

The aspartame debate is raging, due to the proposed inclusion of artificial and 'diet' sweeteners in school tuck shop food, and a number of severe reactions to aspartame recently reported in news headlines. Who to believe? The NZSFA says it's safe, so your children could soon be downing copious quantities of the often Chinese-produced chemical. *Fitness Life* tracked down world expert Dr Woodrow Monte to tell the real story behind this potentially lethal lollipop

{ Abby Cormack is a young lady from Wellington, who recently made headlines because of serious adverse reactions attributed by her physician to her use of the artificial sweetener aspartame. She sent me an email asking for help. I was happy to assist, as I have seen hundreds of similar complaints over the years.

My name is Dr Woodrow Monte. My 26-year career as Professor of Food Science at Arizona State University was devoted to research, and lecturing on

the composition and safety of foods. For 25 years, I have had serious concerns about the consequences of consuming aspartame. In 1983, I filed the first petition to the US Food and Drug Administration (FDA) seeking its removal from foods. My 287-page petition, containing copious documentation from published research, was denied without explanation. In 1984, I wrote the first scientific article warning of the effects of the methanol produced when aspartame is ingested.

The trouble is, the issue of aspartame safety is embedded in a quagmire of politics. Its approval by the FDA was championed by the former US secretary of defense, Donald Rumsfeld. At the time, he was president of the company that invented the chemical, and which stood to make considerable financial gain from its manufacture and sale.

NZSFA public relations and the beverage industry

The New Zealand Food Safety Authority (NZSFA) has endorsed aspartame safety in all its handouts, for the most part paraphrasing the claims of the sweetener industry. And, despite vigorous protest, it has maintained this pro-aspartame stance, at the same time choosing not to allocate resources to study the many hundreds of scientific works that comprise the methanol toxicity literature alone.

Based on the NZSFA's recommendation, the New Zealand government is currently considering a measure that will promote diet sweeteners as a replacement for sugar-sweetened beverages in schools. Inexpensively produced aspartame from China is most likely to be selected to play that role. And the fizzy drink manufacturers are happy – they stand to

reap a substantial profit from the money saved substituting aspartame for sugar.

What will be the likely cost to the public health, though? I have studied the scientific literature and, in the remainder of this article, will present my learnings and why I believe it is so important to reject this proposed measure.

The science

Aspartame tastes sweet because of its attachment to a molecule of methanol or wood alcohol. This is very loosely bound and will fly off at the slightest heating or when the chemical is consumed. Methanol is a dangerous poison that, over time, is known to remove the insulation from nerve axons. Because its toxicity is well known, millions of dollars were invested by aspartame's inventors in attempting to find some other, safer substance to attach it to, but they were not successful. So, with the approval of aspartame, a new source of methanol was added to the very short list of methanol-containing foods.

Why is methanol dangerous? Inside cells, it is converted to formaldehyde, an undetectable toxin and recognised cancer-causing agent, rated at the highest order (Group I) by the IARC International Agency for Research on Cancer. Even when formaldehyde is injected directly into a living human, it turns into formalhydrate, an aggressive molecule that instantly attaches to any protein molecule with which it makes contact. The formaldehyde molecule completely disappears under the cover of the much larger protein, which then loses function. No diagnostic procedures can detect a protein molecule so changed.

Damaged protein molecules are not tolerated by the immune system. Specific detection sites for 'formaldehyde-modified

protein' are found on white blood cells called macrophages. Macrophages seek out and destroy these proteins at a rate 100 times faster than they do proteins not treated with formaldehyde.

Upon autopsy, macrophages have also been found in the damaged areas of the brains of those who have died from multiple sclerosis (MS). In fact, in German scientific literature, Swiss physician Dr Hugo Henzi, argues eloquently that naturally occurring methanol is the cause of MS.

Despite this, pharmaceutical companies use formaldehyde-treated viral proteins to greatly enhance antibody production during the manufacture of vaccines. However, the effect of this on human proteins has never been examined as a cause of autoimmune disorder.

A question never answered

In response to the kinds of concerns above, spokespeople for the soft drink industry and for the NZFSA claim that there is a large amount of methanol consumed in the normal diet, and that a 'little more' from aspartame will do no harm. This seems to be their only justification for allowing more of the toxin to be introduced into our foods.

Interestingly, though, no estimate of the amount of methanol consumed per person, per day, in the average diet, has yet been publicly presented by those spokespeople. Consistent with the data in my published research, I believe that the amount of methanol in a typical diet without artificial sweeteners would be less than 8 milligrams per day. One can of aspartame-sweetened diet cola alone yields 16 milligrams of methanol.

