This is the seventh volume of our research newsletter. We plan to publish 4 volumes each year (Fall, Winter, Spring and Summer). Each volume will include research we are working on which supports our current treatment strategies, and research which may support future therapeutic modalities.

The PMC is a for profit outpatient facility for children (over 5 yrs) and adults specializing in the evaluation and management of biochemical imbalances, which may be associated with the symptoms of developmental, learning and behavior disorders or anxiety, depression or mental illness. Our innovative approach of using vitamins, minerals and other nutrient supplements to treat biochemical imbalances has helped thousands of patients lead a more productive and rewarding life.

HRI Pharmacy, a compounding pharmacy, assists patients worldwide with filling prescribed nutrients (vitamins, minerals, amino acids, etc.) in the strength, form and dosage needed to correct their biochemical imbalances. Our goal is to provide exceptional service and the highest quality preservative free nutrients. HRI specializes in meeting the healthcare needs of every patient, including those with behavioral learning issues; including ADD/ADHD, autism spectrum disorders, Alzheimer’s disease, depression (including post-partum depression), bipolar disorder, schizophrenia and anxiety. Please telephone HRI at 800-505-2842 or fax 630-836-7056 to request a price quote for your custom compound. You can visit us at www.hripte.org or Facebook at HRI Pharmacy.
A.J. Russo, Ph.D.  
Research Director  
https://hriresearch.wordpress.com/  

About Dr. Russo  

His Masters in Biology and Ph.D. in Experimental Pathology are from Roswell Park Memorial Institute, a division of the State University of New York in Buffalo. After graduate school he did post-docs as a staff fellow at the National Institutes of Health and the Department of Neurology at Johns Hopkins.  

Dr. Russo’s research over the past ten years has focused on studying autism and other behavioral disorders such as schizophrenia, bipolar disorder, anxiety and depression. He has published 19 research papers since 2009. All are PubMed articles and can be downloaded, for free, through our research web site (above) and through PubMed.  

Current Research  
Effectiveness of Primer, MTP and Probiotics  

Over the past six years we have studied the effectiveness of Primer (zinc and antioxidant therapy) and Metallothionein Promotor (MTP) on patient symptoms, and have found that it works. Primer and MTP raise zinc levels when zinc is low and help to lower copper levels in patients when copper is high. Most importantly, we have shown, in many of our patients, that after therapy their symptoms significantly improve. Based on one of our recent papers, Decreased Myeloperoxidase Associated With Probiotics in Autistic Children, Dr. Russo was interviewed by the magazine, Contemporary Pediatrics. Here is the interview:  

http://contemporarypediatrics.modernmedicine.com/contemporary-pediatrics/news/podcast-gut-check
We are investigating the genetics and environmental factors that may be affecting patient groups that are being treated by clinicians at the Pfeiffer Medical Center and Health Research Institute Pharmacy. One of our goals is to learn more about the underlying cause(s) behind diseases like autism, ADHD, depression, anxiety, schizophrenia and bipolar disorder. To accomplish this, we study the genes or DNA that are not structured properly in the patient group, predict which characteristics (proteins) would be affected by the faulty genes and study these characteristics (proteins). One of the important ways that our lab studies these characteristics (proteins) is by establishing their concentrations in the blood, or other parts of the body, then comparing these concentrations to the norm. If the concentration is abnormal, then that may indicate that the particular protein is associated with the cause of the disease.

Recently, we have measured oxytocin levels in autistic individuals and Bipolar Disorder and found that the autistic children had significantly lower oxytocin levels in both disorders. Oxytocin lowers levels of the protein mTOR.

Russo AJ, Anubrolu, L Decreased Oxytocin Associated with high mTOR in Individuals with Autism, JLSB 2016, 3, 119-126. DOI: 10.1234.67/Jlsb.1014

We continue to measure pathway proteins, particularly those in the Akt and MAPK (ERK) pathways, to evaluate their potential involvement in neuro-behavioral disorders. We recently found that Akt levels are significantly decreased in individuals with autism.


Recently we measured phosphorylated ERK levels in individuals with Bipolar Disorder and found that ERK levels are significantly decreased and those decreased levels correlate significantly with decreased GABA levels. This suggests that developing therapy that would raise ERK levels might be worth investigating.


mTOR has been found to be associated with mood disorders, we have found that this protein is in patients with clinical anxiety, clinical depression, and Bipolar Disorder, but not in individuals with schizophrenia. We hypothesize that oxytocin may be an effective therapy because it lowers mTOR. We hope these discoveries will lead to new therapies.

We have shown that the protein Akt is decreased in individuals with autism. Recently, we found that Akt levels significantly increased after zinc therapy (Primer). This may represent one reason that Zinc is associated with improved behavior.
HRI-PMC Research

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