

Sweet Misery Fact Check

Part I

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This is part of my “What Does the Science Say” series which lives at <http://whatdoesthesciencesay.wordpress.com>

There is a comment-enabled blog edition available at <http://wp.me/pH6F5-1Z>

There is an HTML version available at <http://tinyurl.com/sweetfact1>

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Introduction

I have covered aspartame twice before, but I thought to finally get it out of my system I would cover the documentary “Sweet Misery” which essentially contains all of the claims I have seen

previously (and some of which I've covered) as well as the cast of characters which frequently pop up with this topic. In this way I can address the whole gamut of aspartame claims and be done with it.

For the most part, the movie amounts to 90 minutes of anecdotal evidence of aspartame causing all manner of harm. A few of the guests in the documentary at least have medical degrees, but their statements frequently contradict the best scientific evidence we have and are often backed only by books that they themselves have written.

As you read this, you will notice a trend in my thinking that I want to make clear now. As a non-scientist, I am only "qualified" to trust consensus scientific evidence. While it may turn out in the future that a series of high quality, reproducible, studies will emerge which demonstrate a link between aspartame and a number of neurological disorders, this has not occurred yet. A large body of anecdotes do not count as studies. Individual studies do not really even count as evidence against the large amount of existing studies. Odds are, individual studies (no matter what they find, for or against aspartame) are wrong in some way. It takes a volume of studies to create that proper body of evidence that leads to a consensus.

So you may read this paper and find yourself thinking "he is just trusting scientists, he is just trusting the government, but they lie to us/are bought by industry/are biased". ***I do not trust scientists, I trust science. And the current science shows no link between aspartame and all of these disorders.*** You should not trust me. And you certainly should not trust a few people in a documentary. But I firmly believe you *should* trust the large body of actual, peer-reviewed, studies that make of the evidence, especially in the form of reviews of multiple studies which can aggregate the results. I have no evidence of wide-spread corruption and fraud in the scientific community in this regard. Individual cases, sure. That's why you go with the wide body of evidence.

If you are convinced that anything that comes from "mainstream" science is flawed, you may as well stop reading now.

Cast of Characters

The doctors and patients in the video are all people who are violently opposed to aspartame. The patients are not random people they found who had these issues, but are actively engaged in the idea that aspartame causes any number of issues.

The "Experts"

[Russell Blaylock](#) is a retired neurosurgeon who writes and speaks frequently about "excitotoxins" (which is not very prevalent in the scientific literature). He even manages to bring autism into the picture. He is also anti-fluoride.

Jim Bowen is a *former* medical doctor who appears to believe in all manner of other conspiracy theories, especially those related to the “Zionist Conspiracy”. You can easily find him searching for “Jim Bowen aspartame” on Google. He also wrote a pleasantly-titled article called “Aspartame Murders Infants”. He also appears as one of the sufferers in the video.

Arthur Evangelista is apparently a former FDA investigator (not sure how to confirm or deny this) who, ironically enough, runs a company that helps herbal supplement company “avert” oversight by the FDA. His PhD is in “Industrial and Occupational Safety”, not biochemistry, biology, chemistry, etc.

HJ Roberts appears to be/have been a doctor, but now writes books against aspartame. One aspect, at least, where he seems to be “right” is in his criticism of taking vitamin E supplements in large doses. That criticism appears to be backed by real science. But otherwise his views do not appear to fit with mainstream consensus science.

Ralph Walton is psychiatrist who believes that aspartame leads to number of neurological disorders. [I have covered](#) ¹his supposed list of 97 “peer reviewed” articles against aspartame previously (in short, while it is a list containing about 97 items... most are not peer-reviewed, about aspartame, or even against aspartame).

Many of the sufferers in the video have websites and are in business related to anti-aspartame and “natural” industries. However I could not absolutely positively identify them (I would rather not link to sites that turn out not to be the same person) and so will leave that as an exercise for the reader. But as far as I could tell, these were not simply people they found off the street who were affected by aspartame, but rather fellow anti-aspartame crusaders.

