Effects of contrast baths on skin blood flow on the dorsal and plantar foot in people with type 2 diabetes and age-matched controls.


Abstract
Contrast baths have been used for therapy for over 2,000 years. The basic concept is to alternate warm and cool water baths during a treatment session. It is believed that this will increase circulation better than just placing the limb in a warm water bath. However, there is little supportive evidence for this assertion. Further, for subjects with diabetes, with underlying impairments in their circulation, this may not work at all. Fourteen people with type 2 diabetes were compared to 14 age-matched controls. Skin blood flow of the foot (BF) was measured during 16 minutes of contrast baths at two different intervals: 3 minutes warm and 1 minute cold and 6 minutes warm and 2 minutes cold. In control subjects, warm and cold contrast baths with the ratio 3 minutes warm to 1 minute cold elicited significantly (p < 0.01) greater BF than placing the limb continuously in warm water or using a 6:2 ratio of warm to cold bath time. In control subjects, there was also a greater plantar than dorsal BF. For subjects with diabetes, there was no statistical difference between BF with contrast baths versus warm whirlpool; but in both cases BF was significantly less than that seen in control subjects under similar circumstances. There was also very little difference between BF on the plantar and dorsal aspects of the foot in the subjects with diabetes. Patients with diabetes do not show a vascular response to contrast bath therapy. The BF response to contrast temperatures may be a good diagnostic test for diabetic vascular impairment.