Methanol is only found in natural foods that contain pectin; the glue that holds certain plants together. Fortunately, the bond that holds the methanol to

pectin is so strong that it rarely breaks, or breaks only under certain conditions. These include fermentation or the high temperatures of the food-canning process. In fact, before aspartame, methanol in the normal Western diet came primarily from heat-processed plant foods such as canned fruit and vegetables, and their juices. (It is interesting to note that MS was first documented as a disease at about the time that canning began to flourish in Europe). Even then, only a small percentage of pectin's methanol is released. Further, humans have no enzymes for pectin digestion, so that pectin consumption is unlikely to yield much methanol. In contrast, aspartame consumption yields methanol always and readily.

So, fresh fruits and vegetables contain small traces of methanol, but their consumption is not problematic, in that during fermentation in the gut, they produce a natural substance that stops the conversion of methanol to formaldehyde. While there are unusually high levels of methanol in blackcurrant and tomato juices, these foods are included only occasionally in most diets, and therefore have little impact on an average person's methanol intake.

Another attempt to put methanol into foods

A hundred years ago, the scientific community believed methanol was benign and swore to its safety, with disastrous consequences. Over the previous 50 years, many toxicity studies performed in reputable laboratories had showed that more methanol than ethanol is required to kill a test animal. Research of this sort was repeated with monkeys, dogs, rabbits and laboratory rats, each time with the same result.

Such data was presumed to support the safety of methanol consumption. At the turn of last century, scientists wanted to

use this newly developed, inexpensive and odourless form of wood alcohol to extract vanilla and other flavourings, while the drug industry proceeded to use it in patent medicines. And soon after the first bottles of methanol-laden extracts appeared on the market, people started to fall seriously ill.

The stories that linked suffering, blindness and death were discounted by the scientific community as anecdotal and unrelated to methanol, which "had gone through so much testing". When incidences of vision loss and death continued to mount, professionals surmised that some impurity had found its way into individual products. They continued to maintain that nothing was wrong with methanol per se.

Thousands died before the scientific community determined that animals and humans do not metabolise methanol in the same way. Eventually, they learned that a liver enzyme present in animals, but absent in humans, accounts for methanol's toxicity to us. While animals can consume methanol safely, as little as two teaspoons can be lethal for a human. Since then, methanol itself has been forbidden in foods and must always be packaged with a label showing a skull and crossbones; the universal symbol for poison.

Why I question the safety of the worlds most-tested food additive

The inventors of aspartame had the advantage of hindsight when designing studies for determining the safety of their methanol-containing product. Inexplicably, all of their toxicological testing was conducted on the same selection of animals that falsely supported methanol's safety more than 60 years earlier.

Despite this bias in sample selection, long-term toxicity studies for aspartame showed an increased likelihood of cancer in test animals; an outcome not examined in earlier

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methanol studies. As a consequence, it did become the first additive in the history of the FDA to be denied approval for use in foods, by an expert panel of scientists. And its ultimate approval was not the result of additional research, but rather of political intervention.

What was remarkable, was the method used to bend science to the will of an aggressive drug firm. When it was clear that chances of approval were waning, representatives of the company sought out the few laboratories in the United States that were performing methanol research. These were, in effect, hired to help prove aspartame was safe. They were tasked with finding an animal that would respond as a human does to methanol, then to identify a way to prove that formaldehyde was not producing the symptoms of methanol poisoning in that animal.

If formaldehyde was proved to be the cause of the symptoms and deaths resulting from methanol poisoning – the opinion held by the scientific community at the time – its inability to be detected would put a quick end to any hope for aspartame's approval. Millions of dollars bought many scientific papers, few indicating that the research therein was 'contracted' by the manufacturers of the product. Those findings are now forever embedded in the scientific literature, and scientists who were on the corporate dole are now considered experts in the field of methanol safety.

It should be noted that research not funded by the manufacturer of aspartame has led to significantly different conclusions. For example, 10 years ago, an independent Spanish laboratory found that aspartame most definitely turns into formaldehyde.

Because of differences across species in the production of enzymes that metabolise methanol, the results of animal research into aspartame safety cannot safely be generalised to humans. So, we have become the test subjects in a 27-year long experiment. Now, unfortunately, the damage that methanol can cause is being revealed in aspartame consumers such as Abby Cormack.

The issue is complex, but the choice is simple. Fortunately, there are several other readily available artificial sweeteners that do not contain dangerous toxins. And it just makes good sense to keep aspartame out of our schools.

You can visit TheTruthAboutStuff.com to view my 1984 article, for a full discussion of this issue and references for this article. Please also refer to Fitness Life's article 'Lethal Lollipop' (page 89, Issue 14).

