

# Sunlight

by

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## Introduction

When we go outside on a sunny day, in a short period of time we feel relaxed, calm, and refreshed. Sunlight creates a cheerful, calm mood; it increases our efficiency and brings joy to our work. Why this happens will be understood if we remain mindful how human beings stand united with their environment.



Head: Sense organs and nerves

*Light*

Chest: Heart and lungs

*Air*

Abdomen: Inner organs, organs of digestion

*Liquids and solids*

Sunlight provides our main source of sensory perception because sight, the taking in of light through the eyes, is the sense upon which we most heavily rely. The light we take in from the environment is just as important as the air that goes into our lungs and the liquids and solids that go into our mouth. The human organism takes in light not only through the eyes but also through the skin and even through the lungs when air, permeated with the sunlight of a bright summer day, is inhaled. It is essential to life that we “nourish” ourselves with light.

Today, however, getting the necessary exposure to the sun cannot be taken for granted. First of all, fashion dictates a tanned skin tone that gives people a fresh, vital, and youthful appearance. Unfortunately, the way in

which a tan is achieved is often unhealthy. Secondly, the quality of sunlight has changed in the last decades. Through a thinning of the ozone layer in the stratosphere, more ultraviolet light is making its way to the earth's surface; sunlight is now more "aggressive." Both aspects, the demands of fashion and the changed quality of sunlight, have led to an increase in chronic sun damage to the skin such as premature aging and skin cancer.

The two-sided nature of sunlight with its positive and negative effects on plants, animals, and human beings, can be graphically illustrated in the German word for light, *Licht*.

L - ich - t

Leben (life) <—————> Tod (death)

The German word "ich" means I or ego.

Light means life. An especially important example of this is the photosynthesis of green plants. The chlorophyll in plants uses sunlight to form sugar from the carbon dioxide found in the air and the water in the ground. Human beings owe our existence upon the earth to the presence of sunlight. But light also means death. For instance, it is possible to keep an operating room free of bacteria when ultraviolet lamps are left on overnight because the light kills bacteria. Human beings must find a middle ground between the life-giving and the life-destructive effects of sunlight by maintaining our 'I' between both extremes. The effects of sunlight on human beings, whether helpful to physical development and activating at a soul-spiritual level, or harmful to the body and soul, depend upon the common sense of the person exposed to it.

The following is intended as a presentation about the effects of light on the bodies and souls of human beings and a short guide for finding the proper exposure to sunlight. A series of practical tips follows for dealing with sunlight. Readers should then be in a position to use sunlight to the best advantage for their health and well-being.

### **The quality of sunlight**

First, let us look at sunlight itself.

Viewed from the physical aspect, sunlight has three different parts:

- *Ultraviolet Rays* (UVA and UVB)—They have the most intense effect upon organic nature (plants, animals, humans). They are necessary for photosynthesis in plants. They cause tanning of the skin in people and, in the case of overexposure, sunburn, chronic sun damage, and skin cancer.
- *Visible Light*—It forms the greatest part of sunlight on the Earth's surface and can be perceived with the eyes.

The *intensity of sunlight* and the relationship of the different components of light to one another are dependent upon:

- *Position of the sun*: This varies according to geographic latitude, time of year, and time of day.
- *Elevation*: For example, the plains or the mountains
- *Degree of cloudiness*
- *Degree of air pollution*: Badly polluted layers of air allow less light to penetrate so that the smog cloud over a large city paradoxically provides protection from the sun.
- *Condition of the earth's surface*: For example, snow or sand

### **The ozone layer**

The most important protective shield against the ultraviolet radiation of the sun that life has on the earth is the *ozone layer* in the stratosphere (six to thirty-one miles above sea level). In the last ten years there has been a two to five percent measured decrease in the stratospheric ozone over the northern hemisphere. This decrease has been the result mostly of human activity. Chlorine from chlorofluorocarbons (CFCs) rises into the stratosphere and destroys the ozone there. These substances are commonly used as cooling agents in refrigerators and air conditioners, as propellants in aerosol sprays, and in the manufacture of synthetic foam materials used in insulation and packing, and in such common items as disposable plates and cups. The chlorine gas that is propelled high into the atmosphere by volcanic eruptions is a secondary cause of depletion of the ozone layer.

### **Changes in light quality**

The main effect of the thinner ozone layer is in the *quality of sunlight*. There is an increase in biologically active ultraviolet radiation (UVB). This can be objectively measured, and subjectively, it is clearly perceptible. For instance, older people who have been working in agriculture their entire lives notice that sunlight has become “more aggressive” in the last few years. Various consequences, covered later in this article, emphasize the increasing importance of developing a conscious relationship with sunlight and the necessity of effectively protecting ourselves from it.