The point is not to promote the *genetic fallacy* or perform an *ad hominem* attack, but rather to show that these are not necessarily “experts” who we should take at face value and that we should be extra sure to look into the evidence (or lack of) that they present for their claims. The claims must still stand or fall on their own grounds.

¹ DeWald, Joshua. “Aspartame and Formaldehyde: What does the science say?”. June 13, 2010.

The Claims

Claim: Studies show a growing trend of multiple sclerosis, brain tumors, diabetes, etc in recent years linked to the introduction and usage of aspartame

Claim is made in first three minutes of video by the narrator, Russel Blaylock and HJ Roberts.

HJ Roberts says he noticed “conflicting” themes and that the rise was not due to lack of adequate scanning devices and that other cancers stayed the same while brain cancer incidence went up.

It's not clear what studies are showing this trend (as the documentary doesn't have a list of sources), but, at least for brain tumors, the incidence has bounced up and down and in fact started going up before aspartame was introduced, and went back down between 1990 and 2002.

Brain Tumors

According to the [National Cancer Institute](#):

“From 1990 to 2002, the overall age-adjusted incidence rates for brain cancer decreased slightly; from 7.0 cases to 6.4 cases for every 100,000 persons in the United States. The mortality rate from 1990 to 2002 also decreased slightly; from 4.9 deaths to 4.5 for every 100,000 persons in the United States.”²

“Incidence” refers to the numbers of new cases.

NCI Continues, “However, aside from the small percentage of brain tumor cases that can be linked to exposure to high-dose ionizing radiation or to certain inherited genetic alterations, few specific risk factors have been convincingly linked to brain tumors.”

They do mention that they are looking at “sweeteners” (among many other things) as potential causes, but studies were initiated in 1994 and I think I can show that aspartame has been ruled out quite well.

The Olney Study

I suspect that their “source” for the information in the first place, as the documentary makes reference to it, is the infamous J.W. Olney (mentioned above) study brain tumor “study” which

² NCI. “National Cancer Institute Brain Tumor Study in Adults: Fact Sheet”. <http://www.cancer.gov/cancertopics/factsheet/Risk/brain-tumor-study>. Visited April 26, 2011

looked at brain tumor incidence. The study has been highly criticised for cherry-picking the data and its methodology.

The NCI addresses the study and mention the fact that brain tumor incidence rises (for the time in question for this documentary) [started 8 years prior to the introduction of aspartame](#):

*“Questions regarding the safety of aspartame were renewed by a 1996 [the Olney study] report suggesting that an increase in the number of people with brain tumors between 1975 and 1992 might be associated with the introduction and use of this sweetener in the United States. However, an analysis of then-current NCI statistics showed that the overall incidence of brain and central nervous system cancers began to rise in 1973, 8 years prior to the approval of aspartame, and continued to rise until 1985. Moreover, increases in overall brain cancer incidence occurred primarily in people age 70 and older, a group that was not exposed to the highest doses of aspartame since its introduction. These data do not establish a clear link between the consumption of aspartame and the development of brain tumors.”*³

Additionally, from the [French Food Safety \(AFSSA\) report on aspartame](#) from 2002 (French 2011⁴) (emphasis mine):

*“In 1996, Olney et al. published an article.. the authors concluded that there was a significant increase in the frequency of brain tumours in the mid-1980s, that is to say the period following aspartame came onto the market. The conclusions of this epidemiological study have been criticised by a number of scientists who questioned the methodology, the use of the data and their interpretation (Levy et al., 1996; Linet et al., 1999; Ross, 1998; Seife, 1999; Smith et al., 1998). **One of the major criticism is that the authors only took into account the frequency of brain tumours during a selected period (1975-1992). When all the epidemiological data are used (1973-1992) a different conclusion is reached, as the frequency of brain cancers began to increase in 1973 and stabilised from the mid-1980s (Levy et al., 1996). Furthermore, Olney et al. did not provide any quantitative or qualitative relationship between the exposure of the population to aspartame and the observed frequency of brain tumours.**“*

Additionally, there was a case-control study that attempted to demonstrate any sort of link, and failed to do so (Gurney 1997).⁵

In short, except for the Olney statistical analysis, all actual studies of humans and the data demonstrate no link between brain cancer and aspartame usage.