***What do you think about the aspartame debate?
Email your thoughts to fit@fitnesslife.co.nz*** ◀

Abby Cormack is a young lady from Wellington who recently made headlines because of serious adverse reactions her physician attributed to her use of the artificial sweetener aspartame. She sent me an email to ask for help. I was happy to assist since I have seen hundreds of similar complaints (1). Aspartame contains methanol(5,14,48,). Methanol is a dangerous poison that, over time, is known to remove the insulation from nerve axons(18,53), producing symptoms identical to Multiple Sclerosis (MS)(2). In fact, in the German scientific literature, Swiss physician, Dr Hugo Henzi, argued eloquently, that naturally occurring methanol was the cause of Multiple Sclerosis(5,6,8,9,10).

My name is Dr. Woodrow Monte. My 26 year career as Professor at Arizona State University was devoted to research and teaching of the composition and safety of foods. For 25 years I have had serious concerns about the consequences of the consumption of Aspartame. In 1983, I filed the first petition to the US Food and Drug Administration seeking Aspartame's removal from foods(39). My 287 page petition, containing copious documentation of published research, was denied without explanation. In 1984, I wrote the first scientific article warning of the methanol produced when Aspartame is consumed(1).

This issue of aspartame safety is embedded in a quagmire of politics(39). Aspartame's approval by the American Food and Drug Administration (FDA) was championed, by the former US Secretary of Defense Donald Rumsfeld. At the time of Aspartame's FDA approval, he was president of the company that invented it and which stood to make considerable financial gain from its manufacture and sales(39,56).

NZFAS Public Relations for the Beverage Industry

The New Zealand Food Safety Authority (NZFSA) has endorsed Aspartame safety in all of their handouts, for the most part paraphrasing the claims of the sweetener industry(39,56). The New Zealand government currently is considering a measure which endorses diet sweeteners as replacement for sugar sweetened beverages in schools. Inexpensively produced aspartame from China is the product most likely to be selected to replace sugar. Fizzy drink beverage manufacturers stand to reap a substantial profit from the money saved substituting aspartame for sugar. But at what cost to the public health? Despite vigorous protest, the NZFSA has maintained a pro-aspartame stance. They have chosen not to allocate resources for study of the many hundreds of scientific works that comprise just the methanol toxicity literature. I have studied

this scientific literature and, in the remainder of this article, will present to you what I have learned, and why I believe, it is so important to reject this proposed measure.

The Science:

Aspartame tastes sweet because, attached to it, is a molecule of methanol (wood alcohol). The methanol is very loosely bound and will fly off with the slightest heating or when consumed(20,51). Because methanol's toxicity is well known, millions of dollars were invested by Aspartame's inventors in an attempt to attach some other "safer" substance, but this attempt was not successful. With the approval of Aspartame, a new source of methanol was added to what is a very short list of methanol containing foods.

Methanol - Trojan Horse:

Why is methanol dangerous? Inside cells, methanol is converted to formaldehyde(30), an undetectable toxin and recognized cancer causing agent of the highest order (Group I)(11). Even when formaldehyde is injected directly into a living human, it turns into formal hydrate(4,27), a very aggressive molecule that instantly attaches to any protein molecule which it makes contact. The formaldehyde molecule then completely disappears within the cover of the much larger protein(31,32). **No** diagnostic procedures, can detect a protein molecule so changed, yet the damaged molecule, loses function.

Damaged protein molecules are not tolerated by the immune system. Specific detection sites for "formaldehyde modified protein" are found on white blood cells called macrophages(23,24). Macrophages seek out and destroy these proteins at a rate 100 times faster than proteins not treated with formaldehyde(25). Upon autopsy, macrophages are found in the damaged areas of the brains of those who have died with MS(42,44).

Pharmaceutical companies use formaldehyde treatment of viral proteins to greatly enhance antibody production during the manufacture of vaccines(26). However, the effect of formaldehyde (resulting from methanol poisoning) on human proteins, has not been examined as a cause of autoimmunity.

A Question Never Answered:

In response to these concerns, spokespersons for the soft drink beverage industry and for NZFSA claim that there is a large amount of methanol consumed in the normal diet and that a “little” more from aspartame will do no harm. This is their only justification for allowing more of this toxin to be introduced into foods. No estimate has been publicly presented by these spokespersons regarding the amount of methanol consumed per person, per day in the average diet. Consistent with the data in my published research(1), I believe that the amount of methanol in the typical diet without artificial sweeteners would be less than 8 milligrams per day. One can of aspartame sweetened diet cola yields 17 milligrams of methanol(47), more than twice the amount of methanol from other sources in a typical diet.

Fresh fruits and vegetables contain small traces of methanol(28,29) but their consumption is not problematic, in that, during fermentation in the gut, they produce a natural substance that stops the conversion of methanol to formaldehyde(35,36). In fact, before Aspartame, methanol in the normal human diet came primarily from heat processed plant foods such as canned fruit and vegetables and their juices(33). While there are unusually high levels of methanol in black currant and tomato juices(1,19,33), these foods are included only occasionally in most diets and, thus, would have little impact on an average person’s methanol intake(1).

