The conventional wisdom that the sun cures human illness comes to us from ancient times, and the ancient belief that a "robust" color was a sign of health persists to this day. The worship of the sun as a health-bringing deity is probably as old as man itself. Possibly the earliest medical association with sun light is the observation of Herodotus, who, in 525 BC, related the strength of the skull to sunlight exposure. The social attributes of healthy glow and a tan have led to popular use of sunbathing and sunlamps.

Sunbathing

Sunbathing is not a new custom; it goes back to Greek and Roman times when enclosed patio solaria open to the sun were quite popular. Many early physicians prescribed sunbathing for such diverse conditions as epilepsy, jaundice, and obesity. The systematic use of sunbaths as a preventive and therapeutic measure in rickets and other diseases was suggested by Palm in 1890. Rickets may be caused by either the lack of vitamin D in the diet of humans or inadequate exposure to sunlight, and it may be considered the first air-pollution disease. In fact, rickets was prevalent among children in Northern European industrial towns, where the burning of soft coal produced heavy black smog along the narrow street and UV-B antirachitic radiation from sunlight was greatly reduced. The action of UV-B on skin occurs through a photochemical precursors of vitamin D, present in living skin cells, which leads to the formation of vitamin D₃.

"Chromotherapy"

One hundred years ago "color therapies" based on claimed therapeutical properties of various colors or combination of colors received wide attention in U.S.A. The claim that exposure to sunlight filtered through blue glasses would cure certain diseases and increase the yield of crops and the fecundity of domestic beasts produced a blue-light mania, which lasted
for over a decade. Not only blue, but also red light was soon after recom- mend for treating various diseases. The use of colored light had lost scientific credence by the turn of the century, when the importance of the UV component of sunlight was realized. Surprisingly, there are still "chromopath" today, sometimes with tragic consequences for their credulous patients.

**Heliotherapy and Actinotherapy (UV-phototherapy)**

The foundations of modern-day UV photobiology began with the work of Niels Finsen, who promoted natural sunlight (heliotherapy) and later artificial UV radiation (actinotherapy) for the treatment of tuberculosis of the skin (lupus vulgaris). Following his pioneering work, heliotherapy expanded rapidly throughout Europe and USA, accompanied by an enormous literature on the subject. Most of the irradiation protocols for the countless number of diseases described in the literature are now of historical interest only. The advent of effective antibiotics and the realization that the success claimed in many of these diseases were little more than anecdotal have resulted today in a much reduced role of UV radiation in clinical medicine. Strangely, despite the lack of convincing proof on the role of sun's UV radiation in curing many diseases, not everyone has abandoned the view that the sun's rays have such curative value.

The use of UV radiation from solar or artificial sources to treat diseases is now usually confined to the therapy of certain skin diseases (acne vulgaris, mycosis fungoides, psoriasis, and some forms of chronic eczema).

**Photosurgery**

It has been known for thousands of years that the sun can cause ocular damage (eclipse blindness). In 1949 Meyer-Schwickerath reported the first beneficial use of sun light in surgery. Retinal detachment, close-angle glaucoma and other eye pathologies were successfully treated by focusing sunlight into the eye, thus avoiding direct surgical intervention. A few years later the famous eye photocoagulator employing a high-power xenon arc lamp was developed by Zeiss; it was replaced in current clinical practice only twenty years later by the introduction of the argon laser.

**INTERACTIONS OF PHOTONS WITH BIOLOGICAL MATTER**

The sequence of changes that follow exposure of the body to nonionizing radiation is very complex and only partly understood for any given biological response.

The photobiological effects of exposure to nonionizing radiation involve the initial essential step of absorption of photons by some molecule, called a chromophore. Once radiation has been absorbed, photochemical changes may occur in the chromophore, and this leads eventually to an observed biological response. Changes in cell and tissue function, and probably participation of mediators, are steps that produce such a response.