

## **AUTISM - A CASE HISTORY**

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Joey, age 3, was diagnosed autistic. He did not speak or interact with anyone, threw tantrums daily and was severely constipated. His first hair mineral analysis showed a calcium level of 66 mg% (ideal is 40), magnesium of 5 mg% (ideal is 6), sodium of 4 mg% (ideal is 25) and potassium of 16 mg% (ideal is 10).

### **VITAL RATIOS**

The hair calcium, magnesium, sodium and potassium levels indicate a mild slow oxidizer pattern. This is a tendency for somewhat underactive thyroid and adrenal glandular activity. This is uncommon for a three-year-old as most children of this age are fast oxidizers. It indicates some degree of adrenal exhaustion, even at the age of three.

Joey's calcium/magnesium ratio was slightly high, which can indicate that Joey was overeating on carbohydrate foods. The sodium/potassium ratio was very low at 0.4:1. This indicates excessive tissue breakdown and is also associated with chronic infections, glucose intolerance, kidney and liver stress, and feelings of frustration, resentment and hostility.

### **MANGANESE AND IRON**

Joey had a severely elevated manganese level at 0.123 mg% (ideal is 0.04) and an iron level of 2.4 mg%. I consider any iron level over about 2 mg% to be somewhat elevated.

High iron and high manganese are often associated with behavioral problems. High iron is associated with anger and rage. Iron settles in the amygdala, a portion of the brain associated with anger. 'Manganese madness' is a term used to describe the toxicity condition seen in manganese miners.

### **ALUMINUM**

Joey's aluminum was also quite high at 3.66 mg% (ideal is 0.05 or less). Aluminum has been implicated in Alzheimer's disease and perhaps other dementias. However, we find that aluminum can affect mental functioning even in children. It is also reversible if it can be eliminated from the tissues.

In our experience, aluminum, iron and manganese toxicity are found together. If any one of these are elevated on a hair mineral analysis, the other two are also present in excess, even if they are hidden. These three minerals are also often eliminated together on nutritional balancing programs.

### **LEAD AND ZINC**

Joey also had an extremely elevated lead level at 1.54 mg% (ideal is 0.1 or less). Lead toxicity is

associated with over 100 symptoms. Prominent among these are hyperactivity, lowered IQ and emotional and behavioral abnormalities. Lead interferes with calcium metabolism, blood formation and a number of critical enzyme systems.

Joey also had a zinc level of 8 mg%. This is very low, with the ideal being between 15 and 20 mg%. Zinc is critical for over 50 functions. Low zinc is associated with emotional instability, delayed development, slow growth, impaired digestion, skin problems and impaired protein synthesis.

## **A CORRECTIVE PROGRAM**

The daily nutrient program for Joey included two divided doses of a multivitamin for slow oxidizers, as well as 10 mg of zinc, 1 mg of copper and about 3 mg manganese to help correct his low sodium/potassium ratio.

Let us discuss giving manganese when the level is this high. Some authorities believe that manganese supplements should not be given when manganese is elevated on a hair mineral analysis. However, we consistently find that giving a biologically available form of manganese will help the hair manganese level return to normal, as occurred with Joey. His elevated manganese is in a bioavailable form. Giving available manganese is helpful in these cases to raise the sodium level and perhaps to provide needed bioavailable manganese as well.

Joey's daily nutrients also included about 200 mg of calcium and 200 mg magnesium. Calcium is an excellent lead antagonist, and both calcium and magnesium are sedative minerals that can improve hyperactive behavior. Magnesium is helpful for many cases of constipation. Joey also took a small amount of vitamin C and E to help raise his sodium level. Vitamin C can help as a chelator of excessive metals.

## **DOSING CHILDREN**

These dosages of minerals may seem large for a three-year-old child. However, we find that often children do well on and require somewhat larger doses than one would calculate for a child based simply on weight or age. This is an important principle for obtaining the best results with young children.

## **RESULTS**

Joey's parents made sure he ate well and took his supplements. He improved dramatically. Within four months on a nutritional balancing program he began to speak, his temper tantrums were greatly reduced and he now interacts with people. He will be able to attend at regular kindergarten. He is also no longer constipated.

Often the process of correction takes longer, up to several years, and it is often less dramatic. In this case, the chemistry shifted quickly and results followed. We never know which mineral imbalance or other factor is most important and when the body will address that factor. Also in some cases emotional difficulties at home can significantly slow down progress in rebalancing body chemistry.

## **RETEST MINERAL ANALYSIS**

A retest mineral analysis after Joey was on supplements for four months showed some surprising changes. The electrolyte pattern looked worse in some ways! Calcium was 56 mg%, magnesium

was 31 mg%, sodium was 16 mg% and potassium rose to 59 mg%.