### **The protective function of the skin**

#### *Skin Formation*

If one looks at a skin specimen under the microscope, one will see three layers. The outermost layer is the epidermis with its many protective cells. Next is the dermis made up of connective tissue that is a mesh of tough fibers that give the skin its firmness and elasticity. The bottom layer is the hypodermis or subcutaneous layer; it contains fatty tissue and gives the body its round form, acts as padding, and provides warmth. The epidermis is closely interconnected with the dermis. The innermost layer of the dermis is where

the protective cells of the epidermis are constantly dividing and forming new cells. During their migration to the skin surface, protective substances and fat develop and finally mature to the point where they are sluffed off as dead skin cells.



1. Horny Cell 2. Immune Cell 3. Nerve (hot/cold, pain) 4. Melanocyte (pigment producer)  
5. Blood vessel 6. Nerve ending (pressure) 7. Sweat Gland 8. Hair 9. Sebaceous Gland  
10. Hair follicle

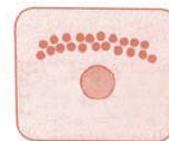
### Protective layer

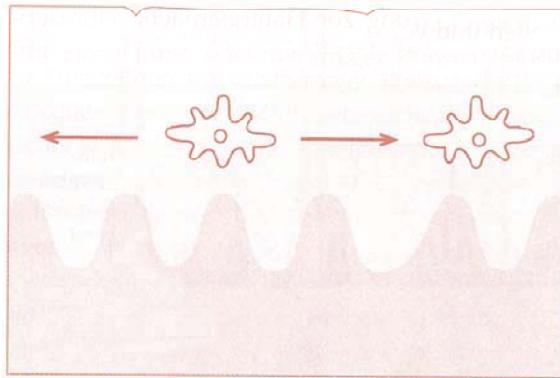
It is the epidermis that protects the skin against sunlight. The UVB portion of sunlight activates the epidermis to form a thicker protective layer that reflects, filters and diffuses the sun rays. If a person gradually increases his time spent in the sun each day without getting sunburn, it will take about two to three weeks for the protective layer of the epidermis to completely form. A well-formed protective outer skin layer can be exposed to the sun four times longer without sunburning than skin that does not have this protective layer.

### Tanning

The second and more effective protective function of the skin is the tanning of the skin. The epidermis contains melanocytes, cells which produce pigment. They are quite mobile and move back and forth in a horizontal direction between the protective horny cells. By their rather hose-like motion they are able to “fill” the protective cells with pigment (melanin). Melanin is draped like an umbrella over the nuclei of the horny cells in the epidermis on the side that faces the sunlight, thus shading them from the penetrating rays of the sun.

*Epidermal Cell  
with Pigment*





*Pigment Production  
in the Epidermis*

Because the cell nucleus contains the genetic information of the cell which could be damaged by outside light, it needs protection. Sunlight damage to the cell nucleus marks the beginning of skin cancer.

UVB rays activate the pigment producers and start the process of skin tanning. The melanocytes react slowly to UVB rays and reach their maximum output of pigment only after ten to twenty days. In contrast, UVA rays can effect an immediate tan, but it is significantly weaker protection than the slowly built up tan induced by UVB rays.

The length of sun exposure without burning increases up to ten-fold when the skin has been maximally tanned during a two- to three- week gradual process. It should be emphasized that the epidermis does not react immediately with an increase in tolerance. Rather, developing good tolerance to sunlight proceeds slowly. Just like every other process in the kingdom of life, it needs time!

By daily increasing the amount of exposure and avoiding sunburn, an individual's tolerance of the sun can be optimally improved over two to three weeks. In this way, people with light complexions can increase the length of time between exposure and reddening of the skin up to forty-fold. That means that tolerance can be built up from ten minutes to five hours after a three-week period without complications.

### **Sunburn**

The widely accepted assumption, "No tan without a sunburn!" is false. Melanin production in the melanocytes reaches its maximum before UVB rays cause reddening. Reddening can be evaluated as a "cry from the skin." It signifies the beginning of sunburn which in turn causes the shedding of skin cells and the loss of any tan or protective layer. Therefore, sunburn actually prolongs the time it takes to build up optimal tolerance.

