



Briefing on aspartame

Petition 2005/167 of Alison White and 7,886 others

Report of the Health Committee

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Recommendation

Following its briefing on aspartame and the hearing of evidence on petition 2005/167 of Alison White and 7,886 others, the Health Committee makes the following recommendation to the Government:

That the Ministry of Health and the New Zealand Food Safety Authority maintain on their web site information for consumers and health professionals on the latest evidence-based research on the consumption of aspartame.

Introduction

We requested a briefing on the artificial sweetener aspartame and its potential effect on public health, following the well-publicised case of Abby Cormack, who suffered adverse reactions attributed by her physician to her use of aspartame. We received briefings from the Ministry of Health, the New Zealand Food Safety Authority (NZFSA), Abby Cormack, and Dr Woodrow Monte.

Since receiving this briefing we have received a petition from Alison White and 7,886 others (representing the Safe Food Campaign) requesting that the House of Representatives restrict the artificial sweetener aspartame until a ban can be enforced. Her specific requests are for

- warning labels on all products containing aspartame, to increase awareness of symptoms associated with aspartame toxicity, and particularly to alert pregnant women and mothers of small children
- a public education programme to raise awareness of adverse reactions to aspartame
- a programme to raise awareness in the medical profession of the symptoms associated with aspartame toxicity, to prevent incorrect diagnosis of conditions that may be related to aspartame toxicity
- the removal of all products containing aspartame and other artificial sweeteners from schools, to reduce toxic effects on young people, thus reducing any associated behavioural and psychological problems that may result from these effects.

Abby Cormack

Abby Cormack informed us that in early 2007 she experienced physiological and psychological symptoms, including dizziness, tingling, articulation change, insomnia, loss of bladder control, paranoia, and anxiety. After she tested negative for numerous medical conditions, her psychiatrist suggested she might be suffering from bipolar disorder. Abby Cormack's symptoms were relieved when she removed aspartame from her diet. Previously she had been chewing four packets of sugar-free chewing gum a day and drinking large quantities of diet soda.

Abby Cormack made the following requests of us in her submission:

- that warning labels be attached to products containing aspartame
- that an internet database be established to identify foods containing aspartame and list the possible side effects of aspartame consumption
- that a list of prescription and over-the-counter medications containing aspartame be compiled, and that this list be widely publicised and included on a website
- that medical practitioners be educated as to the symptoms of aspartame poisoning
- that all sugar-free sodas be removed from New Zealand schools
- that a Government-funded study be conducted by independent scientists to examine the formaldehyde-producing property of aspartame.

In the hearing of evidence, Abby Cormack also said she would prefer that we recommend that aspartame be removed entirely from the food supply.

The petition

Alison White, the petitioner, says that aspartame is the most controversial and complained-about additive in history, and that many people consuming it suffer symptoms ranging from mild and transitory to debilitating and life-threatening. Ms White says it is significant that independently funded studies have found various adverse health effects to be associated with aspartame, whereas industry-funded studies do not find problems.

Ms White says that aspartame is being used in an increasing number of products, currently estimated at 6,000 worldwide, and not just those labelled "diet" and "sugar free". Sometimes the only warning provided is the words "contains phenylalanine".

Ms White says that aspartame in medicine is a particular problem, as medicines do not have to be labelled with all their ingredients. She notes that aspartame interacts with the medicines Coumadin, Dilatin, antidepressants other psychotropic agents, and all cardiac medications. She notes that in New Zealand the Minister of Health has confirmed that MedSafe has approved 124 medicines containing aspartame, of which 81 can be given to children.

The NZFSA says that assessments of food additives are made by the joint Australia and New Zealand body Food Standards Australia New Zealand (FSANZ), and that this body has considered aspartame and has assessed it as safe for Australian and New Zealand consumers.

Human ingestion of aspartame

We received evidence on the ability of humans to digest aspartame from the Ministry of Health, the NZFSA, and Dr Woodrow Monte, a retired professor of food science at Arizona State University.

Dr Monte told us that when aspartame is ingested by humans it breaks down into methanol and then into formaldehyde, a carcinogen. Dr Monte said that tests on the safety of aspartame for human consumption were carried out on animals, which can safely metabolise methanol, whereas humans cannot.

The NZFSA informed us that aspartame is digested to form aspartic acid, phenylalanine, and methanol. The NZFSA said that these compounds occur naturally in foods, are absorbed, metabolised, and excreted by normal biochemical pathways. Dr Monte agreed that methanol is found in other foods, primarily in acidic fruits, but said that it naturally occurs in much lower levels than occur as a product of the digestion of aspartame.

Trials and data

NZFSA says that there is a large body of robust toxicity data on aspartame, generated over the past 40 years in both animal and human trials. It says that the data from internationally-accepted, peer-reviewed scientific studies does not show potential harm, and the recognised scientific evidence shows no toxicity associated with aspartame. It says that several human trials are reported in the scientific literature in which people of all ages received aspartame at various doses and for various periods of time, and no health effects were observed. The authority says there are many studies on the potential for aspartame to produce changes in DNA and to cause cancer, but none with scientific credibility demonstrate any such potential.

Health and safety

Warning labels

Both Abby Cormack and Alison White request that warning labels be put on all products containing aspartame. The NZFSA says that products containing aspartame carry a label warning of the presence of the amino acid phenylalanine (of which aspartame is a source). This substance may cause serious harm to people with phenylketonuria. It notes that all babies are tested for this condition at birth, and parents of children found to have the condition should be aware of the need for their children to avoid such products. We note that it is also a labelling requirement that aspartame be listed in the ingredients list as “aspartame” or “sweetener 951”. Most New Zealanders would probably not recognise “951” as referring to aspartame, but the NZFSA informs us that it does produce and widely distribute the booklet “Identifying Food Additives” to assist with the identification of all food additive code numbers.

