

EDITOR'S NOTEBOOK/Bernard Rimland, Ph.D.

Dimethylglycine (DMG), a nontoxic metabolite, and autism

DMG is a rather sweet-tasting substance that was described in a recent article in the *Journal of Laboratory and Clinical Medicine* (1990, 481-86) as a "natural, simple compound with no known undesirable side effects." The article did not pertain to the use of DMG in autism, but instead described an experiment in which DMG was used to try to enhance the function of the immune system of laboratory rabbits. It worked—the immune systems of the animals given DMG showed 300% to 1000% better response to infection than the controls.

DMG is readily available in many health food stores. It is legally classified as a food. It does not require a prescription. It is manufactured by several companies, and comes in various forms, most commonly in tiny foil-wrapped tablets about 1/3 the size of an aspirin.

The taste is pleasant and children chew the tablets readily. At about 25 cents per tablet, the cost is minimal, since only one to three tablets a day are usually taken (three for adults).

"So far so good," you may be saying, "but what does this have to do with autism?"

In 1965, two Russian investigators, M.G. Blumena and T. L. Belyakova, published a report showing considerable improvement in the speech of 12 of a group of 15 mentally handicapped children who had not been able to use speech to communicate. The children had been treated with a substance variously known as calcium pangamate, or pangamic acid, or "vitamin B15." In addition to enriched vocabulary, the children began to use simple sentences, their general mental state improved, and there was better concentration and interest in toys and games. Subsequent research has shown the essential factor in calcium pangamate to be DMG.

Soon afterward psychiatrist Allan Cott visited Moscow and brought back a small supply of pangamic acid, which he tried on a number of children in his practice, some of whom were autistic. Many of Cott's patients responded in the same way the Russian children had. One mother wrote, "It's the most exciting thing I've ever experienced. He was repeating words and he answers questions now . . ."

At about this time pangamic acid, or B15, entered the U.S. market. Chaos ensued. Every manufacturer touted his product as "the original Russian formula." There were at least four different formulas on the market, partly, it is believed, as a result of deliberate deception and obfuscation on the part of the Russians. DMG, in small amounts, was a component of some of the formulas. The FDA stepped in and lengthy legal battles ensued. One outcome is that the term B15 was outlawed. (Although DMG resembles the B vitamins in many ways—it is found in the same foods, for example—there are no known overt symptoms characteristic of a DMG deficiency.)

The significant outcome of the legal battles is that the sale of DMG is now permitted, as long as it is not referred to as a vitamin, and as long as it is sold as a *food* and not a drug.

I have been following the pangamic acid-DMG situation for almost 20 years. I have mentioned it in some of my lectures, and told parents and professionals about it in conversations and correspondence. Always I would ask, "if you try it, please let me know what results you see, even if *no* improvement is found."

I am now so firmly convinced that DMG is helpful to a substantial proportion of autistic children and adults that I have decided to "go public" in the *Autism Research Review International*—to tell people about it freely and openly, so they may try it if they wish.

Some who hear of this boldness may be sagast: "Where are the double blind placebo-controlled scientific studies showing it to be effective in autism?" they will ask. My reply is simple. "There aren't any, and none are needed." There are, of course, numerous double blind non-autism studies of DMG in the scientific and medical literature, using not only humans, but many kinds of laboratory animals, often given very large amounts of DMG. As noted earlier, no adverse side effects have been found with even massive intakes of DMG. (I say "intakes" rather than "dosages" because "dosage" implies that DMG is a drug, which it is not.)

Since no company has the exclusive right to make DMG, competition keeps the price—and profits—down. Thus there is almost no chance that anyone will sponsor a \$200,000 double blind study of DMG on autistic children. A parent can buy 30 tablets for about \$8.00. That is a sufficient supply, even for an adult given three or more tablets a day, to determine, in most cases, if it will be helpful. If it is felt to be helpful, fine. If not, you have wasted \$8.00 (except for the boost given to the immune system).

To help the parents receive unbiased input, I usually tell them to refrain from mentioning to teachers, grandparents and others in the child's environment that DMG is being tried. I have *numerous* letters in my files saying, "Johnny's speech therapist says he has made more progress in the last two weeks than in the last six months. As you suggested, we had told no one at his school that we were trying DMG."

I am 100% in favor of double blind studies on drugs with considerable potential for harm, such as fenfluramine, Haldol, or the like. However, it doesn't make sense to insist on such refinements before trying a perfectly safe substance such as DMG, apple pie, or chicken soup.

If DMG is going to work, its effects will usually be seen within a week or so, though it should be tried for a few weeks or a month before giving up. In some cases

dramatic results have been seen within 24 hours: A Los Angeles mother was driving on the freeway, three-year-old Kathy in the back seat, five-year-old mute autistic son Sammy in the front. DMG had been started the day before. Kathy began to cry. Sammy turned and spoke his first words: "Don't cry, Kathy." The mother, stunned, almost crashed the car.

A similar case: A Texas mother secured her six-year-old mute autistic daughter in the front seat, then, before driving off, turned to tell her husband, "I'll drop Mary at the babysitter's house first." Mary, on DMG for two days, startled her parents with her first words: "No! No babysitter!"

Although speech is the most notable positive change in those children helped by DMG, behavioral improvement is also often reported. One father gave his son one DMG tablet per day without mentioning it to the school. He later requested a copy of the school's detailed record of his son's day-by-day behavioral transgressions. The correlation between outburst-free days and the use of DMG was unmistakable.

An article in the *New England Journal of Medicine* (October 1982) reported that a 22-year-old mentally retarded man who had 16 to 18 seizures per week on standard anticonvulsants, experienced only three seizures per week while on DMG. Two attempts to remove the DMG dramatically increased seizure frequency.

Last year I sent information on DMG to Lee Dae Kun, Director of the Pusan (Korea) Research Center on Child Problems. He tried the DMG on 39 autistic children, ages three to seven, for three months, with the following (summarized) results:

Benefits seen:

Yes..... 31 (80%)

No..... 8 (20%)

(Improved speech, eating, excretion, willingness, etc.)

8 children had difficulty sleeping for weeks 1 and 2.

6 children became more active for weeks 1 and 2.

Lee Dae Kun wrote that the parents, usually skeptical, saw the improvements clearly. He concluded that DMG is very beneficial for children with autism, even if it is not a cure.

I have limited information about the use of DMG with older autistic persons. One mother of a 26-year-old who squeezed things (people, TV sets, etc.) very hard when frustrated, tried DMG, quite skeptically, to see if it would stimulate his very sparse speech. It didn't, but brought remarkable improvement in his frustration tolerance. "Even my husband, who was even more skeptical than me, now is a believer," she wrote.

DMG certainly doesn't always help, and it certainly is not a cure, but it is certainly worth trying, in my humble opinion.

If you try it, let me hear from you.