

# Sorting out the spinning of autism: heavy metals and the question of incidence

Mary Catherine DeSoto\* and Robert T. Hitlan

Department of Psychology, University of Northern Iowa, Cedar Falls, Iowa, USA; \*Email: cathy.desoto@uni.edu

The reasons for the rise in autism prevalence are a subject of heated professional debate. Featuring a critical appraisal of some research used to question whether there is a rise in cases and if rising levels of autism are related to environmental exposure to toxins (Soden et al. 2007, Thompson et al. 2007, Barbaresi et al. 2009) we aim to evaluate the actual state of scientific knowledge. In addition, we surveyed the empirical research on the topic of autism and heavy metal toxins. Overall, the various causes that have led to the increase in autism diagnosis are likely multi-faceted, and understanding the causes is one of the most important health topics today. We argue that scientific research does not support rejecting the link between the neurodevelopmental disorder of autism and toxic exposures.

Key words: autism, autism prevalence, heavy metals, mercury, toxins

## INTRODUCTION

In this paper, we argue that increasingly over the past decade, positions that deny a link to environmental toxins and autism are based on relatively weak science and are disregarding the bulk of scientific literature. In this paper, we are not focusing on vaccines, which is but one exposure pathway, but on exposure to toxic heavy metals as a broader class, of which a vaccine containing a heavy metal preservative would be but one possibility of exposure. It should be clear that any link between toxins and autism is almost certainly mediated by one's genetic makeup, and that other toxins, such as organophosphates (Eskenazi et al. 2007) likely play a role as well. In this conceptualization, the gene pool did not change, but exposure to substances that directly affect gene functioning is changing. Therefore, the reason why one five year old has developed autism and another has not, is indeed in large part a function of the individual's genes. But the question is still why more children are being diagnosed as autistic today

than 30 years ago. Many factors are different today than a generation ago: autism awareness, exercise, diet, use of sunscreen and outdoor play, the amount of toxins in the environment – to name just a few. It is the authors' opinion that all of these things matter. Nevertheless, our interest is in the exposure to toxins, and in this paper to toxic heavy metals. Some prominent researchers still deny that there has been any actual increase in the cluster of behaviors that fall under the umbrella of autism spectrum disorders (ASD). For example, Roy Grinker in his top selling book on autism (2007) denies an actual increase has occurred, maintaining that it is all due to increased awareness and broadening of the diagnosis. Our opinion is not only that the increase is real, but that the increase in various contaminants is a major factor responsible for that increase.

## QUESTION OF THE RISE IN AUTISM INCIDENCE

Before further discussion, we wish to make clear the following: there is evidence for changes in diagnostic practice to have played a role in the autism prevalence rate. To our knowledge, there is no one who denies that diagnostic changes have occurred. When adherents to

Correspondence should be addressed to M.C. DeSoto  
Email: cathy.desoto@uni.edu

Received 14 October 2009, accepted 30 June 2010