Multiple Sclerosis

Even the National Multiple Sclerosis Society does not support the claim that aspartame has

³ NCI. “Artificial Sweeteners and Cancer”. <http://www.cancer.gov/cancertopics/factsheet/Risk/artificial-sweeteners>. Visited April 26, 2011

⁴ French Food Safety Agency. “Assessment report: Opinion on a possible link between the exposition to aspartame and the incidence of brain tumors in humans”. May 7, 2002. <http://www.food.gov.uk/multimedia/pdfs/afssaeng.pdf>

⁵ Gurney JG, Pogoda JM. J Natl Cancer Inst. Aspartame consumption in relation to childhood brain tumor risk: results from a case-control study. 1997 Jul 16;89(14):1072-4

anything to do with it. On their "[Old Theories That Have Been Disproved](#)" page, they put aspartame in there with allergies and owning a dog as having no scientific evidence linking it with MS. (National ⁶)

Or if you're not a fan of the National MS Society, how about the Multiple Sclerosis Foundation? On their page "[Examining the Safety of Aspartame](#)", they call out the "Nancy Merkle" hoax which kick started a lot of this nonsense and state pragmatically ⁷:

"While nothing can be considered 100 percent safe, aspartame has undergone extensive testing. With the exception of a few very mild side effects, aspartame appears to be quite safe. Those individuals, who experience problems after consuming aspartame, should eliminate foods and beverages that contain this sweetener from their diet."

I think it would stretch credibility quite a bit to believe that both of these groups are somehow "in the pocket" of the NutraSweet company.

Diabetes

Jim Bowen makes the claim that Diabetes jumped 33% (not sure which years) Since 1960 or so, [diabetes incidence has grown by about 3% a year](#) (Onkamo 1999 ⁸, Diabetes ⁹). So over any given 10 year period, it would grow ~30% from the start. So a very misleading statistic.

Claim Summary

Misleading and wrong. Brain tumor incidence did go up, but not from aspartame. And incidence actually dropped in subsequent years (while usage of apartame has probably gone up). Aspartame did not cause a rise in brain tumors or multiple sclerosis. Not only is there no evidence linking aspartame with brain tumors, but when anybody actually tries to find evidence for it, the studies demonstrate nothing. So this is not a case of there just not being enough/ no testing. There is a wealth of testing which has led to *negative* evidence of a link between aspartame and these disorders. So what opponents of aspartame mean when they say there hasn't been "enough" testing is really that there hasn't been enough that *agrees with their view*.

Claim: The components of aspartame break down into poisons and build up in the body over long periods of

⁶ National Multiple Sclerosis Society. "Old Theories That Have Been Disproved". <http://www.nationalmssociety.org/about-multiple-sclerosis/what-we-know-about-ms/what-causes-ms/disproved-theories/index.aspx>. Visited April 26, 2011

⁷ Multiple Sclerosis Foundation. "Examining the Safety of Aspartame". <http://www.msfacts.org/article-details.aspx?articleID=40>. Visited April 26, 2011

⁸ Onkamo P. "Worldwide Incidence of Type 1 Diabetes--the analysis of the data on published trends". *Diabetologia*. 1999 Dec. 42(12).

