

EDUCATION AND HEALTH STANDING COMMITTEE

**INQUIRY INTO THE ROLE OF DIET IN
TYPE 2 DIABETES PREVENTION AND MANAGEMENT**



**TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
WEDNESDAY, 17 OCTOBER 2018**

Members

**Ms J.M. Freeman (Chair)
Mr W.R. Marmion (Deputy Chair)
Ms J. Farrer
Mr R.S. Love
Ms S.E. Winton**

Hearing commenced at 10.08 am**Professor JENNIE BRAND-MILLER****Professor of Human Nutrition, University of Sydney, examined:**

The CHAIR: On behalf of the committee, I would like to thank you for agreeing to appear today to provide evidence in relation to the committee's inquiry into the role of diet in type 2 diabetes prevention and management. I am going to introduce the other members of the committee. To my right is Mr Bill Marmion, Mr Shane Love, Ms Sabine Winton and Ms Josie Farrer. I am just going to do an opening statement for Hansard. Sarah is one of our clerks and Jovita is one of our clerks as well. You have agreed to provide evidence to the committee. Your evidence is protected by parliamentary privilege in Western Australia and protected by uniform defamation laws in Australia against actions in defamation. Please note that these protections do not apply to anything that you might say outside of today's proceedings. It is important that you understand that any deliberate misleading of this committee may be regarded as a contempt of Parliament. Can you introduce yourself for the record? The record is being taken by our Hansard here.

Prof. Brand-Miller: My name is Professor Jennie Brand-Miller from the University of Sydney. I am a professor of nutrition. I have been teaching and doing research in nutrition and diabetes for the last 30 to 35 years and I am recognised for my work on carbohydrate foods particularly and the glycaemic index of foods. There is one thing personal I would like to say to you. I am the recipient of bilateral cochlear implants, so I have a hearing impairment. The microphone is slightly distorted, so I would appreciate you speaking slowly for me.

The CHAIR: No problems. I will try to speak very slowly. Before we begin our questions, do you have any questions about your attendance here today?

Prof. Brand-Miller: No, I think I know what you want to ask me about at the moment—diabetes prevention and the role of diet.

The CHAIR: Do you want to make an opening statement to us around that just to get us started or do you want us to go straight into questions?

Prof. Brand-Miller: I think you can go straight into questions.

The CHAIR: Diabetes Australia recommends that people with diabetes follow the "Australian Dietary Guidelines". They do not mention GI at all. Should the advice of Diabetes Australia be amended to include GI? Do you want to comment on that?

Prof. Brand-Miller: Yes. I think the advice given by Diabetes Australia in writing is different from that which is happening in practice. I think what they are actually putting in writing alternates between people who are in leadership. Some people support the glycaemic index and some do not. But it is very clear that the dietary guidelines for diabetes in the UK, the US and in Europe in general—they all mention the glycaemic index of foods and the fact that it can provide a further benefit beyond just looking at carbohydrate alone.

The CHAIR: Why is there this controversy in terms of that? Can you give us some understanding of where that controversy lies, given that none of us have nutritional backgrounds?

Prof. Brand-Miller: It is a good question. I think someone could do a PhD on it. I think it is a lot to do with nutrition as a subject—there are always a lot of opinions and they often are polarised, not just on carbohydrates and glycaemic index, but on any aspect of nutrition. You can see through the history a lot of controversy. At the moment I think the National Health and Medical Research Council

of Australia has recommended the use of low glycaemic index foods in diabetes. I would refer you to Stephen Colagiuri's work on glycaemic index. I think it is mainly a controversy that continues but, really, for most people I think it is just common sense that if you have a problem controlling blood glucose levels, as you do in diabetes and prediabetes, it is common sense that you look closely at the carbohydrate foods and you look at the speed of digestion of the carbohydrate and how fast it is absorbed. The principle behind the glycaemic index is common sense. The actual application of it in real life is something that some dietitians do well and others do not. Part of the problem is that we do not have the glycaemic index on all food labels. We only have it on some. There is a natural, I think, resistance to making life more complicated for people with diabetes. People who do not understand the glycaemic index and do not understand the principle behind it think that this is one more burden for people with diabetes. It is something they do not want to do simply because having diabetes or prediabetes is, in itself, pretty difficult management.

