



Building Bodies and Minds That Can Overcome COVID-19: Boosting Immune Strength with “Daily Baths” — Strengthening the Body’s “Lifeline” with Improved Blood Flow

Hayasaka Shinya, Professor, Tokyo City University

For some twenty years, I have conducted medical research on bathing as a lifestyle habit. That experience has taught me one thing with certainty.

It is that “Bathing is the best health practice that people in general can do.” It is easy and inexpensive, can be done every day without trouble, and it is very effective. We affectionately call bathtub bathing “ofuro” in Japanese. I suspect Japan is the only country in the world where nearly every house across the country is equipped with such an “amazing health promotion tool.”

In fact, the great health effects of bathing have been proven medically. Some examples include increasing immune functions, adjusting autonomic nervous responses, improving blood flow, activating basic metabolism and enzymes in the body, and reducing mental stress. It has an astounding variety of effects.

Among them, I think people are most interested in “increasing immune functions.” In a situation where COVID-19 infections are spreading, I think you would want to build a strong body that can overcome the disease even if you happen to become infected with COVID-19.

For starters, what does “increasing immune functions” mean? Put concisely, it means that the immune cells in the body work as they should. A number of studies on bathing have shown that being submerged in warm water for a certain time increases the number of immune cells in the body. A good example is the natural killer cells (NK cells). NK cells are literally “natural-born killers” that can attack foreign substances inside the body, such as cancer cells and viruses. If you have more of those NK cells, this will naturally increase the body’s immune strength.

However, there is still much we do not know about the long-term effects of more immune cells on the body. Some study results also suggest that the increase in cells is just temporary.

As such, let us take a slightly bigger perspective. As I said, bathing has many health effects and although “food,” “physical activity (exercise),” and “rest (sleep)” are said to make up the “triangle of health,” I would like to add “bathing” to make it “the square of health.” Practice correct bathing every day and build a healthy body. From a long-term perspective, that should lead to building a body with immune strength that can overcome viruses.



Prof. Hayasaka Shinya

Improving Blood Circulation



The best amount of water is a “whole-body bath” with a filled tub that covers you up until your shoulders.
Photo: zon / PIXTA

First, let me explain about the medical effects bathing has on the body. They can be broadly divided into the four effects of “thermal action,” “hydrostatic pressure action,” “buoyancy action,” and “cleaning action.”

Most important of these is the “thermal action” that warms up the body. Maintaining body temperature is extremely important for humans, so even a drop of say 1°C below the normal value is known to reduce immune functions and a variety of other physiological functions. That makes you more susceptible to infectious diseases as well, so it is necessary to make it a habit of warming your body by properly submerging yourself in hot water.

Moreover, “thermal action” also has the effect of improving blood flow. Bathing in hot water first warms up the body surface. Next, the heat is transmitted beneath the skin and causes blood vessels to dilate, which improves blood flow.

Human cells receive oxygen and nutrients from the blood that flows in vessels running to every corner of the body, and the blood also collects carbon dioxide and other waste products. Improved blood flow means that what you could say is the body’s number one “lifeline” is strengthened. When blood flow improves, immune cells flow to all parts of the body and can operate as they should.

Additionally, “hydrostatic pressure action” also has a major effect on blood circulation. Bathing in hot water puts water pressure on the human body. This has a surprisingly big effect, so that if a person who is 170 cm tall and weighs 60 kg is submerged to the neck, the water

pressure on the whole body would be about 400 kg. When bathing in hot water, the water pressure presses down the blood vessels in the skin of the lower limbs in particular, which pushes the blood slightly toward the heart at the body's center. When you get out of the bathtub, the water pressure disappears and the blood vessels are opened all at once, causing a vigorous blood flow. This series of events is what improves blood circulation.

The “buoyancy action” primarily has a mental effect. If you submerge yourself in hot water up until your shoulders, the buoyancy reduces your body weight to 1/10. When the body becomes lighter it has a big relaxing effect.

Lastly, it goes without saying that “cleaning action” cleans away the dirt on your skin. By bathing in hot water and cleaning the surface of your skin, viruses, microorganisms, unneeded sebum, and dirt that are harmful to the body are removed. Breathing in the steam from the bath should also help eject foreign substances from your mouth, nose, and elsewhere in your airways.

Bathing in a Bathtub is Better than Showering

Here I would like to note that these health effects are almost nonexistent if you just shower. Showering has a “cleaning action,” but it has very little “thermal action” and “hydrostatic pressure action.” It likely will not enhance immune strength or help you relax. This is why it is necessary to be properly submerged in a “bathtub bath” rather than just “shower.”

The health effects of just bathing once are said to last two or three days. If possible, it is best to take a bath every day, but if you are too busy and cannot find the time, you should bathe in a bathtub at least once every three days.

Now, what is the “proper way to bathe”? It is surprisingly simple and you can do it as long as you abide by the following three rules.

1. Water temperature at 38–40°C
2. Whole-body bath up until your shoulders
3. Stay in the tub for 10 minutes

The water temperature is extremely important, so much so that even a difference of as little as 1°C could give an opposite effect on the body. Let me explain how your nervous system works so that you see the mechanisms for this.

The human body has an autonomic nervous system that independently coordinates bodily functions to sustain the circulatory organs, the digestive organs, the respiratory organs and thus life. Moreover, this autonomic nervous system has two types: the “sympathetic nervous system” that agitates the body and the “parasympathetic nervous system” that relaxes it instead.

If you bathe in water that is hotter than 42°C this will stimulate the sympathetic nervous system and the body rushes into a kind of “fight mode.” The blood pressure rises, the pulse quickens, and the movement of the gastrointestinal tract and other organs slows down. When setting the water temperature, make it slightly lower than 42°C but higher than body temperature, so somewhere in the range of 38–40°C. This range should enable “thermal action” while the parasympathetic nervous system can heal the body.

