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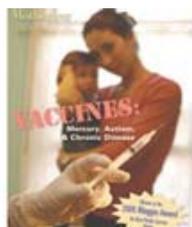


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**Balancing Biochemistry: An Interview with Stephanie Cave**

By Amy Morrison

Issue 115, November/December 2002

*This interview was conducted on August 18, 2002, by Amy Morrison, Mothering's associate editor.*

MM: How and when did your medical career begin?

SC: I'm a board-certified family physician and started my practice in 1986. Dr. Amy Holmes and I have an integrated medicine practice in Baton Rouge, Louisiana, which just means that we integrate everything that the patients need, hopefully in a nontoxic manner. I went to medical school when I was 36. At the time, I had a ten-year-old son with ADHD (Attention Deficit Hyperactivity Disorder). I've always worked toward a practice where I could integrate metabolic medicine-nutritional therapy and normalizing biochemistry-because it works so well. And I keep telling people you can't help but get better if your chemistry becomes more normal.

MM: So your practice has evolved primarily into treating the biochemistry?

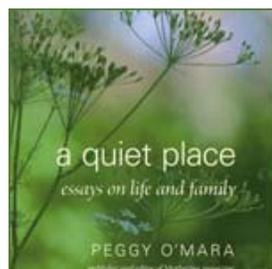
SC: Yes. We do laboratory determinations of amino acids and trace minerals and vitamins in the blood. Then we put in what's missing, working with each child individually. In the 1980s I worked primarily with ADD (Attention Deficit Disorder) children. In the mid-1990s, I started seeing autistic children. I got a protocol from the Autism Research Institute in San Diego, which happened to be the same one that I was using with ADD children. And it worked beautifully for the autistic children, too. It wasn't until the mid-1990s that we realized that these children had a problem with metal.

MM: What were you seeing?

SC: We started testing hair, urine, and blood samples around that time. We found low levels of mercury in the hair and high levels of several other metals like aluminum, antimony, arsenic, and tin in the blood and urine. These children retain mercury, which is toxic to them.

MM: Did you find these metals across the board in children who exhibited some form of developmental delay?

SC: Yes. The children fell within the autism spectrum, including those with



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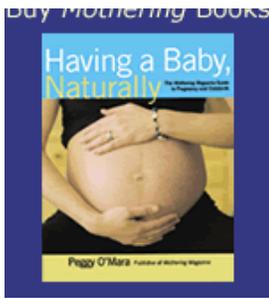
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speech and language delay, ADD, ADHD, PDD-NOS (Pervasive Development Disorder Not Otherwise Specified), Asperger's Syndrome, and Autism DSM-IV. I feel they are part of the same spectrum because they all seem to improve dramatically when we start treating them metabolically and actually detoxifying the metal. They improved as we did repletion of nutrition and improved bowel-bacteria balance. But when we started pulling metal, all of them started turning around. And the earlier they were treated, the greater the improvement.

MM: What do you suspect are the sources of the metals you are finding?

SC: Tin may come from some stannous fluoride toothpastes and dental amalgams. The antimony comes from flame-retardant sleepwear and baby sheets. The arsenic is from food and water. In addition, treated wood, used to build decks or swing sets, contains high levels of arsenic. However, these children don't have to be around a high exposure to metal--they just have to be around metal per se, because they do not have the biochemistry to aid them in the removal of metals. I believe that's because we have overloaded them with metal through the vaccines. We give them so much metal early in life, specifically through the hepatitis B vaccine given at birth, that their bodies keep producing metallothionein, which is what helps us to remove metals from the body. After their biochemistry is depleted, they end up with an inability to handle any metal at all.

Biochemist Bill Walsh of the Pfeiffer Treatment Center made this discovery. He tested 503 autistic children and found that 91 percent had a deficiency of metallothionein, whereas normal children do not. [See Mothering 112 (May-June 2002): 30.]

MM: What about mercury and aluminum? What's the source of these exposures?

SC: Infant vaccines contained mercury and aluminum. The epidemic with autism really started during the late 1980s and early 1990s, and it seemed to coincide with the time that the vaccines for Hib (Hemophilus influenzae type b) and hepatitis B were added to the vaccine schedule--Hib around 1988, hepatitis B in 1991. The children had already had the DTP (diphtheria-tetanus-pertussis) vaccine through the 1980s, and the MMR (measles-mumps-rubella) was subsequently added; but we did not realize much of an upswing until the hepatitis B vaccine was added at birth.

MM: Parents are frequently told that the amount of mercury given to infants in vaccines is a "trace amount" and nothing to get upset about.

