

## **THE BATH: ITS USE AND APPLICATION. GENERAL PRINCIPLES.**

Inasmuch as disease cannot exist where there is no disturbance of the vital functions, and as there can be no disturbance of these without an unbalanced circulation of blood, it follows that whatever agent or agents will give us the most perfect control over the circulation, and enable us to keep it equalized and well balanced, will be the most proper agent for us to employ in the treatment of disease. Medicines that occasion a change in the actions of any of the organs of the body, or that produce what medical men term a medicinal effect, are poisons; and they, instead of restoring a proper balance of the circulation, only occasion a change of excessive vital action and circulation from one organ to another, usually leaving the system in just as unbalanced and disturbed a condition as before the medicine was taken, and oft times in a much worse condition. If we examine the nature and cause of health, we shall find that it is highly important that the right degree of temperature be constantly maintained in all parts of the system; otherwise, an equally balanced circulation cannot be maintained. (See Part I., p. 28, article on Temperature.) This being the case, it is evident that, if we can have perfect control of the temperature of the body, we can, in a measure at least, have control of the circulation also. Therefore, whatever agent will give us the most perfect control over the temperature of the body and its various parts, will be the very best agent for us to employ

in the treatment of disease. There can be no question but that water, in its various modes of application, will give us a more nearly perfect control over the temperature of the body than anything else we can employ. In seeking to know when, and why, and how, to use water in the treatment of disease, we must never lose sight of the fact that whenever the body or any part of it is diseased, some part, at least, is clogged with impurities, or is congested or swollen with the fluids of the body; and that the disease consists largely of an effort on the part of the organism to remove the obstruction and its cause. If the obstruction consists of poisonous substances taken from without, or of retained excretions, those substances form an obstruction by becoming entangled or lodged in the tissues, where they either hinder, or entirely prevent, the usual life processes from being carried on. These poisonous matters are held in solution in the blood, and are divided into particles too minute for us to distinguish with our external senses, yet they are sufficiently large and solid to obstruct the nicely adjusted mechanism of the vital structures of our bodies. Now as these un usable substances can reach the tissues only as they are circulated in the blood, being held in solution by it, it is evident that in many cases the drinking of pure, soft water would result in great good, as the elimination of this water by the kidneys, the sweat glands, and other depurating organs would remove much of the poisonous matter held in solution by the watery portion of the blood. Water, being the

most perfect solvent of any known fluid, dissolves out, and washes away the impurities that have clogged the system, unless it is itself so saturated with similar materials that it can retain or dissolve no more. Water is not only useful when used as indicated above, but it is also useful when applied externally as a purifying agent. The skin contains an innumerable number of little orifices, called pores, through which more than one-half of the waste and effete matters of the body are passed off as the insensible perspiration. The mouths of these pores open upon the surface of the body, and deposit the matter thrown off through them upon the skin. If this waste matter is not removed, it accumulates, dries, and soon chokes up these openings, thus causing a retention of the effete matters within the system. A daily bath for three or four days for a person in this condition, if he is of ordinary strength, is a very effectual means of removing these deposits, thereby enabling the system to regain a condition of health by discharging the impurities through the pores of the skin. If the skin has not been properly attended to for a long time, the pores will not only be clogged, but the entire system will be very gross, being filled with the retained excretions, and a diseased action will be set up in some of the internal organs for the purpose of removing these waste matters which should have been thrown off through the skin. In such a case it is apparent that the only treatment that can be given is that which will set the sweat glands at work, and thus relieve the

internal organs from congestion. To accomplish these purposes, the prolonged warm or hot bath will be found the most effective treatment that can be given, for it softens and washes away all the impurities from the surface of the body, and also softens the skin, and thereby enables the sweat glands to excrete more readily the insensible perspiration with its contained impurities. By heating and moistening the surface, it will also draw a great amount of blood from the internal organs to the surface, thereby relieving them of congestion, and at the same time inducing a much greater action in the skin and its appendages, so that a greater amount of impurities shall be thrown off through the skin. If the patient's system is very foul, it may be found necessary to repeat the bath daily for several days, or to apply a wet-sheet-pack, or even a vapor-bath daily, or to alternate these for a few days, in order to successfully remove obstructions from the system. Prolonged baths should never be given daily to any but the strongest patients. Water may be so applied as to excite special action in almost any organ in the body, if proper attention is paid to the temperature and the mode of application. It may be used so as to produce vomiting, purging, sweating, diuresis, etc. It may be made a tonic, a stimulant, a sedative, or an alterative. In fine, by means of it we can accomplish nearly all the results aimed to be produced by medicines. Inflammation in some part of the body is an accompaniment of most of the diseases to which the human family are liable, and this is

