Autism treatment is more than skin deep

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Metal-binding agents rubbed into the skin, prescribed by some alternative practitioners for the treatment of autism, are not absorbed and therefore are unlikely to be effective at helping the body excrete excess mercury. The study by Jennifer Cohen and Michelle Ruha from Banner Good Samaritan Medical Center in the US, and their colleagues, provides evidence against the use of these treatments in children with autism. Their work is published online in Springer's *Journal of Medical Toxicology*.

Metal-binding agents such as DMPS* have received significant attention in recent decades amid the controversy over the link between mercury and autism. Even though no causal relationship between mercury in vaccines and autism has been proven, some practitioners treat their patients with mercury-binding agents in an effort to help the body eliminate mercury and treat the autism. One of these agents is a formulation of DMPS which is applied to the skin, also known as topical application. DMPS is approved in Europe for the treatment of heavy metal toxicity, but is not approved by the US FDA for use in the USA.

For the first time, Cohen and team looked at whether topically applied DMPS is absorbed into the body by measuring levels in the blood 30, 60, 90, 120, and 240 minutes after application. They also measured whether DMPS applied to the skin leads to increased excretion of mercury in the urine 12 and 24 hours after application. The study comprised eight healthy adult volunteers and one control subject who ingested oral DMPS, which is proven to increase mercury excretion.

None of the urine samples collected from the healthy subjects contained detectable DMPS at any time point. DMPS was also not detected in 40 of 41 blood samples, with a single sample found to have a small amount of DMPS, considered by the authors to be contamination of the sample. The control subject given oral DMPS had increased levels of DMPS in the blood at every time point and also detectable DMPS in the urine. In addition, topical application of DMPS did not lead to increased mercury excretion, whereas oral intake led to a six-fold increase.

Michelle Ruha concludes: "This is the first study of an expensive, non-FDA approved medication that is advertised on the internet and used on children to treat autism. Our results show that the drug is not absorbed and does not work as a metal-binding agent, when applied to the skin."

More information: *2,3-Dimercaptopropane-1-sulfonate

Cohen JP, Ruha AM et al (2012). Plasma and urine dimercaptopropanesulfonate concerntrations after dermal application of transdermal DMPS (TD-DMPS). Journal of Medical Toxicology; DOI 10.1007/s13181-012-0272-9

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