

# Introduction

*Thousands of sickly children, pining away in the slums of our manufacturing towns, might be saved by an occasional sunbath. Aside from its warmth, sunlight exercises a vitalizing influence upon certain organisms which science has not yet quite explained, but whose effect is illustrated by the contrast between the weeds of a shady grove and those of the sunlit fields, between the rank grass of a deep valley and the aromatic herbage of a mountain meadow, as well as by the peculiar wholesome appearance of a "suntanned" person or a sun-ripened fruit.*

— Felix L. Oswald

In presenting this book, I am well aware of the existing prejudices against the role of sunlight in health. Some in the profession of medicine proclaim that the sun is harmful and does nothing to support the health of man. At the same time they offer their chemical tonics and praise the wisdom of modern science.

Where, we ask, is the wisdom for us to respect? We see little more than an accumulation of absurdities and barbarities. Look at sick humanity around you; look at the mortality reports; look at generation after generation, cut off in the very springtime of life, and then talk of wisdom or science!

Nature's health laws are simple. The road to health and happiness is not the labyrinthine maze described by our medical mystagogues. In pursuing their dietetic codes one is fairly bewildered by a mass of incongruous precepts and prescriptions, laborious compromises between old and new theories, arbitrary rules and illogical exceptions, anti-natural restrictions and anti-natural remedies.

In this volume we offer you real wisdom and true science — we offer you the accumulated wisdom of many thousands of years, wisdom that will still be good when the mass of weakening, poisoning and mischief-inflicting methods of regular medicine are long forgotten.

In his book, *Nature's Household Remedies*, Dr. Felix L. Oswald writes:

*Life is a sun-child. Nearly all species of plants and animals attain the highest form of their development in the neighborhood of the equator. Palm trees are just tropical grasses... the python, a fully developed black snake... the tiger, an undiminished wild cat. With every degree of higher latitude, Nature issues her archetypes in reduced editions — reduced in beauty and longevity, as well as in size and strength.*

This statement was made in 1885, and although practitioners had been employing the sunbath in this country for over thirty-five years at the time Dr. Oswald's statement was made, the practice was still frowned upon by the medical profession. All who enjoyed sunbaths were denounced as charlatans, quacks, extremists, or fanatics. Indeed, these names were still being applied to sunbathers in 1911, when the present writer began taking sunbaths.

Sunlight for the many purposes for which it has been employed, has been in use since before the dawn of history. Indeed, it may be said that it is as old as life. Savages, "primitive" peoples, little boys and animals instinctively seek to avail themselves of the benefits of sunshine. During recent years the wearing of very scanty clothing, shorts, and bathing suits, by both sexes, young and old, has served to give the youth of today the advantages of sunshine.

## The Long History of the Sun and Health

Before discussing the modern phase of sunbathing, it's necessary to give a brief account of the practice in ancient times. Evidence of the use of the sun for the restoration of health and prevention of illness may be found in every period of history, in all peoples, savage or civilized. Positive evidence of the hygienic use of the sun is found in the history of the Egyptians. The Babylonians and Assyrians had their sun gardens; the Greeks their helioses; the Romans their solaria.

Akhenaton of Egypt; Zoroaster of Persia; Hippocrates of Greece; each and all elevated the sun to the dignity of a god and a force of health. The great sanitarium of Hippocrates, on the Island of Cos, was equipped with a large solarium for the use of the sun. The Roman thermæ were all equipped with solaria for those taking sunbaths. Hippocrates himself extolled the virtues of sunlight, and ancient physicians declared the sun to be "the best food and medicine in the world."

Herodotus and Antyllos declared that "the sun feeds the muscles." The Romans made use of sunbaths in strengthening and enlarging the muscles in training their gladiators. Philostratus also tells us that the Olympian athletes were required to take sunbaths.

Celsus, Pliny the younger, Galen, and Cicero are among the Roman writers who describe the use of the sunbath. "Sol est remediorum maximum" — the sun is the best remedy — declared Pliny. The flat roofs of the southern houses were esteemed as solaria by the Romans.

The old German epic poem, “The Edda,” tells us that in the springtime, Germans used to carry their sick to the sunny mountain slopes in order to expose them to the sunshine. Certain Germanic tribes placed their feverish children in the sunlight on the tops of their houses. On the shores of the Bay of Gascony, sunlight is still employed in combating rheumatism. The Incas of Peru treated syphilis with sunbaths. In Haiti, similar procedures are still employed.

Sun worship predates recorded history. At one time or another, the whole human race has worshipped the sun. The Egyptians employed the sunbath over five thousand years ago, and the first Egyptian temple was erected to the sun god. This temple was erected in a city called Heliopolis — City of the Sun. At the time of the discovery of America, the more advanced Indian tribes of both continents were sun worshippers.

Religion and philosophy alike taught that the sun is the source and creator of life, and there are yet many who hold this view. In the third century A.D., Mithraism, or sun worship, came very near to becoming the universal religion. This religion and Christianity were so alike that they became virtual rivals. After the fall of the Roman Empire, the extreme reaction of Christianity against everything “Pagan” practically ended the sunbath.

Between the Ancient world and the Modern, was the Middle or Dark Ages. There was a thousand years’ reign of anti-natural madness that practically destroyed all that was of value in ancient civilization and preserved its worst or least desirable features. During this millennium of madness, coincidentally, few physicians employed the sunbath.

## **The Modern Era of Sunbathing**

The modern phase of sunbathing had a dual origin — one of these in Europe, the other in the United States.

Arnold Rikli, who died in 1907 at the age of 97, is regarded as the originator of the modern practice of sunbathing. For over half a century he prescribed sunbaths at his institution at Weldes Krai, Austria on the Adriatic Sea. This institution attracted patients from all over the world. Rikli wrote about his methods in seven books, some of which have been translated into the Spanish, French and Italian languages.

Across Europe, sunbathing grew in popularity. In 1755, Waldvogel of Bohemia advocated sunbathing although he had few or no followers. Madame Duhamel exposed tubercular children to sunshine at Berck as far back as 1857, believing that sunbathing would hasten recovery time. Dr. Lahman employed the "Sun and Air Cure" in his institution in Germany, as did Bilz in his famous institution as early as 1872-73.

In America, the first advocate of sunbathing was Sylvester Graham, who declared the benefits of sunlight in *Lectures on the Science of Human Life*:

*If man were always to go entirely naked, the external skin, the anatomical structure and functional character would be preserved in a more healthy and vigorous state, and perform their functions more perfectly. Thereby the whole human system in all its properties would be benefited; the circulation, and particularly the venous circulation which is near the surface, would be more free and unobstructed; breathing would be more free, full and perfect; the bones be less liable to disease and distortion; all the muscles would be better developed and more powerful. In short the anatomical development and symmetrical proportion, the physiological power and functions of every part in the whole system would be more perfect.*

It is only since World War I, that any considerable attention has been given to sunbathing by the medical profession and yet there remains much opposition to it in medical circles. Most writers on the subject attempt to show that sunbathing was merely an instinctual or religious practice in the past. This is true. But sunbathing was also a therapeutic practice, and its healing properties were well known to the medicine men of ancient Egypt, Greece, Rome, India, Peru, etc.

Now that the medical profession has partially recognized the value of sunlight, they forget the work of our ancestors and tell us that Dr. Loncet of Lyons, France, made the first series of observations as to the effects of sunlight in disease in the decade of 1890-1900.

Dr. Neils Finsen, of Denmark, who experimented with sunrays and also with artificial light is also given much credit. In 1890, Dr. Palm of England contributed an article to *The Practitioner* in which he discussed the value of sunlight in the prevention and correction of rickets. Many physicians have now plunged into this field with earnestness and zeal.

Today, sunbathing has attained respectability despite the fact that it is not yet understood by its medical supporters.