more quickly and effectually allayed by water than by any other means; and as water enters so largely into the composition of the human frame, we have the assurance that, however much may be absorbed, no evil results will follow. The cooling property of water renders it of priceless value in the treatment of inflammations and fevers. The natural temperature of the body in health is 98° Fahrenheit, and it cannot vary much from this without serious difficulties following. In fact, if the temperature of the whole body were to be raised or lowered nine degrees from the natural standard, death would be the inevitable result. In all fevers and inflammations there is an increase of temperature, and the danger depends upon the degree of heat that is present. If the heat is intense, the fluids of the body undergo rapid change; and unless some agent can be found that shall reduce the temperature of the part, death must speedily result. The treatment required in such cases is to reduce the temperature and equalize the circulation. If the temperature of the body is too high, it can be readily reduced by the application of water, which should be applied continuously if cool or tepid, or if warm or hot it should be applied alternately with cold, or for but a few minutes at a time. If the temperature is too low, it can be readily raised by the continuous application of warm or hot water, or of dry heat. Water, when used either externally or internally, is the very best agent known for cooling the system, for the reason that it requires more heat to give a sensible warmth to a given

amount of water than to an equal weight of any other common substance. A vast amount of heat is required to convert water into vapor rapidly; hence, when water evaporates from the surface of the body, no matter at what temperature it has been applied, it serves as a constant cooler of the surface. It is this evaporation of water that makes it serve so beneficial a purpose when applied in the treatment of fevers and inflammations. The heat required to convert the water into vapor in these cases is all obtained from the body; consequently, the temperature of the body must be lowered if water is allowed to evaporate from its surface. This being the case, it is easy to understand how fever and inflammation may be reduced by the frequent application of water of any degree of temperature. Internal fevers may be reduced by cool drinks. The cool fluid is absorbed and circulated with the blood, and the fever of the internal organs is thus reduced, a certain amount of heat being used up in raising the temperature of the liquid taken to the same degree as the blood. The greater the variation of the temperature of the body from the common standard, the more constant and assiduous must be the application of water, both externally and internally. It is this cleansing, absorbing, dissolving, and cooling power of water, by means of which the effete matters are removed from the system, and its temperature and the circulation of its fluids regulated, that renders water so efficient an agent in the restoration and preservation of health. All systems of medicine recognize

the fact that, in the treatment of disease, it is necessary to accelerate the change of matter in order to renovate the tissues and invigorate the various organs. To do this, they bleed, purge, or mercurialize their patients down, and then give wine, tonics, and a "generous diet" to stimulate them up again as fast as possible, thus doing and undoing inter changeably. Bathing, pure air, appropriate exercise, and plain, simple food, will effect a change of matter incomparably more rapid, and without the destruction of healthful materials, than can be accomplished by any other mode of treatment.

### **HOT AND COLD APPLICATIONS.**

Heat and cold exert a powerful influence on the nervous organism, as well as on the temperature of the body and the circulation of the blood. Heat applied to any part of the body expands the vessels of the part and increases the activity of the nerves. The blood vessels enlarge, and lose their contractile powers to a certain extent, and become more or less distended with blood. Cold applied to these vessels causes them to contract and force the blood out, leaving less than their usual supply. In congestion and inflammation the circulation is obstructed by the capillaries becoming distended and surcharged with blood. The most successful means of overcoming these conditions is by the use of water. Water, when applied cold, will absorb the heat and cause the capillaries to contract, thus