Public education campaign

Alison White requests a public education campaign on adverse reactions to aspartame. Abby Cormack told us that a number of other people who have experienced reactions similar to hers have contacted her. The NZFSA says that despite a widespread campaign urging New Zealanders who have experienced such reactions to contact them, it received

only nine calls relating specifically to aspartame in 2007, and is aware of only two adverse reactions, of which one was that experienced by Abby Cormack.

Awareness in the medical profession

Both Abby Cormack and Alison White request measures to raise awareness among the medical profession of the symptoms of aspartame toxicity to prevent incorrect diagnoses. The NZFSA told us that it is not aware of any scientifically credible symptoms of such toxicity, despite the human trial data mentioned above.

Removal of products containing aspartame from schools.

Alison White requests the removal of all products containing aspartame from schools. Ms White says that the Government made an agreement with industry to phase out sugar drinks in secondary schools by 2009, in an attempt to control obesity. However, as manufacturers are maintaining market share in schools by substituting diet drinks, she says that exposure to aspartame may be increasing. The NZFSA agrees with the ministry that milk and water are the most suitable beverages for children, but considers that artificially sweetened products are a viable choice for those wishing to reduce their sugar and calorie intake.

International scientific opinion

We were informed by the ministry and the NZFSA that FSANZ consider that aspartame is safe to consume providing it is within the current acceptable daily intake guidelines of 40 milligrams per kilogram of bodyweight taken continuously over a long period. It advised us that an adult weighing 70 kilograms would need to consume 17.5 cans of diet drink per day to reach the acceptable daily intake; for a child weighing 25 kilograms, this figure is six to seven cans. The ministry also cited a 2003 study which found that individuals were typically consuming between six and fifteen percent of the acceptable daily intake of aspartame.

The ministry's and the NZFSA's view that aspartame is safe for human consumption is shared by the United Kingdom Food Standards Agency, the European Commission's Scientific Commission on Food, the United States Food and Drug Administration, and Health Canada. The ministry noted that Health Canada recognises a number of allegations about adverse health effects from aspartame, but notes that the scientific data does not support these allegations.

The majority of us do not consider that a specific New Zealand study, as requested by Abby Cormack, is necessary at this time. Aspartame has been widely studied overseas and there is no reason that New Zealanders should metabolise it and respond to it differently from other people.

We recommend to the Government that the Ministry of Health and the New Zealand Food Safety Authority maintain on their web site information for consumers and health professionals on the latest evidence-based research on the consumption of aspartame.

Green party minority view

Aspartame is arguably the most controversial additive in the food supply, and a wide range of adverse effects from aspartame have been reported over many years.

Aspartame is present in thousands of foods, but many people are unaware of this, as it is often only indicated on a label by the number 951, which very few New Zealanders recognise.

We believe it is essential that consumers are informed that there are potential adverse effects from consuming aspartame, via a simple warning label. The European Parliament has agreed to put a warning statement on foods containing certain colourings—“may have an adverse effect on activity and attention in children.” In our view a similar simple warning statement pointing out that aspartame may cause adverse effects in some people, should be required on food and drinks containing aspartame.

We agree with the petitioner that doctors need to be fully informed of the potential side effects from consuming aspartame, as there is anecdotal evidence that people with adverse reactions to aspartame, such as Abby Cormack, are being misdiagnosed by the medical profession, and given inappropriate medication.

We support the petitioner’s call for fizzy drinks containing aspartame to be removed from schools. Having diet fizzy drinks available in vending machines in schools encourages children to believe that these drinks are safe and even desirable, and to drink large amounts of them. A survey of 76 schools carried out by the petitioner found that 30 percent of schools they surveyed stocked diet drinks.

We note that the NZFSA says aspartame is safe, *providing* people consume less than the recommended daily intake of 40 milligrams per kilogram of bodyweight. A child drinking six or seven cans of coke a day and chewing gum or consuming other products containing aspartame, could easily exceed this acceptable daily intake. But there is no regular monitoring taking place to ensure that children are not exceeding this allegedly safe dosage.

Finally we support the petitioner’s call for an internet database which identifies foods and medicines that contain aspartame.

Appendix A

Committee procedure

The committee heard evidence from Abby Cormack, Dr Woodrow Monte, the Ministry of Health, and the New Zealand Food Safety Authority on 6 November 2007. On 23 July 2008 the committee heard evidence from Alison White, Dr Ken Stoller, Abby Cormack and the New Zealand Food Safety Authority.

Committee members

Sue Kedgley (Chairperson)
Lesley Soper (Deputy Chairperson)
Dr Jackie Blue
Dr Jonathan Coleman
Jo Goodhew
Hon Luamanuvao Winnie Laban
Jill Pettis
Hon Tony Ryall
Barbara Stewart
Hon Tariana Turia
Louisa Wall

Appendix B

Corrected transcript

Briefing on aspartame

Health Committee

21 November 2007

Members

Sue Kedgley (Chairperson)
Lesley Soper (Deputy Chairperson)
Dr Jackie Blue
Dr Jonathan Coleman
Ann Hartley
Hon Darren Hughes
Hon Luamanuvao Winnie Laban
Jill Pettis
Hon Tony Ryall
Katrina Shanks
Barbara Stewart

Staff

Graham Hill, Clerk of the Committee
Fiona McLachlan, Parliamentary Officer (Report Writer)
John Thomson, Parliamentary Officer (Committee Support)

Witnesses

Abby Cormack
Dr Woodrow Monte

Ministry of Health

Chris Laurenson, Acting Manager, Non Communicable Diseases Policy Group
Elizabeth Aitken, Team Leader and Senior Advisor (Nutrition), Non Communicable Diseases Policy Group

New Zealand Food Safety Authority

Sandra Daly, Director, Communications and Infrastructure Group
John Reeve, Principal Advisor (Toxicology)
John van den Beuken, Programme Manager (Composition)

Kedgley Welcome and thank you for agreeing to appear at our briefing on aspartame. Abby Cormack and Dr Woodrow Monte are going to make the first submission.