The CHAIR: With respect to the GI symbol, how many products have been authorised to display the GI symbol and why is it that there is not that widespread GI symbol on foods? Is that simply because of that difficulty you are talking about—it is too difficult or the food industry are reluctant to do it?

Prof. Brand-Miller: The answer is a bit of both. First of all, the GI symbol program acts in the same way as the Heart Foundation tick. It was the same principle. If the information was on food labels, then the company could provide it and flag it and flag with a symbol—either a tick or, in the case of the glycaemic index, our symbol. There is a charge involved in that and many of the big companies feel that the charge is valuable to them and it is a good marketing tool. As you can imagine, it might be difficult for smaller companies, but what we have found, actually, is that most companies have not gone to the trouble of testing the GI of their foods. Clearly, there is a charge involved in testing and that is a hurdle they have to jump. The next hurdle is that in all likelihood the food is not a low glycaemic index food. A lot of the traditional healthy foods that you think are healthy, such as rice, whether it is brown or white, or if it is bread, whether it is brown or white, that means usually that the glycaemic index is high. You have to have a product that has actually been developed with a low glycaemic index and you have to have a guarantee to the consumer and to the program that you can actually maintain that low glycaemic index. That is not easy and over the years we have learnt that if it is very close to the cut-off of low glycaemic index food—close to 55—it is very hard to ensure that it is always under 55 in terms of the number. Although that is really just an artificial cut-off, it applies to every nutrient that you would care to talk about—fibre and the guidelines for labelling something as rich in fibre, they all use a cut-off. Actually, for the food company, ensuring that they have a low glycaemic index food reliably is not an easy task.

The CHAIR: Do you think it is well known with consumers? Do you think consumers actively make choice out of that glycaemic indicator or because the Australian guidelines do not have it in their guidelines and because there is that controversy, consumers do not actively look for it so the demand is not there?

Prof. Brand-Miller: The glycaemic foundation has done so much, so the informed consumer who says, "I recognise the glycaemic index is something I should know about", they will say they use the glycaemic index in everyday shopping, so they recognise it. Most people with diabetes will say, "Yes, I have some knowledge of the glycaemic index." They may not understand all the detail behind it. My feeling is that low glycaemic or low GI has become part of the Australian vernacular. If you are a reader of women's magazines, you will see at least one reference to low GI in every issue of the women's magazines. It is really well recognised that low GI is a sign of good, in some way. But the food companies need to come on board and say, "I want to tell my customer that my food is low GI."

Mr W.R. MARMION: Just exploring the issue of the GI index, is there intellectual property on how it is tied with Sydney university, or can anyone, through a laboratory, calculate the GI, and also what is the approximate cost of calculating the GI?

Prof. Brand-Miller: There is no intellectual property associated with the glycaemic index. It is something anybody can use. It is freely available in scientific literature. We make it available on a searchable GI database for free. If you want to test the glycaemic index of a food, then you need resources which are quite beyond the average food company, so you need a lab, you need volunteers, you need ethical approval and you need the ability to measure glucose accurately. Most food companies could not simply set up a glycaemic index testing laboratory. So, it is one of the reasons we have one at the University of Sydney. There used to be one down at Baker IDI as well that did commercial GI testing. There are probably—I do not know—a dozen or more glycaemic index testing laboratories around the world. They are testing for a fee. That fee varies from lab to lab and it is very much based on what people are willing to pay. At the moment, basically, in Sydney we do a lot of testing at a rate which seems to be acceptable for many food companies. About 50 per cent of our testing every year comes from international sources, so the rate we are charging must be competitive. We are never short of having foods to test. There is a steady demand there, and it comes from a lot of the major food companies. It would be a breach of contract if I told you who they were. I have the feeling, though, that a lot of them are sort of—in doing product development work, they want to have a reliable ingredient, say, it is flour, that will give any product, maybe this flour, to be low GI. There is a lot of background research going on. In Australia, for example, there was the development of a low glycaemic index potato. That was done with one particular food company. The same with rice. There are thousands of varieties of rice available around the world. In Australia, the rice growers for the last 30 years have been looking at sources of low glycaemic index varieties that they can grow here and export around the world. That is a very big market at the moment. For example, Australia is trying to sell rice to China, and at the moment, they are doing a pretty good job on the basis that it is low GI.