SC: Well, what is a safe level of a poison? Twelve and a half micrograms of ethyl mercury at birth is 25 times the EPA "safe level." The 62.5 mcg of ethyl mercury that a 10-pound infant was receiving at two months of age can be up to 125 times the EPA "safe" level. That's a seriously toxic dose of mercury. This metal is especially hard on premature infants. The post-vaccination level of mercury in the premature infant's blood can rise to ten times that of the term infants.

MM: How does mercury specifically affect the immune system and the enzyme system?

SC: Mercury is a neurotoxin; it inhibits brain function in a variety of ways. It also suppresses the immune system to a certain degree. When hepatitis B began to be administered at birth during the 1990s, we started seeing ear infections beginning around two weeks of age, which was almost unheard of before that. We started seeing many more sick children in that first month of life. We also find that these children make antibodies against their own tissue. They have antibodies to the basic myelin protein in brain tissue. These antibodies disappear after the children are treated and the mercury is eliminated. In addition, the children combine casein from dairy protein and gluten from wheat, oats, barley, and rye to naturally occurring morphine in the body. These gliadomorphin and casomorphin peptides make the children spacey and irritable. The enzyme DPPIV that would normally break down these peptides and eliminate them is inactivated by mercury and heavy metals. Subsequently, these children have higher levels of morphines in the body.

MM: There are reports of autistic children who consumed copious quantities of milk and wheat. Now we know why--they were self-medicating in the only way they could.

SC: Exactly. So one of the primary treatments we do is to make sure they're



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on a casein-free, gluten-free diet. That can make a 60 percent or greater difference in their behavior. It's amazing to see the difference in behavior when the diet is changed.

MM: Would you explain the DMSA (2,3 Dimercaptosuccinic Acid) treatment you use for detoxification?

SC: DMSA binds to the mercury and removes it from the body. It is approved by the FDA for lead detoxification. As it circulates through the body, metals attach to it and are then excreted in the urine. It pulls out mercury, aluminum, antimony, and arsenic. My colleague Amy Holmes did a study that showed that autistic babies had very little mercury in their hair, ten times less than normal children. This was at a time when we knew that the exposure was very high because of the vaccines that were given.

MM: So they were retaining it in the body?

SC: Yes. A lot of people who were looking for high mercury in the hair of the autistic children didn't find it and thought that the theory was wrong--they assumed that mercury in the hair meant that there was mercury in the body. But in fact the mercury was being retained. We know it is there when we treat because we can measure the amounts excreted in the urine.

MM: Are there other sources of mercury?

SC: I think it starts in utero, because we found that more than 53 percent of our mothers of autistic children were Rh- negative and received an immunoglobulin preserved with thimerosal during pregnancy. In contrast, only 3 percent of our mothers with normal children were Rh- negative. This is a very significant difference, as it demonstrates an in-utero exposure to ethyl mercury; the metal from this gestational exposure can pass through the placenta to the baby. We also did a study on amalgam fillings (49.6 percent mercury) in mothers and found that the mothers of autistic children have significantly more of these fillings than the mothers of normal children. That's another intrauterine source. Yet another in-utero exposure comes from the flu vaccine, currently recommended for all pregnant women past 14 weeks gestation.

MM: So a woman's mercury burden has a direct effect on the fetus she is carrying.

SC: Yes, it appears to. We are telling pregnant women to be careful with their seafood intake, and nursing mothers as well--if they are ingesting seafood that contains mercury, it will show up in the breastmilk.

MM: What is the rationale of giving the vaccines at birth versus waiting until a child is two years old?

SC: A lot of infections can be picked up very early. For instance, the critical time for contracting hemophilus is six months of age, so the hemophilus vaccine is given early. But there's no rationale for hepatitis B being given at birth. That vaccine is for preventing a sexually transmitted disease. If a mother is hepatitis B positive, that's different; it has always been the case that the infant would then receive hepatitis B at birth. But if the mother is negative for hepatitis B, there's no reason in the world to give a child that vaccine. Most of the physicians on the committees that approve vaccines are infectious disease specialists not immunologists, so they're looking at eliminating disease. They have access to a child more readily at birth than any other time. They can cover more children if they give the vaccine at birth.

Hepatitis B is the first genetically engineered vaccine we've ever had, and it had five days of safety study! Giving it to a newborn baby was a big, big risk, and I think it still is, even with the mercury taken out of it. We see more autoimmune processes in these ASD babies, and we're not sure where that's coming from--mercury, the hepatitis B itself, or the MMR.

MM: Five days of safety study seems inadequate for a vaccine given at birth to nearly every baby around the world.

