

## Severity-tracking biomarkers for Autism: New perspectives towards a more suitable therapeutic approach for Autism

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### Abstract

ASD develops through a complex set of etiologies that involve environmental, genetic and immunological factors.

**Objective:** The subjectivity of behavioral diagnosis urges the need for biomarker clinical tests to improve and complement ASD diagnosis.

**Methods and results:** A wide range of biomarkers to diagnose and indicate the severity of ASD include metabolic and genetic biomarkers. The role of oxidative stress in the etiology of an ASD diagnosis, including increased lipid peroxidation, altered antioxidant enzymes in plasma, nutritional and genetic factors; as tracking biomarkers will be discussed.

**Conclusion:** We will comprehensively review the biomarkers reported in ASD in addition to our own 20 years' experience in Egypt. It is important to establish those biomarkers resulting able to help diagnosis and optimize the treatment of ASD.

### Biography

Nagwa Abdel Meguid is a professor of human genetics and Former Head of Human Genetics Unit, National Research Center (NRC) in Egypt. She holds a Ph.D. in Human Genetics and she is a Senior Geneticist at the Genetics Institute, Pasadena, California; a fellow of Uppsala University, Sweden and Yale University. She was one of five selected scientists to win the outstanding L'Oreal UNESCO Award for women in Science for Africa & Middle East (2002). She has awarded with the National State Award of Excellence in Advanced Medical science & Technology. She was given the Distinctive Arab Female Scientist Prize Creative Women in Genetics by the Arabian Gulf University. She has used her expertise to identify and describe several novel genetic syndromes. She has more than 80 International publications in elite Journals and Supervised 60 theses. She is the head of the laboratory of research in DNA in genetic behavioral disorders and Founder of autism research study in Egypt. Jury president L'OREAL-UNESCO Egypt awards for young researchers. She is a Member in Gender Research in Africa, Information Communication Technologies for women Empowerment (GRACE). She is the Head of CONEM Egypt Child Brain Research Group and member in Council for Nutritional and Environmental Medicine, Norway.

### Publications

1. Mutations in BCKD-kinase lead to a potentially treatable form of autism with epilepsy
2. Reduced serum levels of 25-hydroxy and 1, 25-dihydroxy vitamin D in Egyptian children with autism
3. Evaluation of oxidative stress in autism: defective antioxidant enzymes and increased lipid peroxidation
4. Role of polyunsaturated fatty acids in the management of Egyptian children with autism
5. Clinical genomics expands the morbid genome of intellectual disability and offers a high diagnostic yield

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