Mr W.R. MARMION: Thanks very much. Just one follow-up question on the same topic. You do not have to give me the cost but it would be handy to get a rough idea. Let us say I wanted to test some baked beans. My kids like baked beans, but I know there are a number of different types of sauces they put with baked beans. If I was going to get a GI index for my baked beans products, would I have to do a trial or a test individually for each variety of my baked beans? Can you give me a rough idea of the cost? Is it like \$500 000 or \$50 000 in terms of my company getting that test done?

Prof. Brand-Miller: Sure. If a company makes baked beans, say it is a low salt baked bean or a normal salt baked bean, we would suggest that they test them together, and the cost, for the first food, is \$5 000. That includes the testing of three reference foods. The reference foods are all a glucose solution, so to have a good handle on an individual's glucose tolerance, we would keep testing their responses to a 50-gram glucose solution. The first food is \$5 000 but the second food is about \$3 000, and there is more discounting as the numbers get higher.

The CHAIR: One of the things that you have been doing and have just come back from—we thank you very much for agreeing to speak to us when you have just had a long journey home—but you were involved in the prevention of diabetes in Europe and worldwide, PREVIEW. You have just returned, as we understand, from a conference in Berlin. What are the aims in terms of PREVIEW? Obviously prevention is a big one, but down from that? Can you give us some feedback on the conference, and then I have another question?

[10.30 am]

Prof. Brand-Miller: The purpose of me going to Berlin was to help to launch the findings of the PREVIEW study. The PREVIEW study is special. It was funded by the European Union, but it included people outside the European Union, like Sydney University and the University of Auckland, as a site for the diabetes prevention study. So PREVIEW lasted six years and had six years of funding from the EU. Some of it came from the NHMRC as well. What we did was the largest, longest multinational, multi-ethnic diabetes prevention study ever. What we found was that we had been so successful that there were hardly any cases of diabetes. So at the end of six years, in 2 500 people with pre-diabetes, who lost weight and maintained an intensive lifestyle intervention for three years, there were very few cases of diabetes. So it tells us that we can prevent diabetes or delay the diagnosis of diabetes, and that we can be very successful at helping people to maintain weight loss. If we had not done any kind of intervention at all, we were expecting 21 per cent of the subjects to develop diabetes. Well, we got a rate of four per cent, so it is much, much lower than the rate that we expected, but it is also much, much lower than what they achieved in other diabetes prevention studies, such as the one in the US and in Finland.

Because there were so few cases of diabetes, it was not possible to say one diet was better than another and it was not possible to say one exercise strategy was better than another. They were both effective for diabetes prevention. But then when you start to drill down and you look at which of the diets was best for weight control—and both of them were effective in maintaining the weight loss that they achieved to begin with—there were no differences in diet composition. Both diets were good and both exercise strategies were good. Now, we still are at the stage where we are looking at what you call the intention to treat data, where you do not look at compliance and you do not look at whether people adhere to the instructions or not; you just look at the people who were randomised to one or other diet and accept that they followed the diet. But it is now necessary for us to look more closely to people who complied and who did not. I cannot give you the answers yet. I do not know them myself. We have only had the data and the code broken about six weeks ago. We did this mad rush to get the data for the conference, but there is a lot of work to do still, a lot of work to look more closely at. Can we say who best? What sort of individual is most likely to change their lifestyle, to make the effort to prevent diabetes? Do they have some enduring characteristics? Are they older versus younger, or are they heavier or lighter, or do they have family support or do they not? Those sorts of questions we will be able to answer within the next six months.

The CHAIR: In terms of that research, did it have a control group that did not diet or did it just have the two different diets?

Prof. Brand-Miller: Because we know that a conventional dietary intervention will be effective, it is not ethical to have a control group that has no intervention. Okay?

The CHAIR: Yes.

Prof. Brand-Miller: We do know that a conventional diet is effective, but we are the first study to actually compare two diets. I think the answer is it is too early for me to say that one diet is better or more effective than the other one; it is too early.

The CHAIR: What were the two diets?

Prof. Brand-Miller: One was just your conventional low-fat diet; the average level of protein is 15 per cent of energy. It is quite high in carbohydrate—55 per cent of energy is carbohydrate. It has wholegrains and fruit and vegetables and the normal advice about saturated fat. That is the conventional diet that has been used in previous intervention studies, so what we did was put a second diet into a study. That diet had modestly more protein, not as high as CSIRO's protein level, modestly less carbohydrate and with an emphasis on low glycaemic index sources of carbohydrate.