### **Skin type**

The skin's sensitivity to UVB and UVA varies from person to person. It is mainly dependent upon the amount of pigment in the skin. In Europe people have been grouped into four different pigmentation types, each with a different level of sensitivity:

- Skin Type 1: Celtic Type (two percent of the population)  
Pale skin tone, red hair, freckles, blue or green eyes, seldom brown eyes, extremely sensitive skin.  
Reaction to sunlight: Immediate, intense reddening, exposure lasting more than five or ten minutes causes increasing sunburn, no tanning.
- Skin Type 2: Light-skinned Europeans (twelve percent of the population)  
Light skin tone, blond hair, seldom freckles, blue, green, or gray eyes, sensitive skin.  
Reaction to sunlight: Sunburn when exposure is longer than ten to twenty minutes, light tanning.
- Skin Type 3: Dark-skinned Europeans (seventy-eight percent of the population)  
Light brown skin tone, dark blond to brown hair, gray or brown eyes, and good tolerance for sunlight.  
Reaction to sunlight: Sunburn is seldom, good tanning.
- Skin Type 4: Mediterranean Type (eight percent of the population)  
Brown to dark brown skin tone, dark brown to black hair, skin is most tolerant of sunlight.  
Reaction to sunlight: Never sunburn, tan quickly and deeply.

Obviously, people with Skin Types 1 or 2 must be especially careful.

### **Beneficial effects of sunlight**

Sunlight is just as important to human beings daily as the air we breathe and the food and water we consume. A measured amount of sunlight increases physical ability. Physicians credit sunlight with an improved exchange of oxygen from red blood cells and improved blood circulation. It also precipitates the production of vitamin D in the skin. (Vitamin D is responsible for regulation of calcium metabolism and is therefore important for bone mineralization and density.) From sunlight, people take in formative forces through their skin all the way to the innermost regions, into the bones, where they help with form and density.

Most everyone has probably experienced how a cold that has gone on for weeks and just does not improve will suddenly disappear when one can sit in the early spring sunshine for a half-hour after lunch. That happens because the sunlight stimulates the immune system. Here too, it is a blessing when the sunlight is enjoyed in the right measure.

Last but not least, another of the beneficial effects of sunlight is therapy for skin diseases in combination with climate therapy by the ocean or in the mountains. Treatment with sunlight exposure has proven especially effective for neurodermatitis and psoriasis.

## **Harmful effects of sunlight**

Just as with everything else that is taken in through the mouth and gastrointestinal tract: “The dose makes the poison.” (Paracelsus) The amount of sunlight exposure determines the good or bad effects to the human organism.

Too much long-wave UVA exposure can cause:

- Skin infections through the interaction of light with chemical substances on the skin resulting in a poisoning effect or allergy.
- Sun allergy
- Chronic sun damage to the skin

Since UVA rays can penetrate window glass, it is advisable to protect oneself from sunlight in an automobile if a person is susceptible to a sun allergy. UVB rays are only partially filtered out by window glass.

Too much short-wave UVB exposure can cause:

- Sunburn
- Eye infections
- Suppression of the immune system
- Chronic skin damage: skin cancer and pigmented lesions
- Skin moles
- Cataracts

The infrared portion of sunlight with its intense warming effect can cause:

- Sunstroke
- Heat Cramps
- Heat Stroke

Infrared rays can also intensify the harmful effects of UVB rays, especially sunburn.

The following is a short description of the harmful effects of sunlight from its acute to its chronic effects.

*Sunburn:* Sunburn is in degrees a reddening of the skin all the way to a full burning accompanied by swelling to the point and including blistering. In this case, the amount and intensity of sunlight exposure has led to a skin infection. The skin itches and feels tight and painful. Fever may also ensue. The end result is loss of skin cells and tissue.

*Eye Infection:* The protective and connective tissues of the eyes can also be burned and react to too much sunlight with an infection. The eyes become reddened and one has the feeling that some foreign object has landed in them.

*Sun Allergy:* Sun allergies usually appear after the first, intensive exposure to the sun (for example, in the spring or during a vacation in a sunny, warm climate in the winter). Itchy, red spots or bumps appear everywhere the skin was exposed to the sun. The cause is most often the body’s own metabolic

products that lead to a skin reaction when they are exposed to sunlight. Substances added to the skin, such as sunscreen lotion, might become poisonous or cause an allergic reaction when exposed to sunlight.

*Mallorca acne:* One example of this kind of reaction is an acne-like rash with red bumps and pustules, most often caused by perfumes and emulsifiers found in sunscreen lotions that react with sunlight. Sun allergies can be imitated by a whole array of different skin diseases that are instigated or exacerbated by sunlight.

