or other things, then that's not being captured in any of our searches.

Dr. Steven Heymsfield: Okay.

Dr. Kathryn Dewey: I think ***[indiscernible 1:37:22]*** had a definition in summary, don't they?

Dr. Sharon Donovan: Yes. Back to using the ODS.

[Crosstalk 1:37:22]

Dr. Barbara Schneeman: Yeah, you're using the Deshea definition.

Dr. Sharon Donovan: Yeah, I had that on a—

Dr. Barbara Schneeman: Actually though, that reminds me of a question of—so, with the supplementation, are you looking at it if it might come in with a multivitamin supplement? It's not just—or is it only that they have to supplement with one specific nutrient?

Dr. Ronald Kleinman: It has to be.

[1:23:59] ***Dr. Sharon Donovan:*** Yes, because many of the prenatal supplements are combined.

Dr. Kathryn Dewey: But can they add that in?

Dr. Sharon Donovan: Yes.

Dr. Kathryn Dewey: But when we look at the evidence, if it—results have to be a contrast, where the only difference is folic acid. So, if they're getting multis, it would be multis without, and multis with, that kind of thing.

Dr. Barbara Schneeman: With. I see.

Dr. Ronald Kleinman: Tim?

Dr. Timothy Naimi: Very interesting. When you talk about there's so many possible comparisons between all these micronutrients and different outcomes, and some of them may not have sort of a biologically plausible explanation, so are these—I don't think we have to ask questions in terms of what's assessed, but is there, in terms of summarizing the evidence, how do address that?

[1:24:58] ***Dr. Barbara Schneeman:*** Great question.

Dr. Sharon Donovan: I mean many of them are—we can sort of link, provide the evidence between the omega-3s and neurocognitive outcomes, and others, but again, some of them, we'll just have to see how we're able to discuss that, because I would agree that it's not necessarily clear that some of the nutrients and some of these outcomes have clear mechanistic link.

Dr. Timothy Naimi: B12 and diabetes.

Dr. Sharon Donovan: Yeah.

Dr. Timothy Naimi: And there may be tables that have no basis.

Dr. Ronald Kleinman: I think the sentence will start, "Although there is no evidence of biological plausibility, we still…"

Dr. Sharon Donovan: The idea was looking at sort of key nutrients and key important outcomes.

Dr. Kathryn Dewey: Do you want to talk about folic acid in human milk, and why are we not surprised by the results?

So, with the one conclusion statement, we can really stand behind today, is the one that the folic acid supplements during lactation, and in these populations, doesn't affect folate levels in milk.

[1:26:04] And honestly, we knew that already from decades of work and the biology of how folic acid is taken in and then what happens in terms of mammary gland biology.

So, that was our big surprise.

But I totally agree with the idea that the discussions of our sections of the report need to address biological mechanisms, not in great depth, but at least allude to what we understand.

Dr. Ronald Kleinman: And there are potential research questions that will come out of some of these, where there isn't an obvious link, but potentially, there is some metabolic pathway that could impact it.

And around folate, I think what we talked about is the absence of studies in folate in sufficient mothers, and whether they—

Dr. Kathryn Dewey: Exactly, yeah.

[1:26:59] ***Dr. Ronald Kleinman:*** So, there is more to learn about this, although we addressed this question, I think quite directly.

Dr. Sharon Donovan: Right. Yeah, so our conclusion statement very specifically says in high HDI countries, so we can't conclude whether it would be beneficial in women who are folate-deficient, and also, the addition of folate to the food supply through flour has kind of raised everybody's—but nobody's really specifically looking at that anymore, because it's there. So, that's why we tried to think maybe there were some older studies prior to the fortification.

Dr. Regan Bailey: So, maybe it would be helpful to just clarify that in your language. Because there are high development index countries that don't have fortification. So, maybe just in highly—or in countries with fortification, or in folate-replete populations, or something like that might be just adding a little clarity.

Dr. Ronald Kleinman: Yeah, that's a good point.

[1:28:00] ***Dr. Sharon Donovan:*** Yeah, I think in terms of our statements, we're trying to work with a common language, but in our discussion, we can provide more evidence and flush things out a bit.

Dr. Ronald Kleinman: Yeah. Any other comments or questions? Oh, Regan?

Dr. Regan Bailey: I just have a question. So, I'm really interested in the research on the quantity of human milk. What does that literature look like? Isn't there a tremendous diurnal variation? And how are you guys addressing that? In addition to all the amazing work you're doing, you have a lot of challenges inherent within each of your questions.

Dr. Sharon Donovan: Right. Well, we haven't gotten to any of those searches yet. I mean there's several ways to measure milk quantity, through 24-hour weighing, or stabile isotopes. But so, we would try to look at the methods that are being used and then, when we're grading the evidence.

[1:28:57] But yeah, I don't think that a lot of these micronutrients will have much of an effect, but it might actually be interesting when we get to the beverages, potentially, just fluid intake.

Dr. Kathryn Dewey: So, speak up. I would be happy to.

So, we've understood for a while that the regulation of milk production is governed by endocrinological factors and physiological factors, but mostly driven by infant demand. So, maternal nutrition is a very minor player, and particularly in well-nourished populations.

And if it is a player, it's more on the level of energy balance and those kind of really macro and micronutrients we don't know of. I don't know of any mechanisms by which their intake would affect those mechanisms that determine milk production.

[1:29:59] Again, the biology here is what we really need to look at, and it's interesting because, in dairy cows, it's different, and maternal nutrition of the cow can make a difference, but they've been bred for very high levels of production, way beyond what human women do.

So, it's a very different situation. We don't really have a great model from the animal literature.

Dr. Ronald Kleinman: I thought where you were perhaps going with that also is there are differences in concentrations in human milk, depending upon when the milk is sampled. Is that what you were getting at?

Dr. Regan Bailey: Yeah.

Dr. Ronald Kleinman: And so, one further need for our group is to be sure that the methodologies for collection are similar between studies, right? Because if you're collecting early in the lactation, or at the

end of it, or it happens to be at night versus the morning, or let's say early in the lactation cycle versus very late, and we could go on and on.

[1:31:09] And sometimes the studies don't actually talk about that at all. And so, that makes comparisons even more challenging.

Dr. Sharon Donovan: Yes. So, one of the decisions we made was milk after two weeks, so to try to get some colostrum, but you're 100 percent correct. If it's foremilk versus hindmilk, or different times of the day. So, that would be considered as the evidence is being abstracted and we can look at that.

If it's a single sample and they don't define when it was taken, particularly as we start looking at some of the omega-3 fatty acids and fatty acids, since those tend to be higher in the hindmilk. It's a very good point, Ron.

[1:31:59] ***Dr. Barbara Schneeman:*** I think Tim had a—

Dr. Ronald Kleinman: Oh, another question.

Dr. Timothy Naimi: One more question. You guys are trying to distill out the effect of supplements. And so, I was just wondering, in the protocols, I might have missed it, but how do you try to account for baseline consumption of a particular thing, such as folate, apart from the supplements? Is it possible to do that, and should that be kind of a key confounder for all of those—for each of the micronutrients?

Dr. Sharon Donovan: Well, I mean I think from the—from Regan's committee, we'll be getting levels of intake. So, we can speak to that more generally. But unless, in those specific papers, they did any sort of a diet record, I think it'd be very difficult for us to determine the intake within a specific study. But we will have intakes of these nutrients from NHANES and other data sets.

[1:33:02] ***Dr. Barbara Schneeman:*** It also comes back, it also comes back to this point that, in a country that fortifies, chances are, you have a pretty high level of intake.

Dr. Sharon Donovan: And one of the things we thought about is, almost gets back to dietary patterns, is people are consuming less carbohydrate, that is a large contributor to folate intake. So, if we look at dietary patterns, we might actually see differences in folate consumption, which could be problematic.

Dr. Ronald Kleinman: Linda?

Dr. Linda Snetselaar: I just wondered, and I don't know how this plays into the equation, but many moms today will pump, and you had mentioned the idea of demand and how important that is. Are there any studies that have been done looking at that concept?

[1:34:00] ***Dr. Kathryn Dewey:*** Yeah, you can actually increase the stimulus for milk production by pumping in addition to nursing directly at the breast.