## The Science of Light

Light is a composite entity, which may be broken up by means of a prism into the color band of the spectrum — red, orange, yellow, green, blue, indigo and violet. These different colors represent different rates of vibration of the light rays. From red to violet the wavelengths decrease, while the rate of vibration increases.

In addition to the color rays, sunlight contains a number of other rays, the “vibrations” or frequency of which are not visible to the naked eye.

The visible or “color” spectrum is composed of rays that vibrate from 8100 A.U. (red) to 3900 A.U. (violet). These rays of light are visible to the eye and give us sensations of light, color and heat.

The invisible rays of the sun are quite beneficial to our bodies. However, it is the complete solar-spectrum, with all its colors and shades so blended and proportioned as to produce white light that is needed for ideal growth and development.

## Sunlight: Effects on Plants and Animals

Light enables plants to assimilate carbon dioxide and convert it into plant substances. The carbon dioxide is transformed into formaldehyde and this in turn is polymerized to sugar by the action of light. A carbohydrate is thus formed by plant metabolism under the influence of light.

Photosynthesis is the manufacture of carbohydrates out of carbon dioxide and water in the chlorophyll-containing parts of plants exposed to sunlight. The starch of fruits and some plants like cane and beets is converted into sugar in the ripening process. This conversion requires the action of light. Heat will accomplish part of the work, but the perfection of these sugars requires the work of ultraviolet rays.

Sunlight is essential to the production of both the green coloring (chlorophyll) of the leaves and the many colors of the flowers, stems, leaves and fruits. The beautiful colors of flowers cannot be produced or perfected without light.

A plant kept in darkness grows colorless, flaccid and stunted. Given sunshine, it soon regains its color and unfolds bud, leaf, flower and fruit. Deprived of sunlight, the plant dies outright or puts forth a sickly, colorless growth. If any rays of light chance to filter through, the plant will bend towards the light. If it fails, it soon withers and dies.

Plants turn their leaves and flowers to face the sun, and some of these, like the sunflower, follow the sun around, seemingly in order to have the largest possible area exposed to its radiations.

The stalk of a potato that sprouts in the cellar will be as white as chalk and as tender as bleached celery and the substance of the potato will be exhausted without a new vegetable being formed. Put the potato outdoors where it will receive sunshine and it will put forth green leaves, its stalk will become thick and strong, it will grow and produce more potatoes.

I quote the following from *Rational Diet*, by Otto Carque:

*In order to determine whether the indirect daylight has the same effect as direct sunlight, I selected twelve bean plants of the same variety and in the same state of development. Then I planted them in such a way near one another, that six always had full direct sunlight while the other six received only the diffused daylight.*

*In October, the pods were harvested. And the following year, these seeds were planted and they were all grown in full sunlight. The surprising fact was that those which had been raised in the shade only yielded half the amount of the previous year's harvest. While in the fourth year, they blossomed but did not mature. The deprivation of sunlight during one summer weakened the stock to such a degree that the species became extinct after four years.*

Colors of animals, butterflies and birds, as well as the development of the eyes of mammals, are determined by light. Complete absence of light not only results in blindness in animals, but even in eyelessness. The young of blind fish and crustaceans have normal eyes, but mature forms may be entirely eyeless.

Sun-deprived plants are structurally weaker and possess less resistance to weather changes and to pests. They are unable to produce fruit and often unable to put forth leaves. Sun-starved animals are the same. Their bones are more delicate, tissues less firm and resistant; they are short-lived, subject to disease and also possess less resistance to weather changes. Every cell and fiber in the plant and animal body is strengthened by the sun's rays. People who live indoors out of the sun are pale, weak and flabby.

Chickens raised in the sunlight produce harder and thicker shells on their eggs. Chickens, geese and other birds raised in the dark put on fat more rapidly. Calcium does not seem to be “laid down” in the absence of sunlight.

There is not a tissue or function in the body that is not favorably affected either directly or indirectly by sunshine. The sun’s rays enable the animal, as they do the plant, to analyze compounds and to synthesize new ones. Sunshine is an essential catalytic agent in both plant and animal life.

In his book, *How to Treat the Sick without Medicine*, Dr. James C. Jackson wrote:

*It may be said with perfect truth, that no living organism whose subject has a brain, a pair of lungs, stomach, bowels and backbone, can ever be equal in capacities, if kept in shaded sunlight, to what it would be if permitted to follow out its habits in unshaded sunlight. This is just as true of humans as it is of animals; whoever lives habitually in the sunlight grows strong.*

The manner in which sunlight is used to produce the effects that follow is not well understood, and many theories, some of these very ridiculous, have been offered to explain its use.

Almost all reactions in nature require a catalyst, or a “change agent.” For example, explosives require a jar or a shock to cause them to explode. If mixed in the dark, hydrogen and oxygen gases do not unite. Photography is based entirely upon the power of light to instigate a chemical reaction. That plants and animals also make use of this power of sunlight is certain.

Sunlight is vitally important in the nutritive processes of both plants and animals. Perhaps we cannot call it a food, but we can, at least, call it an accessory nutritive factor. In the tropics, where sunlight is most abundant, life exists in greatest profusion.

In those portions of the earth where nights are longest and days are shortest and where long winters prevail, life is either absent altogether or it consists of poorly developed forms.

## Sunbathing and Tanning: The Basics

In most parts of the earth inhabited by man there is sufficient sunshine to meet his needs and the needs of the teeming flora and fauna about him.

It is cooler in the high mountains, there are more ultraviolet rays and, if one is above the clouds, there are more sunny days, but the fact still remains that there is sufficient sun and favorable conditions for sunbathing in the valley or at the seashore.

The best and healthiest rule in the sunbath is constant movement. Rest in the shade. Pigmentation is slower, but one is less likely to be injured if moving about than if lying still.

A sunbath taken at any time of the day will be beneficial and a busy person should take one at any time he or she can. But as the intensity of light and the length of time of exposure play important roles in sunbathing, greater caution must be observed if a bath is had at mid-day in summer.

The early morning is the best time for sunbathing, as at this time one may enjoy longer exposure without the depressing influence of intense heat. The late afternoon is also a good time for sunbathing.

Rikli had his patients arise half an hour before sunrise in the summer and go up to the mountains and get their sunbaths during the coolest moments of the day. His baths were given on the mountain and it is here that the ultraviolet rays are most abundant.

Sir Henry Gauvin, English tuberculosis specialist, claims best results are obtained with sunbathing if there is also a current of air playing over the body. Cool breezes probably do more for the body than merely protect it from excess heat. If this is true, it only confirms the Hygienists' contention that air baths are of great value even without the sun. Take your sunbath in the cool portion of the day or else while the wind is blowing.

There are sections of the earth in which there is little winter sunshine and from which the sick will do well to retreat when winter comes.



The excuse often offered for not getting sunbaths is that there is no place to take them. This is a lame excuse. Where the will exists there is no lack of possibilities and facilities for sunbathing in spots where the sun shines. Balconies, flat-roofs, apartment house roofs, open verandas, a sunny place in the garden or park, all offer splendid sunbathing spots. The beach and secluded spots in the country also offer possibilities for sunbathing.

There are three chief means of protection: pigmentation (tanning), thick-skin, and avoiding overexposure to the sun.

Just as chlorophyll is formed as a light screen and filter in plants, melanin is deposited in the presence of sunlight as granules in the deeper cells of the epidermis. This pigment absorbs the visible and ultraviolet radiations and, after converting them into radiations of less energy and lower vibration, passes them on to the deeper structures.

It is customary to divide pigmentation into two types — instantaneous tanning and delayed tanning. The first develops almost immediately after exposure to sunlight; the other develops gradually and continues for several days after exposure to sunlight.

