

Weight loss surgery's effects on bone marrow fat and bone mass

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Bone marrow fat is thought to regulate bone metabolism, and high levels of marrow fat are seen in states of low bone mass, severe underweight, and diabetes. In a study of obese women undergoing gastric bypass surgery, increases in bone marrow fat were associated with a greater decline in bone density. Furthermore, in diabetic women undergoing the surgery, improvements in blood sugar control were associated with decreased marrow fat.

The findings suggest that blood sugar metabolism and weight loss may influence marrow fat, which in turn may affect bone health.

"This longitudinal study adds evidence that marrow fat is a unique fat depot that may influence bone. Ultimately, better understanding of bone marrow fat could lead to strategies targeted to the prevention and treatment of osteoporosis, skeletal complications of bariatric surgery, and diabetic bone fragility," said Dr. Tiffany Kim, lead author of the *Journal of Bone and Mineral Research* study.

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