The body interprets that as increased demand and will respond to that. So yeah, it gets more and more complicated these days, because so many women are pumping.

Dr. Sharon Donovan: And then, we'll also take into account if it was pumped milk, if it's been frozen, in terms of nutrient composition.

Dr. Ronald Kleinman: Joan?

Dr. Joan Sabate: In the analytical framework for vitamin B12, and I think for other key nutrients, supplements, you put into the key confounders vegan/vegetarian diets. I mean I wonder, as far as using this as a confounder.

[1:34:56] And the other thing, in case that is one to proceed, I think it would be wise to separate, I mean vegan versus vegetarian diet.

By vegetarian, we interpret lacto-ova vegetarian.

Dr. Sharon Donovan: So, that's a good point. So, right now, they're combined, but that data would be extracted separately, so we'll be able to look at those separately.

Dr. Kathryn Dewey: If I could just add, I think one of the important considerations as it being a potential confounder is that many pregnant and lactating women who are at least vegan, and maybe even vegetarian, are advised to take vitamin B12.

And so, their consumption of supplements and the dietary pattern are linked quite strongly. So, that's why it's an important confounder in my view, because when we're looking at the outcomes, we have to figure out what they're related to.

Dr. Joan Sabate: But vegan being a confounder, I mean it could be also an effect modifier.

Dr. Kathryn Dewey: It could be.

[1:35:57] ***Dr. Joan Sabate:*** Stratifying by this parameter will give very useful information.

Dr. Kathryn Dewey: Absolutely. But we're dependent on the studies to have done that. And we think it's a logical thing to do, but it isn't always in their papers.

Dr. Ronald Kleinman: Alright, well—

Dr. Kathryn Dewey: I have a question for Linda. Can I ask that?

So, I have a question for the Dietary Fats and Seafood subcommittee, because I was looking back over all of the protocols we just presented this morning, and in terms of the omega-3 fats in the B24 protocol, so we're looking at intake of that from supplements or fortified foods, and but the outcome domains do not include neurological or cognitive development? That's what we were given.

So, my question is, I don't remember what is the definition of the types of dietary fat exposures that your subcommittee is looking at, does it include supplements or exclude supplements?

[1:37:07] ***Dr. Linda Snetselaar:*** What I presented the other day excluded supplements. That doesn't mean that some of our eventual questions might not get into that area, when we look at total fat, for example. But what I presented with ADD/ADHD and ASD excluded supplements.

Dr. Barbara Schneeman: Because they were seafood questions.

Dr. Ronald Kleinman: Right. It was purely food.

Dr. Kathryn Dewey: So perhaps we can discuss this when we have some cross-talk on the upcoming protocols?

Dr. Linda Snetselaar: Most definitely.

Dr. Kathryn Dewey: Thanks.

Dr. Ronald Kleinman: Alright, well I think we've earned a little break. So, 15 minutes? Is that—

Dr. Barbara Schneeman: Yeah, I think 15 minutes.

Dr. Ronald Kleinman: Okay.

Dr. Barbara Schneeman: And just before we go on break, I do want to, once again, remind everyone who's listening that what we're hearing from the committee reflects their findings and their conclusions.

[1:38:02] We haven't formulated any recommendations yet. So, it's—these are sort of our initial findings and conclusions that we're presenting for discussion.

Dr. Ronald Kleinman: Work in progress.

Dr. Barbara Schneeman: Yeah. So, we're out—

Dr. Ronald Kleinman: 10:55?

Dr. Barbara Schneeman: That sounds good.

Dr. Ronald Kleinman: Great.

Dr. Barbara Schneeman: Great.

[Break 1:38:20-1:55:33]

Dr. Barbara Schneeman: So, if we could get started, please, if the committee could reconvene? We have the presentation on—from the Data Analysis and Food Pattern Modeling subcommittee, so if—if we could—

[1:56:09] Okay, so Dr. Regan Bailey will be giving the subcommittee report, so I think we're ready.

Dr. Regan Bailey: Okay, last and certainly not lease, Data Analysis and Food Pattern Modeling again. So, I spoke a little bit earlier, specific to the B24 group. Now, we're going to be looking at the other set of questions that we are addressing, and those are listed here, and we'll go through each one of those, so I won't read those to you now.

So, we're implementing the plan for two years and older for all of the protocols that we discussed at the July meeting, and the final piece, as I mentioned previously, is the Food Pattern Modeling and what changes need to be based on the work that you all are doing in your systematic reviews, and are those food patterns possible for two years and younger?

[1:56:58] So, just some general updates to those protocols that we presented in July.

So, infants and toddlers, again, specified as birth to less than 24 months.

We added specificity to age groupings and population subgroups in our analytical plans.

Added sugars and caffeine are being referred to as food components rather than nutrients, as they are not nutrients, and I'm on this bandwagon to get the word dietary component so that it's representative of foods, beverages, and supplements, but right now, it's a food component.

And then individual nutrients contributed by beverages that were not specified until we determine what those nutrients of public health concern are, and then we're going to have that discussion towards the end of the talk, but all of our protocols are aligned with those particular nutrients.

So, some protocol-specific updates.

Dietary patterns and beverage consumption, we're looking at changes over time. So, our comparator group will be NHANES 2005-2006.

[1:58:02] Current intakes of food groups and nutrients and changes in average nutrient intakes from food and beverages was added to the analytical plan for adults and older adults to be consistent with life stage.

And the prevalence of nutrition-related chronic health disease, so dentition was added to the analytical framework and the analytical plan.

So, for all of the questions that we will be addressing, our sample is the United States. So, we, really, all of the data sets that we're looking at are nationally-representative so that these can inform the Dietary Guidelines, and that's the reason why we rely so heavily on these sources.

And we discussed a little bit about this yesterday, but here's a specific slide that I alluded to, with the exact life stage groupings, and of course, these are not perfect, they aren't set in stone.

[1:58:59] Some of the publication that we have, have different age groupings, but this is just kind of an overarching framework.

And then, we will have data available to us by sex, race-ethnicity, socioeconomic status, and inclusive of food security status.

Again, we will be utilizing the NHANES data What We Eat In America survey components, with the requisite databases that are listed here, to get nutrient content, food groups, and foods as they are consumed from foods, beverages, and dietary supplements, so just as a refresher.

Again, and we've presented these before, but the stage of life is often variable. It can depend on whether it's available in NHANES the way that the reports are written and/or by the Dietary Reference Intake groupings.

[1:59:55] Socioeconomic status is a broad term that can reflect any of the indicators that are listed on this slide.

So, we will be discussing some of the newer protocols and how the relationship to achieving food and nutrient recommendations vary by the frequency of eating, by beverage consumption, and there's a separate protocol for alcohol from the other beverages, as well as consumption of added sugars.

So, the first question is "What is the relationship between the frequency of eating and achieving food group and nutrient intake recommendations?"

We will look at the total number of eating events as well as person-described (I didn't want to say subject), participant-described eating occasions, such as breakfast, lunch, dinner, and snacks, and their

Spanish equivalents. So, snacks, just a note here, that those are inclusive of drinks or extended consumption.

[2:01:00] So, there's interest in when people are eating, time of day, does time of day have an impact meeting food and nutrient recommendations?

But this is something that we are discussing with the Frequency of Eating, how do we operationalize those times of the day, and that's part of ongoing work and discussions that we're having.

So, as I mentioned, we'll look at frequency of eating with and without those naming conventions, so the number of eating events in a 24-hour time period, so the way that the 24-hour recall is collected is midnight to midnight, so we have information available on the hourly consumption of eating events, the number of snacks, which can include beverages, and we've been looking at that inclusive and exclusive of water, because a water-only event really increases the total number of ingestive events in a 24-hour period, as well as time of day, and then we have hour timestamps for some of the reports in NHANES.

[2:02:02] We're also looking at the proportion of food group and subgroup intakes and dietary components by eating event type, with and without naming conventions, and the naming conventions are what I described earlier.

So, our next question that we'll be presenting to you is "What is the relationship between beverage intakes and achieving food group and nutrient recommendations?"