Cormack Hopefully you've had a chance to read through the symptoms in quite a lot of detail, so I'm not going to go over that too much. First

of all, I just want to quickly outline them. The major physical symptoms that I had were a terrible tingling and aching sensation in my extremities, I had constant dizziness and blurred vision and headaches, my articulation began to change, I wasn't sleeping well, I was diagnosed with insomnia, and the final straw came for me—I knew there was something really wrong with me when I lost control of my bladder one day at work.

The psychological symptoms were severe depression, which I was diagnosed with. There was a suggestion that I had bipolar. I developed paranoia, anxiety, panic attacks, and had suicidal thoughts. I consulted three GPs. I made a visit to the emergency department after my mum had to pick me up off the floor. I was in agony. I had two psychiatric appointments. I had two complete blood counts that were carried out, there was no results whatsoever other than I had low iron. I had an optometrist consultation and there was a suggestion that my vision had got worse. There were no answers from the GPs. I was told that I was having panic attacks and I was overtraining at the gym.

The medication I had—well, I've got the list up there. I got no relief whatsoever from any of these. The anti-inflammatories were prescribed to try to resurrect the tingling and the aching sensation which I thought were muscle cramps. I was prescribed with Valium to help me sleep. I was absolutely exhausted from not sleeping through the tingling and aching sensation. I was prescribed penicillin for what they thought was a strep throat, so any bacterial infection would have been got rid of. I was prescribed melatonin valerian, and I was constantly rubbing Deep Heat cream into my muscles to try and get rid of the muscle cramps.

Kedgley

We've got limited time, so if you've got your slides, perhaps we could just move along a bit.

Cormack

OK. The main point that I want to make is that the only relief that I got from these symptoms was when I removed aspartame from my diet. I then went back on aspartame accidentally when I had a protein powder, and once again the tingling sensations came back. So I think that that was pretty good evidence to suggest that this was the reason why I was developing these symptoms.

My main concern is that the medical profession are unaware of these symptoms. They are potentially, I believe, diagnosing people with conditions mimicking aspartame poison, such as multiple sclerosis and lupus. These two conditions were suggested when I was seeing the GPs. I also think that aspartame contributes to psychological disorders. GPs should be alerted to the symptoms of aspartame poisoning to eliminate these conditions. Other consumers suffering from these symptoms are not actually

recognising them because they are not aware of them. GPs don't recognise aspartame, and so people, when they go to the doctors, are not being told that this could be a possibility.

Parents are dosing their children up with medication which contains aspartame—I think that is a really crucial point. There are vitamin C tablets with aspartame in them; cough medicine, redoxin, and several other ones. There is no acknowledgment whatsoever of any consumer complaints in regards to aspartame. There has been no investigation into case histories. As soon as anyone comes up with the suggestion that they have been poisoned by aspartame, they are referred to websites where it says aspartame is safe.

Lastly, I think there is insufficient labelling on these products. There is no warning to suggest that there is any adverse health effect for aspartame. There is no amount of aspartame in a product—when you pick it up, it doesn't say how much aspartame is in it, even though there has been an allowable daily intact which is being suggested is appropriate.

I just want to conclude by saying that I am just an everyday Joe Bloggs. I was harmed by a product that I thought was safe. I came off the aspartame and I got well. I think if aspartame is to remain in our food supply, consumers should be at least informed as to what the potential health effects are. Thanks.

Kedgley

Thank you very much indeed, and identifying your personal symptoms and so forth is always quite hard in a situation like this. So you've got Dr Woodrow Monte, who's going to make a brief submission.

Monte

Thank you very much for allowing me to come talk to you. I've been with this issue for 25 years in the United States. I've had no success whatsoever in having it banned in the United States. It's a complicated scientific issue, I will try to make it as simple as possible.

Abby has been poisoned, and she's been poisoned by methyl alcohol and by what methyl alcohol turns into, which is formaldehyde. The science is eloquent, it's clear, and I think I can explain it to you here—if you have any questions I guess we'll have time for that later on.

Let me just talk about what I'm doing here. The slide says that we are here today to discuss the pros and cons of encouraging children of this country to consume 951, which contains the poison wood alcohol. The New Zealand Food Safety Authority can provide no data to show that methanol is safe in any levels in human beings. Methanol is a human-specific toxin. There is no animal sensitive to

methyl alcohol, which always turns into formaldehyde. Formaldehyde is one of the most powerful cancer-causing substances. It is a group 1 carcinogen. No level of a group 1 carcinogen is safe. Since raising kids with human-specific toxins is not the norm, I've come to take the side of the children and beg this committee to stop this barbaric practice. I know you don't believe me now, but when you hear the science you'll be stunned.

There are two other sweeteners that would be perfect substitutions for 951. They have the formulations. Coca-Cola has the formulations for the new sweetener. They're available: use them if there is any doubt in your mind. This substance needs to be taken off the market, completely.

OK, I have 5 minutes, but I'm going to start 2 million years ago. About 2 or 3 million years ago we had a mutation. Everybody has this mutation—Aborigines, every human being does. What happened was the major enzyme that saves animals from methyl alcohol—catalase enzyme—was changed in this woman who was the bearer of the child that was to be the father and mother of us all. That catalase was changed. From then on, everything changed for us. The lucky thing was that methyl alcohol's knocked down in the fresh food supply. The numbers that you were given by the Food Safety Authority are very high-end numbers that can be found in the literature, but it's only the recent literature. The old literature is not contaminated by the money spent by the company that wanted to be assured of a profit.

