

SUN, THE GREAT HEALER.

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Heliotherapy is such a vast subject that it is impossible to discuss it as a whole in this article. I propose, therefore, to limit myself to the action of sunlight on tuberculosis of the bones, joints, glands and peritoneum.

From the outset I was convinced that tuberculosis of the bones and joints was but a manifestation of a general disease. It was therefore necessary to treat not only local disease, but the whole body, on whose state of health everything depends. Our treatment has, therefore, had a double object, that of curing the general as well as the local condition by the methodical exposure of the whole body to the sun. In principle, the whole body must be in contact with these two life-givers—air and sun. But in practice it is necessary to adapt the organism to its surroundings by a most careful technique and dosage, the rules of which we have laid down. Heliotherapy, inseparable from air baths, should be *direct, i.e.*, applied to the naked body without the intervention of screens, and *general, i.e.*, the whole of the body must be exposed, the surface and time of exposure being slowly increased. This treatment should begin and end with the extremities so as to relieve congestion. The sun bath should be strictly regulated according to the needs of the individual to the climate and season of the year. The dosage is determined by the local and general reactions of the body.

Thus practised, heliotherapy provides at one and the same time local and general treatment. Methodically regulated it is the best conceivable regenerator of the organism, by virtue of the congestion which it relieves, the healthy scarring which it promotes and the hardening of bones which it effects by means of the calcium it helps to deposit in them. It can safely be claimed that there is not a single organ of the human body which does not benefit from the carefully regulated action of the sun.

One of the considerations which has induced me to practise general heliotherapy is the conviction that the skin plays an important part, when exposed to the sun, in the fight the organism puts up against tuberculosis. The skin is not merely an organ of protection and excretion. It is also an essential organ of circulation. Certain elements of the solar spectrum amplify the dilatation and contraction of the small arteries and capillaries of the skin. By drawing blood from the deeper parts of the body to the surface, sunlight relieves congestion in the chest and abdomen and thus facilitates their vital functions. The exposure of the skin to sun and air intensifies the most important functions of the nervous system in relation to the skin. Not only is the skin under normal conditions an organ of secretion and elimination, it is also the principal organ of immunization of the human body.

It is thanks to the action of the sun that Vitamin D is formed in the skin. This vitamin is indispensable to the formation and development of bones. It is also the action of the sun on the skin which creates the colouring matter known as pigment which gives

the skin its more or less bronzed colour—a sign of health when it is kept within normal limits and has not been provoked by the excessive exposure to sun which is much in fashion at the present time. The normally pigmented skin is the admirable clothing devised for us by the Creator; it is comparatively insensitive to heat and cold. It is noteworthy that boils, pimples and eczema are hardly ever seen in bronzed skins; and the most obstinate wounds rapidly heal in contact with air and sunlight.

But the radiations of the sun are not limited to the skin; their influence extends also to the muscles even when the person concerned is ill and quite unable to move. This most remarkable action of the sun on the muscles is due to its ability to draw blood from the interior of the body, through the layers of muscle, to the surface of the body.

The action of the sun is extended in an equally favourable sense to the bones, thanks to their recalcification by its rays. Quite early in my experience, I noticed how they cured rickets. The same process is observed in bones which are always decalcified, wherever they are invaded by tubercle bacilli. The recalcification of the bones due to the deposit in them of calcium and phosphorus from the blood is largely responsible for the healing and scarring of diseased bone. Our collection of more than 80,000 X-ray photos shows that there is no disease of the bone, however deep-seated, which escapes this recalcifying and scarring process.

The effect of heliotherapy on the mentality of patients is also too characteristic to be ignored. One has only to note the happy animation and high spirits of patients in a solarium to be convinced of the profound sense of well-being and happiness which accompanies the carefully graduated sun and air bath. As is generally known, we have combined it with the work therapy, which has proved such an effective remedy that we have created a veritable system of treatment in our "Clinique-Manufacture."

The application of general heliotherapy has introduced radical reforms in the treatment of surgical tuberculosis—suppression of mutilating operations and complicated plaster-of-Paris apparatus, in whose place we now have a rational orthopedic treatment, the principle of which is to expose the whole body to the sun and air.

Briefly, the effects of heliotherapy on surgical tuberculosis are as follows: Improvement of the general state of health, renewal of the skin, muscles, ligaments and bones, and healing of wounds and sores. The restoration of their normal functions to the joints is promoted, irreparable mutilations are avoided, and the patients are restored to the community, not as cripples obliged to live at its expense, but as individuals able to earn their living and to resume their life in society and the family. Heliotherapy is practised with great success in Leysin, Montana, Davos and Arosa, whose high level above sea provides much sunlight even in winter. They are fitted with the most perfect technical appliances—a fact which explains the surprising successes they have achieved.

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