NEWS

Diabetes drug slows weight gain in some children with autism

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The widely used diabetes drug metformin reverses weight gain in children with autism who take antipsychotic medications, according to a study published 1 September in *JAMA Psychiatry*[1].

The antipsychotics risperidone and aripiprazole are the only medications approved for children with autism. Although these drugs can ease irritability and outbursts, they can also **trigger weight gain and metabolic changes** linked to diabetes[2].

“We get consumed by managing the behavior in the moment, but we need to think that these are not adults, they are kids,” says lead researcher **Evdokia Anagnostou**, senior clinician scientist at the Bloorview Research Institute in Toronto. “The complications of these [antipsychotic] medications will have long-lasting effects for them.”

Antipsychotic drugs promote weight gain by blunting the body’s response to insulin. Metformin increases sensitivity to insulin and has been shown to control weight in typically developing children.

Anagnostou and her team tested the effects of metformin in 60 children with autism aged 7 to 17 who were already taking at least one antipsychotic drug. All the children demonstrated either a 7 percent or more increase in body mass index (BMI) or more than a 5 percent increase in body weight within a year of starting antipsychotics. BMI is a body-fat indicator based on the ratio of an individual’s weight to height.

Roughly half of the children received daily liquid doses of metformin alongside the antipsychotics for 16 weeks. The other half received a placebo liquid. The researchers measured each child’s weight, BMI and metabolic markers, such as insulin levels, at the beginning and end of the study.

At the end, children who received metformin showed significant decreases in both weight and BMI

adjusted for projected growth, age and gender. For some children, the drop in BMI was as large as 9 percent. Children in the placebo group showed no change in weight or BMI overall.

Halting a process:

Taking off excess weight in children with autism can stave off medical problems such as diabetes, says **Lawrence Scahill**, professor of pediatrics at the Marcus Autism Center at Emory University in Atlanta, who was not involved in the study.

“The fact that [BMI] goes down at all means that [metformin] is potentially halting a process that is unfolding,” he says. Rapid weight gain induced by many antipsychotics can trigger a vicious biological cycle that disrupts liver function, insulin response and blood-sugar breakdown.

The children’s insulin levels did not change with metformin treatment, perhaps because the study was too short for a change to occur, Scahill says.

The new study supports the clinical use of metformin to control weight in children with autism who take antipsychotics. But the treatment is not risk-free: Three of the children stopped taking the drug early because it seemed to make them agitated, and one withdrew from the trial because of excessive sleepiness. Children taking metformin were also more likely than those in the placebo group to experience gastrointestinal issues, which are **common in people with autism**.

Given these potential side effects, parents should consider trying to control weight in children taking antipsychotics through diet and **exercise**. But metformin is a relatively safe alternative if these options don’t pan out, says Anagnostou.

[A follow-up study backs the idea that use of metformin results in weight loss, but that after a few months, weight simply stabilizes[3]. In this report, all of the children took metformin for 16 weeks after the initial trial ended. Children who had been taking metformin before maintained their decreased BMI but did not lose any additional weight. Children who had been taking a placebo in the first trial showed decreases in BMI. There was no change in insulin levels or other metabolic markers in either group. Three children stopped taking the drug because of an adverse event.]

REFERENCES:

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