So, that diet some people would find more palatable because it does allow higher amounts of protein foods and less carbohydrate emphasis. Some people would say they would prefer to use low glycaemic index foods like pasta, rather than to eat a wholemeal pasta, which might have a higher GI. They might prefer the low glycaemic index version of the carbohydrate food compared to the regular wholegrain version. We often, when we do comparisons between two diets, refer to the low GI diet versus the brown diet. The brown diet is the control diet. It has wholegrains, but they are not necessarily low GI products. Does that make sense?

The CHAIR: It does make sense. Thank you. I assume that if you launched the study, we can go and have a look at the study, that is now a public document? Is that right?

Prof. Brand-Miller: Can you say that again, please?

The CHAIR: I assume that now that you have launched the research and the paper that that is a public document. Is that a public document?

Prof. Brand-Miller: The press release is. We have not released the slides from our presentation because we would prefer to announce the results in the main paper, which will come out in the next six months.

The CHAIR: Yes, okay.

Prof. Brand-Miller: Probably in *The Lancet*. *The Lancet* has been wooing us to publish with them. So until that time, there is no scientific reference that we could use; just the media release.

The CHAIR: Thank you. The GI Foundation partnered with the CSIRO on its total wellbeing diet, the 12-week online program. Is that right?

Prof. Brand-Miller: Yes.

The CHAIR: Are there aspects to the diet that are not as compatible with the GI message?

Prof. Brand-Miller: Totally compatible.

The CHAIR: Totally compatible?

Prof. Brand-Miller: Totally compatible. The CSIRO total wellbeing online diet is based on a combination of modestly higher protein and lower glycaemic index carbohydrates, so we work together to put that message across.

The CHAIR: If you were going to give us an understanding of a daily diet of an adult male, for example, who was meeting the recommended average of GI 45 or less, what would that sort of diet look like in terms of 45 or less?

Prof. Brand-Miller: If you are a breakfast cereal eater, you might have Kellogg's Guardian or Kellogg's All-Bran or one of the mueslis that have been tested for breakfast, so they will have a lot of fibre there, as well as being lower GI. You will choose some fruit and milk to go with that. If you are fairly energetic, you might also have some toast and you would use something like the Brger Soy-Lin bread or any of the Brger breads as your form of toast. You could have eggs for that matter and put them on the Brger toast. But you would not use just your common-variety wholemeal bread, because that common variety would not be low GI, okay. Then for lunch I would make sure that I am having, typically, barley salad with lentils and a mixture of vegetables in it, so it has got carbohydrates; it has got low GI sources of carbohydrate. I would make sure there is enough protein there as well, so I would be looking at some chicken or some smoked salmon or something as well. Then for dinner, you have got a whole array of foods. If you are a person who likes stir-fries, you just make sure the rice is a low GI rice. Rice growers do a good job of advertising their low GI varieties. But you could have a pasta and it could be any sort of white pasta; it does not have to be

wholemeal and we would encourage lots of vegetables with the pasta and a salad with the pasta. It is not hard at all to choose a low glycaemic index diet. In fact, I would say once you tell people about the swaps—this bread instead of that bread or this rice instead of that one—and tell them which foods are universally low in GI, like the legumes and baked beans and your pastas, they are pretty simple rules to follow. I say that it is just a shortcut to a healthy diet, because the low GI diet will have more micronutrients than your conventional healthy diet. It is an easy message. It is a message that a lot of people want to hear, because they do not want to hear that everything must be brown. They do not want to hear that everything must be low sugar. They want more palatability associated with it. I think the low GI message is a much simpler, more appealing message than the conventional healthy diet.

[10.40 am]

The CHAIR: Your recommended diet sounded like the 12-week program, which I have done. It is very helpful I have found.

Ms S.E. WINTON: Jennie, I just wanted to ask a bit of a technical question, so forgive me if I sound a bit dumb. I just want to talk about the levels of GI and what that does to the body in terms of cravings. I have asked this before in terms of addiction, because we all know that if we have something with a high GI, it is obviously the food that we crave or get better satisfaction from than when we have the low GI alternative. What is it that is giving that reaction in the body?