forcing the blood out and so relieving the congested organ. If the water is applied very hot at first for a few minutes, and then quite cold for a short time, alternating thus for thirty to sixty minutes, the blood will be caused to circulate freely through the parts until the cause of the congestion is removed. This last method of applying water is very successful in removing congestions where they are not deep seated. But if the inflammation is deep seated, prolonged hot applications in the region of the inflamed part will be found the most efficacious, as it relieves the affected organ by relaxing the vessels of the surface and thus causing them to become distended with blood, which is thus diverted from the previously inflamed or congested organ. When any part of the body lacks its due proportion of blood, which is frequently the case with the surface, and especially with the hands and feet, a sensation of coldness results. If we apply heat to these parts, the capillaries become distended, the blood flows more freely, and they become warm. The first effect of cold applications to the surface is to force the blood in upon the internal organs, thereby inducing an increased action of the heart to force the blood back again into the capillaries; and if the cold is not too intense, nor too long applied, the increased activity of the circulatory system makes the circulation freer, and the parts warmer than before the cold was applied. This effect is termed reaction, and it is brought about wholly by the nerve centers of organic life. When the cold is first applied,



they recognize that there is danger of the system becoming too cold; and they immediately set the tissues of the entire surface of the body at work in a rapid manner to warm up the part. This explains how it is that a strong and vigorous person can take a cool or cold bath and be warmer immediately after than before taking it, or than immediately after taking a tepid or warm bath. It also explains why tepid or warm baths, and in some instances even hot baths, are better to alleviate fevers than are very cold baths. It is because the reaction is less after the tepid, warm, or hot bath than after the cool or cold bath.

### **HEAT AND COLD TO THE SPINE.**

Dr. John Chapman, of London, has made some interesting discoveries in regard to the application of heat and cold to the spine. The following is a statement of his theory, as presented by Dr. Miller, of New York: — "Heat or cold, applied over the spinal column, exerts an important influence upon different parts of the body. The effect upon the internal organs and remote parts of the body is directly opposite to that produced upon the capillaries in the region where the application is made. To illustrate : By applying heat to the feet, the flow of blood to them is increased, and they become warm ; the same result is accomplished by applying cold to the lower part of the spine. Cold is applied to

the bleeding vessels to stop uterine hemorrhage; hot applications to the middle of the spine will have the same effect. Cool or cold compresses are applied to the chest for pleurisy or inflammation of the lungs; hot applications to the spine, between the shoulders, will arrest these inflammatory processes much more speedily. "A knowledge of these facts, and of the correct methods of applying heat and cold to the different portions of the spinal region, and to other portions of the body, serves to make these the most powerful agents we have for the control of disease, whether acute or chronic. "There are thirty-one pairs of spinal nerves, one of each pair being given off on either side of the spinal column. Each nerve has two roots, a posterior or sensitive, and an anterior or motor, root. These two roots unite near the spinal cord, forming one nerve, which, after receiving two small fibers from a ganglion of the great sympathetic nerve, extends to some remote part of the body. Thus the thirty-one pairs are distributed, each in its order, to the different organs. "The great sympathetic nerve, so called because through it is produced a sympathy between different organs of the body, consists of a series of ganglia, connected by nerve fibers, situated on each side of the spinal column, and extending from the base of the skull to the lower part of the spine. When heat or cold is applied on each side of the spine, over these ganglia, it exerts a powerful influence upon the organs to which nerves from these ganglia are distributed. " Hot applications over the

ganglia that sends nerves to the lungs, heart, stomach, liver, bowels, kidneys, or genital organs, will diminish the flow of blood to those organs. Thus, for inflammation of the head and throat, apply cold to the inflamed parts, and heat to the back of the neck; for inflammation of the pleura, lungs, or heart, apply cold to the chest, and heat to the spine, between the shoulders ; for inflammation of the stomach, liver, or spleen, place cool or cold applications over the part, and apply heat to the spine, just below the shoulder blades; for inflammation of the bowels, kidneys, or genital organs, apply cold to the inflamed part, and heat to the middle and lower part of the back. Heat, applied to the spine in these places, will check hemorrhage in the organs to which the particular nerves over which the application is made are distributed. Uterine hemorrhage is effectually arrested by the application of heat to the middle of the back. "Ice applied between the shoulders increases the flow of blood to the breast and warms the hands. Ice applied to the lower portion of the spine prevents cold feet, relieves painful menstruation, piles, constipation, cholera, chronic diarrhea, spermatorrhea, and removes diseases of the bladder and many other difficulties. Ice, applied the whole length of the spine, is very effectual in cases of epilepsy, Saint Yitus's dance, diabetes, and paralysis."

*The Hygienic Family Physician: A Complete Guide for the Preservation of Health, and the Treatment of the Sick without Medicine, pg. 115-127 by M. G. Kellogg*