*Sunstroke:* Infrared rays of the sun penetrate deeply and can even irritate the cortex of the brain when the head and neck are exposed to the sun. This is how sunstroke occurs with headache, nausea, fever, and dizziness even to the point of a complete collapse.

*Heat cramps:* Long, hard, physical labor in the bright sunshine causes sweating resulting in the lowering of the salt content in the body. This can cause heat cramps.

*Overheating:* In conditions of great heat and high humidity perspiration can not evaporate properly and the body can overheat. The body tries to give off heat by increasing blood circulation to the skin, which causes a drop in blood pressure. A heat collapse is accompanied by dizziness, problems with vision, buzzing in the ears, and an increase in the pulse and breathing rate.

*Sun poisoning:* If a person goes for a hike on a glacier, for instance, and is exposed to the intensive sun, it can happen that a blister appears on the lips. The cause is a suppression of the immune system in the sun-exposed skin and also in the entire body. An appropriate amount of sunlight stimulates the immune system, but too much sunlight suppresses it.

*Chronic sun damage:* Normal aging of the skin involves a decrease in the connective tissue of the dermis. That is why the skin of older people is thin, dry, and wrinkled with even tanning. This aging process can be accelerated by overexposure to sunlight. The normal aging process can also be exaggerated. The sum total of the effect of too much sunlight over decades is an extremely dry, flaky, yellow-white skin tone with deep lines and wrinkles. Facial skin especially loses its elasticity and sags as if it is too big for the face.

*Cataracts:* In the eye, damage from sunlight can result in a clouding of the lens and a cataract. The aging individual sees as if through a gray veil and will eventually grow blind.

*Age spots:* Age spots often appear on the skin of older people who have chronic sun damage. They are concentrations of pigment, brown and usually on the face, the backs of the hands, and the lower arms, areas whenever the most sunlight has reached the skin.

*Skin cancer:* Skin cancers that begin in the protective cells of the epidermis are relatively benign because they usually do not metastasize. However, they can grow slowly over a period of years or decades into the under layers of the skin and destroy the tissue in that area, and eventually bone tissue. These types of skin cancers should be surgically removed as soon as possible.

*Melanoma:* Much more dangerous is the malignant melanoma, the black skin cancer that starts in the pigment-producing cells of the dermis and can quickly metastasize into the lymph nodes and the inner organs. Cases of this type of melanoma are increasing at the greatest rate in middle Europe. Over eight thousand people a year in Germany become ill with malignant melanoma. If it is detected early and surgery is performed immediately, the chances of a cure are good. However, those chances rapidly decline when detected at a later stage.

What are the signs of melanoma? There are four characteristics of which one should be aware that would make a mole on the skin suspect:

- diameter of the brown spot is more than five millimeters
- irregular outline, sometimes clearly delineated, sometimes not
- no symmetry; that is, the form is not round or oval but rather loose
- mottled pigmentation; the mole has dark and light parts next to each other

If a person finds a pigmented mole on the skin that exhibits one or more of these characteristics, he should have it checked by a dermatologist. These characteristics usually do not indicate melanoma but they can highlight an unstable structure of a mole which could be an indication of a person's susceptibility to melanoma.

Medical science points to increased sun exposure as the major cause of the enormous increase of malignant melanoma. People especially in danger of developing malignant melanoma are those of light skin type, who have more than fifty skin moles or many age spots, or experienced several sunburns in childhood and youth (before the age of twenty). Sunburns in early life increase the risk of developing melanoma later in life. After five sunburns in childhood the melanoma risk increases three-fold. Sunlight advances skin cancer formation in the epidermal cells at the places where sunlight exposure has been most intense during the course of a life. On the other hand, it acts differently in causing melanoma. Repeated sunburns during the first three decades of life can weaken the formative forces in the skin for one's entire life. Melanoma can appear anywhere in the skin, even in the mucous membranes.

*Moles:* The more moles the higher the risk of melanoma. The connection is that the majority of melanomas begin where a mole exists. The number of moles that exhibit an unstable structure is also on the increase (dysplastic moles).

A recently published study of first-graders in middle and southern Europe showed that children who often used sunscreen developed more skin moles. Children who seldom used sunscreen and often had sunburn had an especially high number of moles. According to the study, the same was true for children who very often used sunscreen and had never had sunburn. Children who wore shirts and pants as protection from too much sun had fewer moles. Apparently the use of sunscreens that filter out UVA and UVB rays to prevent

sunburn is not an adequate measure. *We must effectively protect ourselves from all of the rays of the sun.* Use of sunscreen prevents sunburn by filtering out UV rays but it also leads to longer exposure times since the warning signs of sunburn are missing. Therefore, a person is exposed much too long to the many other aspects of sunlight that also affect people.