Joey became a mixed oxidizer with a fast thyroid ratio (calcium to potassium ratio less than 4:1). A faster oxidation rate means Joey's energy level improved. This is excellent for general healing. In hyperkinetic children, however, more energy at times means more acting out behavior because more energy is available to the body. This was not the case with Joey, however, as his behavior calmed down.

The calcium/magnesium ratio became extremely low at 1.8:1. This is often due to a magnesium loss. It could have been an elimination of magnesium that for some reason could not be used by the body. This type of change looks worse, but usually resolves itself on later tests.

## **THE SODIUM/POTASSIUM RATIO**

Joey's sodium/potassium ratio also became much more imbalanced at about 0.27:1. This is extremely low and usually indicates severe protein breakdown or catabolism. Joey showed a pattern we call a double inversion. This is a low ratio of calcium to magnesium combined with a low ratio of sodium to potassium. The double inversion pattern reinforces the low sodium/potassium ratio pattern, associated with excessive tissue breakdown, chronic infections, liver and kidney stress, glucose intolerance and feelings of frustration, resentment and hostility.

In this regard, we have found that on a corrective program, at times the body must go through a stage of breaking down poor quality tissue. This is tissue that may contain toxic metals or toxic chemicals, or tissues infected with bacteria or viruses.

When cells are broken down, potassium and magnesium are released, as these are the primary intracellular minerals. This release is associated with temporary higher hair readings of these two minerals. This in turn can cause a lower sodium/potassium ratio and a lower calcium/magnesium ratio as well.

## **OTHER CHANGES**

On the retest, Joey's lead level was about half of the level on the first test at .84 mg% and aluminum was about 1/3 of his previous test at 1.10 mg%. Manganese was down to 0.078, which is still slightly elevated but much better. Iron also declined from 2.4 to 1.4, which I consider a more normal reading. These are all excellent changes.

## **THE ZINC MYSTERY**

Joey's zinc level did not change from the first test to the second. In both cases, the reading was a very low 8 mg%. This occurred in spite of Joey taking a substantial amount of zinc for four months. How can this be?

There are several explanations. First, we know that our bodies will often keep the tissue zinc level low to help raise the tissue sodium level. In Joey's case, the sodium/potassium ratio was extremely low. The body may not have absorbed the zinc he took to keep the sodium level up, which in turn helps maintain the sodium/potassium ratio. Dr. Eck called this phenomenon a defender. That is, zinc stayed low to defend the sodium/potassium ratio.

Another possibility is that zinc was simply not well-absorbed during this period of time for other reasons. Alternatively, zinc was absorbed, but used up as fast as it was being given.

Finally, we know that zinc is a vital mineral that replaces toxic metals in enzyme binding

sites during healing. The zinc level in the hair may have remained low because the zinc Joey took was absorbed and incorporated into the tissues to replace toxic metals that were eliminated. Thus, no extra zinc found its way into Joey's hair.

By persisting in providing Joey with supplemental zinc in the correct amount, eventually the hair level will rise in our experience. This will mean he is re-establishing his normal tissue stores of zinc.

### **DOES MERCURY CAUSE AUTISM?**

Some health authorities claim that mercury toxicity is the cause of autism. Joey's mercury level was a very low 0.002 mg% on the first test. It increased five times to 0.01 on the second test. This is still very low reading.

We know that many toxic metals are not revealed on the first hair mineral analysis. They are revealed later as they are mobilized from storage sites deep within the body. Time will tell if Joey will start to eliminate more mercury on future retests.

However, it is clear that other toxic minerals such as lead and aluminum, or vital minerals in excess including manganese and iron, probably played important roles in his behavioral problems. Deficiencies in vital minerals such as zinc also most likely contributed to Joey's symptoms.

In our experience, it is usually incorrect to blame symptoms on just one metal, as most people have combinations of imbalances.

### **CONCLUSION**

This case illustrates so many principles that it bears rereading a number of times.

Perhaps most important, it confirms that autism is not simply an incurable or 'genetic' conditions requiring years of drug therapy to control the symptoms. A hair mineral analysis showed severe mineral imbalances. By following the principles of test interpretation and program design based on the brilliant work of Dr. Paul C. Eck, results were most gratifying.

Although in some ways the retest hair analysis looked worse, another principle is always to ask the patient (or parents in this instance) about symptomatic improvements. In this case, these changes were amazing, reminding us that mineral analysis results may not correlate with symptoms. Each test uncovers deeper layers of imbalances, and at times the picture may not correlate with how the patient feels. The test results can lag symptomatic changes, or at times test results can anticipate symptom changes as well.