MSG in Infant Formula

We asked whether infant formulas contain processed free glutamic acid (MSG) and processed free aspartic acid - both neurotoxins, particularly toxic to the vulnerable nervous system of the infant.

Results of analyses of five formulas purchased in Canada are shown in Table 1. Brands are listed in alphabetical order. Ingredients of products sold in the United States and other countries may vary. The manufacturer of Enfalac sold in Canada uses the product name Enfamil in the United States.

TABLE 1

Test results in milligrams per ounce (oz.)

	Aspartic Acid	Glutamic Acid
Carnation Good Start	.028	.077
Enfalac Iron Fortified	.019	.390
Enfalar Nutramigen Hypoallergenic	5.505	29.671
Isomil Soy Formula	.039	.025
Similac Lactose Free	.006	.007

Taking an average of the formula requirements given by Mead Johnson Nutritionals we find that the average requirements would be:

1-week-old—8 bottles of 3 oz. formula = 24 oz. formula per day

3-month-old—4.5 bottles of 7 oz. formula = 31.5 oz. formula per day

Tables 2 and 3 show the amounts of neurotoxic glutamic acid and neurotoxic aspartic acid that would be ingested daily by an average infant on each of the analyzed formulas for ages 1 week and 3 months.

TABLE 2

Grams of aspartic acid and glutamic acid that would be ingested daily by an average 1-week-old infant

	Aspartic Acid	Glutamic Acid	Total
Carnation Good Start	.0007	.0019	.0026
Enfalac Iron Fortified	.0005	.0096	.0100
Enfalac Nutramigen Hypoallergenic	.1348	.7263	.8611
Isomil Soy Formula	.0010	.0006	.0016
Similac Lactose Free	.0002	.0002	.0003

TABLE 3

Grams of aspartic acid and glutamic acid that would be ingested daily by an average 3 month old infant

	Aspartic Acid	Glutamic Acid	Total
Carnation Good Start	.0009	.0025	.0034
Enfalac Iron Fortified	.0006	.0125	.0131
Enfalac Nutramigen Hypoallergenic	.1769	.9533	1.1302
Isomil Soy Formula	.0012	.0008	.0020
Similac Lactose Free	.0002	.0002	.0004

FORMULA SOLD IN THE USA

In so far as we know, there has been no study of quantities of neurotoxic amino acids (glutamic acid, aspartic acid, and L-cysteine) present in infant formula sold in the USA. So we picked two cans of formula off our grocer's shelves to illustrate the fact that formula sold in the USA has its share of MSG-containing ingredients. The ingredients are shown in Table 4. Those known to contain MSG or create MSG during processing are shown in bold. L-cysteine is noted in italics because it, like glutamic acid and aspartic acid, is a neurotoxic amino acid.

TABLE 4

Nestlé Carnation Good Start (Easy to Digest Comfort proteins): Water, enzymatically hydrolyzed reduced minerals whey protein concentrate (from cows's milk), vegetable oils (palm olein, soy, coconut, high-oleic safflower), lactose, corn maltodextrin. . .
Enfamil Nutramigen Hypoallergenic Formula: Water, corn syrup solids. . . casein hydrolysate, modified corn starch. . . carrageenan, *L-cysteine*. . .
MeadJohnson Enfamil with Iron: Reduced minerals, whey, nonfat milk...carrageenan...

SUMMARY

The Canadian Study leaves no room for doubt that ingredients that contain processed free glutamic acid (MSG) and free aspartic acid — known neurotoxins— are used in baby formula. The fact that neurotoxins are present in baby formula is of particular concern since the blood brain barrier is not fully developed in infants, allowing neurotoxins to be more accessible to the brain than is the case in healthy adults.
The amounts of aspartic acid and glutamic acid found in the formulas analyzed in the Canadian Study have been listed separately in the tables. However, in studies using experimental animals, neuroscientists have found that glutamic acid and aspartic acid load on the same receptors in the brain, cause identical brain lesions and neuroendocrine disorders, and act in an additive fashion.

You will note that the level of neurotoxins found in the hypoallergenic formula was far greater than the level of neurotoxins found in the other formulas. In reviewing the literature on hypoallergenic formulas, we have found short-term studies that concluded that hypoallergenic formulas are safe because babies tolerated them and gained weight. However, we have not seen any long-term studies on the safety of hypoallergenic formulas. We believe that well designed long term studies would demonstrate that infants raised on hypoallergenic formulas, as compared to infants who are breastfed or fed on non-hypoallergenic formulas, will exhibit more learning disabilities at school age, and/or more endocrine disorders, such as obesity and reproductive disorders, later in life. Long-term studies on the effects of hypoallergenic formulas need to be done.

During the 1960s, the food ingredient "monosodium glutamate" was routinely added to baby foods. The industry "voluntarily" ceased the practice after Congressional hearings in which concerned researchers warned of serious adverse effects. However, for some years following the elimination of "monosodium glutamate," hydrolyzed proteins were used in place of "monosodium glutamate." Hydrolyzed proteins always contain MSG.
Many consumers now know to avoid baby foods with hydrolyzed proteins. Yet how many parents realize that MSG lurks in every bottle of formula given to their infants? Babies on hypoallergenic formulas receive about 1 gram of total neurotoxins per day, a level at which many MSG-sensitive individuals experience adverse reactions.

About the Author
Jack Samuels and his wife, Adrienne Samuels, PhD, are founders of Truth in Labeling, a nonprofit organization dedicated to accurate labeling of MSG and the removal of MSG. www.truthinlabeling.org.