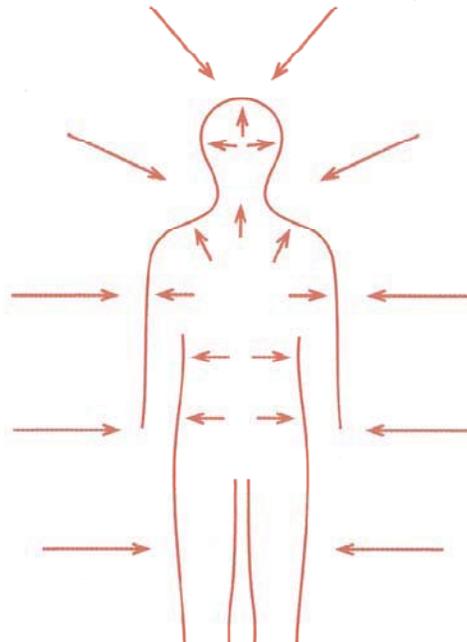
### **The effects of sunlight at the soul-spiritual level**

On the first sunny day after a long period of rain and dark clouds we can experience what sunlight means for our soul. A person takes in the longed-for sunlight so intensely as if quenching a deep thirst. The light supports and improves our general feeling of well-being. We find joy in our work again and problems that before seemed unsolvable are swept away by new energy and ideas. Just as sunlight enjoyed in the right measure can stimulate us physically, the same applies to our soul. The quality of light is a common thread in all of our sensory perceptions. For instance, one speaks of a “light tone” in music. Light nourishes all of our senses.

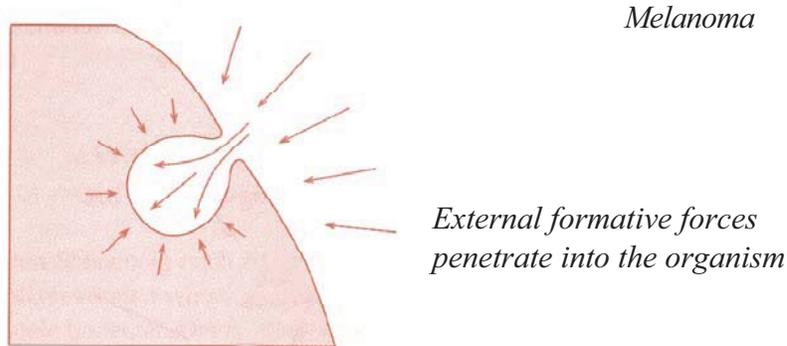
*Inner Light:* Human beings must digest the light that they absorb. In the evening they must *consciously* work through the events that occurred in the light of the day and in the night work through the day’s events *in their sleep*. This *spiritual digestive process* takes the absorbed outer light and releases the *inner light* from it in the form of thought. By the *inner activity of thought* the outer light is transformed into inner light (“a light went on in my head”). In this way human beings can use inner forces, inner light, to offset the intense stream of outer sensory stimulations.

The American poet and philosopher Ralph Waldo Emerson said: “The heavens are the daily bread of the eyes.” One could misconstrue this statement and sit as much as possible in the sun under a clear blue sky. But, for the good of the soul’s health one ought to seek a balance, as Angelus Silesius very aptly expressed: “We do not live by bread alone. What feeds us is God’s eternal Word, His life and His spirit.”

*Inner Activity:* Through inner activity one is able to take in the ‘bread’ in such a way that it also nourishes one’s higher soul-spiritual being. If one remains internally active, one is able to see divine thought in sunlight. The living creation of the spirit is then revealed to us through the light.



*Disturbed Balance:* For an individual who remains internally passive in regards to sunlight, the *balance between inner light*, which appears as a formative force at the organic level, and *external light*, which, under healthy circumstances, must always be present, is endangered. A worst case scenario is that the external light forces coming from the outside gain the upper hand, overcome the body's barriers and penetrate into the organism. At first and for a relatively long period of time these occurrences can be contained at the functional level. However, increased exposure can cause physical illness, for instance, in the form of malignant melanoma.



