Ibusuki hot spring sand bath (SB) (Sunamushi) has traditionally been used for the relief of musculoskeletal pain. It is specified by piling up heavy (40–60 kg) and hot (50°C) sands on the lied body heated by the hot spring water gushed at the seashore of Ibusuki. In this study, remarkable circulatory activation and metabolic improvements probably due to thermal vasodilation and higher hydrostatic pressure is examined.

**Subjects:** The subjects examined were 20 healthy males (34.3 ± 10.5 yrs) who accepted informed consents.

**Methods:** The subjects were thin bathrobe and kept rest for 30 min in the supine position. BP, HR and sublingual temperature measurements and venous blood sampling from the indwelling catheter was done. Blood counts, blood gas pressure and plasma chemistry were examined. Then sand bath carried out for 10 min and 30 min rest under keeping sufficient warmth by blankets.

**Results:** Systolic blood pressure was significantly increased though diastolic blood pressure was significantly reduced. HR and sublingual temperature were significantly increased by +22 bpm and +1.1°C, respectively, just after 10 min SB. Venous blood pO$_2$ and pH were significantly increased by +18.3 mm Torr and +0.03pH, and pCO$_2$ was significantly reduced by -5.8 mm Torr. Lactate and pyruvate were significantly reduced after 10 min and 30 min after sand bath suggesting the improved peripheral oxidative metabolism.

**Conclusion:** Increase in blood pressure and heart rate indicating cardiac acceleration was considered to be induced by hydrostatic pressure with heavy sands and thermal vasodilation. Improved peripheral circulation and oxidative metabolism were also suggested by increased pO$_2$, decreased pCO$_2$ and decreased lactate and pyruvate level. Sufficient O$_2$ supply and removal of wasted substances due to activated circulation was considered to be the basic mechanism of the effects of sand bath.

**Keywords:** Sand bath, Hydrostatic pressure, Circulatory changes, Metabolic effects