Prof. Brand-Miller: That is easy. You might have heard your grandparents talk about food that sticks to your ribs, and they would have often mentioned porridge sticks to your ribs. What it is, is that a food that is slowly digested—a starchy food that is slowly digested and absorbed—is actually being delivered from the stomach to the small intestine more slowly, so it is filling the stomach more. Then the process of digestion is slower, so instead of everything being absorbed in the first few centimetres of the small intestine, it actually is travelling right through to the lower small intestine, called the ileum. Down there, we have these receptors that detect where the food has got down to and those receptors then release these satiety hormones. The fact that the body has registered that food has got down to the lower small intestine produces this feeling of satiety. We know it is a hormone. It is called GLP1. GLP1 is also being marketed by major pharmaceutical companies as a weight-loss drug; it is injected. It has been marketed; it is on the share market from Novo Nordisk. This little hormone is produced naturally when you eat some foods and not others. It has this huge effect on appetite, making people feel fuller for longer and more satisfied with what they are eating. Does that make sense?

Ms S.E. WINTON: Yes, it does, but also I am trying to understand—I guess a lot of people know what are the right things to eat and what are not the right things to eat, and people fail in adhering to diets. Is there an addiction —

Prof. Brand-Miller: People do not like you using the word “addiction”, because everybody is addicted to food. You must have it or you die.

Ms S.E. WINTON: But why am I not addicted to a healthy diet? Why does that not give me the same pleasure as an unhealthy one?

Prof. Brand-Miller: What we know now is it takes very few excess calories to gain weight gradually as you get older. They have done lots of mathematical modelling now. If you gain five kilos over the course of 10 years, that is half a kilo a year—500 grams; one gram a day. The number of calories that you need to eat extra to gain that weight is infinitesimally small—beyond the capacity to measure the calorie value of food. Really, it is your brain that is in charge while maintaining a good weight. There is a lot of crosstalk in this satiety centre of the brain. If you start exercising, your brain

will tell you to eat more. It will not let you lose weight; it will tell you to eat more. We are telling people to eat a healthy diet because we know that they will get all the micronutrients they need and they will have less risk of developing type 2 diabetes or cardiovascular disease, but a healthy diet is not a recipe for all-on weight control or a recipe to avoid obesity. We do not know the reasons why people are getting fat. You said you had one of the reproductive biologists talk to you and I am sure they mentioned the epigenetic effects on the offspring of mothers who have a higher BMI during pregnancy or gain more weight during pregnancy. I think we have got ourselves into a vicious cycle with bigger babies—bigger birth weight. They have a higher appetite right from birth—day one. For babies born on the ninetieth percentile for birth weight, the chances that they stay above the nineties are very, very high. If they were on the ninetieth percentile for height or length, you would not be critical of whatever they ate; you would just say they are simply eating to appetite. A child who has fallen above the ninetieth percentile for birth weight is simply eating to appetite. I think every single one of us is finding it challenging to maintain their weight as they get older—every single one of us. It does not matter how educated we are; it is a challenge and we do not know the answers. We do not know all the answers. We know what a healthy diet is, but we do not have the answers to preventing obesity at the moment.

The CHAIR: One of the things that we noted here is that you have a special interest in evolutionary nutrition and the traditional diet of Indigenous Australians. Josie Farrer, who is here, is the member for Kimberley. Do you know the Kimberley in Western Australia?

Prof. Brand-Miller: Yes. I have just come back from a holiday.

The CHAIR: From the Kimberley?

Prof. Brand-Miller: I loved it. We holidayed there in September.

The CHAIR: So you know the area. Would you like to expand on some of the research or knowledge that you have around Aboriginal diet and traditional diet and diabetes, because it is so high in that community? Are you able to tell us anything?

Prof. Brand-Miller: My whole introduction to nutrition came through being asked to analyse Australian Aboriginal bush foods. This is going back to the late 1970s. I had just started as a lecturer at the University of Sydney, and they had arranged for lots of foods to come down from the Northern Territory, Western Australia, Alice Springs and Tasmania. There were some foods being flown to Sydney for us to analyse for their nutrients. I decided when I read the paper about glycaemic index that it was interesting to measure the glycaemic index of these bush foods, and because some of them were coming in large amounts—they had already been prepared by Aboriginal people in a form in which they would be eaten; for example, perhaps they were Acacia seeds; some Acacia seeds had been ground up and made into a kind of cake—what we did was we decided that we would feed them to our subjects and we would measure their glycaemic index. So, one of my first ever papers is on the glycaemic index in Australian Aboriginal bush foods.