Too much sunlight, even too much sense stimulation in general, can work harmful effects at the soul-spiritual level without delivering any blows at a physical level. When someone allows himself to be exposed only to that which can be taken in by the sense organs, the soul becomes a barren desert. Too much sunshine not only burns the skin, but also, to put it simply, the brain. In such a state a person is hardly capable of soul-spiritual activity. If some time for thoughtful contemplation does not follow the time spent in the sunshine, then a soul-spiritual flattening can occur. By taking in a disproportionately large amount of external light without a corresponding opportunity to form inner light, human beings run the risk of becoming like the animals who are only capable of a soul life based on reactions to external stimuli.

### **Developing the right relationship with sunlight**

Due to the quality of the sun today, the question is raised as to how we can sensibly deal with it so that its healthy and healing effects can be enjoyed and its harmful effects avoided. The following describes possibilities for outer protection from the sunlight in order to then allow for the inner possibilities.

### **Preventive measures**

It should be clear that sunburns should be avoided at all costs. It is especially important that children and young people up to the age of twenty

do everything possible to avoid getting sunburned. Since sunburn begins with a reddening of the skin, then it is clear that every skin reddening after being in the sun is a sign that the skin has received too much light. We must learn to understand the reddening of the skin after a sunny day to be a warning signal, and, actually, never even let it get to that point.

One must use measures that are, in reality, going to be effective since we know that too much sun is generally unhealthy and that the use of sunscreen can prevent sunburn but can not prevent the further negative effects of intense exposure.

*The skin's natural defences:* The most effective protection is the skin's own natural strengthening when it is allowed to slowly become accustomed to sun exposure. The slower this takes place, the deeper and more-lasting is the sun tan. Getting used to the sun is the most beneficial when it happens at a careful pace over a two to three week period. The gentlest method that produces the deepest tan takes place in the shade. It takes longer to achieve but also lasts longer. If one travels to a sunny place in the south, then in the beginning one should, for the most part, stay in the shade.

*Clothing:* Clothing is the healthiest, most effective protection against ultraviolet rays. Cotton is the most comfortable, but it should not be too loosely woven so that sunlight can reach the skin, nor does translucent material prevent sunburn. Wet clothing also allows a great deal of sunlight to penetrate. Light-colored clothing reflects the sun's rays and takes in less heat than dark-colored clothing. It should fit loosely and allow for plenty of air flow.

*Hats:* A wide-brimmed hat is also recommended, preferably a straw hat. It will prevent strong UV rays from reaching the face as well as the infrared rays on the back of the head and neck which can cause sunstroke.

*Sunglasses:* Sunglasses are needed only in places where the light conditions are extreme such as high in the mountains, on the water, or on snow slopes. Do not think that wearing sunglasses at all times while outdoors in the sun is healthy for the eyes. When the organism takes in light through the eyes only through the artificial medium of sunglasses then the quality of the light is adulterated and diminished. Some people experience eye strain in bright, direct sunlight. These people usually are light-skinned or have dry skin and a susceptibility to neurodermatitis. For these people sunglasses are, of course, a welcome relief.

*Shoes:* Shoes should also be chosen with care. Since the tops of the feet are usually less tanned at the beginning of a vacation, sandals are not adequate because they leave large parts of the foot uncovered and therefore susceptible to sunburn. Rather one can wear a lightweight linen shoe, for example, something that covers the top of the foot.

*Umbrellas:* Umbrellas and awnings provide good protection against direct sunlight. Because of the reflection from objects and the ground's surface, the skin still gets enough sunlight that one can get a tan even while under an umbrella. Reflected sunlight is especially intense on glaciers or in a light fog. Paradoxically, a light fog intensifies sunlight. Light-colored sand, snow,

water surfaces, light-colored stone, and cement have a similar effect and sunburns can occur quickly and intensely, especially since the body stays cool in the shade.

### **What to avoid**

*Avoid the midday sun.* In the summer, especially in southern climates, and also in the mountains in winter, the midday sun should be avoided. That means between the hours of 10:00 AM and 2:00 PM (11:00 AM and 3:00 PM daylight savings time) one should not be in the sun. The habit of a siesta after midday is exactly the right thing.

*Sunbathing*, where one is lying or sitting exposed to direct sunlight over a long period of time, is unhealthy. The fashionable ideal of a dark tan can be tempered with the following saying: “The bronze beauty of today is the dried-up prune of tomorrow.” Passively lying in the blazing sun should be avoided completely. There are two reasons why the sun is better tolerated if someone is walking or working in the sun. First, movement causes the areas of skin that are exposed to the sun to constantly change. Second, through muscle activity a person is developing inner counterbalance to the sunlight. Intense physical exertion in the blazing sun should be avoided because of the heat effects of sunlight. Liquids and salts that are lost through heavy perspiration should be replaced by drinking mineral-rich drinks such as mineral water with fruit or vegetable juice.

