Glutathione Therapy

Rationale: Many children with autism have low levels of active glutathione, which is needed to protect the body from many toxins including toxic metals.
Treatment: There are many ways to increase active glutathione levels. They include:
1) Oral glutathione: Only about 10% of oral glutathione is absorbed, so this method is not very effective at raising body levels, but it may improve levels in the gut.
2) IV glutathione: The IV form is highly effective, but temporary, and it can be difficult to administer regularly to the child.
3) Vitamin C: 500 mg of vitamin C was found to raise RBC glutathione levels 50% in college students.
Johnston et al, Vitamin C elevates red blood cell glutathione in healthy adults. Am J Clin Nutr. 1993 Jul;58(1):103-5.
4) TMG/Folinic Acid/methyl-B12: A study by James et al. found that 800 mcg of folinic acid and 1000 mg of TMG somewhat improved plasma glutathione levels in children with autism. Adding subcutaneous injections of methyl-Vitamin B12 (methyl-cobalamin) resulted in normalization of plasma glutathione levels.
James et al, Metabolic endophenotype and related genotypes are associated with oxidative stress in children with autism. Am J Med Genet B Neuropsychiatr Genet. 2006 Dec 5;141(8):947-56.
5) DMSA (chelation): Toxic metals such as mercury can greatly decrease the body's ability to make glutathione, so removing toxic metals by chelation seems to greatly help glutathione production.
Research:
A large study by James et al confirmed her original finding of low glutathione in children with autism due to abnormalities in their methionine pathway. She also found that children with autism were more likely to have genetic polytypes associated with abnormalities in the methionine pathway.
James et al.Metabolic endophenotype and related genotypes are associated with oxidative stress in children with autism. Am J Med Genet B Neuropsychiatr Genet. 2006 Dec 5;141(8):947-56.
A study by Adams et al. found that DMSA (chelation) resulted in a great improvement or normalization of RBC (red blood cell) levels of glutathione after just 1 round (3 days) of DMSA treatment, with benefits lasting at least 1-2 months.
Adams et al, Preliminary results of DMSA treatment study, presentation at Fall DAN! Conference 2006.