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# Title

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Abstract (250 words) - Abstract #65

## Maternal Intake of Supplemental Iron and Risk for Autism Spectrum Disorders

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### Abstract Text:

Background:

Iron deficiency affects 40-50% of pregnancies. Iron is critical for early neurodevelopmental processes, including ones that are dysregulated in autism spectrum disorders (ASD).

#### Objectives:

To examine maternal supplemental iron intake in relation to ASD risk.

#### Methods:

Children enrolled in the CHARGE population-based case-control study from 2003-2009 with diagnoses of ASD (n=510) or typical development (TD, n=341) confirmed at the UC Davis MIND Institute using standardized clinical assessments were included. Mean daily iron intake was quantified based on dose, brands, and frequency of use reported in parental interviews for prenatal vitamins, multivitamins, iron-specific supplements, other supplements, and cereal for each month from three months before through the end of pregnancy and during breastfeeding (index period). Associations with ASD were evaluated using logistic regression.

### Results:

Compared to mothers of TD children, mothers of children with ASD were significantly less likely to report taking iron-specific supplements any time during the index period after adjustment for confounders (odds ratio=0.62, 95% confidence interval: 0.4, 0.9, P=.01). Mean (SD) daily iron intake was also lower for mothers of children with ASD (51.7 (34.0) versus 57.1 (36.6) mg/d, p=0.04). Odds of ASD declined as iron intake increased ( $P_{trend}$ =0.02). Compared to the lowest quintile of iron intake (<30 mg/d), the highest quintile (86+ mg/d) was associated with significantly lower adjusted ASD risk (OR=0.55, 95% CI: 0.34, 0.89).

### Conclusions:

This is the first study to show a protective association between maternal supplemental iron and ASD. Further studies of this association and potential prevention strategies are warranted.