*Vacations in southern climates* during the winter months are generally unhealthy for central Europeans. Maybe two weeks in the Canary Islands in December is relaxing to the mind, but such a trip is not helpful in gaining physical energy and therefore can not be recommended from a physician’s (especially a dermatologist’s) point of view. During the winter the skin is not used to sunlight. Sudden exposure to the intense, southern sun comes at this time when the body is completely unprepared for it. When the vacationer returns home to the cold temperatures, he or she often must pay for it with a bad cold. On top of that, trips to warmer regions during the winter interfere with the natural rhythm of the seasons with which the rhythms of various functions of the human organism are in harmony. For these reasons, trips to far-off destinations actually reduce one’s overall vitality.

*Tanning salons* for cosmetic reasons are harmful to one’s health. In light of the fact that the ozone layer is thinning and we can look forward to a future with more intense sun rays reaching the earth’s surface, every artificial tanning method involving even more exposure is not advisable. (The use of artificial light for the treatment of skin diseases should be at the discretion of a dermatologist.)

The sun should be particularly avoided while taking allopathic medicines. With many allopathic substances there is a danger that they can interact with sunlight and have a poisonous effect on the skin or produce an allergic reaction. Since many perfumes contain substances that can become sensitized in sunlight, they should also be avoided before sun exposure.

### **Protection before and after exposure to sunlight**

To summarize, hats and clothing are the most effective protection from the sun. Sunscreen should not be the primary protection. The danger of developing skin cancer increases when sunscreen is used often. The use of preparations with lower protection factors still allows for a reddening of the skin to be recognized as a warning signal, and allows the skin to build up its own protection undisturbed. For the extremities and face of adults we recommend sunscreen lotion from Weleda with a factor eight that contains a chemical UV filter or the sun lotion from Dr. Hauschka that contains micro pigments. The protection factor number indicates the time one can remain in the sunlight before skin reddening occurs. For instance, if unprotected skin shows signs of reddening after ten minutes then sunscreen with a factor eight would allow that person to stay in the sun for eighty minutes before reddening begins. Sunscreens with protection factors of more than ten are recommended in situations where sunlight exposure is extreme.

UVB rays are especially intense:

- during the midday hours in the summer
- in southern climates
- in snow, on the water or near other reflective surfaces
- at higher elevations

Dr. Hauschka offers sun lotions with factors fifteen and twenty, both of which are water resistant. Since sunscreens are in general harmful to the skin, for the body as a whole, as well as for the soul, it makes no sense to use a sunscreen with a higher factor than ten just so one can “fry” in the sun for a longer period of time.

Especially sensitive parts of the body, such as the lips and the bridge of the nose, should be protected by a sunscreen with a high protection factor such as Dr. Hauschka’s sun block stick with a factor thirty. Other parts of the body that can be especially sensitive are the shoulders, back, breasts, buttocks, tops of the feet, and the inner sides of the arms and legs. A temporary increased sensitivity to the sun appears at the places where the skin has freshly healed from wounds or burns that had blisters. Also, an area of skin that has had a cosmetic peeling treatment or previous sunburn is more susceptible to sunburn.

In conclusion, here are a few tips for the correct usage of sunscreen preparations:

- The lighter the skin tone and the more intense the sunlight the higher protection factor required or recommended.
- Oily skin needs a lotion or gel; dry skin needs a moisturizing cream.
- Clean the skin thoroughly before applying sunscreen.
- Apply sunscreen one-half hour before going into the sun.
- Reapply sunscreen after swimming or bathing.

- Reapplication of sunscreen does not lengthen its time of effectiveness
- If one is susceptible to developing an acne-like rash from sun exposure, then a watery gel or a preparation with a high protection factor should be used.
- When swimming in the ocean use waterproof sunscreen. UV radiation penetrates the water and is still present at a high percentage in water that is several feet deep.

After sun exposure the skin requires care that is cooling and mildly moisturizing. Dr. Hauschka's After Sun Lotion or Citrus Skin Gel (fat-free), Weleda's Wild Rose Milk, or Calendula Baby Lotion from Weleda (both lightly moisturizing) are recommended. When some reddening has occurred, then the Skin Tonic from Weleda is helpful. With full-blown sunburn one can use a compress of Combudoron from Weleda. The liquid should be diluted with nine times the amount of water, the compress kept constantly moist so that it does not become dry. Less serious sunburns can be treated with Combudoron gel or the Wound or Burn Gel from Wala.

