We used Doppler ultrasound to evaluate postoperative hemodynamic changes in blood flow in skin (n = 11) and muscle (n = 4) flaps. The minimum velocities, resistance indexes, and diameters of the pedicle, the recipient, and control artery (the corresponding contralateral artery that served as a recipient vessel) were recorded intraoperatively and at 10 days, 1 month, 3 months, 6 months, and 12 months after surgery. The minimum velocities and blood flow in recipient and pedicle arteries in both groups increased after flap transfer. In control arteries, these values decreased over the follow-up period. The decrease of blood flow in recipient arteries for the skin flaps started at 10 days and in the muscle flap at 1 month. The decrease in minimum velocity was noted after 10 days and 1 month for skin and muscle flaps, respectively. Resistance indexes were higher in skin flaps (99 +/- 6) compared with muscle flaps (89 +/- 9). Also, recipient blood flow after flap transfer, independent from intraoperative values, changed according to flap size; muscle flaps that were larger than skin flaps caused significantly higher blood flow in recipient artery.