These are the beverage categories that we are looking at, and this is part one of two, so there are two slides that give you the discrete beverage categories, and just a reminder that beverage pattern refers to the quantities, proportions, variety, or combination of different beverages within the diet.

So, we'll have these discrete beverage categories as well as those listed on this slide. So, specific between a diet beverage and a sweetened beverage is the 40 calories per reference amount customarily consumed, water from all sources, whether it's carbonated, flavored, the definition is less than 5 calories, and the alcoholic beverages, and we'll have a whole discussion on that category coming up in a few slides.

[2:03:19] So, for the non-alcoholic beverage questions, we will be looking at the food and dietary components per 8 ounce of discrete beverage consumption, okay?

And so, we'll also be providing data on what beverages contribute, so as a percent of total daily energy, how they contribute to selected nutrients and dietary components, how they contribute to food groups, and how daily beverage calories vary by discrete beverage type.

[2:03:57] Specific questions have been an area of interest is the prevalence of intake of nutritionally-fortified beverages, as well as cow's milk and milk substitute beverages.

So, this is the alcohol-specific question, so it would be inappropriate to use the 8 ounces there, because 8 ounces is a very different animal, if you will. So, we're using the alcoholic drink equivalent here, so understanding that wine, beer, and sprits, differential amounts, all provide 14 grams of pure alcohol.

We'll be looking at the prevalence of binge drinking and frequent binge drinking. So, those are defined here for you. For men, binge drinking is consuming five or more drinks on the same occasion, and that same definition for women is true with four as the number of drinks.

And then, frequent binge drinking is binge drinking that occurs on five or more occasions in the previous 30 days.

[2:05:01] So, this is the analytical framework in terms of the data and the age groupings that we have available to us.

So, we'll be looking at dietary intakes relative to alcohol for 20 years and older, alcohol use in terms of underage, the prevalence of underage alcohol consumption from 12 to 20 years, adult alcohol consumption, 21 and over, and then pregnant women, in our NHANES analysis, is 20 to 44, but because we're using the BRFSS data for pregnancy, that is inclusive of women 18-44, so when we say exceptions noted, those are largely driven by the way that the data are collected.

We have information available to us not only from BRFSS on alcohol, but NSDUH, the National Survey of Drug Use and Health. That has to be my favorite acronym ever, DUH. But it is cross-sectional nationally-representative survey data on drug use and mental health, including alcohol use.

[2:06:02] So, as I mentioned, we're looking at the prevalence of alcohol use, binge drinking, and frequent binge drinking.

We're interested in how alcohol contributes to energy, caffeine, and added sugars specifically per drink equivalent, and as well as how do alcoholic beverages in terms of contribute to a percent of total energy throughout the day, how they contribute to added sugars and caffeine, as well as daily beverage calories.

Our next question that I'd like to get your feedback on is the relationship between added sugars and achieving food group and nutrient recommendations.

And throughout the last two days, we've had the FDA definition of what is an added sugar, so I will not read that to you here, but just a reminder.

[2:06:58] Our analytical framework includes the usual distribution of added sugars. That is from the two days of intake, the percent of the population that is achieving the current recommendation from the 2015-2020

Dietary Guidelines of less than 10 percent of total energy intake from added sugar, as well as the food category sources of added sugar and how those contribute to nutrient and food group intakes.

And finally, we would like to have some discussion with the committee today about how we describe and evaluate nutrients of public health concern.

We propose that we continue to use the established three-pronged approach to identifying nutrients of concern, and that includes nutrient intakes from dietary data, biological endpoints, and clinical health consequences, when such data are available.

[2:08:00] So, in terms of defining what is a nutrient of concern, or what I would like to call dietary component of concern, we'll be looking at intakes from food and beverages alone and from total sources, inclusive of dietary supplements.

We have the DRI benchmarks for risk of inadequacy and risk of potential excess, so for all nutrients with and EAR, we will use that as the benchmark of inadequacy. When an EAR is not established, we will utilize the adequate intake and the comparison of the mean intake to the adequate intake.

For nutrients with a UL and CDRR, I think currently, sodium is the only nutrient for which we have a CDRR, we will look at the percent of the population that exceed that recommended intake threshold, we'll look at calorie intakes outside the acceptable macronutrient distribution range, and then existing guidelines.

[2:09:02] So, I've mentioned added sugar, but this is also similar for saturated fat, no more than 10 percent of total energy from saturated fat.

So, we'll use that information to inform the dietary component of that three-pronged approach.

But in addition to that, we also have to look at what previous guidelines have identified as nutrients or dietary components of public health concern.

We will start there with the previously-identified. We'll also incorporate information from the National Academy of Science, Engineering, and Medicine report, specifically, chapter 7 goes into great detail about how having a priori criteria established to be very transparent in how we identify nutrients of public health concern.

[2:09:56] We also want to be mindful to dovetail our efforts with the extensive work that FDA has already done on this for the Nutrition Facts label and the Supplement Facts label. So, they have done a tremendous amount of work already, and so, we want to be complementary to what's already existing.

As well as sources of scientific agreement. And this is particularly for special populations, like B-24 or pregnancy and lactation, where nutrients of concern haven't been previously identified particularly for

birth to less than 24 months. So, we'll utilize some of the expert opinions in terms of identifying potential nutrients that way, as well as the three-pronged approach.

And then, our next steps, of course, would be to integrate nutrients from dietary supplements. I mentioned that, right now, what we have available is from foods and beverages only, so total sources is very important, as there's a high prevalence of nutrient-containing supplements in the United States.

We'll review and summarize the analysis that we already have at our disposal.

[2:10:59] We will begin to draft some conclusion statements.

And then end with some food pattern modeling protocols.

So, that is our plan for the moment, and I would greatly welcome committee feedback, input, thoughts, and questions.

I'd like to thank our federal support staff that are listed here on the slide and the members of the committee.

Dr. Barbara Schneeman: So, Regan, I was wondering if, in the subcommittee, have you started to develop proposals? I think from my perspective, what you've proposed as the nutrient intake adequacy, how—what you're looking at and how you're tackling identifying nutrients of public health concern, but if, for example, looking at the EAR cut point method, have you talked about what percentage of the population falls below or above the EAR cut point, or with the AI, what kind of discrepancy from the AI would sort of bring a nutrient into looking at it further?

[2:12:32] ***Dr. Regan Bailey:*** Yeah, so we've started to have some discussions around that, with the federal support staff, as well as the committee. Ideally, based on what the recommendations in the NASIM report are, is that we establish a threshold that is consistent and transparent.

And so, we've talked about what is that threshold? We've done some preliminary analysis, looking at nutrients for which 25 percent or more of the population would be considered inadequate, and then the next step is that looking at that dietary intake relative to a biomarker.

[2:13:11] So, I think if we could establish what those thresholds are before we go into the data would be my preference, and that's been informed by the work of FDA, who's done that for the food label for different nutrients, but it varies for different nutrients and what the severity of low and high intakes are, so—as well as what the DRIs and the confidence that we have in certain DRIs.

So, that's why it's important that we try to link it whenever possible to a biomarker or a clinical endpoint.

So, there's certain nutrients, as you know, that there's a very high prevalence of dietary inadequacy. For example, folate. There's up to 25 percent in certain population groups, who by the EAR, are considered at risk for folate inadequacy from the diet alone, but when we look to the biomarker, it's less than 1/2 a percent who have low serum or red blood cell folate.

[2:14:08] So, kind of going through that as an example, then we could eliminate folate as a potential dietary component of concern based on multiple sources of evidence.

Dr. Rachel Novotny: Rachel Novotny. So, would you say just another couple sentences at a high level about drafting food pattern modeling protocols? Would these be to address—to identify food patters to address nutrients of public health concern, or on what kind of basis?

Dr. Regan Bailey: Yeah. So, the—and I know it was a long time ago, I don't know if I can skip all the way back there, but the three questions that we have are, are there changes needed to the current recommended patterns to enhance things that are identified in your systematic reviews?

[2:15:02] So, those are the specific questions.

In terms of B-24, are those food patterns that are existing, are those possible for those two and younger?

