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## Manganese supplements reverse symptoms in inherited metabolic disorder

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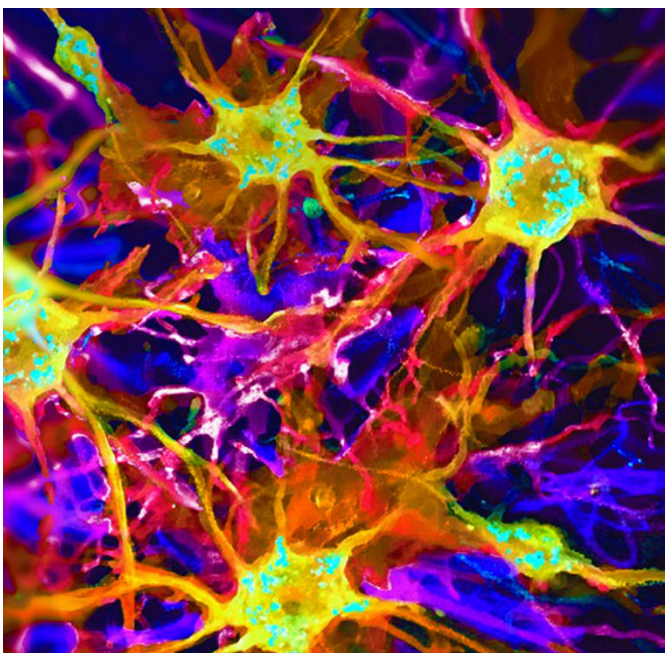
Treatment with high-dose manganese reversed motor, hearing, and neurological defects in two children with a severe inborn error of manganese metabolism, according to a clinical report in this issue. The treated patients were born with impaired manganese transporter ZIP8 due to mutations in the *SLC39A8* gene. The defect, identified as recently as 2015, affects multiple organ systems due to the crucial role of manganese as a cofactor in many enzyme pathways. Park *et al.* report that manganese supplementation over approximately one year made a significant clinical difference in the lives of the patients. The first, an infant, had suffered from severe seizures in addition to other physical problems. She was seizure-free at the end of the study. In addition, functional measures such as hearing, sight, and head control improved enough to merit reclassification of her burden of disease from severe to moderate. Similarly, the burden of disease of a 19-year-old patient with a recent diagnosis improved from severe to moderate. The investigators demonstrated that biochemical abnormalities also reversed during treatment. Careful monitoring for signs of manganese toxicity revealed no sign of overexposure. This small sample provides encouraging evidence that oral manganese supplementation can reverse the underlying biochemical defect in this newly identified genetic disorder. *—Karyn Hede, News Editor*



## New evidence links copy-number variants to hemiplegic cerebral palsy

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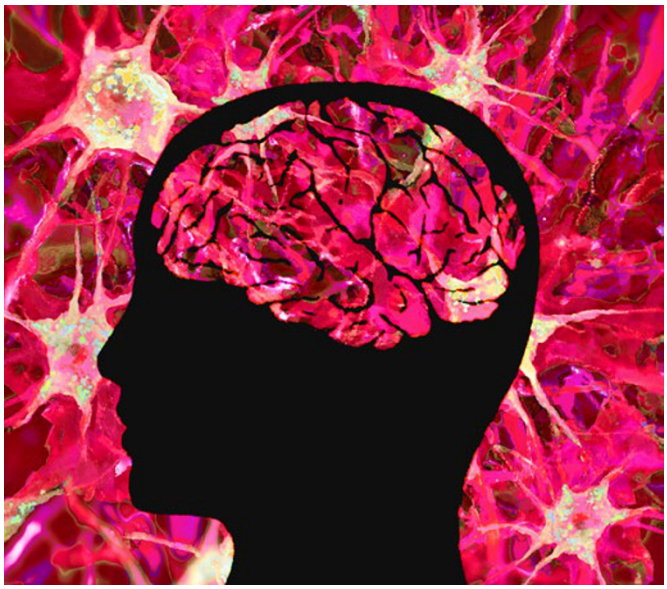

Cerebral palsy (CP) has historically been considered the result of injury to the brain before birth, during delivery, or in infancy. Recent studies have suggested a role for an underlying genetic predisposition, but no clear diagnostic pattern has emerged. Zarrei *et al.* investigated the incidence of copy-number variants (CNVs) in individuals affected by hemiplegic CP, a subtype of CP in which only one brain hemisphere is affected. Hemiplegic CP is fairly common, affecting 1 in 1,300 births. The research team found de novo CNVs in 7.2% of probands and rare, inherited CNVs in 18.6% of a cohort of 97 children. The CNVs that were identified were found to affect loci associated with known genomic disorders (17p12, 22q11.21) or involve genes linked to neurodevelopmental disorders. Of particular interest, multiple CNVs in genes previously implicated in autism spectrum disorders (ASDs) were found. About 1 in 10 individuals with CP is also diagnosed with ASD. However, the research team found no genetic alterations in genes involved in inflammation, in contrast to the results of two population-based studies. The findings suggest that whole-genome sequencing should be considered for hemiplegic CP patients, both to rule out other neurological disorders with overlapping features and to help explain the origin of their disorder. *—Karyn Hede, News Editor*