SC: Yes, we just need more safety studies. We're not asking for people not to give vaccines, we just want it done more safely.

MM: We hear two conflicting theories to explain the increase in autism: 1) It is due to better diagnosis skills rather than an actual increase in numbers, and 2) It is due to a genetic factor only.

SC: But these children would not have gone undiagnosed in the past. If you have a child who, within a week's time, loses speech, eye contact, and the ability to socialize with other children, and starts hurting himself, it's going to be diagnosed as something. It would be pretty hard to miss that.

And this is regressive autism; it's not from birth. It happens sometimes within two days or a week. When the parents come in, the histories are so similar. We try not to suggest anything when we're taking a history. We just say, "What happened? What did you find? Did the child develop normally?" And the mother will say, "Yes, until..." and we know what she is going to say next: "...until some vaccine was given around 15 to 18 months." Doctors used to give the MMR on the same day as the DTP and the Hib, and that was usually the time the regression started. They've now shifted the schedule--the MMR is being given at 12 months.

Now we know just what a mistake it is to give infants a live attenuated virus (MMR) at the same time you are giving them ethyl mercury, which suppresses their immune system. The big question is, is it the MMR or the thimerosal? I think both are contributing factors.

There is a genetic predisposition to regressive autism, but I don't think it's a straight genetic problem, because I don't think we would have such a thing as a genetic epidemic. It's hard to separate out the genetic versus the environmental. I don't think you can. I think you've got to say that it's both.

MM: I wonder about parents with little financial resource and/or emotional and family support. How can they help their children?

SC: The biggest problem is that there are so few physicians who are actually treating ASD children. They are reluctant to make it part of their practice, unless they themselves are parents of autistic children. The Autism Research Institute website ([www.autismresearchinstitute.com](http://www.autismresearchinstitute.com)) has a list of DAN (Defeat Autism Now) doctors who do treat these children.

MM: Could you talk about your successes in treatment? That must be gratifying.

SC: It is. And it's a tough practice, physically--there are days when we come out of there with bites and scratches and bruises, and we have to put the office back together, but for the most part, we know the children are going to improve a whole lot. In a study last year, we found that about 40 percent of the children that we looked at (out of a total of perhaps 120) showed marked improvement, particularly in the younger age group. In most of the ones that resolve, the children go from not having any speech or eye contact to complete dialogue with good eye contact. It's the two, three, and four year olds that resolve most quickly. Within about six to eight months time, they get to a point where you can't tell that they were ever autistic. It's amazing. The parents come into our office in tears; they'll fly across the country just to show the children to us.

MM: Theoretically, if vaccines were thimerosal-free and in-utero mercury exposures were eliminated, would we see a drop in autism spectrum disorders?

SC: "Theoretically" is the appropriate word. In late 1999, there was a soft recommendation made by the FDA to industry, requesting that infant vaccines be manufactured without thimerosal by 2001. But we still have some on the shelf; there was no recall ever done. And I think we still only have one brand of DTaP (diphtheria-tetanus-a cellular pertussis) that is thimerosal-free or made in single-dose vials. If it comes in a multi-dose vial, then the vaccine contains thimerosal. The flu vaccine, presently recommended for pregnant woman, contains thimerosal and they are now talking about recommending it for every child over six months of age. Also, over the counter and prescription eye and nose drops for infants are yet another source. But in answer to your question, I think there will be a peak in this autism epidemic in about four years, when the two year olds that we're seeing reach six and are counted in school populations. (Children aren't counted until they enter school.) Then, I think, we will begin to see a downward trend.

I spent the weekend with my newest grandchild and noticed how even-tempered she is. She slept 12 hours each night, took two naps each day, and didn't cry unless she was hungry. That's the way children used to be. But through the 1990s, the children were irritable. I can stand in an airport now, look around at the children, and tell you almost when they were born and how

many micrograms of ethyl mercury they've had, just by the irritability I see. I think calm children who develop more quickly will be coming back. I think we've lost sight of what the normal child could be during the past ten years.

*Stephanie F. Cave, MS, MD, FAAFP, presently practices in Baton Rouge, Louisiana. Specializing in the metabolic treatment of patients, she and her colleague, Dr. Amy Holmes, are presently treating more than 1,900 children with autism spectrum disorders. Both travel extensively throughout the country speaking about autism to groups of parents and professionals. Cave is the author of What Your Doctor May Not Tell You About Children's Vaccinations (Warner Books, 2001). She is married to attorney Donald Cave and has three sons and six grandchildren.*

For more information on vaccines see the *Mothers* Reprint: [\*\*Vaccines: Mercury, Autism and Chronic Disease\*\*](#)

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