

Is Phosphoric Acid Connected to Autism: An Hypothesis

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ABSTRACT

In this letter to the editor I will present a short hypothesis regarding Phosphoric Acid's possible role in Autism, in regard to its role in the ATP to ADP cycle and Glutamate to Glutamine cycle. The hypothesis is short and still doesn't have sufficient basis because of the seldom researched nature of Phosphoric Acid in autism but it explains a logic as to why it could, perhaps, be important and asks for further studying of the subject.

Keywords: Autism, Glutamate, Glutamine, ATP-to-ADP cycle, Phosphoric Acid.

The way the Glutamate-Glutamine circle works is as follows: Glutamate + ATP + NH₃ (Ammonia) \leftrightarrow Glutamine + ADP + Phosphate. I hypothesized that in Autism patients, where higher glutamate and lower glutamine levels have been found [1], it's possible that ATP is lacking.

The way the ADP to ATP cycle works is as follows: ADP + H₃PO₄ + Energy \leftrightarrow ATP + H₂O. I then hypothesized that what's missing could be that H₃PO₄, which is Phosphoric Acid.

I searched the web for studies regarding Phosphoric Acid and Autism I've found a Chinese study that "observed decreased amounts of phosphoric acid in ASD children relative to TD (typically developing) children". [2] as well as other studies [3, 4] that found autistics to be low on phosphorous in general.

I believe this connection between the role of phosphoric acid in the ATP to ADP cycle should be further examined for its possible impact in Autism.

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