And then in terms of food pattern modeling related to nutrient adequacy, so thinking about things like dietary supplements, fortified foods, and added sugars.

So, those are some of the very specific things that we have as questions for the food pattern modeling sections.

Dr. Barbara Schneeman: I'll ask another question. Because you mentioned the B-24 as a group that hasn't had this defined through the Dietary Guidelines, and I know that you all are looking at specific nutrients.

[2:16:05] So I'm just interested to know how did you decide those nutrients, and how does that feed into what this group will look at, or think about how it wants to define nutrients of public health concern for the, particularly, the B24, but also, pregnancy and lactation?

Dr. Kathryn Dewey: So, for—this is Kay Dewey. For B24, we've had some side conversations about, in the first year of life, we really have to subdivide between 0-6 months and 6-12. So, 0-6 because it's all AI values and it's based on the composition of human milk, it's a very different picture. But from 6-12 months, we do have a couple of nutrients where there's an RDA, but most of them are AI values. So, this is another problem.

[2:16:59] And in that age group, the likelihood of being below an EAR cut point, for example, is very small for infants getting a lot of fortified infant formula, because they're fortified with all those nutrients.

So, that's why stratifying by the human milk fed predominantly, even when they're getting complementary foods, and formula-fed infants is so important, and that's what we're working on.

Once that's done, based on other evidence and other kinds of modeling, there will most likely be some nutrients that are most problematic or limiting, iron and zinc, for example, possibly calcium, and then potentially, some vitamins, depending.

And so, when we start thinking about the food modeling part, I'm—I think we'll have to have a lot of discussion about how that works, because it would need to include scenarios where it's just the unfortified foods that are getting into the picture, and then options, scenarios where fortified foods, like baby cereals, etcetera, are in the mix.

[2:18:10] And because we've been tackling the issue of iron deficiency in infants in the US for decades with fortified infant products.

So, those are some initial thoughts.

Do you want to say something about it?

Dr. Sharon Donovan: Well, I guess in terms of the—I mean obviously, in terms of the nutrients that we're focusing on, the systematic reviews, or based on the questions we were given, which identified nutrients or dietary components of concern, but it will be, I think very interesting in this process, as you go through, to help identify other, because we hear a lot about fiber in children, and fiber in the whole US population, but again, we don't have any questions related specifically to that.

[2:18:55] So, I really see these as fleshing out some different areas, and then it's particularly critical, I think in the B24, because we don't know a lot, particularly with the breast-fed infants.

Dr. Richard Mattes: This may be overkill, but so, your analysis of snacks, which will be self-described, will you break it down into snacks early in the day, snacks later in the day, or snacks will just be a general category?

Dr. Regan Bailey: I think that we've talked about not the specific details of snacking. I think those are some conversations that our committees should have and have soon. But I think what we've talked about is early morning eating and late-night eating, and how that impacts the frequency of eating and meeting nutrient and food group recommendations.

[2:19:58] So, and that would vary across the life stages. So, in children, snacks are contributing quite a bit of energy, and potentially, for some of the nutrients of concern.

But I think your point is well-taken that not only is it an issue of when, but what that is being called.

Dr. Richard Mattes: Yeah.

Dr. Regan Bailey: Yeah, that's a good point. Thank you.

Dr. Joan Sabate: On this slide that is now posted, I mean the questions at the bottom, you relate as far as the frequency of eating, beverage consumption, alcohol intake, so on and so forth. As far as achieving the food groups and nutrient intakes.

I have two questions. One is the food group intake, I mean I think is one of the issues that this committee, I mean has to come up with guidelines.

[2:21:05] So, how can your committee work, I mean as trying to compare what the general population consumes as far as guidelines that has not been issued yet?

I mean that's the first question.

Dr. Regan Bailey: Yeah, so we will utilize the existing food group recommendations from the 2015-2020 as a benchmark to inform our report.

Dr. Joan Sabate: Okay. And as far as the nutrients, as you know, there are many compounds. I mean now ***[indiscernible 2:35:23]*** very helpful that probably are not still yet labeled as nutrients. Are you going to also use those as a benchmark, or these are going to be excluded of your analysis?

Dr. Regan Bailey: Yeah, and I think that is one of the reasons for at least start to standardize the language to use dietary components rather than nutrients.

[2:21:54] So, there may very well be strong associations with certain bioactive components in foods, but if we don't have the requisite database amounts of those bioactives available to analyze our data, and that's oftentimes the limitation.

Not only are there not Dietary Reference Intake recommendations for a lot of dietary components, but then we don't have the database information to analyze what current consumption is. And I think that's something that we'll have to document as limitations and areas for future research.

Dr. Joan Sabate: Okay.

Dr. Barbara Schneeman: Other questions or comments from the committee members? I know that this, when we get to that point of trying to integrate, based on what you're finding from the literature, being able to se where we are is going to be a crucial part of actually coming up with recommendations.

[2:23:03] So, absolutely, I know everyone's anxious to see all the data.

Dr. Rachel Novotny: I guess—Rachel Novotny—just sort of a general think I'm thinking about is making the transition from nutrients into foods and food components or diet components, and then related to that, trying to address some of the general policy issues that we want to make around foods. And just looking to this group, really, to help us see patterns of eating in the population in general, and thinking that we should spend more time about sort of certain segments of the population that we may want to understand their patterns better in order to go a next step. That's as far as my thinking has gotten, but it's just sort of a general thought.

[2:24:01] ***Dr. Regan Bailey:*** Yeah, absolutely. Thank you.

Dr. Carol Boushey: In the research space of dietary patterns, and in particularly, the theoretically-driven patterns, but to a certain extent, it also occurs in the hypothetically-driven patterns. But so, are patterns usually made up of a number of different groups of foods? And we refer to those as dietary components? So, I don't know if that blends with what you have in mind for dietary components.

Dr. Regan Bailey: I think more or less, to be inclusive of things like added sugar, fiber, caffeine, these are all things that we're interested in broadly in different questions that we have, but they're not nutrients per se.

[2:24:56] I mean we all use the colloquially, but not to be overly pedantic, but I'm a big fan of harmonization of terms. I'm a recovering federal employee, can't help it.

Dr. Richard Mattes: Do you have particular concerns about the estimates of water intake?

Dr. Regan Bailey: I think that is a way of you saying you have particular concerns. Stated differently.

Yeah, I think there are certain things that are notoriously difficult to measure. I think water is one. I think alcohol is one. The serving sizes are provided. They're very hard. And I think that we will have to have caveats around that in the way that we draft our conclusion statements and interpreting the data that we have available to us.

[2:25:59] There is some prompts in the AM/PM procedures when doing a 24-hour recall to help participants remember to report beverages or forgotten foods that are often or difficult to measure.

So, there are prompts built into the procedures, but it remains an issue of concern.

Dr. Barbara Schneeman: Did you have a follow-up or anything to add?

Dr. Richard Mattes: No.

Dr. Ronald Kleinman: He's not willing to risk it.

Dr. Regan Bailey: But I actually cite your paper a lot for that tap water provides about 5 percent of calcium to diets. And so, it's not—it's not insignificant.

[2:26:59] And so, it's an important question, and I know that we've been talking through the Frequency of Eating, but especially, water is an ingestive event because that happens quite regularly for a lot of people.

And so, being mindful of that in the way that we present and think about the data.

Dr. Barbara Schneeman: So, other comments from the committee? Beth or Juan, did you have some other comments that you wanted to make?

Okay. Go ahead, please.

Dr. Richard Mattes: Can I just make a global? Okay, so I think things may change as we progress along in that we will be dealing with an adequate number of papers to be worrying about all of the key confounders and other issues.

[2:27:59] But so far, we sort of have a pattern of we start with around 4,000 hits and we end up with 0, 1, or 4 papers, so it's a moot point that we're going to compare across these things.

What strikes me is I know that when the NESR group is going through the papers, they read them. When they see the first disqualifying criteria, they say, "Okay, that one's out." And I understand completely why you do that.

But maybe it would be instructive to know why—which of the criteria in each of these searches actually led to the rejections. It will tell us about where the gaps in the science are.

[2:28:55] And so, I don't know if we can do it up front, because I understand that would be an enormous additional workload on them, but at some point, or some group, that might be a worthwhile exercise.

