

# Obesity and the Longitudinal Course of Pediatric Bipolar Disorder

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## Abstract

**Objective:** To examine the association between obesity and the course of pediatric bipolar disorder (BP).  
**Methods:** Subjects (N=323), 7-17 years old, were in the Course and Outcome of Bipolar Illness among Youth (COBY) study, who fulfilled DSM-IV criteria for BP-I, BP-II, or operationalized criteria for BP-NOS. Illness characteristics during 4 years of follow-up were examined as they relate to obesity at intake.  
**Results:** Compared to non-obese subjects, obese subjects spent a significantly greater proportion of follow-up weeks with syndromal symptoms, which was mainly accounted for by major depressive episodes. Obese subjects were significantly more likely to experience syndromal manic and depressive episodes. Obese subjects were more likely to demonstrate psychosis during follow-up, and there was a trend toward increased rates of psychiatric hospitalization.  
**Conclusions:** Obesity is associated with a more severe prospective longitudinal course of BP among youth.

## Background

- The prevalence of overweight and obesity among youth and adults with BP is greater than in the general population and this has also been reported among medication-naïve patients with BP.
- Previous examination of prevalence and correlates of obesity among youth with BP in the COBY study found that the prevalence of obesity among youth was 42%, significantly but modestly higher than in the general population.
- Obesity is associated with a number of proxies for the burden of BP among adults, including more episodes, more symptoms, suicidality, treatment-resistance, and treatment use.
- Most studies of adults are cross-sectional, and no previous study has examined the longitudinal association of obesity with the course of BP among youth.

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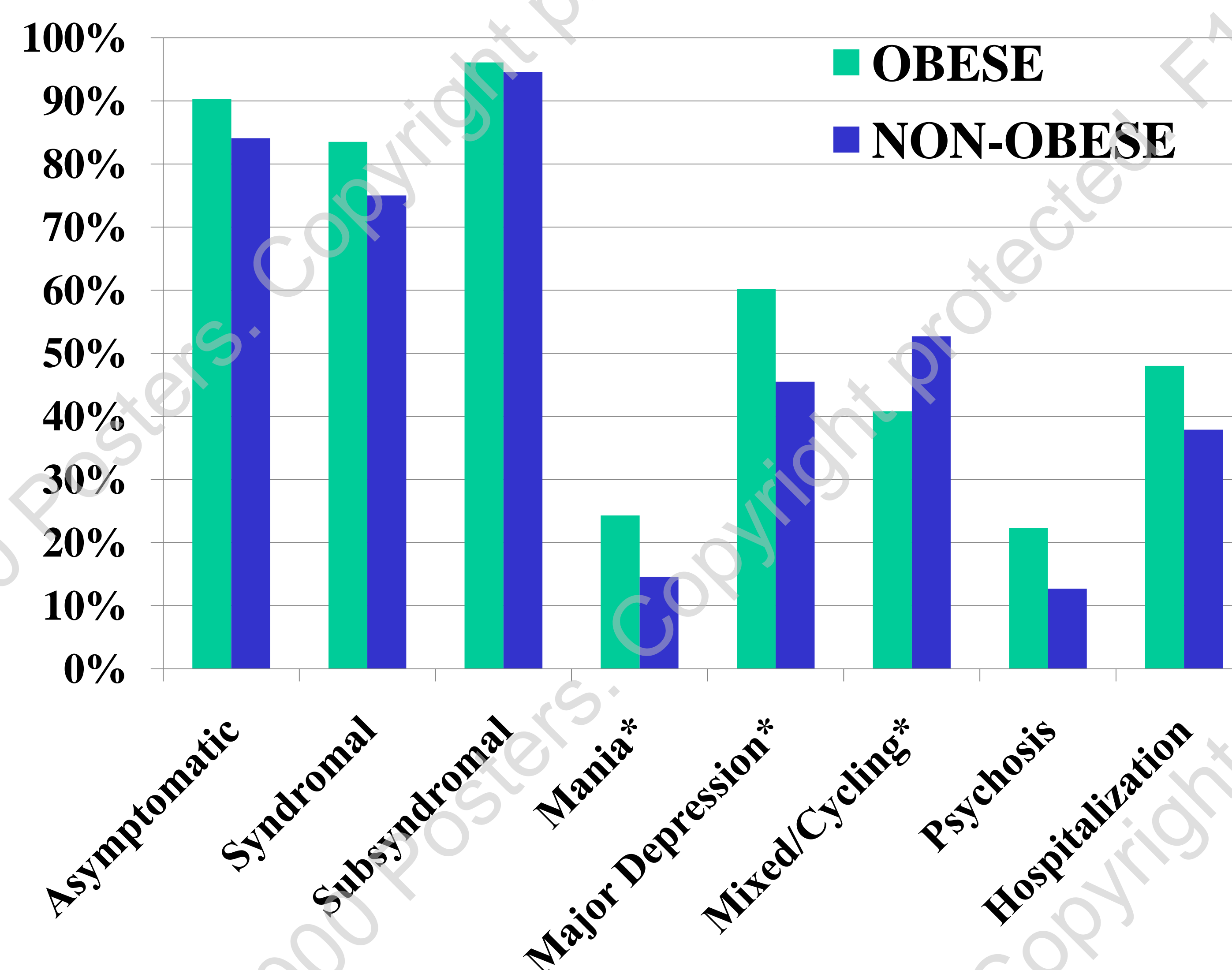
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## Methods