The first part of sun tanning seems to be a darkening of the pigment already present in the skin. Following this is a deposit of more and more pigment as exposure to the sun is repeated, so that a very heavy color screen may be produced in the skin. The tanning process begins at once when the skin is exposed to the sun, but a few short sunbaths are required to visually notice a “tan.”

Except in the cases of albinos and some red-haired people, pigment is quickly formed in all human beings when exposed to sunlight. It is produced most abundantly in black races, less abundantly in brunettes than those with black hair, and least abundantly in redheads. In each type it may be increased by exposure to sunlight.

The deepest pigmentation is occurs through a combination of infrared and ultraviolet rays. It may occur without any preceding redness of the skin; that is, by gradual exposure to the sun without burning. Pigmentation is a vital physiological process, manufactured within the body out of the elements of food, deposited

The body is well-equipped with defenses against the sun and burning can occur only when more sun is secured than the defenses can protect us against.

in the skin by the body, not by the sun. Two people equally exposed to the sun will tan differently — one becoming a dark brown, the other a light tan. These differences are due to the genetic differences in the two individuals — and to the ability of the body to manufacture pigment.

I doubt that a deep, dark tan can be considered a desirable acquisition. It is my opinion that, both for appearance and for the benefit of health, a light tan is preferable.

Tanning may range all the way from very light to almost black, depending on the amount of exposure to which one is subjected and one's pigmenting ability.

And keep in mind, it is not universally true that, "a tanned body is a healthy body." I have seen bodies that were

so tanned they were almost black, and their possessors were dying of cancer or diabetes. Sunshine is no substitute for right living in other departments of life.

In infancy and early childhood, when sunshine is of great importance, tanning is a slow process and is almost never dark, even after months of sunbathing. With rare exceptions, a child must be four to six years of age before he or she will become dark from sunbathing.

Dr. Rollier thinks that pigment acts as a kind of dynamic accumulator and says:

*Experience, at least, confirms this by showing that the resistance of the patient is nearly always in proportion to the degree of pigmentation. It acts not only in protecting the skin against the too violent irritation of the ultraviolet rays, but in regularizing the thermic contribution of the sun. Finally it is probable that the pigment receives, furnishes and activates the elements essential to the metabolism of the hormones.*

Jesionek believes that the pigment itself passes in solution into the blood. It is changed there into substances that act favorably in pathological processes, such as tuberculosis.

Rollier lays great stress on pigmentation, not only to arm the skin against the inflammatory stimulus of the ultraviolet rays, but also because experience has shown that only a strong deposit of pigment in the skin warrants certain success in healing tuberculosis. Pigment cells are also thought to secrete substances which are carried into the blood and beneficially affect the rest of the body — the skin thus becoming an organ of internal secretion.

Good pigmentation depends upon regular, sensible sun bathing. Subjects with fair or red hair do not pigment as readily as dark-haired subjects. These first become a coppery red color and then, light brown. Brunettes, on the other hand, pigment very quickly. In Egypt, the Englishman soon becomes as dark, or even darker in many cases, as the Egyptian or Arab.

I have started a number of blonde and red-haired babies sunbathing from birth and have had them continue to do so on through their infancy and childhood and none of them have freckled. This has led me to believe that were all such types given sunbaths from infancy, the freckles that bother them so much would not develop. It would seem that freckling is due to a certain loss or disturbance of the ability to tan as a result of long denial of sunshine during the formative years of life. As these babies and children have all been provided with superior nourishment, it may well be that nutrition also plays a very important role in this matter.

Too much exposure to the sun occasions an excessive thickening of the skin and at the same time, makes the skin dry and causes it to scale. A harsh, dry skin is the result. Certainly this is not desirable and it is the worst kind of folly to stay in the sun long enough that this takes place. It is largely to avoid this dryness and harshness of the skin that olive oil and certain other lotions are employed by those who refuse to exercise a little intelligence in their sunning. Instead of buying and using the various commercial preparations that are sold to prevent the harshness and dryness of the skin that results from over-exposure, the intelligent person will avoid undue exposure and thus avoid the undesirable consequences. A silken, smooth skin is the result of proper sunbathing. Such a result is for those who exercise intelligence in sunbathing.

The ancient rule of moderation should guide us, just as in eating and daily exercise. Many of us have never learned self-control and tend to go to excess in everything we do. We are never satisfied until we have had too much. Then, because too much harms us, we are likely to abandon the thing altogether rather than learn the true lesson.

We work on the principle, "The more of a good thing the better." Never was there a greater delusion. A little boy asked his mother, "If a teaspoonful of salts will do daddy good, why not give him the whole box and get him well in a hurry?" Too many people work on this principle in everything they do. They over-eat, over-exercise, over-bathe, over-sunbathe, etc. Lotions are not substitutes for intelligence.

Even animals whose bodies are not nude but are covered with hair, feathers or thick, heavy scales, instinctively avoid over-exposure. They may be seen actively feeding in the sun in the morning, when it is cool, but they retire to the shade

before noon and remain there until later in the day, when they come out again. Birds, beasts, insects, even the red and black ants, observe this simple precaution. And so should you.

## Sunbathing: Cautions and Risks

The devitalizing influence of the hot sun is well known. Therefore, we must distinguish between the "light" of the sun and the heat of the sun. It is not the sun's heat from which all these benefits flow. Cities like Chicago and Pittsburgh receive plenty of the sun's heat, but less of its light or non-luminous rays, with the result that the blood of their inhabitants is on an average about twenty percent deficient in hemoglobin.

Animals seek the sunlight but avoid its heat. They prefer to be in the sun during the cool portions of the day and seek the shade when it grows hot. The extreme heat is depressing and weakening. The guiding hand of animal instinct in avoiding the heat of the sun may be seen in the city's zoological gardens, the country pastures, or in the untamed places of the earth. The Indian in Mexico, Peru, South America, the black men in Africa, all obey this instinct. The fox, the cows in the pasture, the hens in the barn lot, and the birds in the tree tops all love to bask in the sunlight of morning, but retreat to the shade as the heat of mid-day approaches.

In taking a sunbath, excessive heat is to be avoided. A temperature of 65° F is most suitable. Above 85° F, prolonged exposure becomes weakening.

In the tropics the leaves of palms and trees are both thick and heavy, or have their edges turned toward the sun. At mid-day in summer, when the sun is hottest, these leaves curl up. Like birds, insects and beasts, the plant escapes the excessive heat as much as it can. Like the lower animals, led by their unerring instincts, we should obtain our sunlight during the cool portions of the day.

Individuals whose skin reddens and blisters easily and never tans, are frequently advised to stay out of the sun completely. I think this is pernicious advice. These people also need sunshine, but should take precautionary measures. First, enjoy the sun in the early morning or in the late afternoon, when the sunlight is not so abundant in ultraviolet rays. Next, stay in the sun but a few minutes at a time. Begin with but one minute on each side and cautiously and slowly increase the time of exposure. It may even be possible, where time permits, to have two, or even three such short periods of exposure a day, slowly building the body's resistance to the sun's rays and developing protective pigmentation.

Efforts are made in many circles to convince the public that enjoying sunlight is extremely hazardous. Much of this is pretense with a commercial bias.

Anyone with sense enough to eat, or sleep, or exercise, or breathe pure air, can enjoy the healthy pleasure of sunlight. It is as natural as any of these things and equally as simple.

A few simple precautions must be observed in sunbathing, and anyone of average intelligence may understand and apply these.

One of the first things necessary in taking sunbaths is to acquire a good coat of tan. Women and others who do not desire a dark tan on their faces, necks and arms, may cover these when taking sunbaths. In this way they may control the amount of pigmentation in these regions.

Many people are impatient and desire to tan too rapidly. They are inclined to overdo the sunning process and burn themselves. Do not try to get a year's supply of sunning in one day.