Dr. Barbara Schneeman: So, I'm going to suggest that you've now started our final discussion for the committee, and if we have time, we can, as we gather items, if there's some like that that we may want staff input on, we can come back at the end and see if there's an opportunity to do that.

But since you were last yesterday, you're first today, and we'll go to Steve Heymsfield, to the—

Dr. Steven Heymsfield: It must be telepathy. I had exactly the same question as Rick. And I wondered, for mortality in our group, Frequency of Eating, we had thousands, 4,000 papers, and none come up at the other end of the line.

And I had thoughts about, like is there an error rate in reviewing these papers, and if there is, then I assume the public can feed in and say, "You missed this paper," or "Why didn't you consider this?" so there's some checking mechanisms on our screening process.

[2:30:09] But also, the same question about is this just bad research or is it unrelated research, or what are the underlying rejections due to? Because there are thousands of papers in there that we're not considering. And it would really help people in the future research to know what's really an acceptable quality study to make an impact. That was my thought as well, yeah.

Yeah, okay, well I thought we were going to get around to Heather. Heather rightfully is concerned about our criteria for selecting studies for Frequency of Eating and mortality.

[2:31:01] We set up certain criteria and there was quite an extensive discussion yesterday about those criteria. Heather, do you want to make a few more comments on that? Is that okay if we go lateral in that direction?

Dr. Barbara Schneeman: Yeah, I'd just as soon, if it's something where you need the committee input on, it's better to talk about it now.

Dr. Heather Leidy: So, if you remember yesterday, we—the eating frequency committee had come up with some more, I would say rigorous inclusion/exclusion criteria. Some of those related to sample size, and then how we're including dietary intake.

And so, I went back in. I had some one-on-one conversations with folks and then went back into all the protocols to see if I was missing something across the boards, and consistency, to my knowledge, unless—feel free to chime in—none of the subcommittees have established a sample size criteria, whether it's observational studies or experimental.

[2:32:00] And so, unless I missed it, and I apologize, I went through them fairly quickly. And so, it was just something that came up, and then the other piece too, was that, outside of the NHANES data, there weren't any criteria in terms of how many dietary recalls that should be included and what to do with food frequency.

And then, I also found, with the Beverage subcommittee, that I'm also on, is that I think that's the only group that established a criteria for study duration of experimental studies of eight weeks, and that was only applied to those that had body composition outcomes as well as type 2 diabetes outcomes.

And so, I wondered—I had a discussion with our eating frequency group, because I feel like there needs to be a level of consistency among the committee, because a lot of these outcomes are consistent with the subcommittees. And so, it's how do you wrestle with that? And we've been back and forth.

A side note that I didn't bring up yesterday, I didn't think about it until after the discussion, and Kay had brought that up, as far as the number of time points that we were including in the eating frequency. So, just a comment.

[2:33:02] When we were talking about the food frequency questionnaires that we include with our eating frequency, just keep in mind we're not really—it's not the standardized food frequency questionnaires that we can include, because we're not dealing with foods, it's the number of eating occasions.

And so, a lot of those frequency questionnaires are not validated, which is okay. We don't have that criteria around the board.

But a lot of them don't have an established time interval, so it might just be in general, "Do you skip breakfast," or whatever? Or maybe it's the past week or past month.

And so, that was another reason why we felt that having multiple ones of those would be appropriate.

With the recalls, the reason we wanted greater than—we have three days right now—was just because the eating frequency concept can be different, primarily too, when you have weekdays versus weekends, there's a different amount of skipping that occurs, whether it's a weekday or weekend, and then intermittent fasting also raises a question that, if you are recalling just one day, you may not be eating anything, versus one day where they're maybe overeating in the context of a given day.

[2:34:05] And so, that was just some context around that.

So, the reason I raise this up is a couple things, and I didn't think about it until Barbara brought it up, that you can identify all studies that generally have this topic, and then at the end of the day, so for example, with our all-cause mortality, there were 18 studies that were identified, and then none met the criteria, only three had the diet intake component.

But is it—this is really a committee decision, is it appropriate for us to then comment about all of those studies and really have it be that it's really low or poor quality, or do we establish that there should be potentially a certain level of rigor that we say, well maybe these studies shouldn't really even meet the criteria to be included.

And another example too, with the duration of—with weight loss.

[2:34:55] There are studies that will report weight loss at two weeks or three weeks or four weeks. Where do you draw the line that says that it's low quality versus data that really shouldn't have been included in the body of evidence?

And so, that's what we're just trying to figure out, if the committee feels that there should be a level of consistency and that maybe our committee is being too rigorous. It is a new research question, and so,

we felt the need that, for eating frequency, and I can't document this per se, folks that are on the eating frequency committee have done research in this area, and there seems to be more variability in the number of eating occasions that we have, outside of diet or food choices or food components.

And so, I think that's why we may establish that, but I think there's just a bigger discussion, too, in terms of when you're dealing with the subcommittees that have outcomes related to body composition, should we collectively establish a certain minimum for experimental studies and with sample size?

Dr. Sabate, you brought up the fact of that observational studies should have a sample size.

[2:36:01] But none of us have done that, and we did that with the experimental evidence, but then nobody else has it. I don't think, for a sample size question, that's not specific to eating frequency, I think that's in general.

So, that was very long-winded and I apologize, but we thought it was appropriate to bring this up with the committee because I think that really has long-lasting implications, because our committee may end up with very few number of potentially high-quality studies that might be appropriate, but then, we're not really establishing the level of the quality, because it's already higher, versus maybe some of the other committees.

So, we just wanted to bring that up for comments, because I feel like, at this point, moving forward, I think it needs to be a group—we all decided it should be a group decision how we approach this for all subcommittees, and then more specifically, comments related to ours.

Dr. Linda Snetselaar: I just have one comment related to that. This also relates to a question that Tim had yesterday, which I did not hear very well, on quality of studies.

[2:37:03] And then, I also had a discussion with Rick.

I think, in some cases, we may have very large randomized control trials that have gone on for several years with large populations, and maybe there won't be a large number of studies related to some of the questions we're answering, but there may be very seminal kinds of articles that can come to bear on our questions.

And just to make sure that, if there are those articles available, and they're a very high-quality, that that may answer some of our questions, and we may not have numerous articles, but we have an extremely high-quality type of research that's gone on that does answer questions.

[2:37:58] ***Dr. Kathryn Dewey:*** Kay Dewey. So, I would like to address what you said, Heather, about at what phase do you impose these judgements?

And in terms of the quality of the exposure assessment, which is what you were talking about in terms of the measurement of frequency of eating, there is a place for that to be done in the risk of bias assessment once the studies have been identified.

I don't know how many subcommittees have actually gone through the whole risk of bias thing, but we, in Pregnancy and Lactation, a couple of us did this just the other day for one of the outcomes that we didn't talk about yet.

And so, there were three types of studies in the evidence base. There were randomized control trials, non-randomized control trials, and prospective cohort studies. And the risk of bias table is different for each type of study.

And so, for randomized control trials, that includes randomization, deviations from the intended interventions, missing outcome data, outcome measurement, and selection of the reported result.

[2:39:03] And then, it's a slightly longer list for the non-randomized control trials.

And for the prospective cohort studies, it includes confounding selection of participants, and importantly, classification of exposures.

And that's where I personally would choose to have this criterion around did, they assess frequency of eating well enough? Then, they would get a low rating for classification of exposure in that risk of bias table.

And then, there are four others. I won't read them all out here.

But I think that helps take care of not excluding too many studies but making sure that their flaws are recognized when writing up and making a judgement about the overall grade. Because once all these cells are filled in, there's an overall grade assigned to the entire body of evidence.

[2:39:58] And this is color-coded. It's very, very helpful, green, yellow, and orange. And it's based on external kind of recommendations about how this should be done, and maybe, some of the staff members would want to say more.

But I think it's a useful exercise for each subcommittee to have gone through all that, to think about how it applies.

For the power calculation and minimum sample size, I think we have some analytical frameworks where we've done that. Maybe you didn't find them, and I could be wrong. But I seem to recall that we did impose that, and I don't remember which ones.

