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**Autism and PPD:
Comprehensive Medical Management with Heavy Metal
Detoxification Produces Salutary Benefit**

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Autistic spectrum disorder (ASD) and related pervasive developmental disorder (PDD) exhibit diverse symptom patterns that perplex the most competent practitioners. Our comprehensive management strategy incorporating heavy metal removal has produced substantive and lasting benefits for pediatric ASD/PDD subjects.[1]

In our collective practices, we have seen more than 2,000 ASD/PDD cases over the past five years. Our protocols for managing these children emphasize (1) dietary reform that can extend to oligoantigenic diets; (2) aggressive gastrointestinal support with nutrients and probiotics; (3) systemic support with vitamins, essential minerals, additional antioxidants and the omega-3 fatty acids EPA and DHA; and (4) pharmaceuticals as necessary. This comprehensive approach has positive results, but benefits are limited and tend to plateau. However, upon adding the removal of toxic metals, the heightened degree of benefits was dramatically obvious.

DMPS (2,3-dimercapto-1-propane sulfonate) is a dithiol compound safely employed for heavy metal detoxification over more than 4 decades.[2] It is particularly effective in metal-induced developmental toxicity[3] and depletes toxic metals without inducing damage to the renal system or other organs.[4,5]

Recent development of a specifically formulated transdermal DMPS complexed with reduced glutathione and stabilized especially to prevent oxidation (TD-

DMPSTM) allows for convenient dosing by applying a small amount of cream onto the forearm. Since DMPS also removes essential minerals, the regimen applies TD-DMPSTM every other day with oral supplements of essential minerals on the opposing days. We routinely monitor toxic metal and essential mineral excretion using RBC, urine, fecal and hair samples, adjusting mineral supplementation as necessary.

The prescribed daily dose of TD-DMPSTM is 1.5 mg/kg b.w. as a single application, not to exceed 60 mg daily except on challenge days. Prior to starting treatment, a DMPS challenge that used twice the normal TD-DMPSTM dose (not to exceed 120 mg) was administered, followed by urine, fecal, RBC and hair sample collection. Specimens were analyzed for metals by ICP-MS (Inductively Coupled Plasma-Mass Spectrometry), performed by Doctor's Data of St. Charles, Illinois, USA. TD-DMPSTM challenge with subsequent urine, fecal, hair and blood sampling was repeated every 2 months, as mandated by the ongoing detoxification protocol.

Following each TD-DMPSTM challenge, heavy metals appeared in various samples collected. In the majority of cases, as early as 2-4 weeks after initiating TD-DMPSTM parents noticed improvements in their children. The most marked and lasting improvements required compliance with the complete comprehensive program. In a minority of cases, initial TD-DMPSTM triggered a minor localized skin rash that resolved in less than a week.

Most often the first improvement observed following TD-DMPSTM was in speech. Facility with one or two words could expand to speaking sentences, sometimes within weeks. Communication with parents rapidly improved, as did social interactions with siblings and children at school. Curiosity about the world reappeared or intensified. Writing, drawing, and other academic performance improved, with parents, teachers, caretakers and extended family often surprised at the rapid progress. Growth spurts often occurred. Uniformly, TD-DMPSTM treatment added a dimension of improvement in these children significantly superior to our basic comprehensive program or other extant protocols.

Symptom improvement following TD-DMPSTM treatment was preceded by appearance of heavy metals in the specimens collected. The reported panel lists 15 metals—aluminum, antimony, arsenic, beryllium, bismuth, cadmium, lead, mercury, nickel, platinum, thallium, thorium, tin, tungsten, and uranium. The samples collected subsequent to TD-DMPSTM challenge exhibited highly

individualized toxic metal contents. To facilitate assessment, two of us (RB and PK) examined 28 cases in depth.

All said patients had independent, 3rd party ASD or PDD diagnoses from qualified practitioners, with ages ranging from 2-11 years upon admission. On average, their first TD-DMPSTM challenge excreted more than 7 different toxic metals (range 2-12). Arsenic was most often seen (100%) on first challenge. Cadmium, nickel and tin were next (86%). Subsequent challenges resulted in some metals declining while others waxed and waned in quantity.

Mercury appeared at initial urine challenge in 16 of 28 cases (57%), but in subsequent challenges, became evident in all except one (96%). The exception, a 5-year-old female, showed no detectable urinary mercury after 4 challenges but did show marked clinical improvements while manifesting high, aluminum, cadmium and nickel. However, further review revealed increasing mercury levels in fecal and hair samples during the same time period.

Our clinical experience with ASD/PPD led us to suspect mercury as the main toxic culprit. This metal is notoriously neurotoxic and teratogenic.[3] But the urinary excretion patterns suggest mercury may not be the sole toxic challenge for this population. These children may have an impaired detoxification capacity for a variety of toxic metals, and this along with the synergistic destructive nature of these heavy metals may be a pivotal etiologic factor in this population.

In summary, our collective clinical experience with ASD/PDD children suggests a comprehensive approach to their management is very useful. However, ameliorating their body burden of arsenic, cadmium, nickel, mercury, tin, thallium, tungsten, lead, antimony, and other toxic metals markedly expands their dimension of benefit and is essential to the most optimistic outcome. The diverse benefits of toxic metal depletion are well established.[4,5] Feedback from parents augments our clinical observations that ASD/PPD children are able to thrive and substantially resume normal development, once this barrier of toxic metal burden is removed.

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