There are those who tan readily and those who tan slowly and with difficulty. There are a few who do not tan at all. The amount of precaution required in commencing sunbathing depends upon the type of skin possessed. It should not be thought that people who tan slowly derive no benefit from the sun.

It is necessary that blondes and red-heads proceed more cautiously in beginning sunbathing. As no good can ever come of sun-burning yourself, all types should use intelligence in sunbathing and proceed with due caution. Where the tendency to freckle exists, women may desire to cover the face, neck and arms to prevent these parts from freckling. This will detract little or none from the value of the sunbath.

The chief value of pigmentation is the protection it affords against burning. We would still caution those who have developed a deep tan against excessive sunbathing. The statement that "people with a nicely tanned" skin "are able to stay in the sun all day with no bad effects" is misleading and not based on experience. Sunbathing is entirely different from the popular practice of enjoying the fresh air. The bath is taken with all of the clothing removed. Care must be taken not to burn the body. Too little, rather than too much, should be the rule.

Begin the sunbath by exposing the entire body six to ten minutes a day and gradually increase the length of time of exposure until half an hour to an hour or more. Make haste slowly. Expose the front of the body three to five minutes and then, expose the back three to five minutes.

Necessary and useful as is sunshine, it is a powerful chemical agent against which the body must protect itself to avoid serious damage. It is estimated that the "normal" unprotected skin can endure fifty minutes of sunbathing without burn, but this estimate must not be taken too literally. First we must ask: What is a normal skin? Next we must take into account the time and place for sunbathing. Is it to be taken at the shore or in the lowlands or on the mountains? Is it to be taken in the early morning or at high noon?

The bronzing or browning of the skin due to a deposit of pigment (melanin) around the epidermal and basal cells, following exposure to the rays of the sun, constitutes "sun tanning." Pigment is the most important protecting mechanism by which the body prevents getting an overdose of sunshine. This pigment screen is the body's most important protection against too much sun.

Tanning prevents the over-absorption of rays, and thus prevents burning. The layer of pigment is the body's barrier against the penetration of an excess of ultraviolet rays, and the more one is tanned, the less is the danger of light rays causing suffering.

Before pigmentation has occurred, an overdose of the chemical rays of the sun will have injurious effects on healthy tissues. Once pigmentation has occurred and a deep brown skin has been obtained, more sun exposure can be tolerated without discomfort.

Articles on sunbathing which appear in popular magazines and newspapers tend to emphasize the dangers of sunbathing on the one hand, and the "virtues" of sunscreen on the other. Rarely do they ever stress the great benefits to be derived from sunning. It is possible to overdo sunbathing, even after one has built up a protective tan. Drying and harshness of the skin and general weakness result from such over-exposure.

The injurious results of excessive sunbathing are not to be prevented by the use of lotions and oils.

To avoid the negative effects from over-sunning, it is only necessary to avoid undue exposure to the sun.

If the lotions afforded the "protection" that they are claimed to provide, they would also deprive the bather of the benefits of sunbathing...

It is not mere tanning that we seek, but the total wellness the sun provides on all tissues of the body.

# The Consequences of Sunburn

Sunburn is distinct from suntan. It is a real burn and injures the skin just as much as fire or scalding water. It results from an overdose of sunshine in those who lack adequate protection against the sun's rays. The sun's rays may penetrate deeply and burn the underlying tissues.

When exposure is too prolonged, inflammation follows. Burning, severe blisters, and peeling can result. Sunburn is usually superficial and quickly heals. As in other burns, there are three degrees of sunburn.

First degree burn is a slight redness (erythema) which causes little or no discomfort and results in no harm. The redness is due to the excess of blood in the skin.

Second degree burn results when you stay in the sun until the skin glows like a boiled lobster. It is very painful and is accompanied with fever. Blisters develop and burst. There is much itching and peeling of the skin. There may be vomiting and other unpleasant symptoms as a result of the terrible beating taken by the nervous system.

A third degree burn results in a sloughing dermatitis and may end fatally. Inflammation of the brain, stomach and intestines, blood poisoning, hemorrhages and tetanus are said to follow as complications of severe burns.

Those impatient individuals who seek to get a coat of tan in a hurry and those foolish individuals who try to get enough sunshine on the first day of their vacation to last the whole year are almost sure to burn themselves.

Sunburn does not show up immediately. One burns without realizing it until hours later. The only safety lies in not overdoing the sunbathing until a protective coat of tan has been built.

It is not necessary to get sunburned in order to tan. Indeed, the purpose of tanning is to prevent sunburning. As tanning occurs from exposure short of burning, it is easy to acquire a tan without a burn and without artificial preparations applied to the skin.

At the shore, on the sand (especially white sand), or in the water, more sun's rays strike the body due to reflection from the sand and water. It is *much* easier to get an overdose. Burning will result in a much shorter time at the beach. Even those with a protective light tan will readily burn under such reflective conditions.

A thin haze over the sun does not exclude its ultraviolet rays and will not prevent burning. A cool breeze will not prevent burning. It is not the sun's heat rays that produce sunburn. Do not be misled by the fact that it is cloudy. A very severe burn may be produced by staying in the sun too long under such conditions.

## The Dangerous Substitutes For Sunbathing

In some form or another radiant energy plays a part in all animal and plant activity. We know that heat sets in motion the wound-up "machinery" of the germ-plasm. It touches-off the vital spark in the egg and is essential to the continuation of the evolution of the new being.

Charles Fere conducted experiments associating of light and muscular force. He found that a light-colored light flashed in front of the eyes will greatly increase muscular strength. If this is kept on for "too long," however, muscular strength diminishes. Red is irritating, blue is soothing. Most of the effects attributed to color are psychological and fail to appear when the subject is blind or blind-folded.

In manufacturing plants of photographic supplies, the workmen who spend all of their time under red light become angry. The substitution of violet glass panes for the red ones calmed the men. This is a psychological effect produced through the eyes.

Physicists have not been able to construct artificial light that possesses the unity and balance of sun-light. There are several marked differences between sunlight and artificial light, and these differences produce corresponding differences in results. Sunlight has inestimable advantages over all forms of artificial light.

Every imitation of nature is incomplete and seldom, if ever, satisfactory.

The balance between red and violet, in sunlight, is beneficial to the eyes and skin. The cells of plants and animals are nicely adjusted to the happy combination of visible and invisible rays of the sun. The complete lack of red rays and the excess of irritating ultraviolet in quartz light constitute a double danger.

Quartz light, which is used in tanning beds and other sun lamps, gives an excess of short, irritating rays, lacks other counter-balancing rays, and makes the risk of burning the skin and severely injuring the eyes with the "artificial sun" very great. The shorter ultraviolet rays, which render quartz light so irritable are not found in sunshine.



Neither the ultraviolet rays nor the red rays are the exclusive metabolic agents of light. The combination of red and violet, of heat and chemical rays is the secret of the sun's beneficial influence. This balanced combination is not found in any artificial light.

Evidence of the harmfulness of the ultraviolet lamp is the special precautions that are necessary to prevent it from producing damage, owing to the painful effect of its short wave rays on the skin. The eyes in particular must be protected, either by goggles or by a dark cloth around the head. Conjunctivitis is very common, even from looking for a few seconds at an arc-lamp, if the eyes are not properly shielded. "Quartz light," says Thederling, "has the richest content in short-wave rays. Radiation of the skin of even a few minutes duration causes intense burning, and if the naked eyes are exposed to the light, painful conjunctivitis will result." This condition is exceedingly painful. Sunlight does not produce it.