Dr. Heather Leidy: So then, I guess the question is, should the committee—should all the committee follow that one you're dealing with similar outcomes? And I would love to have that shared. I just couldn't find it on—I apologize. It was—I was trying to do this very short.

But for a lot of the ones, I couldn't find that there were just standardization for the observational, and definitely not for the experimental studies, unless it was with ours.

[2:40:59] And so, I guess as a committee, do we feel that we should have that same level? Or does that go under risk of bias?

I mean so I guess it's where do you draw the line then of saying, well, this should be…

And it occurred to us that, when you put that in the excluded exclusion criteria, you're excluding studies. You're not even being able to assess risk of bias when you kick them out. So, even the eight weeks for the beverages, I'm wondering if maybe that's something that should be retracted if we collectively feel like they should be in, and then the risk of bias is assessed.

So, the same thing, I guess, with sample size. If we have them, should we keep them in? And if not, we probably should remove them consistently.

Dr. Barbara Schneeman: So yeah, but I think it would be very helpful to have Julie comment in this, because the other factor is, first of all, you are looking at the papers. You will receive the papers. So, it's not just the summary. That's part of the assessment is to actually look at the papers.

[2:41:59] And Kay, I'm glad you brought up the risk of bias, because that's really where you start to get into many of these quality factors.

But I think some of these questions relate to the process as it evolves, and that's why I thought it might be useful to have Julie comment. And Julie, before you do, I can't see you, but Tim, did you have another comment you wanted to add to the discussion?

Dr. Timothy Naimi: Tim Naimi. Just a very brief one. I agree, like Heather makes some excellent points. But I think Dr. Dewey does as well. I think there's a middle ground, and I think that, for some of these risk of bias assessments, it's going to differ not only on the basis of the type of study, but the type of outcome and the way that the mechanism expected to work.

So, a follow-up period for some outcomes in a randomized trial could be as little as a day.

[2:43:02] It just depends on what the expected action is.

So, I think we need to be also careful about having blanket decisions about quality criteria applied to all the topics without very careful consideration of that.

Dr. Heather Leidy: And just a quick follow-up, just to clarify that. I think, my statement was more about when the outcomes are very similar in nature. So, if you're dealing with a body composition, or type 2 diabetes, or some of those, I think a consistency should be found, but they can't be—it can't be a blanket statement across it all.

Dr. Rachel Novotny: Rachel Novotny. Just thinking that in terms of the process, and I mean I know we want to streamline things as much as we can, but I do think that if the committee can explain the reasons that, briefly, in terms of sample size or whatever it is, that studies are excluded, that may be actually a really big service to helping the public understand why all these things they've heard maybe, at the end of the day, we're coming up with a different recommendation than perhaps what they might have thought, based on some of the more general information out there.

[2:44:21] So, I guess that would argue towards keeping in more studies then screening them out at risk of bias level. Yeah.

Dr. Elizabeth Mayer-Davis: I'm going to chime in, Barbara. I was just recalling, at some point in one of our subcommittee calls, we had a lovely table that had been put together by the NESR staff that summarized for different variables, what would be considered by the different subcommittees for different outcomes as key confounders versus other factors to be considered.

[2:44:57] And that was exceedingly helpful, and there was a reasonable amount of agreement, but then there were some areas of disagreement, so that the subcommittees had opportunity to say, "Oh well, let me think about that again."

A couple of things for our subcommittee changed, a lot of things stayed the same, because for our particular questions, we had a rationale for whatever it was we had decided.

So, it might be that, while in this moment, it might feel like there's more inconsistency, there's probably a lot of consistency. But I think if we could just identify what we are actually trying to compare, now more broadly than just key confounders and other variables to be considered, but inclusion and exclusion, some of these other factors that Heather mentioned, whether it's duration of experimental study, then we could actually just look at it, and subcommittees could determine relative to their particular set of questions, what their decisions really should be, if they're justified of being different or otherwise.

[2:45:57] And I think Rachel has a great idea, just document that. We're probably closer than, at this moment, potentially feared.

Dr. Barbara Schneeman: But you're right. The documentation is important. And my understanding is that the NESR process itself does document reasons for excluding papers, so Julie, I'll let you comment.

I assume she's down there.

Dr. Julie Obbagy: Yeah, I'm here.

I think a lot of—is this one—there it goes.

I think a lot of the criteria that you're discussing, that have come up in terms of inconsistency areas, are ones that we have not historically established NESR standard criteria, for some of the exact reasons that you've articulated just now, is that there is either not great empirical evidence for why you would select a sample size of 30 versus 50 versus 500 versus 1,000 for an observational study.

So, that's why we don't have standard NESR criteria, because it could depend on the population, it could depend on the question being addressed.

[2:47:03] And so, we don't have very strong rationale for establishing some of those standard criteria, so that's why we haven't.

But it's certainly within the purview of your role and your committee to discuss that and come to an agreement, and consistency is always nice, but if there is some rationale for doing something differently, by question or topic area, that's always acceptable as well.

So, that's sort of the point of being able to tailor some of these criteria more specifically to the topics and the populations that you're addressing.

So, I think your discussion is all perfectly in line, and we're open to whatever you can come to agreement on as a committee.

So, we do, not to switch gears totally, we do document all of the reasons for exclusion. I think some of the discussion comes from the fact that we document the reason for why a paper is excluded, but we don't go through every paper and document every potential reason for why it was excluded.

[2:48:09] And so, we can't confidently report exact numbers of x number of studies were excluded based on study design, x… because we sort of capture some of the most easily-identifiable ones from the paper and the abstract.

So, we can't, with 100 percent confidence, report exact numbers on that, but I think what we do provide, in terms of the rationale for exclusion, should give you a pretty good sense of what the most common reasons for exclusion are.

In the title screening, and I appreciate that it does look like the numbers go from thousands and thousands down to such a little number, but I think if you actually looked at some of the abstracts and titles that come up, the reality is, PubMed does not do a very good job with indexing.

[2:48:56] And so, if you're looking at a frequency of eating review, where you've included a search term like fasting, that's going to pick up all papers on fasting blood glucose, and things that are not the fasting you're talking about. So, it's that lack of specificity within PubMed that can lead to sort of a lot of noise coming up in the searches.

And so, that's why the numbers typically look that way.

But I think looking from abstract and title screening rationales will give you a pretty good sense of what the reasons for exclusion would be. We come across a lot of cross-sectional studies, for example, so that's a common reason, or studies conducted in a country not on your HDI criteria.

So, I think we can work with you to provide some more details around that.

And then, I think just to the points about risk of bias and parts of the process that can address some of these issues that you're sort of uncertain about, in terms of how to handle with inclusion/exclusion criteria, I think Kay, you did a great job of talking about exposure assessment being a really critical part of the risk of bias tool for observational studies in particular.

[2:50:02] So, we do have mechanisms in place to be able to consistently assess some of these limitations across a body, if you don't feel comfortable making a criteria.

Precision is another place in the grading process where sample size is definitely part of that assessment for the body of evidence. And so, if you don't establish a sample size criteria, precision in the grading process will allow you to assess that very consistently and transparently.

Dr. Kathryn Dewey: Kay Dewey. So, thank you so much, Julie. A specific question about the precision criterion. If I remember correctly, that's applied at the level of the entire body of evidence, not study by study? Is that correct?

Dr. Julie Obbagy: No, it's study by study, but I think in order to really assess the body of evidence, you kind of do have to look across the studies.

[2:51:00] And so, you have all of the ***[indiscernible 2:51:03]***, and looking across that, I think you can make some judgements on the study by study basis, but then bring it up to the body of evidence.

Dr. Kathryn Dewey: That's right. But what I'm getting at is that the risk of bias assessment by type of study is at the individual study level, and when I was scanning through those criterion, they're between five and eight or so, depending on types of studies, I don't think any of those are specifically around power or sample size. Correct?

Dr. Julie Obbagy: Correct.

Dr. Kathryn Dewey: So, what that means is that you wouldn't be, if you don't have an exclusion of studies, of papers based on sample size, it would be at a much later phase, when you're looking at the whole body of evidence, that the power issues would come up.