⁹ Diabetes and the Environment. "Type 1 Diabetes Incidence: Historical Trends". Author includes source references <http://www.diabetesandenvironment.org/home/incidence/historical>

time to create toxic effects

Approximately minutes 4 to 7, with some later as well

Russell Blaylock - People say they take MSG, aspartame with no obvious effects. "Subtle toxic effects in those who don't have obvious problems" Over long term will have disease.

... long term "Exposure to large amounts of the components of aspartame is toxicity".

... "We know aspartame is a poison, it affects protein synthesis, and how the synapse operates in the brain. Affects DNA"

... "Sub-chronic level" ... Slow build up of toxins. Disrupts endocrine system

"aspartame with carbohydrates, reduces availability of L-tryptophan, an precursor for serotonin"

... "methyl ester becomes free methyl alcohol.. a real poison"

... "made sense that aspartame would lower seizure threshold"

... "Poisonous effect of methyl alcohol and ester is well known"

Lorena: Drinking water. "Searched for aspartame. Eyes lit up and started crying. I counted 79 of the 92 symptoms"

Methanol/Methyl Alcohol

I have a [whole article essentially devoted to methanol/formaldehyde](#) from aspartame that you can review, but I have looked a bit deeper for this current one^[10]. While it is technically true that aspartame has methanol (and then formaldehyde) as one of its metabolic byproducts, it is also a bit of a red herring. Fruits break down into more methanol than numerous cans of soda. Meat contains much more phenylalanine than aspartame.

[Kirchner found .8 mg/kg of fresh orange juice](#) and 62 mg/kg stored and canned (Kirchner 1957¹¹). Assuming my math is right, this would equate to about 0.2mg in a fresh 8oz glass, and about 15mg stored. Compare this with a single 12oz can of soda, which has about 150mg (on the high end) of aspartame, 10% (15mg) of which metabolizes to methanol. Nobody seems to think the orange juice is going to kill you. On the low end of aspartame concentrations, juices and fruits are going to have much more. And anti-aspartame advocates are well aware of this, and simply claim that there are "protective factors" in these fruits, juices and wines that make it not matter. This is special pleading. There is no evidence that methanol from aspartame *in fact* builds up.

The actual reason for the toxicity of methanol is from the build-up of formic acid/formate from high *acute* ingestion of methanol within a single exposure (good luck finding a study that finds evidence of long-term build up... they all refer to acute exposure). There is no evidence that it builds up indefinitely over years. In fact, the formic acid is able to leave the body faster than it is

¹⁰ DeWald, Joshua. What does the Science Say? (blog). "Aspartame and Formaldehyde (Or not...)". <http://wp.me/pH6F5-S>

¹¹ Kirchner JG, Miller JM. Volatile water-soluble and oil constituents of Valencia orange juice. J Agric Food Chem 1957;5:283-91.

produced. Formaldehyde by itself [appears to not contribute directly](#) to the toxic effects of high doses of methanol (McMartin 1978 ¹²).

Scientists have in fact looked at whether or not there *might* be build up of formic acid or methanol in the blood following ingestion of aspartame... and there simply is not.

Lewis Stegink performed a study finding no increased levels of formate after consumption if even “abuse” levels of aspartame (Stegink 1981 ¹³). Stegink also has a [larger review of the studies](#) performed on the various components in aspartame, in which he discusses the results of that study and others which have looked into formic acid build-up:

*“blood and urine formate levels were determined in subjects administered the highest dose of aspartame (200 mg/kg body weight). No significant change in blood formate concentration was noted however, urinary formate excretion was increased significantly over preloading values in urine samples collected 0-4 h and 4-8 h after aspartame loading. Urinary formate excretion returned to preloading values in samples determined 8-24 h after loading. **Because the rate of formate synthesis apparently did not exceed the rate of formate metabolism and excretion, blood formate levels were not detectably elevated. Thus, there appears to be little risk from aspartame’s methanol content at the doses studied**” (Stegink 1987 ¹⁴).*

In other words... the body easily gets rid of the byproducts via urination. When drinking/eating products containing aspartame, you are not getting an acute dose of methanol that would cause harm. The normal metabolic processes of your body get rid of the methanol. If it didn't, then you would have to avoid fruits and vegetables as well.