While plants may be grown in artificial light, they lack the rugged constitution of plants grown in the sunlight. They may be made to grow more rapidly than plants in the sunlight by subjecting them to light for longer hours than the revolving world does, their rate of growth increasing or decreasing with the decrease or increase of light, but forced growth of this kind proves to be defective in more ways than one. The plants do not have the same color, or equal structural soundness, nor are their flowers and fruits equal to those of plants grown in the sun. The sun has no rival.

No one can doubt that man is normally a nude animal, that clothes are artificial and abnormal. Before man learned to clothe his body (and the whole race does not do so, even yet), his body was exposed to the sun in the normal course of his daily activities, just as are the bodies of other animals. Perhaps he did not lie on a log in the summer's sun as do snakes and turtles, but he was in the sun nonetheless. Like all other animals, he probably sought the shade during the hot part of the day.

## **Moderation is the Key**

Some medical writers foster the belief that we would be better off if we spent our lives in darkness and never came in contact with the sun. One hack writer who popularizes medical opinions tells us that, while sunbathing produces vitamin D in the skin, we can get all the vitamin D we require by taking sufficient irradiated milk, eggs, butter-fat and a few other substances, so that "you need never encounter direct sun to be perfectly healthy." He actually presents sun exposure as a punishment to the skin and the sun as a distinct evil.

Most medical writers, however, damn the sunbath with faint praise and then catalogue a whole list of its evils and dangers. They never discuss the dangers of irresponsible over-exposure to the sun, but only those of sunbathing.

One writer tells of a blonde who “fried herself so intemperately,” that “ever since then her back has been marred by yellow brown blotches that have lasted winter and summer, for ten years.” Inasmuch as medical men do not employ sunbathing in their care of either the well or the sick, they come in contact only with cases such as this one. Here is an obvious case of abuse of the sun and it is upon such cases that physicians and dermatologists base their opinions.

Oversunning is weakening to the body. It may intensify any already existing trouble as surely as any other unhealthy influence. But the evils of over-indulgence shall not be permitted to weigh against the proper and sane use of one of the most important elements in nutrition.

A medical “researcher” warns that to blister your skin in the sun puts a strain on your kidneys, that it may produce toxemia, it may produce shock or even death. But we never advise anyone to blister the skin in the sun. Why condemn sunbathing because sunburning may prove harmful?

Tilden says that sunbathing causes sore lips. While I have seen many sore lips heal in patients getting daily sunbaths, I have not seen sore lips develop in sunbathers. But I would not deny that sore lip is a possible development from excess.

## Sunlight and the Risk of Skin Cancer

In medical circles sunbathing is blamed for skin cancer. Even by their own admission, the evidence for this is very weak. Many medical authorities reject the idea. It is certain that skin cancer is as prevalent among the clad as among the unclad races.

It need not be denied that in certain types of individuals, who tan inefficiently or not at all, and who burn easily, repeated burning may help to develop skin cancer. Such skin cancers are said to be very common among certain red-haired Irish people. On the other hand, I have seen such red-headed Irish who burned

every time they were exposed to the sun for a considerable period and who were repeatedly burned during as much as sixty years of life, without developing skin cancer. It would seem that even in these sun sensitive individuals more than repeated burning is essential to the production of cancer.

Shall we forever have to combat the fallacy that if the abuse of a thing is evil, the correct use of it is also evil? Must we advise everybody to abstain from all food throughout life because overeating is harmful?

Must we spend the remainder of our lives in bed because overactivity is exhausting? Or, can we not use our intelligence in all of the activities of life and employ all things that have a normal relation to life?

Medical men tend to decry and condemn every wholesome thing and laud to the skies every unwholesome thing. To them only poisons have value in maintaining and restoring health; the normal things of life are suspect. While they repeatedly warn us of the "dangers" of sunbathing, they even more frequently tell us of the virtues of penicillin or arsenic. They are not to be taken seriously; their anti-natural approach to all of the problems of life guarantees that they will be on the wrong side of everything.

Excess sunbathing proves to be very weakening. I have seen much harm result from excessive stimulation of this kind. It is my advice never to indulge in sunbathing for more than an hour, and many cannot take this much sunshine.

Protection of the head and eyes is usually strongly urged. This advice is pernicious. Man does not require goggles or bonnets any more than animals. Sunlight is distinctly beneficial to the hair and eyes. It has always been quite amusing to me to hear sunbathers advised to cover their heads and then hear the same advisers describe the wonderful results in increased hair growth obtained by ultraviolet radiation. It is a well-known fact that sunshine accelerates the growth of hair and more exposure of the head to its influence might easily reduce the number of bald-headed people.

The eyes are benefited by light and injured by too much darkness. Mules employed underground in mines have much eye trouble not found in mules that work above ground. Men working underground and children living in dark tenement houses far from the sun are always very sensitive to light. Such men

and children need sunlight and to prescribe tinted and shaded glasses for them can only make the condition worse. Yet this is what is regularly done by regular physicians and opticians, who are regular in but one thing — the regularity with which they go at everything wrongly.

*Writing in Psychology* (July, 1929), Dr. R. A. Richardson, optician, says:

*On a recent trip to Africa, I took advantage of the opportunity to find out whether cataract and blindness, often found there, were caused by the sun's intense light and heat, as I had been told. To my surprise, I discovered that the persons blinded by cataract were not those who worked in the open sunshine, but in the small shops and bazaars of Tunis. Questioning them, I traced their trouble to over-indulgence in sugars and starches, nicotine and caffeine.*

## Sunscreen: Pretense With a Commercial Bias

Sunbathing is objected to because of a so-called “drying damage” it does to the skin. This is the result, not of intelligently conducted sunbathing, but of over-sunning. Lubricating creams and lotions are certainly not needed by those who have sufficient intelligence to behave themselves. It is not necessary to oil the skin to prevent drying. Dryness of the skin indicates that the skin has been over-exposed.

In order to sell their wares, we should expect that the manufacturers of suntan lotions would emphasize the evils of overdoing without discriminating between over-use and the proper use of the sun. But physicians should know better.

What excuse is there for remaining in the sun so long that the skin becomes dry and harsh? Why must we abuse everything we undertake? The sensible person will not find any apparent need for oils to replace the natural oils of his or her skin, for he or she will not be guilty of abusing his or her skin with excessive exposure.

It is also objected that sunburn ruins the fine texture of the skin. What has this objection to do with intelligent sunbathing? Only fools will remain in the sun long enough to spoil the texture of their skin. Others will substitute intelligence for the ointments and salves that are offered for sunburn.

The purpose of sunbathing is not to see how much you can burn yourself, nor to see how black you can become, but to supply your body with adequate amounts of sunshine.

People who cannot sunbathe without sunburning are in the same class as those who cannot eat without overeating. They are the uncontrolled type — those who lack self-discipline. They are inclined to overdo everything.

Erythema (redness) and dermatitis (inflammation of the skin), both of which are painful and distressing, result from excessive exposure before pigmentation has occurred. Such undesirable results prove the bath has been carried to excess. Wherever possible, secure the sunbath in the early morning or late afternoon, except during the cooler seasons of the year.

Sunstroke is a very remote possibility. Heat-stroke may occur in weak individuals who stay too long in the sun when the weather is hot. If proper precautions are observed this can never occur.

## Precautions For the Ill

Sick and weak individuals need sunbaths most; yet they must observe the greatest care in taking them. A headache, indigestion, or any other evidence of impaired health means that resistance is low and one so impaired may easily suffer from the heat due to over-exposure, even where there is sufficient tan to prevent burning.

The sunbath often excites weak or nervous patients to such a degree as to prevent sleep. Sometimes after the bath they complain of a feeling of weakness which distresses them. Such symptoms are always the results of too frequent baths or of too prolonged exposure.

If pains increase, this suggests fatigue and over-stimulation. The sunbath should leave one feeling better, not worse. If it leaves you weak or depressed or with an increase of any of your symptoms, you have had too much — take less next time.