[2:51:56] I was looking at some of the other ones, because I could remember that we had a sample size minimum, and I think, and maybe Julie or others can, again, clarify, but I think we may have inherited some of that language from the previous PB24 project.

Because the one I pulled up was for the human milk and infant formula, and other outcomes, and they had a minimum sample size of 30 per group.

So, Julie, am I right? Is that—did I inherit that?

Darcy: That's right, that's inherited from the last project, where there was a sample size for the breastfeeding and formula feeding questions, that the groups in the study had to have at least 30 per group, or a power analysis that indicated that the sample that they did have was sufficient for the outcome or the comparison and the outcome of interest that we are interested in.

[2:52:56] So, sometimes, there might be a power analysis in the paper, and it might not have been for what we were drawing from the paper, it might have been for a different analysis, and maybe what we were drawing from the paper was a secondary analysis of some sort. So, that I guess is a caveat to maybe mention, sort of a nuance, but that is the sort of complete idea was that it was 30 or a power analysis.

Dr. Kathryn Dewey: And I think there's a logistical reason why we might have wanted to inherit that, because these are updated, we were updating those reviews, and to have to go back and remove that criterion and rescreen and reevaluate everything would be extremely difficult. So, inheriting it was logistically the right choice.

But that doesn't mean that it has to be imposed across the board for all of the questions that all the subcommittees are looking at.

Dr. Heather Leidy: We were comfortable with ours until the committee raised the questions, because we also have a 30—sample size of 30 for between-group and then 15 for crossover, and then the question was made about the observational studies, and I don't think that's in your criteria.

[2:54:03] It's hard to know whether they were observational or experimental studies.

And so, we just felt like, after the conversation, that it seemed like there were a lot of not red flags, but flags that were raised with our criteria, so that's why we just wanted to bring it up in the discussion for today.

Dr. Barbara Schneeman: Right. I'm glad you brought it up. I know when we were looking at yours, the fact that you had "or a power calculation" seemed to open the door, that it's not that it was set in stone, you allowed for the power calculation.

What I'm going to pose, and you can disagree or come up with an alternative, because so many of the subcommittees now are at the point where you're starting to look at the evidence and now really having to think through the risk of bias, which I know you all heard about it before, but haven't necessarily worked with it when you were in the protocol development.

[2:54:57] My suggestion is, within the subcommittees, there be a discussion of that risk of bias, now that we're at that point of looking at the evidence. Some of the groups have already done it, but to really make sure that your protocol is not duplicating what's in that analysis as far as looking at the strength of the evidence for the particular criteria that you've looked at.

So, that's a proposal. Do you think that would help to deal with the issue?

Dr. Heather Leidy: Yeah, and our biggest problem is we can't really look at risk of bias because when we have our criteria, the inclusion/exclusion, we don't get the—we don't have the ability to go back and look at those studies for bias.

So, I think, I can't speak for Steve, I feel like our recommendation—what we were proposing to do with our subcommittee is to go back and remove the criteria so we can then do risk of bias.

Dr. Barbara Schneeman: Yeah, look at the risk of bias to see—

Dr. Kathryn Dewey: The tool.

Dr. Barbara Schneeman: Yeah, the tool. Just to see if you're duplicating.

[2:56:01] ***Dr. Heather Leidy:*** And you mean—so you propose we do that before we decide to remove a criteria?

Dr. Barbara Schneeman: Yes.

Dr. Heather Leidy: So, go back and look at all 18 studies that we excluded?

Dr. Barbara Schneeman: No, I'm suggesting you start by looking at the criteria that are within the risk of bias.

Dr. Heather Leidy: Oh sure, yeah.

Dr. Barbara Schneeman: The tool, to see, okay, did you really factor that in when you set your exclusion criteria? So, rather than just going back and changing criteria, start by looking at did you really factor

those in? And if you didn't, then you have a rationale for why you might need to reexamine your exclusion criteria.

Dr. Kathryn Dewey: Kay Dewey again. I think that's a great idea, but with that said, I was thinking about the fact that the Pregnancy and Lactation conclusion statement that was made on whether folate intake related to human milk folate, I think all of those studies were less than 30.

[2:57:13] There were four studies, and I think they were all less than 30 participants.

And they would have all got screened out. And so, I think I would sort of prefer to err on the side of not being too stringent on minimum sample size unless you make a really compelling case, because there is an opportunity at that final stage of assessment of the quality of the evidence to bring this in to bear.

Dr. Barbara Schneeman: And I think if you look at some of the statements that were made around the evidence for the seafood, you see that looking at the nature of the study itself, in terms of how the committee developed its conclusion.

[2:57:57] Is that—are we good with that? Okay. Beth, you look like you're ready to say something.

Dr. Elizabeth Mayer-Davis: Yeah. So, this is on a different topic, but I think this was a good discussion, so, that's great.

And that is thinking about dietary patterns, food groups, foods, nutrients, it occurred to me this morning, and we had some conversation about it, that for the B24 and Pregnancy and Lactation groups, subcommittees, there is attention being paid to looking explicitly at supplements, whereas for Beverages and Added Sugars, for example, we at some point decided not to deal with supplements, looking at FDA definition.

[2:58:57] And it was partly because, as a matter of scope and likely available data, when you think about various supplements, broadly defined, that find themselves in smoothies these days, that that was just not something that we reasonably could address.

But I'm just wondering, Barbara and Ron, what your thoughts are, and maybe what discussion we might have as far as thinking about supplements that may be important to include for specific nutrients of public health concern, for example, maybe certain stages in life course, B24, Pregnancy and Lactation. Then again, we thought, well, in the elderly, this can be an issue, too.

So, some, I think maybe some general conversation might be helpful in terms of supplements as relates to our work for Dietary Guidelines.

[2:59:56] ***Dr. Barbara Schneeman:*** Okay, so I think the first place I might go is to look at what we're going to learn from the data analysis in terms of with and without supplements.

So, with that interjection…

Dr. Regan Bailey: I think that's why it's an advantage, at this point, that we don't have the dietary supplement data, because I think it's important that you look at nutrients for foods and beverages alone, and then in the context, particularly in pregnancy, where more than 70 percent of pregnant women are using micronutrient-containing supplements.

So, I don't know if that addresses what you're talking about. I think you're talking more about in all of those—the other subcommittees.

[3:00:58] ***Dr. Elizabeth Mayer-Davis:*** Well, there's another layer to it, which really has to do with focus on nutrients versus foods. And so, we've really thought, in our subcommittee anyway, about beverages as foods, and added sugars as a matter of foods, and so forth, rather than a focus on nutrients, since that is not, in our view, particularly in our remit to really focus on nutrients that might be contained in, say beverages, with respect to particular outcomes.

So, we're actually not looking at trying to come up with what are the nutrient or what are the dietary components that might explain an association, for example, between beverage intake and the type 2 diabetes. We're staying at the food level essentially. And that was part of the philosophy around not getting into supplements, because that drives you to a nutrient focus rather than a food focus.

[3:01:58] So, that was really some of the back talk of our thinking.

Dr. Regan Bailey: And I think that's actually an advantage, because the approaches that we're taking complement each other in a lot of ways. And we're also taking an approach where we're looking at foods, food category sources of nutrients, and then nutrients in and of themselves.

So, you have like three different levels of data that will inform the federal government on how to interpret that into actionable guidelines for Americans.

Dr. Elizabeth Mayer-Davis: So, that makes sense, as between Beverages and Added Sugars subcommittee and the work of your committee. I'm still not quite sure how that fits with the B24, Pregnancy and Lactation, that does have a specific focus on supplements, which I don't have any personal objection to. I'm just trying to make sure that we have an understanding about really what the scope is.

[3:03:00] ***Dr. Kathryn Dewey:*** This is Kay Dewey again. Well, we were given those questions, and it was just intake from supplements or fortified foods.

So, it wasn't the foods, and then did they happen to have something in them as well?

So, and it is because, certainly, pregnancy is a period with heavy supplement use. And then there are questions around whether supplements are needed for infants.

