

# Meds, surgery may help obesity-related high blood pressure if diet, exercise fall short

September 20 2021

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Weight-loss medications and surgical procedures show promise for reducing the long-term effects of high blood pressure (also called hypertension) in people who are overweight or have obesity, according

to a new American Heart Association scientific statement published today in the Association's journal *Hypertension*. A scientific statement is an expert analysis of current research and may inform future guidelines.

"Weight loss achieved through dietary changes and increased physical activity are the cornerstones of treatment for [high blood pressure](#) that's related to being overweight. However, these lifestyle behaviors are often not sustained over the long term. Subsequently, reductions in [blood pressure](#) aren't maintained over time," said Chair of the statement writing group Michael E. Hall, M.D., M.S., FAHA, associate division director for cardiovascular diseases at the University of Mississippi Medical Center in Jackson, Mississippi. "The new scientific statement suggests medical and surgical strategies may help with long-term [weight](#) and blood pressure improvement, in addition to a heart-healthy diet and physical activity."

Previous scientific statements from the American Heart Association have addressed the impact of diet, physical activity and [weight control](#) related to blood pressure. The new statement is focused on obesity-related high blood pressure. Overweight or obesity is weight that is higher than what is considered healthy for an individual's height. Specifically, a body mass index (BMI) of 30 or greater is considered obesity, and a BMI of 25 to 29 is classified as overweight. The writing group for the scientific statement included experts in the fields of obesity and high blood pressure, and they reviewed existing research to provide the latest guidance on [weight-loss](#) strategies to reduce high blood pressure.

## **The impact of diet and physical activity**

National guidelines recommend a heart-healthy diet to help manage weight and control blood pressure. These guidelines emphasize dietary pattern rather than individual foods and nutrients. The most well-

established healthy eating patterns are the Mediterranean diet and Dietary Approaches to Stop Hypertension (DASH). The diets are similar in emphasizing eating more fruits, vegetables, legumes, nuts and seeds with moderate amounts of fish, seafood, poultry and dairy, and low quantities of red and processed meats, and sweets.

"There's no doubt that eating healthy foods has beneficial effects on both weight and blood pressure," said Hall. "Numerous weight-loss diets are often successful in the short term; however, eating healthy foods consistently and long term, and maintaining weight loss are challenging."

Intermittent fasting, an approach that alters the timing of eating and fasting during the day or each week, produced some weight reduction and modest reductions in blood pressure in a few studies involving people with [metabolic syndrome](#) – a group of five conditions that can lead to heart disease, including high blood sugar, low levels of HDL cholesterol, high triglyceride levels, large waist circumference and high blood pressure. Metabolic syndrome is diagnosed when someone has three or more of these conditions. However, analyses of several studies found that intermittent fasting had a weak impact on blood pressure and was no more effective than other diets in reducing weight.

Increasing physical activity as well as improving cardiovascular fitness and reducing the amount of sedentary time can help lower body weight and reduce blood pressure. The statement suggests exercise is critical to reduce weight and lower blood pressure, as supported by the Association's [June 2021 statement on first-line treatment for elevated blood pressure and cholesterol](#).

## **Medications for weight loss**

If lifestyle modifications have not been successful in achieving weight reduction and blood pressure control, the statement suggests [prescription](#)

[medications](#) may be considered for people who have obesity or who are overweight and have a weight-related health issue such as high blood pressure.

"Currently, only a fraction of eligible individuals are prescribed medicine or referred for metabolic [surgery](#)," said Hall. "We often don't consider medications or metabolic surgery until after there has been target organ damage, such as heart injury or having a stroke. However, we may be able to prevent these complications. When combined with lifestyle changes, anti-obesity medicines and surgical procedures can be effective long-term solutions for weight loss and blood pressure control in select individuals who are overweight or have obesity."

A newer class of medications called GLP-1 receptor agonists have been shown to help with sustained weight loss and significantly reducing blood pressure, according to the statement. GLP-1 agonists, such as liraglutide and semaglutide, are synthetic hormones, self-administered in a daily or weekly injection, that reduce appetite and help people to feel full. Both medications were initially approved to treat type 2 diabetes because they lower blood sugar by stimulating the release of insulin. The U.S. Food and Drug Administration recently approved both medications for weight management and weight loss in individuals classified as overweight or obesity.

## **Surgery for weight loss**

Metabolic surgery (also called bariatric surgery or gastric bypass surgery) can aid weight loss in people with severe obesity, defined as people who have a BMI of 40 or higher, or if they have a BMI of 35 or higher along with an obesity-related health condition including hypertension. The statement includes a research review on metabolic surgery. High blood pressure was resolved in 63% of people who had metabolic surgery, and several studies showed less use of blood pressure-

lowering medicines after surgery.

"Metabolic surgery techniques are continuing to evolve, and they are getting less invasive and less risky," said Hall. "For select individuals, medications or [metabolic surgery](#) or both may be considered in addition to healthy diet and increased [physical activity](#)."

The statement also highlights questions and gaps in research data on the use of medications and surgery to prevent and treat obesity-related hypertension. These issues include whether these strategies will have the intended outcome of preventing organ damage, how effective they are for individuals who already have kidney disease or heart failure, and comparing the effectiveness of medications, surgery or a combination of both to determine the best approach for long-term blood [pressure](#) reduction.

"There are still many unanswered questions and many opportunities for research that can help people live healthier, longer," said Hall.

This scientific statement was prepared by the volunteer writing group on behalf of the American Heart Association's Council on Hypertension; the Council on Arteriosclerosis, Thrombosis and Vascular Biology; the Council on Lifestyle and Cardiometabolic Health; and the Stroke Council.

**More information:** Michael E. Hall et al, Weight-Loss Strategies for Prevention and Treatment of Hypertension: A Scientific Statement From the American Heart Association, *Hypertension* (2021). [DOI: 10.1161/HYP.000000000000202](https://doi.org/10.1161/HYP.000000000000202)

Provided by American Heart Association

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