# The Nutritional Benefits of Sunlight

Several years ago, experiments were performed on rats at the Johns Hopkins University. Eighteen rats were fed a diet which was known to produce rickets, which resembles in every way the same “disease” in man. Twelve of these rats were exposed to the sunshine for about four hours daily for about two months. The other six rats were raised in well-ventilated, but poorly lighted rooms. At the end of the period the rats were all examined.

The report states that in the rats exposed to the sun no evidences of rickets were found. Their condition was normal with the exception of the bones, which were more delicate than in rats of a corresponding age which had been raised on a more satisfactory diet. An abundance of fat was present. The rats raised in Baltimore, away from the sun, presented but scant fat, as well as evidence of rickets.

Are we to conclude from this experiment that sunlight can be made to take the place of a proper diet? Shall we conclude that the sun’s rays supply the lacking food elements? Not at all. We can only claim that rickets is due to a combination of “causes,” among which is lack of sunlight. It is evident that the required food elements were present in the diet but that the rats out of the sunshine were not able to extract and assimilate them. The other rats, under the beneficial effects of the sun’s rays, were enabled to extract the food elements and assimilate them.

The phosphorus and calcium content of an infant’s blood rises and falls with the seasons, there being less in winter and more in spring and fall. Dr. Hess of Columbia University, has pointed out that in New York City, rickets reaches its peak in March — at the end of winter after months of deprivation of sunshine.

As previously pointed out, it was known to the ancients that “sunshine feeds the muscles.” Today every athlete employs sunbathing as a regular part of his or her training. It not only adds to the size and qualities of the muscles, it increases the calcium in them and adds to their enduring powers. The firmness of the athletic muscle requires calcium in considerable amounts. Such muscles contain far more calcium than flabby ones. After exercise their calcium content is diminished.

Muscles subjected to proper sun exposure grow larger, firmer, and have their contractile powers enhanced even without exercise.

Milo Hastings tried raising a thousand chickens in an airy, sunless building by feeding them an abundance of green food. He says:

*I nursed and nourished those thousand chicks most carefully and never once let them out of doors; but I fed them green leaves galore and far more abundantly than any outdoor chicks would have been able to provide for themselves. My chicks thrived for a few weeks and then began to spraddle and sprawl, and developed bowlegs aplenty. One hundred of them died from their malformations and inability to get around to their food. Then I turned the rest of them out of doors, and they recovered promptly, and the weak legs grew strong, though the worst of them remained twisted and bent at ridiculous angles.*

Skin that has become weakened by clothing serves as a less effective barrier to infectious matter from the outside. Medical books list about twenty different forms of skin inflammation, about forty different varieties of hypertrophies, thirty-five atrophies, several forms of neurosis, several varieties of skin hemorrhages, about sixty to seventy kinds of new growths, and many parasitical affections. These skin "diseases" appear almost wholly among the much clad inhabitants of urban civilization, and are seldom, some of them never, met with among the unclad races.

George Wharton James, author of *What the White Man May Learn from the Indian*, says:

*While there is no doubt that the unclothed Indian occasionally suffers from a few forms of skin disease, I can abundantly testify from my thirty years intimate association with the tribes of the Southwest, that amongst those who have been least in contact with civilization, there is so little skin disease as to make it inappreciable. For many years I scarcely saw a skin disease amongst them, and when the skin would be torn or injured in any way, as I have often seen it, by their falling from a horse, by riding through the forest after deer and catching the projecting limbs of trees, etc., the rapidity with which the wound healed was both surprising and enlightening. It was enlightening in that it revealed to me the advantage, from this standpoint at least, of their life over mine. When my skin was torn there was a good deal of pain and it took a long time to heal, and yet I was far healthier than many white men. Yet what to me was a severe skin wound they regarded as a trivial affair, paying little or no attention to it, and the rapidity with which it healed justified their scornful laugh at my warnings that they take care of it lest greater evil ensue.*

Mr. James also says: "I have never seen an Indian with a poor head of hair or with dandruff or any other disease of the scalp."

A skin, well pigmented in response to sunbathing, tends to become firm and strong, but at the same time delicate and soft, almost silk-like in texture. Sunshine is the finest cosmetic.

## Sunlight and the Mind

As you might expect, any influence which produces such beneficial effects on the physical body also exerts a wholesome influence upon the mind. It is a matter of common observation that on dark, cloudy days, people are more subject to worry, ill-temper and depression. But as soon as the skies become clear and sunny, happiness and good nature return. But the sun's influence strikes deeper than this.

Dr. James C. Jackson noted nearly eighty years ago that "the more a man lives in sunlight, other things being equal, the more vigorous will his brain be, the more energetic and competent will his mental faculties be."

A class of boys from the slums of London were taken to the garden of a private home where they studied and played all day attired only in shorts and no shirt. At the end of six weeks, even in the feeble light of foggy London, they showed an increase in mental capacity and alertness.

The benefits to be derived from sunshine apply to all periods of life, but are greatest during periods of development...

Enjoying sunlight during pregnancy benefits both the expectant mother and the developing fetus, producing better health in the mother and better development in the child.

## Sunlight: Birth and Development

There is also evidence that sunlight can do much towards lessening the pains that now make childbirth a harrowing ordeal in so many cases. Sunlight also helps to prevent tiredness, backache, nausea, loss of appetite, emotionalism and hysteria during pregnancy.

Girls brought up in the sunshine, properly fed and normally active, should develop so well that normally painless childbirth should be the rule instead of the now rare exception. It is worthy of note that those mothers who are in the sunlight the least are the ones who have the most difficult deliveries in childbirth. The unclad races have the easiest deliveries.



Enjoying sunlight during pregnancy as well as after childbirth increases the mother's ability to nurse her baby and improve the quality of the milk.

Sunlight is essential to the production of good milk. Milk from cows fed on pastures in the sunlight maintains the health and growth of young animals, whereas, milk from cows maintained out of the sun and fed on fodder will not maintain life and growth. Sir Edward Mellanby wrote: "The means by which milk prevents rickets varies greatly according to the diet of the cow and the degree of exposure to sunlight."

Not vitamins alone, but minerals are concerned in this problem. Milk from pasture-fed cows is not only richer in vitamins, but contains much higher percentages of phosphorus and calcium and fifty percent more citric acid. Cows and mothers can produce perfect milk only when given green foods and exposed to the sun. Young animals fed exclusively on milk from cows fed in the shade on dry fodder lose weight and die. Similar animals fed on similar quantities of milk from cows that run in the pasture, getting both sunlight and green foods, grow and thrive.

Similarly, the nursing mother would also benefit from sunshine. It would enable her to supply more and better milk for her child, so that she would not be forced to depend on the cow to mother her offspring.

Babies that are light-starved and fed on milk from light-starved mothers are at a double disadvantage.

It is notorious that the clad races and especially those who live in the cities and are rarely in the sun are unable to supply their children with milk that will sustain them.

Sunshine also stimulates the growth of hair. Under its influence, breathing becomes deeper and slower; sleep sounder, blood-pressure is diminished, and urinary excretion is increased. Ulcers, sores and skin diseases heal more rapidly under its influence. Sunshine aids in building good teeth. And it undoubtedly aids in preserving the normal alkalinity of the blood.

Sunlight is also especially important during puberty and adolescence, when profound internal developments are taking place.

Sunlight enables the body to manufacture vitamin A. Because the skin is an organ of internal secretion, it has been suggested that under the influence of sunshine it contributes to the making of hemoglobin.

Sunlight is needed by the healthy, growing, developing child, the pregnant or nursing mother, the chronic invalid, the convalescing patient, the athlete, and by all who desire to maintain or regain health. It is an important aid in building and maintaining health and we should not wait until we become sick to make use of it.

