Objective: To determine the impact of stimulant treatment on height, weight, and BMI in a naturalistically followed sample of children with Attention Deficit Hyperactivity Disorder (ADHD).

Methods: Children with ADHD (n = 358) were identified by chart review as having been treated exclusively with either an amphetamine (AMP) or methylphenidate (MPH) product at a university child psychopharmacology clinic. Height, weight, ethnicity, length of time in treatment, number of prescriptions, and medication dosage were extracted from the electronic medical record. An average daily stimulant dosage (ADSD) was calculated for each patient. The association of stimulant treatment variables and ethnicity with change in height, weight and Body Mass Index (BMI) was studied using a mixed-effects linear model with a random intercept and fixed-effects for time.

Results: Length of time on stimulant was negatively related to change in height z score (p value = 0.001), indicating growth suppression. There was, however, no relationship between ADSD and height z score change (CI: -0.00005, (-0.00041, 0.00032), p value = 0.807). In contrast, weight and BMI z score change was negatively related to both length of treatment and ADSD (p value < 0.001). There were no main effects of ethnicity on height z score change, nor any interaction effects of ethnicity and stimulant treatment on this variable. Hispanic had a greater increase in weight and BMI z-score than other ethnic groups (p value < 0.01), but there was no interaction with any aspect of stimulant treatment.

Conclusions: Stimulants are associated with mild reductions in height, weight and BMI. For height, time in treatment, rather than average daily dosage, appears to be related to growth suppression, while weight and BMI are both negatively impacted by time in treatment.