**Subjects** COBY, N=323, 7-17yo, BP-I, BP-II, or operationalized criteria for BP-NOS via the K-SADS-PL. Recruited from three sites (U. Pittsburgh, Brown, and UCLA).  
**BMI** Height and weight based on parent-report or self-report at intake. BMI cutoffs for obesity based on International Obesity Task Force (IOTF) recommendations of adult cutoff of BMI  $\geq 25$ kg/mg<sup>2</sup>.  
**Reliability** Reliability of the categorization of obesity was examined using data from 35 consecutive clinical BP patients at the Pittsburgh site. Obesity determined by self-reported height and weight was strongly correlated with obesity determined by direct measurement (Pearson  $r=0.78$ ,  $p<0.01$ ).  
**Analysis** Analyses examined the association between obesity at intake and dimensional (t-test) and categorical (chi-square) clinical variables during 4 years of follow-up.

## Results

### Association between Obesity and Course of Pediatric BP



There were no significant between-group differences in suicide attempts, in rate or time to recovery, or in rate or time to recurrence.

	Obesity (n=103)	No Obesity (n=220)	p
Asymptomatic	40.0 ± 29.3	43.6 ± 33.5	0.349
Syndromal*	20.9 ± 24.6	15.4 ± 21.2	0.039
Mania	1.5 ± 6.3	0.8 ± 3.3	0.256
Hypomania	2.0 ± 6.3	1.7 ± 6.3	0.778
Mixed/Cycling	8.4 ± 16.6	7.2 ± 15.2	0.534
MDD*	9.1 ± 16.7	5.7 ± 12.4	0.042
Subsyndromal	38.1 ± 25.8	40.5 ± 30.0	0.480
Mania	13.2 ± 17.6	13.1 ± 18.5	0.983
Mixed	12.8 ± 18.8	14.5 ± 21.4	0.497
Depression	12.1 ± 15.9	13.0 ± 17.7	0.696
Psychosis	4.4 ± 15.2	1.8 ± 6.8	0.102

## Discussion

### Main Findings

- Obesity is associated with a more severe prospective longitudinal course of BP among youth, including manic and depressive episodes, psychosis, and hospitalizations.

### Limitations

- Height and weight of subjects were not measured directly.
- Single measure of obesity.
- Certain predictors of mood course not measured, such as medication adherence and course of illness prior to obesity measurement.

### Future Directions

- Long-term, prospective studies examining changes in obesity over time as they relate to the course of BP are needed.
- Treatments that optimize mood stability without compromising metabolic health are urgently needed.

## References

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