Phenylalanine

While people with the rare disorder phenylketonuria (PKU) should avoid products containing phenylalanine, diet soda and other “light” products are the least of their worries. A single can of soda is going to have ~150mg (0.150g) of aspartame. Let's say 50% of that is phenylalanine, which would get you about 0.075g (75mg) in a can of soda.

Using a tool available at <http://www.bitelog.com/narrow-food-search.htm>, you can calculate how much of a nutrient is contained in various food items.

An [8oz glass of milk contains 0.395g](#) of phenylalanine.

An [8oz hamburger has 2.29g](#) of phenylalanine.

1 [medium banana has about .058g](#) of phenylalanine.

¹² McMartin, KE. “Lack of a role for formaldehyde in methanol poisoning in the monkey”. Biochemical Pharmacology. Volume 28, Issue 5. 1 March 1979. pp645-649

¹³ Stegink LD, Brummel MC, McMartin K.. Blood methanol concentrations in normal adult subjects administered abuse doses of aspartame. *Journal of Toxicology and Environmental Health* 7: 281- 290. 1981.

¹⁴ Stegink, LD. “The aspartame story: a model for the clinical testing of a food additive”. Am J Clinical Nutrition. July 1987. Vol 46:1. p207

So < 0.1g is well below many other foods that most people wouldn't think twice about. Even if you drink 6 cans a day, you only get a little bit past the glass of milk but still nowhere near a hamburger.

Aspartic Acid

Aspartic acid is one of the “non-essential” amino acids, as our body is able to synthesize it on its own. In high doses, some would call it an “excitotoxin” but I can find little evidence of this being backed by scientific consensus. I have not seen too many specific claims against aspartic acid, so I don't see any reason to talk too much about it.

Claim: There have been thousands of complaints to FDA about aspartame, more for neurological conditions

3:41 HJ Roberts - By 1988, “80% of complaints about food additives were for aspartame”. Where's the evidence of this?

I covered this one a bit in my article entitled “Extraordinary Claims about Aspartame in the Huffington Post”. The fact of the matter is that there is no real evidence that the document shown in the documentary is legitimate. Even assuming it is, there are thousands of complaints about many additives submitted each year, but after investigation they are not reproducible. The list of 92 symptoms appears to come from [yet another document](#) by, not surprisingly, Betty Martini. As best I can tell, the [scan of the document she \(claims to have\) received from the FDA is located on Scribd](#). But, as I will discuss below, the FDA (and others) has looked into the various reports and found no real causation.

The FDA does in fact have an [Adverse Event Reporting System](#) (AERS), where you can go and report effects you believe you've had (and naturally people have reported aspartame). The FDA uses this to compile a [list of “potential” dangers](#) that consumers and health officials should be aware of (FDA 2010, Potential^[15]). However, you won't find Aspartame listed in that current set. Or for that matter on any of the [warnings from 2008 to 2010](#).

I think it is useful to quote from the FDA here about what the AERS is and is not as it relates to causality (FDA AERS ^[16]):

¹⁵ US Food and Drug Administration. “Potential Signals of Serious Risks/New Safety Information Identified by the Adverse Event Reporting System (AERS) between January – March 2010”. <http://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/Surveillance/AdverseDrugEffects/ucm216272.htm>. Visited 7/12/2010

¹⁶ US Food And Drug Administration. “Adverse Event Reporting System (AERS).” <http://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/Surveillance/AdverseDrugEffects/ucm082196.htm>. Visited 7/9/2010

“AERS data do have limitations. First, there is no certainty that the reported event was actually due to the product. FDA does not require that a causal relationship between a product and event be proven, and reports do not always contain enough detail to properly evaluate an event. Further, FDA does not receive all adverse event reports that occur with a product. Many factors can influence whether or not an event will be reported, such as the time a product has been marketed and publicity about an event. Therefore, AERS cannot be used to calculate the incidence of an adverse event in the U.S. population.”