Just let me go through this real quickly. Alcohol dehydrogenase is the enzyme that we now depend on to metabolise methyl alcohol. Where is it found? It's not found everywhere in the body. It's found consistently and always in the human breast. Women, particularly, have alcohol dehydrogenase associated with high metabolic tissue—associated with tissue that will eventually, if methyl alcohol is converted to formaldehyde, that tissue could produce identifiable carcinomas. A teaspoon of methanol can blind a human. Two teaspoons of methanol can kill a human being. If we had catalase, as rats, rabbits, monkeys, and all these other animals do, the consumption of two litres of methanol would only cause us to become profoundly drunk. Animals are not fit subjects for 951 testing—they are not. Real human study is going on now and the results look very bad.

OK, let's go to Abby's symptoms. Are they real? Well, they are. They are methyl alcohol symptoms. It's in the literature. This is available on the Internet. There is a study done by the University of Washington—it's a new article. The two most common uses of occupation exposure to methyl alcohol are inhalation. The old ditto

- machines, the copy machines, used to have a mixture of methyl alcohol and ethyl alcohol.
- Kedgley Dr Monte, first of all, you need to address it to us, not the entire—
- Monte Oh, I'm sorry.
- Kedgley —and, secondly, can you sum it up in the next couple of minutes?
- Monte I will sum it up. Let's see if Abby's symptoms are found in the literature. Headache, dizziness, nausea, vomiting, weakness, vertigo, chills, shooting pains in the lower extremities, unsteady gait, dermatitis, multiple neuritis—these are all her symptoms—shooting pains in the back and the hands and forearms, as well as oedema of the arms, nervousness, gastric pain, insomnia, blurred vision—whole heaps of them. The Food Safety Authority should be here instead of me. What are they doing? Her symptoms are all in the literature, and worse. She was poisoned by the food industry; she needs to be believed. You'll find out that many more people have been poisoned. They just report to their doctors, but they don't know what it's all about. It's just not fair, and it's particularly not fair to feed kids a substance that always turns into a cancer-causing agent in their brains and in their breasts. If you have questions later on I can get into this in more depth, but thank you for listening.
- Kedgley Thank you very much, and we will have time for questions. Are there any questions for Abby and Dr Monte?
- Coleman I think that was very clear. Thanks very much, especially your description of the symptoms and your experiences. Just one question for you—what would you like to see, Abby, regarding aspartame?
- Cormack I don't believe it should be in the food supply at all. First of all, there needs to be some sort of warning label on it so people are aware that there are health effects, because there are, and there are none on any products containing aspartame—unless you're PKU; unless you're phenylketonuric. Also I'd like to see that the GPs and the medical profession are briefed on what the effects are, so then they can diagnose correctly.
- Coleman Thanks very much. That's very interesting.
- Stewart Thanks for your presentation, Abby. How many other people have contacted you since you went public with your symptoms?
- Cormack Several. There's some in the submission that I've written out, but there were 13 or 14. I've had a lot of feedback from people saying "I've had this." Obviously, it's not verified and not every single case is necessarily going to be aspartame-related, but a lot of the

symptoms that they were relating to me were mimicking what I experienced. So I believe there are several other people out there that are suffering what I suffered from.

Stewart I would agree with you, because I have had people contact me since you went public. Have any of them followed up with you, when they stopped taking the sweeteners in their drinks or stopped drinking whatever the drink contained?

Cormack Absolutely. During the public meetings people came and said: "I'm on this, and I'm going to give it a go and come off it.", and I've had people say "I've been relieved."—particularly sleeping. A lot of people were not sleeping, and came back and said that's something they'd been relieved of. The headaches and the dizziness—people have said they are no longer experiencing that. So, yeah, definitely people have felt improvements. People around my gym, as well, have just come up to me and said: "Hey, I've seen what you went through, and I've stopped having the Diet Coke and I'm feeling heaps better."—just in general; people don't really give me specific symptoms.

Stewart That's good, thank you.

Kedgley I've got a few questions. First of all, did I understand you, Dr Monte, to say that the aspartame breaks down to methanol, is that right? And then does it always break down to formaldehyde? Would you just clarify that?

Monte It cannot break down into anything else. It has to go into formaldehyde. Catalase enzymes could have taken it right to formic acid, which is much safer. We don't have—our catalase enzyme rejects methanol as a suitor; it does not match up with it. Only alcohol dehydrogenase will metabolise it and, by definition, that enzyme will always turn it into formaldehyde.

Kedgley So my question then is also, does the aspartame always break down into methanol, which in turn then breaks into formaldehyde?

Monte There is no way to stop it. It happens in the stomach. Immediately upon hitting the stomach the methanol breaks off. It's a very weak bond.

Kedgley Now, I think one of the points the Food Safety Authority makes is that this is present in other foods, it's only present in small amounts, and, really, one shouldn't be worried.

Monte It is not present in small amounts—well, here it is; the literature. You can find any amount of methanol in any juice. If you pick a rotten piece of fruit off a tree and analyse it, you will get lots of methanol. I have perfectly good scientific evidence that citrus juice,

grapefruit juice, and orange juice—as I presented to you—has 0.8 milligrams per litre of methanol alcohol. Orange juice has 0.8 milligrams; grapefruit juice has 0.2 milligrams. That's 1/500th, as found in a litre of diet soda. A litre of diet soda has about 100 milligrams. That 100 milligrams of methyl alcohol will turn into 100 milligrams of formaldehyde. That's phenomenal.

Kedgley If that is the case, it's 100 milligrams—

Monte Approximately.

Kedgley —you would think, well, why—because the argument is that it's been used for I don't know how many decades, and, if that was the case, then why wouldn't there be widespread evidence of poison?

Monte Can I give one example?

Kedgley All right.

