

## Oxandrolone yields short-term benefits in treating Klinefelter's syndrome

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Klinefelter syndrome (KS) is a common condition in males resulting in androgen deficiency and cardiometabolic diseases. These conditions are likely related and may be present in prepubertal boys with KS.

Cardiometabolic health in prepubertal boys with Klinefelter's syndrome may be improved with treatment with the non-aromatizable anabolic steroid oxandrolone, study data show.

However, oxandrolone may lower HDL cholesterol and advance bone age, according to researchers.

Shanlee Davis, MD, an endocrinologist at Children's Hospital Colorado, and colleagues evaluated 93 boys with [Klinefelter's syndrome](#) aged 4 to 12 years randomly assigned to oral oxandrolone 0.06 mg/kg per day (n = 46) or placebo (n = 47) for 2 years. Researchers sought to determine whether body composition and other [cardiometabolic risk factors](#) are improved with oxandrolone. Primary outcome was percent body fat standard deviation score (SDS); secondary outcomes included additional measures of cardiometabolic health and safety.

The oxandrolone group had significantly lower percent body fat SDS compared with the placebo group at 2 years. An average of 8.5 kg lean body mass, or 33% of baseline weight, was gained by the oxandrolone group compared with 7.1 kg in lean body mass, or 23% of baseline weight, in the placebo group (P < .001).

The oxandrolone group had lower fasting triglycerides (P = .037), fasting blood glucose (P = .032) and systolic blood pressure (P = .022) compared with the placebo group. The oxandrolone group also had significantly lower total and HDL cholesterol compared with the placebo group; LDL levels were similar, the researchers wrote.

Among participants who remained prepubertal during the study, the oxandrolone group had lower percent body fat (SDS, 0.26) compared with the placebo group (SDS, 0.96) after controlling for age and baseline percent body fat SDS (P = .009).

No serious adverse events were reported in the oxandrolone group.

"The result of a 2-year, double blind, placebo-controlled trial of oxandrolone in boys with [Klinefelter's syndrome] yields modest benefits in some cardiometabolic markers, including [percent body fat] SDS and fasting triglycerides; however, [oxandrolone] notably decreased HDL cholesterol and results in mild bone age advancement," the researchers wrote. "Overall, the short-term cardiometabolic effects of [oxandrolone] in prepubertal boys with [Klinefelter's syndrome] are beneficial; however, additional studies are needed to understand the effect of [oxandrolone] on long-term cardiometabolic health." –

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