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## Significant Weight Gain, Metabolic Changes Associated with Antipsychotic Use in Children

Many children and adolescents who receive antipsychotic medications gain a significant amount of weight and experience metabolic changes, according to NIMH-funded research published October 28, 2009, in the *Journal of the American Medical Association*.

**Background**

Children and adolescents with mental disorders such as bipolar disorder or schizophrenia spectrum disorder are often treated with antipsychotic medications, especially the newer, second-generation (sometimes called atypical) antipsychotics. However, research has shown that these medications have worrisome cardiovascular and metabolic effects on young people, and their long-term effects on growing bodies are unknown.

Christoph U. Correll, M.D., of Zucker Hillside Hospital in New York, and colleagues conducted a nonrandomized study in 338 pediatric patients, ages 4 to 19 years, who had never taken antipsychotic medication before (antipsychotic-naïve). The children had been diagnosed with a mood disorder, psychotic disorder, or a disruptive or aggressive behavior disorder. They were prescribed one of four antipsychotics by their doctors—olanzapine (Zyprexa), aripiprazole (Abilify), quetiapine (Seroquel) or risperidone (Risperdal)—for a period of 12 weeks. Their doctors decided which drug each patient received, and at what dose. Fifteen patients who refused to take the prescribed antipsychotic or who stopped their medication in the first few weeks and returned for study visits were used as a comparison group.

**Results of the Study**

The researchers found that all of the medications were associated with significant weight gain (an average of almost 13 lbs). Those taking olanzapine gained the most weight—an average of about 19 lbs, while the weight gain with

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other antipsychotics ranged from 9.9 to 13.5 lbs over the first three months of treatment. In contrast, the untreated comparison group experienced minimal weight change of less than 0.5 lbs.

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Changes in metabolic factors varied considerably among the medication groups. Those taking olanzapine and quetiapine experienced statistically significant changes in total cholesterol and triglycerides. Those taking risperidone experienced significantly elevated triglyceride levels. Neither the aripiprazole group nor the untreated comparison group experienced significant metabolic changes during the first three months of treatment.

### Significance

This study was the largest to focus on changes in weight and metabolic factors among children and adolescents who were antipsychotic-naïve and treated under real-world conditions. The authors note that unhealthy weight and metabolic problems in childhood often lead to increased cardiovascular problems in adulthood.

### What's Next

Longer-term studies are needed to determine long-term weight and metabolic effects associated with specific antipsychotics in youth. In addition, more study is needed on the mechanisms involved in antipsychotic-induced weight gain and metabolic abnormalities, as well as strategies to reduce these adverse effects. NIMH studies investigating the effects of antipsychotics in children are ongoing.

In the meantime, the authors suggest that clinicians treating children weigh the benefits of antipsychotics against their significant cardiovascular and metabolic risks and consider lower-risk alternatives.

### Reference

Correll CU, Manu P, Olshanskiy V, Napolitano B, Kane JM, Malhotra AK. Cardiometabolic risk of second-generation antipsychotic medications during first-time use in children and adolescents. *Journal of the American Medical Association*. 28 Oct 2009. 302(16): 1765-1773.

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