Monte All right. These diseases that are associated with formaldehyde, we don't really know what they are, because the work in formaldehyde toxicity or poisoning stopped in 1970. But one example would be if we take breast cancer—just as an example. Breast cancer requires a carcinogen to activate it. The epithelial tissue of the breast is where most of the alcohol dehydrogenase in the body is located. So methanol, when it gets into our system, circulates in the blood. It continues to circulate until it finds something that'll metabolise it. The breast is the most logical place. Have we seen any changes in breast cancer in New Zealand since we started consuming this stuff? I'm not sure about New Zealand, but in the United States—and I gave you that chart—diet soda goes up, and the first 7 years are the most critical time. The first 7 years are the most critical time, because that's when they were ramping up NutraSweet, and that's when we ramped up the consumption of methyl alcohol. You'll see breast cancer follows it. Amazing—like two snakes winding around each other.

If I was talking to professionals—and I want to talk to professionals; medical doctors, your research scientists—I'll give an hour and a half presentation and the Food Safety Authority can give an hour and a half presentation. They can't disprove anything I say. They have got no evidence they can show you that humans have been tested with methyl alcohol. They have not; it is unethical to do that. I tried to do that at Arizona State University, the ethics committee turned me down. "You can't feed people methyl alcohol," I said, but they're feeding it every day to kids, to everyone, and they said: "No, you can't do it." So if I can't do it on an experimental basis at about the same level that I was going to use

as—how on earth can we allow this American food company, basically—Coca-Cola—to come over here and poison our kids?

Kedgley Actually, I think it's used in something like 5,000 products here—

Monte Oh, it's used in everything.

Kedgley —but anyway this will be my last question, because Lesley Soper has a question. If you are right that it inevitably breaks down into methyl alcohol and then in turn into formaldehyde, why would our Food Safety Authority and similar bodies all around the world say it's perfectly safe and there's no concerns?

Monte In this tome recently—I think just a few weeks ago; I've had this 2 days ago—they admit that it does turn into methyl alcohol, and the methyl alcohol turns into formaldehyde. They pass it off as: "Oh, so what? Look at all the methyl alcohol in the real world." Honestly, have someone impartial look at all the methyl alcohol in the real world and you'll find very little. Aspartame, 951-flavoured food products, are the major source of methyl alcohol. It has never been this high—ever—in the history of the world, and the damage it's doing is dramatic.

Soper Thank you both for your submissions. One of Abby's recommendations in the list of requests—the last thing you say there is you recommend the Government fund a study on the formaldehyde-producing ability of aspartame. Why and what do you think that's going to prove that you haven't already told us about? What do you think you're going to gain?

Cormack Well, there haven't been any studies done in New Zealand currently that the New Zealand Food Safety Authority are basing their points around. All of the studies have been conducted in America. So if we do a study in New Zealand, basing your evidence on an overseas study—I just think if it came to New Zealand and we could have people from both sides to conduct it, would be much more relevant.

Soper And you're thinking of it being human subjects?

Cormack To be honest, I hadn't thought that far ahead. Possibly not; it's too harmful to give to humans.

Soper OK, thank you for that.

Kedgley OK. Anyone else with any further questions? No. We will move to the next one, but is methyl alcohol permitted in the food supply—is it a permitted substance?

- Monte If you tried to add methyl alcohol to the food supply, you couldn't. You couldn't do a study on it. It's against the law in every civilised country in the world. This is the back door into it, and there are no animals, at all, that can be used as test animals. They need to throw away the 250 animal studies. They knew that those animals would not respond to methyl alcohol poisoning—they knew it.
- Kedgley Thank you very much indeed for your briefing.
- Now we will have the Ministry of Health, and I think the Food Safety Authority wants to sit with them. So who have we got from the Ministry of Health?
- Laurenson [*Introductions*]
- Kedgley Thank you very much. As you know when we asked for briefings, we specifically asked the Ministry of Health because, really, we didn't want to go through the history of aspartame; we just wanted to focus on whether there were health effects and whether there should, therefore, be some sort of labelling. So we've got your letter to us, and would you like to make a few comments.
- Laurenson Certainly. As you say, you have our submission before you, in which we point out that the ministry believes aspartame is a safe product that offers consumers a sweet, low-energy option in the diet, with an acceptable daily intake for 40 milligrams per kilogram of body weight. Our understanding of aspartame is based on assessments by Food Standards Australia New Zealand and other food standards agencies in the United Kingdom, the European Commission, the United States, and Canada that have all looked at extensive studies of the biochemical effects of aspartame consumption, all concluding that there is no credible evidence that aspartame is carcinogenic, neurotoxic, or contributes to other adverse effects on health.
- We're not unmoved by the submissions before you of Abby Cormack. However, the Ministry of Health cannot comment on the validity of her evidence as we are not the Government agency with responsibility for protecting New Zealand consumers in relation to public health and safety issues in food. That responsibility was formerly the responsibility of the Ministry of Health, but was transferred to the New Zealand Food Safety Authority in 2002. Representatives of the Food Safety Authority will now present a statement on their position in relation to this product.
- Kedgley Thank you. Is Sandra Daly is going to do that?
- Daly Yes. [*Introductions*] Thanks for the opportunity to comment on the issues raised by Abby. We would point out that the assessment of the safety of food additives such as aspartame are, as Chris said,

made by Food Standards Australia New Zealand, FSANZ. FSANZ has considered aspartame. It's done an extensive assessment, and assessed it as safe for New Zealand and Australian consumers. The New Zealand Food Safety Authority supports this assessment, and the outcome of that is reflected in the Australia New Zealand Food Standards Code. It's the role of NZFSA to provide input to that assessment process, and then to implement and enforce the standards in the food standards code. You'll note that under the code all food containing aspartame must be labelled to ensure consumers are able to make an informed decision about their purchase of such products.