If you would like to dive into the actual complaints available, there are data files you can [download](#). If aspartame were such a danger, there should be at least a few references for aspartame, but I don't find any. You will however find aspirin in there, which makes sense as it is a potent and effective drug^[17].

This documentary (and list shown on screen) show various neurological disorders that aspartame apparently causes, but the majority of these are diseases and disorders for which the the medical community does not have a known cause or cure. So of course we cannot definitively say “aspartame did not cause this.” However, aspartame most definitely is not in the running by any established or credible research agency into any of these diseases.

Tollefson and Barnard [did an analysis in 1992](#) of the 900 or so claims available at the time. They only looked into seizure related ones and found that the data “did not support the claim” of a linkage to seizures and aspartame consumption (Tollefson ^[18]).

A more overarching review was done by the CDC, and also found no reason to suspect a “widespread public health hazard” (but cautioned that were a small number that could be attributable to aspartame) (Bradstock 1986 ^[19]).

Claim Summary

There is always a chance that a small number of people have side effects from aspartame. Like any chemical, it can react to the body. But when apparent claims are looked into broadly, they come to nothing. And in the case of these specific symptoms, they are generic ones that we all go through for random reasons and rarely have obvious causes (itching, headaches, etc). So, if you feel weird after consuming aspartame stop consuming it. But millions of us consume it without ill effects. Both sides are anecdotal evidence, not science. The science shows that there is no effect across a broad spectrum.

¹⁷ US Food And Drug Administration. “The Adverse Event Reporting System (AERS): Latest Quarterly Data Files”. <http://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/Surveillance/AdverseDrugEffects/ucm082193.htm>. Visited 7/9/2010

¹⁸ Tollefson L, Barnard RJ. An analysis of FDA passive surveillance reports of seizures associated with consumption of aspartame. *J Am Diet Assoc.* 1992 May;92(5):598-601.

¹⁹ Bradstock MK, Serdula MK, Marks JS, Barnard RJ, Crane NT, Remington PL, Trowbridge FL. Evaluation of reactions to food additives: the aspartame experience. *Am J Clin Nutr.* 1986 Mar;43(3):464-9. PubMed PMID: 3953484.

Claim: People who stop consuming aspartame have their symptoms go away, and re-intake causes symptoms to come back

Approximately minutes 9 to 25, with some gaps. Claim is made by Joan (Goodman), Ed Johnson, HJ Roberts, Jim Bowen, Lorena Murray

“When I got off of NutraSweet, the symptoms stopped” ... “My doctors will not say it is aspartame in the official records, but say it to the side” ... “She didn’t have lupus or MS.. her husband made her stop drinking the diet drinks and the symptoms went away” ... “I put the diet drink down, Friday the 19th... within 24 hours” ... “When aspartame removed, the symptoms go away. That’s what you call strong circumstantial evidence”

*HJ Roberts: “after they re-challenge themselves with aspartame, the symptoms come back, sometimes within minutes. **That’s more than anecdotal.** “That’s reproducing the problem. Many of these ‘aspartame reactors’ have testing themselves multiple times”.*

Jim Bowen says with his patients when they go off aspartame it goes away. Says he developed therapeutic outlooks working with experts on environmental toxicology.

Not “more than” anecdotal

First of all, these various claims are not “more than” anecdotal. They fit absolutely into the very definition of anecdotal. Having a lot of (supposed) people making a claim does not suddenly carry the weight of actual science. The claim must be tested.