Dr. Elizabeth Mayer-Davis: So, it's just a function of the very specific questions given? Okay. So, as long as we're all in agreement that we're sometimes looking at supplements for those—for that reason, and sometimes not…

Dr. Carol Boushey: Liz, in these papers that you've looked at, do they even provide that information? I mean what happens is when you go into different spheres of research questions, it's rare that a paper might even put in supplements.

[3:04:03] And so, I don't—so that's a risk, if you start adding them, then—

Dr. Elizabeth Mayer-Davis: Yeah, and we're not planning on adding them. I just wanted to make sure that we were all in good communication about what we were doing. So, yeah.

Dr. Rachel Novotny: Yeah. No, I appreciate the question. I've been struggling with that, too, because we're the Dietary Guidelines committee, and—but I also sit on the ***[indiscernible 3:18:16]*** committee, or the subcommittee. So, those were the questions given to us.

It does beg the question, I don't know if, again, it's going to depend on the papers. Maybe we can kind of, as a philosophy, try to articulate sort of the relative role of food and supplements in the outcome, if it's there, just to keep the emphasis on food.

[3:05:05] ***Dr. Barbara Schneeman:*** I think this is very helpful to have the subcommittees identify if there are additional issues where they really need the input from the full committee to make sure that you can make great progress between now and the—our next meeting.

So, our time is getting short, so I'm just going to sort of quickly go around and see if there is anything else that needs to be brought up along those lines from—so Steve, you did your thing. Yeah.

Dr. Carol Boushey: I'm good.

Dr. Barbara Schneeman: Okay.

Dr. Carol Boushey: Thank you.

Dr. Kathryn Dewey: I have no further comment.

Dr. Sharon Donovan: No.

Dr. Jamie Stang: Me neither.

Dr. Regan Bailey: I guess this is not specific to the committee, but a plea for people who are doing funding reviewing and publishing research, that you include or demand that details of the methods are so critical in their applicability to our purposes.

[3:06:10] So, if you are a journal editor, if you are a researcher, if you're funding research, the devil is in the details, and those details need to be published.

And a lot of times, you're limited by word count, or things like that, but just be mindful that, in order for your research to be impactful and interpretable to committees like this, you have to have the details.

Dr. Rachel Novotny: I'll pass.

Dr. Joan Sabate: I just appreciate the conversation we had, the last one, as far as the clarification between the major emphasis of this group on nutrient versus foods and food patterns, and I am in full agreement that, or at least that was my understanding, that the main purpose of this task force is to relate foods and food patterns, I mean with health outcomes.

[3:07:14] And I think that was a very useful conversation as far as understanding the role, and we know that these were questions that were asked as far as a specific nutrient supplements, but in general, I think we have to continue trying to see the connection that exists between foods and food patterns and health outcomes.

Dr. Barbara Schneeman: You already had a turn.

Dr. Barbara Schneeman: So, Ron, do you want to—

Dr. Ronald Kleinman: No, I have nothing to add. I'm just glad that we were able to come together. I think we really do accomplish a lot when we're seeing each other face-to-face. Something to be said for staying home and doing it over the phone, but it is great to be able to talk these things through.

[3:08:05] So, thank you all.

Dr. Barbara Schneeman: Okay, so I know that—I believe Eve has to officially adjourn the meeting, so I won't do that, but I will remind you that we—the committee takes, as long as the committee is meeting, public comments can come in, but if anyone has specific comments on the protocols that, particularly the new protocols that have been discussed, those will be most useful to the committee if we receive them by November 7.

So, I will turn it over to Eve.

Dr. Eve Stoody: Thank you, Dr. Schneeman, and to the committee. And we do just have a few closing remarks before we adjourn for today.

I did want to just make a quick comment regarding the supplement conversation.

[3:08:57] For—historically, the Dietary Guidelines that have focused on two years and older, it has been a focus on meeting nutrient recommendations through foods, but as Kay and Regan kind of both noted, for these new populations, for birth to 24 months and pregnancy and lactation, there were just questions around should there be a recommendation at the population level for supplements in addition to like a typical diet?

So, that's where those questions came from. So, that's why there's not specific questions related to supplements for the kind of two-year and older population but for the birth to 24 and pregnancy. So, just a few comments there.

Okay, so thank you for joining us for meeting three of the 2020 Dietary Guidelines Advisory Committee. I do want to note that materials from this meeting, as always, will be posted at DietaryGuidelines.gov, so that will include recordings of all the presentations, there will be transcripts, meeting minutes, all of the slides.

[3:10:02] It does take a little bit of time to get the transcripts and all that stuff finalized, so please allow about one month for those materials to be posted, but as always, our Listserv is the way that we communicate, so if you're signed up for our Listserv, as soon as those materials are posted, we will send out an announcement so you can come back and view the discussion again.

Okay, can we spend just a minute talking about meeting four? Because it is in a different location. Meeting four will be held in Houston, Texas, and who knew, when we were setting our meting locations, we were predicting the World Series. So, stay tuned for the next round, I guess.

And so, yes, our next meeting is in Houston on January 23 and 24 at USDA's Children Nutrition Research Center, and the meeting will be held from 9:00 a.m. to 4:30 p.m. each day, if that helps with your planning purposes.

[3:11:00] And as we talked about yesterday, meeting four will include an opportunity for oral comments to the committee from the public. This will be essentially exactly the same as it was last time. The public will be able to provide up to three minutes of oral comments to the committee, and that will be—registration is expected to open for that in early January.

So, registration is not yet open. Registration will be confirmed on a first-come, first-served basis, and as with the last time, we ask we keep it to one representative per organization. So, watch for announcement through our Listserv for registration. The registration does fill up pretty quickly. I think it filled up in the first day for the last meeting. So, stay tuned for that, be ready.

It's similar to last time, when you go to register for oral comments, we do ask for a high-level outline of the items you plan to discuss, so you can be at the ready when that announcement comes through.

[3:11:58] In the meantime, you can follow the work of the committee at DietaryGuidelines.gov. You can view progress on the scientific questions. As we go, protocols will be updated. So, between now and the public meeting, we do expect to do an update on the website.

You can also read subcommittee updates, there's a section on the website with subcommittees, and there's brief updates provided on the work that they've done at various points.

We typically do both of those pieces—we do it all at once. So, for all of the subcommittees, we'll update the protocols and the subcommittee updates all at once, and this is another thing, when we do that, we'll send an announcement through our Listserv. So, if you're interested in kind of following the process, be sure to sign up for our Listserv.

At DietaryGuidelines.gov, you can also see a link to Regulations.gov, and there you can go, as Barbara noted, to submit comments to the committee, comments anytime throughout their process.

[3:12:57] Again, for the comments specific to the new protocols, the 19 new protocols, those are asked for by two weeks, November 7.

You can also read all the written comments that have been submitted to date.

You can check out our recently updated most popular questions page. We do update this page based on the questions that we are receiving. So, that is something that we try to keep updated based on questions that are coming in and that we're hearing.

And you can also learn about continuing professional education credits for viewing the meetings.

Now, as has been discussed by Barbara and others, this is really—it's an independent committee, and their findings are their findings, but it does take a lot of staff to support the process, and this is staff from across USDA and HHS who support this process in some way.

So, for example, supporting the committee's scientific review through the systematic reviews, data analysis, and food pattern modeling, managing all of the web updates, processing public comments, coordinating the actual meetings, and more.

[3:14:05] And so, really, just thank you to all of the staff for that support.

I do want to pause for just a second, and acknowledge a specific staff member, who is retiring next week. And that is Colette Rihane, who is very mad at me right now.

[Applause]

So, Colette has supported the Dietary—four different Dietary Guidelines Advisory Committees. She has—she's the director of the Office of Nutrition Guidance and Analysis at USDA's Center for Nutrition Policy and Promotion, and I just want to say, she's had just huge dedication to this process, just works so hard and committed so much.

So, thanks for your contributions to this process and to the Dietary Guidelines, and for your 33 years of service. So, thank you.

[3:14:58] [Applause]

So, with that, we will adjourn for the day. Thank you again for joining us, and we look forward to seeing you in Houston in January.

Oh, and I should note that that meeting will be in person and by webcast. We're bringing our YouTube team.

So, if you can't make it to Houston, you can always join online. So, thank you.