The objective of this research was to examine the relation of the dietary amino acids: aspartate, glutamate, and glycine, to Attention Deficit Hyperactive Disorder (ADHD). These amino acids function as key neurotransmitters in the nervous system, and could potentially modulate symptoms in ADHD. Parents of a small sample of children from the Oregon ADHD cohort (23 with ADHD and 22 without) were given three 24-hr recalls to estimate nutrient intake. The two groups did not differ by age and sex, but the group without ADHD had a higher IQ (p=0.01). Univariate analyses of each amino acid (in grams) did not differ between groups; however, percent intake of aspartate was significantly higher, percent glutamate was significantly lower, and percent glycine was marginally higher in those with ADHD as compared to controls. Multivariable logistic regression, modeling ADHD as the outcome, demonstrated significant effects of glutamate and glycine when modeled together and adjusted for age, sex and IQ. Greater intake of glycine was associated with an increased likelihood of ADHD, (OR (95% CI) = 8.02 (1.30–49.53), p=0.03) and greater intake dietary glutamate was associated with a reduced likelihood of ADHD (OR (95% CI) = 0.66 (0.44–1.01), p=0.05). These results are limited by the small sample size; however, they suggest that future research is needed to further evaluate the association of dietary glycine and glutamate with ADHD.