I have to say we're pleased to hear of the good progress Abby's health has made. While we do understand her concern, the problem we have is that when we apply the recognised science to situations such as hers, there is just no evidence to support the belief that aspartame toxicity was the cause of any problems. NZFSA has, nonetheless, considered her evidence as far as it's known to us, and compared that with what we know of the toxicity of aspartame.

There is a very large body of robust toxicity data for aspartame, that's been generated over the past 40 years in both animal and in human studies. The data from internationally accepted, scientific, peer-reviewed studies doesn't show a potential to cause illness such as the one described. In fact, the scientific evidence shows no such toxicity sustained for aspartame. Like our colleagues in the Ministry of Health, we believe that aspartame has a place in the diet of New Zealanders who wish to reduce their intake of sugar, either because they are diabetic or concerned about their weight, but still enjoy a sweet taste. Organisations such as the New Zealand Nutrition Foundation and the Dietetic Association support our stance in this regard.

The Australian and New Zealand position, in continuing to permit aspartame in the food supply, is, as Chris said, no different from that of other food safety authorities around the world, including the European Food Safety Authority, the United Kingdom Food Standards Agency, the Canadian Food Inspection Agency, and the Food Safety Authority of Ireland, as well as the United States Food and Drug Agency. I point out these agencies are all official government bodies committed to protecting consumers in their countries and have found aspartame to be a safe and useful product. We've tabled fact sheets from some of them, but others can be provided.

Concern has been raised here also about the potential of aspartame to cause cancer, and I'd point out there are at least five properly conducted studies on this possibility. All five studies have been thoroughly reviewed by the Joint Expert Committee on Food

Additives, JECFA, and this is a panel of experts convened regularly by the World Health Organization and the Food and Agriculture Organisation of the United Nations to consider the safety of evidence based on science. JECFA, a very esteemed world body, concluded that aspartame demonstrated no such potential. There are also—contrary to statements made earlier—several human trials reported in the scientific literature in which people of all ages, from 1-year-olds right through to older people, received aspartame at various doses and for various lengths of time up to 24 weeks, at an average of 75 milligrams per kilogram body weight, which is twice the New Zealand ADI, and no health effects were seen.

It's our conclusion that while Abby's health effects appear to have been serious, such anecdotal and partial accounts don't counter the extensive weight of evidence supporting the safe use of aspartame or provide a sufficient basis for any regulatory change. We believe the health benefits of a safe, low-calorie alternative to sugar are considerable, but we'll continue to monitor the international work that is being done in this area, and we'll advise consumers of any valid concerns in future. Thank you.

Stewart Thank you for coming along. We've heard Abby's symptoms and I know there are other people that have had similar symptoms. Do you consider that it could be that only some people have a tendency towards these reactions with aspartame?

Daly As I am not the technical expert in this regard, I will defer to my colleagues to respond.

Reeve I think the short answer to that is it's possible, but I think the other side the coin is that the symptoms tend to be very general and, put them all together, could be caused by any number of things. There's not specific ones. And some people could be more sensitive than others; that's exactly what you would expect.

Stewart Because it seems quite strange that once this product is actually stopped or removed from the diet that people actually improve. Their health improves and the problems they are experiencing appear to go away.

Reeve There's no question that this sort of information clearly establishes an association between aspartame and the illness; the problem is that things are a bit more complex than is actually stated. They don't just remove aspartame from the diet; they actually remove the foods which contain aspartame. Now, foods contain a whole host of other things that are removed at the same time, so there's several things being removed at the same time, not just aspartame. So you have an association, for sure, but it's quite a different matter to show that there's actually a cause there. There are other things in

the diet that are known to affect the nervous system, quite commonly in the diet.

Stewart

Like chewing gum?

Reeve

Caffeine, in coffee, tea, diet soft drinks, and many other things.

Stewart

But we have to remember that this started off partly with chewing gum as well, because Abby did chew gum and that was part of it. Do you think it's timely to consider some other sweetener that's put into products, because we've heard some pretty damning evidence this morning?

Reeve

There are other sweeteners on the market, and I'm aware that, I think, sucralose is actually before FSANZ at the moment for consideration.

Stewart

What's that called?

Reeve

Sucralose. Any of these, they need to go through the FSANZ process and be approved before they can be used as food additives. We certainly don't have any objection to others coming on the market, as long as they can pass the tests of acceptability.

Stewart

Are you concerned when you hear reports of the adverse reactions that are experienced by foods that are commonly available that people just consume every day without too much thought, looking after their health?

Reeve

Yes, certainly. One of the things which I spend a lot of time on in actual fact is the number of natural toxins that are present in all sorts of foods, and whenever you get one of these, you do take it very seriously. You go and have a look and see what the data says, check out what's been said, see what evidence is there. You can't ignore it. We certainly accept that there's no questioning that Abby suffered symptoms and the symptoms claimed; there's no question of that. Our simple problem is whether those symptoms were caused by aspartame or not.

Kedgley

The one thing we widely focused on with the Ministry of Health—what we've really focused on are the health symptoms, not whether it's safe, because you seem to be putting a big thing that it's safe; therefore, Abby couldn't have experienced these symptoms. But in fact—and I'll ask the Ministry of Health here, if I might focus on them—peanuts are safe, but they cause quite severe adverse symptoms in some people. Would you accept that?

Aitken

Yes, it's fair to say that peanut allergy is a common allergy and there are a large number of natural foods as well as probably chemical

substances that individuals either have an intolerance, an adverse reaction, or possibly, in the severe category, an allergy to.

Kedgley Right. So it's possible that even though this particular substance has been deemed to be safe, it could cause allergies in some sensitive people?

Aitken I'm not a medical practitioner and obviously haven't reviewed a medical history in this situation, but just speaking, I guess, hypothetically and from a nutrition point of view, and having done clinical work, then yes, there are a number of people that have reactions to substances and natural foods that span the range between being adverse reactions, intolerances, and, in some cases, allergies.