[10.50 am]

The interesting thing was that they were all so low. Even what was called the bush potato had a much lower glycaemic index than the conventional potato. It was a yam of some sort. What came out of that was the idea that perhaps humans had evolved on low glycaemic index foods, but during the course of civilisation, we would make foods tastier and easier to cook, and we made them more finely ground, and in this way we made them easier to digest and absorb. My guess is that Aboriginal bush foods were an example of all the bush foods that were consumed during human evolution, and that they would be naturally slowly digested and absorbed. We have been too clever for our

own good; we produced very palatable foods that are easy to over-consume, and that contributes to the fact that we all struggle with weight control.

Mr W.R. MARMION: It makes good sense to me.

The CHAIR: Yes, it does. Thank you for that. Have you done any work to see whether there is an opportunity for Aboriginal communities to return to a more traditional diet, or low GI diet? Have you done, or do you know of any research in that area?

Prof. Brand-Miller: I am not doing research in that area at the moment. I think there are a lot of people who encourage Aboriginal bush foods for many different reasons, and I would too. I would love to see traditional Aboriginal foods being grown and consumed by everyone. They are special, and I know that there is some effort going on at the moment. For example, Australia has a little green plum, called the green plum. It grows wild, virtually, in the Northern Territory, and by a long shot it is the highest source of vitamin C in the world. It has 3 000 milligrams per 100 grams, where an orange has 80. There are big efforts to commercialise that green plum. But we also have all these Acacia seeds, which are the seeds of wattle trees, which we have really left untouched. I think the CSIRO has used some of the varieties for their efforts in Africa, to provide windbreaks and wood for fires in Africa, but what they did not expect was for some people to start eating the seeds. And they did; they started eating the seeds of the Acacia that had been of Australian origin. I just think that is an untapped area for Australia to look at that. But whether they can be a traditional part of Aboriginal diets at the moment, I am not in a position to say that. I do not know.

The CHAIR: It was lovely to speak to you. We are very privileged to have someone with such an amazing history of working in this area and assisting people to be able to be healthier and have a higher wellbeing in Australia, so we are really thankful that you could make your time available. We expect that we will work through until about April before our report comes out. If we have any questions, are you happy for us to contact you and email you any questions?

Prof. Brand-Miller: Yes, definitely. I am very happy; it is my pleasure to be involved. I am very pleased to know that you are interested in the glycaemic index story and diabetes prevention. There is one thing, if I have just one minute, that I have not been able to tell you yet. Since the diabetes prevention studies from the US and Finland have been published, there have been several studies which show that you can send diabetes into remission if you lose at least 10 per cent of your body weight. Have you had that come out in a hearing?

The CHAIR: We had Dr Michael Mosley come and give us some evidence. He is a strong advocate of that.

Prof. Brand-Miller: Yes, well, he is not the only person. A lot of people, including me, have undergone a reassessment of how to lose weight. Okay, so to lose 10 per cent of your body weight is a huge effort. What the most recent studies are showing—it is not just one, it is several—is that the easiest way to lose a lot of weight is with those meal replacement shakes. That is what we did in PREVIEW for the first eight weeks. We use the meal replacement shakes, so they lose more weight, indeed, much more weight—twice as much weight. Instead of five per cent, they lose 10 per cent of their body weight. It explains why so few of our subjects in PREVIEW went on to develop diabetes because, effectively, by losing 10 per cent of their body weight—the average was 11—they turned back the clock on their beta cells. Someone like me, who is a nutritional person, does not like the idea of people eating artificial food. We have always maintained that to lose weight it is best to use real food and to teach people to eat properly. I no longer say that, and I am not the only one. The best way to lose weight is with the meal replacement shakes. The reason why they are best, and why you lose weight so fast, is that the number of calories is well defined, and within a few days your body has become high in ketones, and your brain is satisfied. Your brain is not hungry. It takes

a few days for it to happen, but then you start losing the weight, and at the end of that eight weeks, you are so pleased with yourself. You are so pleased because you have never been this weight for a long time, since you were a kid, so now is the time to start the lifestyle intervention, because you want to maintain that weight loss. In entering the diabetes prevention intervention, you are entering the lifestyle phase with a completely different frame of mind. You now weigh 10 kilos less, and you want to maintain it. What it is doing is a new paradigm in how to lose weight. You still have to maintain your weight loss, so good food comes into it, but the actual mechanism or strategy of losing weight has changed.

