Memorandum

Date June 26, 1997

From Technical Information Specialist (HFS-728)

Subject Summary of Adverse Reactions Attributed to Aspartame

To Health Hazard Evaluation Board

Since 1980, the FDA has received 7259 complaints of adverse reactions attributed to the use of aspartame. Six hundred and forty-nine of the complaints that were received in the early 1980's have differences in the adverse reaction information collected as compared to the remaining reports. Because of these differences, the 649 complaints are generally not included in the summaries of adverse reactions attributed to aspartame. Excluding these 649 reports, from 1980 through 1996, CFSAN received 6610 complaints describing adverse reactions thought to be due to the consumption of aspartame. These complaints were either reported directly to CFSAN, or received from the Nutrasweet (Searle) Company, Aspartame Consumer Safety Network, 700 Club, health professionals, and other interested parties.

For the 4949 (74.9%) complainants who provided information on gender, 3758 (76%) were female and 1191 (24%) were male. For the 3343 (50.6%) complainants whose ages were provided, the peak age group for reports was 30-39 years old, with 864 (25.8%) complaints. All other ten year age groups provided less than 20% of reported complaints.

For the 5014 (75.8%) reports that included information on intensity of the reaction, 537 (10.7%) reactions were classified as severe and 4477 (89.3%) were classified as mild to moderate.

In some reports, adverse reactions were attributed to more than one product type. Diet soft drinks were implicated most frequently; with a total of 3077 (46.6%) complaints, followed by 1764 (26.7%) complaints attributed to table-top sweeteners. Each remaining product type was mentioned in less than 10% of all aspartame complaints (Table 1).

More than one symptom associated with aspartame was described by many complainants. Ninety-one different symptoms were described in total; with 1900

(28.7%) reports for headache being the most frequent, followed by 749 (11.3%) reports describing dizziness or problems with balance, 679 (10.3%) complaints describing a change in mood quality or level, 669 (10.2%) reports of vomiting and nausea, 466 (7.0%) reports of abdominal pain, 374 (5.7%) reports of a change in vision, and 345 (5.2%) reports of diarrhea. Other symptoms were reported by less than 5% of complainants (Table 2).

Of the 4243 (64.1%) reactions that could be classified in terms of consistency of the reaction following ingestion of aspartame, 1395 (32.9%) were Group A events, described as episodic and appeared to occur following consumption of more than one product containing Aspartame. An additional 1151 (27.1%) reports were classified as Group B reactions, because they occurred on multiple occasions following exposure to a specific Aspartame-containing product. A total of 766 (18.0%) reports were classified as group C reactions, with a single episode following consumption of one or more Aspartame-containing products. The remaining 931 (21.9%) reports were classified as Group D, because the adverse reaction did not occur every time the complainant consumed a specific product containing aspartame, or the reaction was deemed unlikely to have been associated with aspartame.

There has been a gradual decrease in reports of adverse reactions to aspartame received over time. Reports are entered into the ARMS system by the year they occur. The trend for reports of adverse reactions to Aspartame has declined from the 1985 peak, when over 1500 adverse reactions were reported to 16 reported reactions during 1996.

In summary, the number of adverse reaction complaints received by the FDA; and the nature of these reports in terms of demographic distribution, severity, strength of association with the product, and symptoms remain comparable to those from previous analyses.

Donna M. Gray

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Table 2. Symptoms attributed to Aspartame in complaints submitted to FDA.[1]

REPORTED SYMPTOMS	NO. OF COMPLAINTS	% OF REPORTS	% OF COMPLAINTS
Headache	1900	28.7%	18.9%
Dizziness/ Poor Equilibrium	749	11.3%	7.5%
Change in Mood	679	10.3%	6.8%
Vomiting or Nausea	669	10.1%	6.7%
Abdominal Pain and Cramps	466	7.0%	4.6%
Change in Vision	374	5.7%	3.7%
Diarrhea	345	5.2%	3.4%
Seizures and Convulsions	298	4.5%	3.0%
Memory Loss	273	4.1%	2.7%
Fatigue, Weakness	251	3.8%	2.5%
Other Neurological	233	3.5%	2.3%
Rash	227	3.4%	2.3%
Sleep Problems	205	3.1%	2.0%
Hives	194	2.9%	1.9%
Change in Heart Rate	193	2.9%	1.9%
Change in Sensation (Numbness, Tingling)	178	2.7%	1.8%
Itching	177	2.7%	1.8%
Grand Mal	174	2.6%	1.7%
Local Swelling	119	1.8%	1.2%
Difficulty Breathing	117	1.8%	1.2%
Change in Activity Level	115	1.7%	1.1%
Oral Sensory Changes	112	1.7%	1.1%
Change in Menstrual Pattern	107	1.6%	1.1%
Other Skin	103	1.6%	1.0%
Localized Pain and Tenderness	101	1.5%	1.0%
Symptoms reported by less than 100 complainants	1678	.25%	16.7%

1. Some consumers described more than one symptom attributed to Aspartame.

Table 1. Distribution of reactions attributed to aspartame by product type.

PRODUCT TYPE	NO. OF COMPLAINTS	% OF RECORDS	% OF COMPLAINTS
Diet Soft Drinks	3077	46.6%	38.0%
Table Top Sweetener	1764	26.7%	21.8%
Puddings - Gelatins	639	9.7%	7.9%
Lemonade	416	6.3%	5.1%
Other	364	5.5%	4.5%
Kool Aid	342	5.2%	4.2%
Chewing Gum	334	5.0%	4.1%
Hot Chocolate	324	4.9%	4.0%
Iced Tea	324	4.9%	4.0%
Frozen Confections	148	2.2%	1.8%
Cereal	122	1.8%	1.5%
Sugar Substitute Tablets	75	1.1%	0.9%
Breath Mints	63	0.9%	0.8%
Punch Mix	45	0.68%	0.6%
Fruit Drinks	24	0.36%	0.3%
Chewable Multi-Vitamins	9	0.1%	0.1%
Non-Dairy Toppings	8	0.1%	0.09%
Fruit, Dried	2	.03%	0.02%