Methanol is only found in natural foods that contain pectin(33), the glue that holds certain plants together. Fortunately, the bond that holds the methanol to pectin is so strong that it rarely breaks(36), or breaks only under certain conditions. These conditions include fermentation(35) or the high temperatures of the food canning process(1,28,29,34). Even under these conditions only a small percentage of pectin’s methanol is released(36,35). (It is interesting to note that MS was first documented as a disease(45) at about the time that canning began to flourish in Europe(46). Further, humans have no enzymes for pectin digestion (36), thus making pectin consumption rather unlikely to yield much methanol. In contrast, aspartame consumption yields methanol always and readily(20,48).

The Second Attempt to put Methanol into Foods

A hundred years ago the scientific community believed methanol was benign and swore to its safety with disastrous consequences(21). At the turn of the century,

industry scientist wanted to use the newly developed, inexpensive and odorless form of wood alcohol,... methanol, to extract vanilla and other flavorings(17,21). Over the previous 50 years, many toxicity studies performed in reputable laboratories showed that more methanol than ethanol is required to kill a test animal(15,30). Testing of this sort was repeated with monkeys, dogs, rabbits and laboratory rats(17,30). Each time with the same result.

This data was presumed to support the safety of methanol consumption. Accordingly, food and drug industries proceeded to use methanol in patent medicines and to produce flavorings. Soon after the first bottles of methanol laden extracts appeared on the market, many fell seriously ill(17). The stories that linked suffering, blindness and death were discounted by the scientific community as “anecdotal” and unrelated to the methanol which “had gone through so much testing”(17). When incidence of death(16) and vision loss(37) continued to mount, professionals surmised that some “impurity” had found its way into individual products. They maintained that nothing was wrong with methanol per se(17,30). Thousands died before the scientific community determined that animals and humans do not metabolize methanol in the same manner(52). Eventually, scientists learned that a liver enzyme that metabolizes methanol, present in animals but absent in humans accounts for methanol’s toxicity for humans(52). While animals consume methanol safely, as little as 2 teaspoons can be lethal for a human(16). Since that time methanol has been forbidden in foods and must always be packaged with a label showing a skull and crossbones, the universal symbol for poison(49).

Why I question the Safety of the worlds most tested food additive:

The inventors of aspartame would have the advantage of hindsight when designing studies for determining the safety of their methanol containing product. Inexplicably, all of their toxicological testing was conducted on the same selection of animals that falsely supported methanol’s safety more than 60 years earlier(48).

Despite this bias in sample selection, long term toxicity studies of Aspartame has shown an increased likelihood of cancer in test animals(50), an outcome not examined in earlier methanol studies. As a consequence, Aspartame became the first additive in the history of the US FDA denied approval for use in foods by the scientists of a Public Board of Inquiry (39,57). Ultimate approval did occur, however, and it resulted not from additional research but rather from political intervention(39). What was remarkable was the method used to bend science to

the will of an aggressive drug company. When it was clear that chances of approval were waning, representatives of the company sought out the few laboratories in the United States that were performing methanol research. These laboratories were, in effect, hired to help prove aspartame is safe(39).

Participating labs were tasked to find an animal that would respond as a human does to methanol(39), then to find a way to prove that formaldehyde was not producing the symptoms of methanol poisoning in that animal(39).

If formaldehyde was proved the cause of the symptoms and death from methanol poisoning, (the opinion held by the scientific community at that time(21,30)), formaldehyde's inability to be detected would put a quick end to any hope for the approval of Aspartame. Millions of dollars bought many scientific papers, few indicating the research therein was "contracted" by the manufacturers of the product(39). This "research" is now forever embedded in the scientific literature. Scientists who were on the corporate dole are now considered "experts" in the field of methanol safety.

It should be noted that research not funded by the manufacturer of Aspartame has led to different conclusions. For example, 10 years ago an independent Spanish laboratory found that Aspartame most definitely turns into formaldehyde(7,40).

Because of differences across species in the production of enzymes that metabolize methanol, the results of animal research with Aspartame cannot safely be generalized to humans. Humans have become the test subjects in a 27-year long experiment on Aspartame safety. Unfortunately, the damage that methanol can cause is being revealed in populations of Aspartame consumers such as Abby Cormack. The issue is complex but the choice is simple. Fortunately there are several other readily available, artificial sweeteners that do not contain dangerous toxins. Therefore, it just makes good sense to keep Aspartame out of our schools.

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- please go to TheTruthAboutStuff.com to see my 1984 article for a full discussion of this issue and references for this article.

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