The CHAIR: The CSIRO Impromy version of that is two shakes and a meal. In your study, was it three shakes a day for that period of time? Was it just complete meal replacement all the time or did they still have a meal in the evening?

Prof. Brand-Miller: In PREVIEW they had four milkshakes a day, but after a week they are saying to us, “Do I have to have the fourth milkshake? I don’t really want it.” But the answer is, “Yes, you have to have the fourth milkshake because we want to make sure you get all your micronutrients.” Impromy, I am yet to see the data. Impromy may be another way to do it, which is less horrifying. It might be a little slower at achieving 10 per cent, but it is probably something that most people could at least start and perhaps they might take 12 weeks to lose 10 per cent of their body weight, rather than eight weeks.

[11.00 am]

The CHAIR: In PREVIEW did you manufacture and make the shakes, or did you use off-the-shelf products?

Prof. Brand-Miller: We used off-the-shelf ones; it was Cambridge Weight Plan products. They have a subsidiary in Australia; they are very good. They donated it free of charge; it was the equivalent to £1 million of product for PREVIEW, so it is a good example of a company doing the right thing and that is why I like to mention it. I want to call out the companies that are doing the right thing. I think companies like Cambridge and Impromy are the future of fast weight loss for diabetes and pre-diabetes interventions. I think they are the future, but you still need to start this healthy lifestyle intervention; it is just delayed a bit.

The CHAIR: You may not be able to answer this, but there is also an argument that before any serious operation is performed on anyone that our hospital system should say to people, “You have to have a meal replacement diet for six weeks in the lead-up to lose enough weight so that your anaesthetic and any of those things are healthier”. Do you have anything to say about that?

Prof. Brand-Miller: That is exactly how they have been used for the last few years. That has been one of their main uses—fast weight loss, but in the hands of people who know what they are doing. I think you still need professional help during that phase of weight loss. You need people with experience, and it may not need to be a dietician or a GP; it might just be a diabetes educator. It could be just a trained-up individual, but they are the sorts of questions that we want to start asking now. If we are going to be recommending those products, for this purpose—fast weight loss—we need to make people confident. We need to train up individuals, including the GPs, on how to use them confidently, how to support people through that phase.

The CHAIR: Impromy uses pharmacies and trains the pharmacists to assist in that way.

Prof. Brand-Miller: Yes, pharmacies, definitely; as long as they are trained up to do it.

The CHAIR: Okay. There is a question I have not asked—I do not know if it was in PREVIEW. Are there any specific issues around diet for culturally and linguistically diverse communities in terms of food? For example, it is my understanding that research involving the Somalian community in

Victoria showed that they have a higher incidence of diabetes here than in their country of origin. Is there anything that came out in the PREVIEW study or in other studies that you can direct us to that could assist us in looking at that issue and how we can make some recommendations or provide some information around culturally and linguistically diverse communities?

Prof. Brand-Miller: Yes. That is one of the reasons we had Sydney and Auckland as sites, because of the availability of more ethnic groups. We have not looked at that individually yet, but something like I think about 13 per cent of the individuals in PREVIEW were of Asian or Polynesian origin; and yes, the lifestyle coaches were trained in making sure that individual changes could be made to someone's diet, no matter what their background was or ethnic group. So I think low GI foods are a much easier message for all the different ethnic groups than is a high-protein message. The high-protein message is not something that a lot of people want to hear, because it means more meat, less rice. They want to eat the same amounts of rice three times a day that they have been eating since children, so you just change the variety of rice instead. I think the message about carbohydrate foods is that you be choosy, along with the sources and variations in the rices you can eat.

The CHAIR: Thank you so much. It was a real pleasure to talk to you; it was very interesting.

Prof. Brand-Miller: Thank you. I hope I have not talked too much.

The CHAIR: No, absolutely not; we could keep going. We look forward to your paper; I really look forward to its publication in six months, so thank you so much.

Prof. Brand-Miller: All right. I will make sure I send a copy to Sarah.

The CHAIR: Thanks very much.

Prof. Brand-Miller: Thanks, everybody. Thank you for your hard work.

Hearing concluded at 11.06 am