Others believe by the aid of sunshine the body manufactures a substance called "cholestrin" which is essential to calcium metabolism.

As an essential element of healthy nutrition, sunshine is also necessary to growth, development and repair of tissue, being of value to all states or conditions of

the body. It is not a "magic bullet" cure for one or two "specific diseases," but is a therapeutic agent needed to promote overall wellness and restore health.

## A Prescription For Wellness

If sunlight is so necessary to normal development and the perpetuation of life, it is equally necessary to the preservation of health and the prevention of "disease." It is as necessary to life and health as are food and air, and the body is inevitably weakened in its absence. It fills an important need in the organism that cannot be filled by anything else. The highest degree of health cannot be attained and maintained without it. It is essential to the restoration of health and hastens recovery in all forms of illness.

The skin is our largest organ and the body's first line of immune defense. Saleeby says: "A properly aired and lighted skin becomes a velvety, supple, and copper colored tissue, with an increased resistance to infection." The increased resistance to infection and to "disease" seen in the skin extends to the internal organs.

With an insufficiency of light, the clotting factors and the red blood cells which carry oxygen become diminished in quantity. The plasma of the blood is increased, inducing leukemia, a condition characterized by a great increase in the number of white blood corpuscles. A total exclusion of sunlight also induces the more severe forms of anemia.

Inhabitants of southern mountain slopes are stronger and healthier than those living on the northern sides. Tenement house districts in large cities where sunlight has no access, have the greatest infant

Cancer is less prevalent in the sunny regions of the earth.

mortality and are the chief breeding grounds for rickets and tuberculosis. And pneumonia is most prevalent during dark, cloudy weather.

Trall declared:

*Diseases of all kinds, from the most trifling toothache, or rheumatism, to the severest attack of fever, or addiction, are much less manageable in low, dark apartments. And it is notorious that during the prevalence of epidemics, as the cholera, the shaded side of a narrow street invariably exhibits the greatest ratio of fatal cases.*

Dr. Carl Sonne experimented with the light bath on guinea pigs to determine its action on diphtheria toxin in the body. "The destruction of diphtheria toxin in the course of a single light bath lasting two hours is as great as that caused by a high fever, lasting several days and nights.

The germicidal power of sunlight is well known. It is the greatest of all disinfectants and antiseptics. Drs. Trall and Taylor both emphasized its powers in these directions.

Sunlight dominates the chemistry of the blood. People who do not get sunlight do not have the same richness and redness of blood as do those who secure plenty of sunlight. It is not merely enough that their skin is pale but in a metaphoric sense, also their blood and inner tissues.

Sunlight greatly increases the body's consumption of oxygen. Through increased numbers of red cells and hemoglobin, the oxygen-carrying power of the blood is also increased. Quinke and Behring have shown that the oxygen consumption of living cells is vastly greater in light than in darkness. Light, by increasing the chlorophyll in plants and hemoglobin in animals — both of these being oxygen carriers — exerts an enormous influence on the metabolic processes of life.

A few minutes of exposure daily to the sunlight will double the quantity of phosphorus in a baby's blood in over a month. The circulation of the blood itself is improved while blood-pressure is reduced. The capacity of the blood to build and repair tissue is increased, and its power to coagulate is greatly improved.

Dr. James C. Jackson says that:

*A man who lives out in sunlight will grow thin in flesh but full in nerve. His muscles will diminish, but as they diminish his nerves become increased in size and strengthened, and their action on the muscles is such as decidedly to strengthen these; so that when one comes to look at him and judge of his strength by his apparent bulk, if he does not understand and fully appreciate the effect of living largely in the sunlight, he will greatly misjudge his muscular capacities.*

We now know that what Dr. Jackson mistook for a decrease in muscular size correlating with an increase in strength and endurance was in reality, a loss of the fat in the muscles. So while it is unlikely that the nerves increased in size, it is certain that they improved in quality and condition and increased their control over the muscles.

H. B. Cushman, who was born among the Indians of missionary parents, says in his *History of the Choctaw, Chickasaw and Natchez Indians*, that among the Choctaws:

*Deformity was almost unknown, proving that nature in the wild forest of the wilderness is true to her type. It is said of the Natchez, 'that the sight was never shocked by the appearance of deformity,' such as are so frequently observed among the white race; and with equal truth the same may be said of all the North American Indians.*

It is important in this connection, that we take account of the fact that there was no tuberculosis, anemia, leukemia, rickets, no hunchbacks, no bow-legs, no idiots or lunatics, no defective teeth, no deaf and dumb, and almost no deaths either of mother or child in childbirth, and few skin "diseases" among the Indians before the white man "civilized" them — that is, clothed them, gave them "firewater" to drink, cooped them up on reservations and taught them to eat white bread, salt-bacon, black coffee and molasses.

Dark-skinned races do not absorb sunshine as rapidly as the lighter skinned peoples and, consequently, when housed, clothed and transplanted to regions where there is less sunshine, suffer more from light starvation than do the light-skinned races under the same limitations of exposure to sunlight.

Rickets and tuberculosis should be regarded as "deficiency diseases," largely due to lack of sunlight. It requires more sunshine to remedy rickets in black children than in white children.

Although Trall's description of the condition of children in certain sections of our city was written a hundred years ago, it needs slight, if any, modification to fit many sections of the larger cities of today. He says:

*Almost the entire population of our large cities, who occupy back rooms and rear buildings, where the sun never shines, cellars and vaults below ground level, and the shaded side of narrow streets, is more or less diseased. Of those who do not die of acute diseases, a majority exhibit unmistakable marks of imperfect development and deficient vitality, and in fact, as with, animals and vegetables in like circumstances, often run into deformities.*

After due consideration of the influence of light in promoting the development of animals, Trall declared that the exposure of the whole surface of the body to light is favorable to symmetrical development:

*All persons in order to acquire and maintain the best condition of health and strength, should be frequently exposed to the light of the sun, except when oppressively hot. Children are generally maltreated, more especially in cities, in being kept almost entirely excluded from sunshine. Many good mothers are fonder of the delicate faces and pale complexions of their little ones, than intelligent in relation to their physiological welfare. A little sun-browning occasionally of their faces, necks, hands and feet, and, finally of their whole bodies, would not only render their development more perfect and enduring, but tend to the production of the greatest symmetry and beauty in manhood and womanhood. Parents should not be too careful in putting umbrella-hats and bonnet-sunshades on the heads of their children every time they run out of doors.*

## The Healing Power Of Sunlight

Dr. Trall placed great emphasis upon the power of sunlight, both in health and disease. He declared that sunshine should “be given special prominence in the plan of care for tumors, glandular problems, dermatological disruptions, rickets and frail bones, respiratory illnesses, scurvy and cancer.”

In *Water-Cure for the Millions* Trall says:

*The importance of light as a remedial agent is not sufficiently appreciated. Many persons who live in elegant and expensively furnished houses so darken many of the rooms, in order to save the furniture, as to render the air in them unwholesome. The diseases which prevail among those inhabitants of our cities in rear buildings and underground apartments, sufficiently attest the relation between sunshine and vitality. Invalids should seek the sunlight as do the flowers. Exposing themselves frequently to the air and the rays of the sun is a very invigorating practice.*

Although others had suggested the use of sunlight in rickets before him, credit for the discovery of its value in this condition is given to Huldschinsky, who in 1919, “definitely proved that sunlight could prevent and cure rickets.” But a reading of Trall’s works would show any unbiased student that he was nearly seventy years ahead of Huldschinsky in making this discovery.