Definitions of ‘anecdote’/‘anecdotally’:

From dictionary.com: “non-scientific observations or studies, which do not provide proof but may assist research efforts”

From oxforddictionaries.com: “(of an account) not necessarily true or reliable, because based on personal accounts rather than facts or research”

In other words, it stops being an anecdote when the claims are tested with an actual controlled study. For the case of multiple sclerosis, it does not appear that there is enough scientific plausibility to even warrant a study. As noted at the beginning, the various national MS foundations/groups absolutely do not support this claim. In the case of migraines [controlled](#)

[studies find no link](#) (and sometimes a negative link!) [^{20,21}]. For brain tumors, no link. Seizures, very little link (except those with PKU). So, sure, start with anecdotes. But when the science shows no link, accept it and move on. Of course still follow the advice that applies for *all food and drugs*: If you get ill effects from using it, stop using it.

Relapsing-Remitting Multiple Sclerosis

The [most common form of MS](#) -- 85% of people are initially diagnosed with this, versus 15% of the progressive form -- is what is known as relapsing-remitting MS where the sufferer has occasional relapses, sometimes coming on suddenly over a period of days or even hours. This is followed by long periods, months and often years, of remission with complete recovery. RRMS affects women at a 2:1 ratio to men and it *usually* occurs in the 20s and 30s. After approximately 10 years, but even up to 30 years, later it will usually progress to Secondary-Progressive MS in which there is less remission. [²²]

There is no way to know whether or not the people in the video actually had MS, or if they had the “popular” RRMS early form. But based on the fact that there is simply no scientific evidence of a link between aspartame and MS along with the assumption that those appearing in the video are telling the truth, the way that RRMS shows itself is at least a potential explanation for the apparent ability to make the symptoms “disappear” and reappear very quickly... as this is exactly what RRMS does. Couple that with the belief that aspartame is the “only” thing that changed, and you have a recipe for strong correlation without causation. Depending on the person, RRMS can slowly cause permanent degeneration of function and ability, which seemed evident in some of those in the video.

Also, interestingly, incidence of multiple sclerosis appears to increase as you get further from the equator (though this [trend has apparently gotten weaker](#)) and the female to male ratio is actually growing. I would definitely be very surprised if intake of aspartame also follows a distance-from-equator gradient. [²³]

²⁰ Schiffman, Susan S., et al., 1987. "Aspartame and Susceptibility to Headache," The New England Journal of Medicine, Volume 317, No. 19, page 1181-1185.

²¹ Garriga MM, Berkebile C, Metcalfe DD. A combined single-blind, double-blind, placebo-controlled study to determine the reproducibility of hypersensitivity reactions to aspartame. J Allergy Clin Immunol. 1991 Apr;87(4):821-7.

²² National MS Society. "How Relapsing-Remitting MS (RRMS) Differs from Progressive Courses of MS". Visited May 10, 2011. <http://www.nationalmssociety.org/about-multiple-sclerosis/relapsing-ms/relapsing-remitting-ms-rrms/how-rrms-differs-from-progressive-courses-of-ms/index.aspx>

²³ Alonso A, Hernan M. "Temporal trends in the incidence of multiple sclerosis". Neurology. July 2008. Vol 71, No 2.

Conclusion

This article covered the first 30 minutes of the *Sweet Misery* documentary by Cori Brackett. This part looked at the initial claims that there has been a rising trend in various neurological disorders caused by the toxic byproducts of aspartame. I believe I have demonstrated that these claims are not backed by the scientific evidence. Not only does the scientific consensus not support claims that brain cancer and multiple sclerosis is related to aspartame intake, but the national public and private foundations for these ailments do not support the notion. Additionally, the individual parts of aspartame are contained in much larger quantities in foods that would be considered “harmless” such as fruit and meat.

If you feel weird after consuming aspartame stop consuming it. But millions of us consume it without ill effects. Both sides are anecdotal evidence, not science. The science shows that there is no effect across a broad spectrum.

I plan on doing two more additional articles to cover the full 90 minute movie so that I can be done with aspartame once and for all.