

Antiaging of blood vessels by hot spring effect examined by FMD test



Dr. Kaeko Iwanami



MAEBASHI ONSEN CLINIC

Our clinic is one of the few facilities in Japan where a hot spring facility (Maebashi hot spring Cura e Terme) and a clinic are located in the same building. With antiaging as its main focus, the clinic offers outpatient care for lifestyle-related diseases, outpatient anti-aging care, and medical checkups.

Hot spring improved the endothelial function.

When it comes to anti-aging, it is important to start by knowing yourself first and try not to let yourself age from your current state. Blood vessels are "organs" that are stretched throughout the body, and we believe that knowing the condition of your blood vessels is very important for antiaging medicine. The FMD test is an easy-to-understand test for both physicians and patients because it provides a numerical indication of the condition of blood vessels.

Our clinic has a spa facility. Hot spring therapy has long been known to have positive effects on the human body, and anti-aging research is also increasing. Therefore, we used the Maebashi hot spring Cura e Terme facility (sodium monochloride hot spring with a bathtub temperature of 41°C) to investigate whether hot springs contribute to the antiaging of blood vessels in 17 healthy adults (3 males and 14 females) with an average age of 63 years.

The FMD test was measured once before bathing, and then again after a 30-minute hot spring bath and 1-hour rest.

(Figure 1) FMD values improved (5.9%-7.3%) after the bathing, and systolic blood pressure decreased from 129.6 mmHg before the bath to 119.2 mmHg after the bath, while diastolic blood pressure did not change.

Since this result is due to the dilating effect of vascular smooth muscle caused by a temporary increase in NO



Figure 1. Measurement flow

(nitric oxide) due to the hot spring effect, it can be inferred that the various effects of NO, such as inhibition of platelet aggregation, smooth muscle proliferation, leukocyte adhesion, and reactive oxygen species production, improve vascular endothelial function.

Since bathing in hot springs improves FMD values in the short term, we believe that regular bathing in hot springs will prevent vascular aging and ultimately lead to individual antiaging.

We would like to continue to contribute to the antiaging of blood vessels by preventing arteriosclerosis at an early stage through the evaluation of endothelial function with the FMD test. We would also like to increase the number of cases to confirm the effects of hot springs on endothelial function.

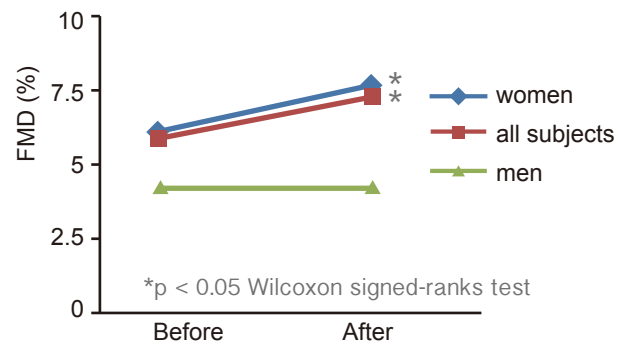


Figure 2. Change of FMD before and after bathing

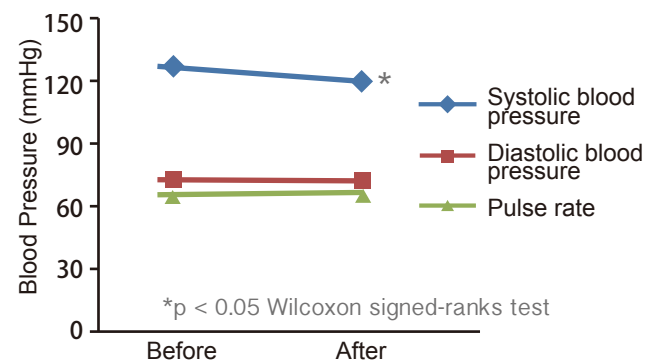


Figure 3. Change of Blood Pressure before and after bathing