Dr. George Taylor also lays great stress upon the value of sunlight both in health and in disease. In *Health by Exercise*, he emphasizes its value in tuberculosis and its great service to nursing mothers:

*It is wonderful and delightful to see how soon a pale, weak, miserable child, after being freely exposed to the sunlight, will begin to improve, and the symptoms begin to disappear. Even swelling of the glands of the neck, or other parts of the body, will quickly succumb under the magical influence of sunlight and pure air.*

In *Weak Lungs and How to Make Them Strong*, Dr. Dio Lewis devotes a brief chapter to sunshine:

*I have assisted many dyspeptic, neuralgic, and rheumatic people into health, by the Sun-Cure. I have so many facts illustrating the wonderful power of the sun's direct rays in curing certain classes of invalids that I have seriously thought of publishing a work, to be called the "Sun-Cure."*

Dr. Lewis presents a few cases illustrating the results of exposure to the sun, including the case of a lawyer suffering with partial paralysis, constant pain in the loins, and other symptoms. He prescribed ten minutes of sunlight daily, increasing the exposure to a full hour. Though his habits were not altered in any other particular way, the man made a complete recovery in six months.

Dr. James C. Jackson devotes twelve pages to sunlight in *How to Treat the Sick without Medicine*, in which he states:

*The effects of sunlight on the ill are quite as astonishing. Many people who have failed under the application of the best tonics and treatments soon become strengthened after taking their sunbaths. Therapeutically considered sunlight is one of our most powerful curative agents, and has come to fill such an important place in Nature's Medicine Cabinet that it is with great confidence that I use it in the treatment of certain diseases with a success which challenges my highest satisfaction.*

It should not be assumed that sunlight is, in itself, a cure for "disease." It is complementary to other health-promoting factors and may be used in building health and improving the nutrition of the body.

The great influence of sunshine upon the development of the bones has been previously shown. Graham spoke truly when he declared: "If man were always to go entirely naked, the bones would be less liable to disease and distortion." Only through the aid of sunshine, particularly the ultraviolet rays, may the fixation of phosphorus and calcium be accomplished in an ideal way.

Sunbathing is no panacea. It is only one of several vital factors in restoring and maintaining health, but it is of sufficient importance that it should never be neglected.

Dr. W. T. Bowie, Professor of Biophysics, Harvard, gathered statistics which show that about ninety-seven per cent of all the babies born in our northern cities are afflicted, to a greater or lesser extent, with rickets.

Dr. Bowie raised two flocks of chickens in a green house. Both flocks were fed the same food, given the same space in which to run about, both wallowed in the same dust and scratched the same gravel. Their conditions of life were identical, except for the fact that one flock was exposed for fifteen minutes a day to the ultraviolet rays of the quartz lamp. Seventy-five per cent of those not receiving the light died of "weak legs" (rickets), while the survivors were by no means normal. All those treated by the ultraviolet rays lived. The latter were larger and more vigorous than those raised under the glass of the green house, but which received no ultraviolet light.

Ordinary glass does not permit the ultraviolet rays to pass through. Basking in the warmth and light of the sun that passes through the window pane is of small value in the prevention of "disease" or the restoration of health.

The unfiltered rays of the sun alone are capable of assisting the work of metabolism.

The evidence is clear from animal experiment and human experience that if a child receives an abundance of sunlight it will thrive on almost any kind of diet, whereas, if you deprive it of sunlight, it will not thrive well on the best of diets. Sunlight is one of the most important elements of the natural diet. Every child should have sunlight before birth and after birth.

On July 1, 1929 the United States Children's Bureau released a study which shows that lack of sunshine is the direct cause of rickets in children, and that lack of food or deficient food is not a contributing cause. These statistics, which are held to prove that the sunlight alone will give immunity to juvenile bone "diseases," are the result of prolonged study of children in Puerto Rico, where an abundance of sunshine wholly prevents rickets, even in badly undernourished children.

Sunlight will prove a spring of renewed health for those who are ailing. In the mountains, at the seashore, or on the plains, the sun's rays are beneficial and meet the needs of plant and animal life. The number of sunny days during the year, even in northern countries, will permit utmost advantages to health if properly utilized. The Southern United States is far better endowed for sunbaths than either Germany or Switzerland.

Dr. Saleeby says:

*The clinical evidence is clear that when the sunlight fails because of atmospheric conditions — as is frequent at Lysen — the patients are injured. Yet they prosper when it returns. The natural process of excretion — such as a morsel of dead bone — may be observed to cease in obscure weather, and may be resumed when the process of exposure to the sun is again permitted by the atmospheric conditions.*

Such facts make it clear that sunlight is used in some more subtle fundamental manner than that of killing bacteria. This is further supported by the fact that sunlight beneficially influences deep-seated local infections when applied to the skin and by its beneficial effects on wounds.

Although the medical community does not advocate sunlight in all conditions, as a whole they are coming more and more to see its value in many conditions in which formerly they did not consider it useful. When the followers of Westernized medicine have grasped the fact that enjoying sunlight is primarily a preventative measure, and when they understand the unity and cause of “disease,” they will be better able to appreciate its universal use by the ancient healers. Rollier’s records, covering over twenty years include recoveries of extreme cases of spinal tuberculosis with paralyzed lower limbs, pulmonary tuberculosis, rickets, many skin “diseases,” varicose ulcers (many of these of long standing), war-wounds, non-healing operative wounds, osteomyelitis, bed sores, cancer, etc. We are informed that bronchitis and colds in the head do not develop at his place in Lysen, although germs must be plentiful.

Cautiously applied, sunbathing is very valuable to the nervous system. It is invaluable to the health of the glands and hormones, irregularities of ovulation, difficulties in puberty, erectile dysfunction and other hormonal issues. Acne, representing disturbances of the glands of the skin, is quickly helped by the sun’s rays. Psoriasis is also speedily improved by sunbathing.

The sun’s light is not a salve or an ointment to achieve a result when applied to a specific area. In London, 1922, patients who had been given local light treatments applied to the “diseased” areas failed to improve. But when they were given general sunbaths, without exposure of the “diseased” areas at all, they recovered rapidly. These results serve to confirm that the benefits observed locally are secondary to the general effect of healing and well-being that sunlight produces.

In northern latitudes, when the sun is not always available in winter, it is wise to enjoy the sunlight during the sunny seasons. The body does not store up sunshine, but rather it stores up substances produced with the aid of sunshine. Not only



vitamin D, but other materials are synthesized in the body with the aid of the sun's rays, and the surpluses of these are stored in the tissues as reserve.

If full and proper use is made of the sun during seasons of sunshine and warmth, and if the general mode of living is not such as to dissipate what should be stored as reserve, an abundance of sun-kissed reserves will be stored in the body to carry the individual through a long, sunless winter.

The man who has received no sunshine, who has stayed indoors or has clothed his body in a way to exclude the sun, and the man who has dissipated his reserves cannot go through the winter without suffering. The body that must ceaselessly use its substances in neutralizing, detoxifying, and resisting poisons — alcohol, tobacco, coffee, drugs, overworking of the emotions, lack of rest and sleep — will not be able to store up ample reserves.

It is the over-clothed, over-housed, inhabitant of the smoky cities who is deprived of his fair share of the sun. Those who live in the modern caves that line the canyon walls of our modern cities and who dress in heavy, dark clothing, suffer most.

## Go Forth Into the Light

The warm sun is one of life's greatest pleasures, and you now understand that sunshine is not something to be feared. Intelligent sunbathing is good for the mind, the muscles, the heart and the blood. It strengthens your bones, boosts your immunity, and lifts your spirits.

But you also know that because something is good, does not necessarily mean that more of it is better. Spend your time in the sun wisely, and remember, as in everything, moderation is the key.

Your body's need for the sun is just as natural as your need for food, oxygen, water and exercise, and the good feelings that you get from spending time in the sun is your body's way of telling you that you need it. So listen to your body and go forth into the light.