After being in the water for a long time, the outer skin is saturated and more sensitive to sunlight. For this reason, dry off immediately after getting out of the water. Drops of water left on the skin can increase the effects of sunlight, as do salt crystals from seawater that are left on the skin after air-drying. Skin that has been washed with soap is more sensitive to light because soap removes the oily layer on the skin. High temperatures outdoors cause the skin to be more absorbent and therefore more sensitive to light than when the outside temperature is cooler.

### **Children and the sun**

During the first twelve months of life no direct sunlight should reach the infant's skin. Having an infant outside on a sunny day for just one-half hour a day is enough to provide the skin's light requirements to synthesize vitamin D, thus preventing the danger of rickets. Toddlers between the ages of one and two years should always have their heads and buttocks covered by clothing. When spending time at the beach, for instance, their faces, arms, and legs should be protected with a sunscreen containing micro pigments and a high protection factor such as Dr. Hauschka's Sun Cream for Children with a factor twenty-two. To put small children into the sun without protection is physical abuse. Children's skin has a thinner epidermis that is only one-fifth the thickness of adult skin. Also, children's skin has not yet fully developed its own protective mechanisms such as tanning. Their thinner skin absorbs more material from the outside and is more easily penetrated. That is why applying sunscreen preparations containing artificial ingredients to the entire body can eventually have a burdensome impact on the metabolism of the child. Toddlers should remain in the shade whenever possible. The play area (a sandbox for instance) is best located under a shady tree.

Following are guidelines for older children:

- Hats, shirts, and pants should be worn even in cloudy weather
- At the beach use a sunscreen with a minimum protection factor of fifteen on the face, arms, and legs.
- Sunglasses should be worn in the mountains, on the water, or wherever there is an abundance of light.
- A tee-shirt should be worn in the water as well as waterproof sunscreen.

### **Who should not be in the sun?**

People with the following illnesses or health problems should avoid direct sunlight completely, or at least be very careful about their exposure to sunlight:

- Weak blood circulation, heart or circulatory diseases
- Acute infections with fever
- General weakness
- All conditions where tumors are present, especially skin cancer
- Conditions resulting from chemotherapy
- Metabolic disorders such as severe diabetes
- Organ transplants
- Skin diseases that could be precipitated by sunlight, or skin diseases in an acute phase of shedding skin
- Suppressed immune system (HIV infection, for example)

Women should be careful with their sun exposure before their period and during pregnancy because their skin is much more sensitive during those times. In general, a person is less sensitive to sunlight during puberty and in old age.

### **Internal protection**

There is also the possibility of protecting the skin from sunlight from the inside. Beta-carotene is a natural substance well-suited to this task. It can be found in carrots, pumpkins, cabbage, and spinach. If one wishes to use carrot juice for protection from sunlight, then it is necessary to drink one-half to one full bottle of juice daily. Since beta-carotene is fat soluble and can only be absorbed by the intestines together with fat, then it is advisable to add something such as cream to the carrot juice.

If we actively participate in the impressions fleeting before our eyes, and internally work through them, then we put our conscious awareness in a position to be able to withstand the intense sunlight of, say, a Greek landscape. For instance, if we observe the ruins of an ancient Greek temple in the blazing Mediterranean sunshine and see reflected in the architecture the way of thinking in ancient Greek culture, then we are internally active in such a way so as to become more resistant to the light. A travel journal and a good tour guide can also help us activate our internal, conscious light protection.

## **Conclusion**

Just fifty years ago people were still able to draw upon helpful knowledge and habits that had been developed over a very long period of time. For instance, if one visits a history museum exhibiting displays about the daily life of rural populations, then one can see that they wore wide-brimmed straw hats when working the fields and the women wore head scarves that shaded their faces. What was in earlier times a common standard of precaution in regard to sun exposure is now completely at the individual level. Today people are easily influenced by fashion trends and advertising from the cosmetic industry which are interested only in their own business development.

In order to behave in a reasonable manner in regard to sun exposure one must have personal knowledge of its effects on the human organism. Human beings must maintain a position in the middle between the enlivening and the deadening effects of sunlight. Then sunlight becomes something great, streaming with life and love, enriching our human lives both physically and spiritually and giving us healthful benefits. In his last conversation with Eckermann before his death, Johann Wolfgang von Goethe said it this way: “If one asks me if it is in my nature to revere the sun, then I say once again: absolutely! For the sun is a revelation of both the highest and the most powerful that has been granted to us children of earth to perceive. I worship in the sun the light and the creative forces of God by which alone we live, act, and have our being, and all the plants and animals with us.”