Kedgley And do you agree that it's possible that Abby Cormack could be the tip of the iceberg—there could be many others out there who are also experiencing a range of side effects?

Aitken I think theoretically that's possible. I think it would be rather unusual not to have had a lot of well-documented case presentations in the medical literature, given how long aspartame has been used for.

Kedgley But it's also possible that—how would we know if no one's looking for it? We're not actually looking because it's possible, isn't it, that what Abby Cormack has suggested is correct—that people could be being misdiagnosed. They could be experiencing symptoms or side effects and thinking it's related to something else.

Aitken That's theoretically possible.

Kedgley Well, I'll come back to you afterwards. And the thing is that given the fact that this is very, very widely available in the food supply and the Ministry of Health has a policy now of allowing drinks with, not necessarily aspartame, but artificial sweeteners to be sold in schools in New Zealand, etc., don't you think that if there was a possibility that it could produce side effects which then in turn could be misdiagnosed, it might be worth exploring that?

Aitken The ministry's advice about preferred drinks for children is quite clear in the food and nutrition guidelines, and the preferred drinks are water and milk. We don't recommend the use of artificially sweetened or sweetened beverages as a first-up option. They are available in the market and some people make those choices.

Kedgley The Minister did a deal with the various beverage companies to permit artificially sweetened drinks—non-sugar fizzy drinks—to remain in schools.

- Aitken Yes, I understand that the Minister did, not the ministry.
- Kedgley So if we're going to take that policy—I mean, you're sort of giving all the responsibility to Food Safety, but really your responsibility is for the public health of New Zealanders. I would've thought that it is at least worth somebody agreeing to look at these case studies, to do something to look at whether there is a possibility that some people are experiencing quite significant side effects and that these could be being misdiagnosed.
- Aitken Both agencies have responsibility for public health and safety.
- Kedgley But you certainly do, too?
- Aitken Yes.
- Kedgley I've just got a couple of questions for the Food Safety Authority. Do you agree with Dr Monte that aspartame would invariably break down into methyl alcohol and turn into formaldehyde?
- Reeve The short answer's yes, but it doesn't stop there. The aspartame is broken down into its three components in the gut or in the gut lining, and it's only the components that get absorbed in the circulation. Contrary to what Dr Monte said, the major site of alcohol dehydrogenase is actually in the liver. That's not to say there isn't any in breast tissue, but the liver is the No. 1 site for it by a long way. It does certainly break the methanol into formaldehyde. The formaldehyde is then, with a half-life of about 1½ minutes, whipped through the formic acid. It does not stick around. There have been studies done looking for potential build-up of formaldehyde, which is, of course, what you'd expect if in fact it wasn't being metabolised further, and you don't find that.
- Kedgley But don't you think that if we do know that we have a product here which does actually break down into methyl alcohol, which is a toxin, and that in turn breaks down into formaldehyde, which is a cancer-causing class 1 substance, don't you think that would justify a certain level of caution, particularly when this is so widely consumed? I know personally, and I am sure many people do, people who seem to develop some addiction to these drinks. They are drinking big 2 litre bottles every day and, as Abby was doing, chewing gum too. It may not be that many people, but some people will be consuming extremely high doses. This also leads me to the question that you say it's safe below particular levels—40 milligrams per kilogram of body weight, and for children that'll be much lower because of their particular body weight. Therefore, firstly, how do you know that people aren't exceeding that intake per body weight, and, secondly, surely if something breaks down into known carcinogens we would have a particular concern about it?

Reeve Methanol and formaldehyde are natural metabolites in the body all the time. Their major source in the body would come from fat breakdown, fatty acid breakdown. So the body is well-used to handling it; it has clearly done so over the years. Both formaldehyde and methanol are present in a number of different other food items.

Kedgley Such as.

Reeve Well, in fruit and vegetables—all sorts of other things. When you actually do studies, yes, you can get various results. Generally they are quoted at ranges from 1 to 60 parts per million, or 600 PBM, or something like that. There's ranges, so it depends on the ripeness of the fruit and all that sort of thing what you would get. It naturally happens. Now, of course, with aspartame or something like that—you're quite right—when it is something that's generating a carcinogen even if it's there just transiently before being whipped across into something less toxic, it does get a great deal of scrutiny. That particular aspect of it has received an awful lot of scrutiny and study in the literature, and that includes looking at metabolites and things in humans and not just animals. The end of the result of this whole stuff is that there is a huge amount of data that is directly applicable to humans that indicates that it doesn't cause a problem.

Kedgley My second question is how do you know people aren't consuming more than 40 milligrams per kilogram of body weight?

Reeve Well, you don't, but that 40 milligrams per kilogram of body weight actually involves uncertainty factors of at least 100 built into it, as well, so if you're—

Kedgley You're only saying it's safe at that level. So regardless of all these other things, how do you know people aren't consuming more or even, with some people, considerably more?

Reeve The 40 milligrams per kilogram is not a cut-off level. It is a level at which we are certain that there are no health effects likely. As you go above that the only thing that changes is your certainty that there are no health effects. The FDA actually has their ADI set at 50 milligrams per kilogram of body weight.

Kedgley You said the body is well used to handling this highly toxic substance. It may be that some bodies, for various reasons, aren't well used to it or don't handle it well and they develop adverse effects. It's possible, isn't it?

Reeve Yes. Well, they would show adverse effects to fruit and vegetables, as well.