The best amount of water is a “whole-body bath” with a filled tub that covers you up until your shoulders. “Half-body baths” were popular for a while, but that bathing method does not have any noteworthy health effects. Compared to a whole-body bath, the amount submerged in a half-body bath is only half, so “thermal action,” “hydrostatic pressure action,” and “buoyancy action” are simply halved. Properly submerging your whole body will better warm your body and also improve blood circulation since the water pressure is higher.

No Need to Keep Warming the Body

I recommend whole-body baths for 10 minutes. This time is the total time so it is not a problem to divide up the bath. For example, if you first bathe for just 5 minutes, then wash your body and hair, and finally bathe another 5 minutes, that gives you a total time of 10 minutes, which is fine. If you want to soak a bit longer, it is best to limit it to 15 minutes.

Fundamentally, about 10 minutes of bathing in around 40°C will raise your body temperature by 0.5–1°C. This increase can lead to “thermal action” and since the increased body temperature is maintained for 1–2 hours, there is no need to force yourself to keep warming your body. If you take long baths hoping to boost the health effects, you need to be wary of losing consciousness due to hyperthermia or dehydration, which in the worst case could lead to drowning in the bathtub. You have to keep an eye on how long you bathe especially during the hot season.

When is the best to take a bath? In fact, if you pick a certain time for your evening bath, this will significantly improve the quality of your “sleep.”

Let me explain this in detail. First, bathing in hot water rapidly raises your body temperature. Good-quality sleep will require that you lower the body temperature again in a good way. Human beings cannot sleep well if their body temperature is high since it keeps them in a state of agitation, which results in low-quality sleep. About 90 minutes after the bath, your body temperature will rapidly begin to fall, so if you get in your bed around that time, you can quickly fall asleep. The right thing to do is to take a bath about 90 minutes before going to bed. It is best not to take a bath just before sleeping.

As I mentioned in the beginning, “sleep” is an important element of health. If you take a bath at the right time, this will enable good-quality sleep and create a “virtuous cycle” for health.

Moisturize within 10 Minutes after the Bath

By adding a few extra elements to the basics I have talked about so far, you can make bathing even more effective and richer.

I strongly want to recommend bath salt as a tool. In particular, foaming carbonate bath salts absorb carbonic acid from the skin, expand blood vessels, and boost the “thermal effect.”

Moreover, you should moisturize all year around. The sebum on the surface of your skin and the moisturizing agent ceramides in your skin will necessarily seep into the water when you are bathing. This causes rough and dry skin. If possible, apply a moisturizing lotion on your skin

within 10 minutes after getting out of the bath. One way is to apply the lotion in the bathroom as soon as you are out of the tub. Nowadays, there are bath soaks that contain moisturizing agents, so it might be good idea to try one of those.

In addition to the above, it is important to drink enough water to prevent hyperthermia and dehydration. It is ideal to drink at least 400 ml of water before or after your bath. This could be either water or tea. Sports drinks (ion supply drinks) and barley tea with minerals contain sodium and potassium, which you lose when sweating, so they have the effect of quickly rehydrating you.

Bathing is good not only for the body but also for the mind. In recent times, there has likely been an increase in the number of people feeling stressed due to worries about COVID-19 and being confined to one's house.

This is precisely the right time to make the most of the relaxing and refreshing effects of bathing. You will be free from gravity through the “buoyancy action” that comes when you are in the water. The load on muscles and joints is eased, the body becomes lighter, and you can relax.

In today's world, our home bathroom is turning into the ultimate relaxation space. There are waterproof cases for enjoying your smartphone in the tub and even waterproof TVs. The bathroom is a place where you undress in solitude and are liberated both physically and mentally, surely making it a precious space with all the stress today.

If your number one priority is relaxation, a good method is “tepid bathing.” The water temperature should be roughly the same as the body temperature of 37°C. This temperature puts little strain on the body, and you can stay in the water for 40–50 minutes while hydrating. This will allow you to enjoy the relaxing effect of “buoyancy action” longer. However, since this method does not warm up the body sufficiently, it is important to note that it more or less lacks any health effects.

If you want a strong relaxation effect, a good method is “scents.” Fill up the wash basin with warm water, put in 2 or 3 drops of the aroma oil of your liking, and just leave it there to spread the scent in the bathroom. You will have a wonderful change of mood if you turn off the lights while in the bath. It is dangerous if you make it pitch black, so you will have to leave the lights on for example in the dressing room. Bathing in dim light will let you enjoy a different atmosphere.

Get a Lifestyle Rhythm through Bathing

If you keep staying at home and refrain from going outside, it becomes difficult to feel the changes during the day from morning to night. This is why it is so important now to make sure to take a bath at the end of the day in order to maintain your lifestyle rhythm.

The busy modern person is prone to just take a shower. Especially among Japanese people in their 20s, it has been reported that a mere 25% have the habit of taking a bath every day. Adults who tend to shower rather than bathe on a daily basis are precisely the people who I think would benefit from a habit of properly cleaning their tub and taking a bath every day.

Translated from “Korona ni makenai kokoro to karada wo tsukuru: ‘Mainichi nyuyoku’ de menekiryoku wa appu suru—ketsuryu no kaizen de karada no ‘raifurain’ wo kyokasuru (Building Bodies and Minds That Can Overcome COVID-19: Boosting Immune Strength with “Daily Baths” — Strengthening the Body’s “Lifeline” with Improved Blood Flow),” Bungeishunju, June 2020, pp. 298–303. (Courtesy of Bungeishunju, Ltd.) [July 2020]

HAYASAKA Shinya, MD, Ph.D.

Professor, Faculty of Human Life Sciences, Tokyo City University