Kedgley I thought the point was that this is different because it's not. I think the comparison isn't—but anyway, your point of view is, yes, it

- breaks down to these varying toxins and carcinogenic compounds. You haven't done a study or anything, and we don't if people are only having a so-called safe limit, but, nevertheless, you've got no concerns and it's just business as usual; never mind that there may be some people like Abby and others who claim that they're having significant side effects. You just dismissed it, basically.
- Daly Could I just point out that FSANZ has done surveys which show that in New Zealand there's an average of 2 milligrams per kilogram of body weight being taken of aspartame, on average, and even the high consumers' intake is less than 10 milligrams per kilogram of body weight.
- Kedgley And when was that one done? We'd like to see that.
- van den Beuken The FSANZ Sweeteners survey was done in 2004.
- Daly 2004.
- van den Beuken Ninety percent of high consumers are consuming less than 15 percent of the ADI—with average consumers having an intake of about 7 percent. So the average consumer consumes about 7 percent of the ADI of 40 milligrams per kilogram of body weight per day.
- Kedgley Well, if we could have that study that would be very helpful.
- Soper I just want to check one thing on the science before I ask my actual question. Did I pick you up to say that, yes, it becomes formaldehyde, but it metabolises further almost instantly?
- Reeve Yes.
- Soper And therefore?
- Reeve It becomes formic acid, and then the formic acid either gets excreted as such or is further metabolised to carbon dioxide.
- Soper Thank you; great. I just wanted you to comment on two things that Abby and her companion have requested. One was around the labelling of products—and I think one of you mentioned labelling earlier; I think it was you, Sandra—and the other one was the knowledge of the medical profession and whether there was some scope for GPs, particularly, to have further education on aspartame awareness.
- van den Beuken Obviously people can make up their own mind which ingredients they consume—this is part of the ingredient labelling—and where aspartame is used, it's labelled clearly as "sweetener" in brackets, either the code number or a specific name. In terms of the medical

profession, it's probably something for the universities that have medical schools, if they believe that there is an issue there. That's good advice to doctors at that end, I would imagine. But in terms of labelling, there's clearly phenylketonuria—that's well-documented, and people are aware that they have this disease very early in life and they'll look for that warning.

Soper Thank you.

Blue I gather Abby was eating quite a lot of chewing gum. Has anyone looked at her milligrams per kilogram of body weight that she was taking of aspartame and seen how high it was or where it was?

Daly As far as I am aware, there hasn't been an assessment of Abby's intake. But you would have to leave that for her to answer.

Kedgley When you said that it very quickly breaks down from formaldehyde to formic acid, is that what happens in the body?

Reeve Yes.

Kedgley Well, I don't have it here, but I certainly read that formic acid is also a substance with some concerns around it.

Reeve There are many acids and things that all have concerns around them. They are just natural metabolites that would be produced in the normal consumption of foods. I mean, it's there all the time, and it would then be taken up further to metabolise further through the carbon dioxide if it's not actually excreted. Being water-soluble it could be.

Kedgley And if the Ministry of Health could perhaps just respond to Lesley's question as well, which is, would it be reasonable to have some sort of labelling so consumers could be aware that there may be some adverse effects from consuming certainly high amounts of aspartame?

Laurenson The labelling of food products is a matter for Food Standards Australia New Zealand.

Kedgley But you have a public health responsibility to protect the health of the nation.

Laurenson Yes, but our position is that aspartame is a safe product at the moment. If we have evidence that it was unsafe, then we would certainly—

Kedgley But that's not the point. Peanuts are safe, but they have a warning because they cause adverse reactions in some people, so the safety issue isn't the issue here. The issue is, maybe some people are

- having an adverse reaction and do they have a right to know that that is a possibility?
- Daly Could I comment on that?
- Kedgley Well, I'd like the Ministry of Health to comment, if that's possible, please.
- Laurenson Our comment in terms of labelling is that we work through the New Zealand Food Safety Authority, who liaise with Food Standards Australia New Zealand about labelling issues.
- Kedgley So you don't have views on these issues?
- Laurenson We don't.
- Kedgley OK. Thank you very much.
- Soper Just one further question on Abby's recommendation around funding a study on the formaldehyde-producing ability of aspartame. Would you comment on that, please?
- Reeve The human ability to do that is well-known. It's certainly true, as Dr Monte said, that those studies have all been conducted overseas, but I would take some convincing that New Zealanders are different from Americans. We're all human beings, so why would it be different? It's a well-known phenomenon. I can't see that it would actually show us anything we don't already know.
- Soper So you're very clearly saying you see no reason at all to do a further study in New Zealand?
- Reeve Yes.
- Kedgley What if you were wrong, and what if it was found that it could produce a significant range of adverse effects re the Government policy, because it was certainly the Ministry of Health that took the Government policy to promote these drinks in schools? Doesn't that concern you—that you're making policy decisions, and, just say they could be wrong, it might cause some adverse effects? I'm asking the Ministry of Health here.
- Aitken We are not specifically promoting those products in schools—
- Kedgley You are.
- Aitken —as we already indicated, our advice is that water and milk are the preferred drink options for children.
- Kedgley But you're permitting them in Government-funded schools.

- Aitken We don't control the market.
- Kedgley Some countries, such as France, have said "No fizzy drinks in schools.", so it's a policy decision you take.
- Aitken And that, no doubt, could have been a decision, or could be a decision for the future.
- Stewart Just a really quick one to the Ministry of Health. Are you concerned about the health effects that people have experienced through the use of products containing aspartame—chewing gum, and the sweetener things that people put in their tea and coffee?
- Aitken Well, I don't think we've seen evidence that there is this definitive link. There's clearly an association, and the individuals that have made presentations believe that they have been adversely affected. They may well have been, but we're not sure what that's to. So I think there needs to be an appropriate investigation at the individual level when these case reports are being made.
- Kedgley So will you undertake that investigation if you think there needs to be one?
- Aitken It would be between the medical practitioner and the individual. That would be the point where it would start. Then, if necessary, there can be a referral to a specialist, and a process could be gone through in the same way that intolerance and allergies are managed.
- Kedgley Thank you for coming before us, and we'll consider where we go from here, and there was one study you were going to forward to us.

conclusion of evidence