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Eureka! Healing with light

Light may one day be used to prevent disease. For 30 years, German scientist physicist Fritz-Albert Popp has been working on experiments that are revolutionizing medicine. His research shows that at the most subbtle level it is light (energy) that determines the the state of health in of a human body.

In the 1970s, Popp, now director of the International Institute for Biophysics (IIB) in Neuss, Germany, proved the existence of electromagnetic waves that he dubbed "biophotons." These biophotons have a crucial purpose. "Each second, some 100,000 chemical reactions occur in a given cell," Popp says. These are not random events, he says, but "a highly controlled process in which the light acts as the communicator that makes the reactions happen at the right moment and in the right place." In contrast to the chaotic light produced by, say, an electric bulb or a glow worm, biophotonic waves resemble the focused light of a laser beam. It is this characteristic, which Popp calls "coherence," that allows them to be modulated and act as information carriers.

Since the German physicist initiated the study of ultra-weak bioluminescence in the mid-'70s, it has become the focus of more than 40 research groups worldwide, 15 of them connected to the IIB. Like Popp, these life scientists are trying to find out how biophotonics can be applied in the diagnosis, therapy and—ultimately—prevention of disease. "We are still in the early phases of the interpretation of this kind of radiation in humans," admits Popp. "But we have already been able to show that the light emitted by cancer tissue, for instance, is quite asymmetrical compared to that of healthy tissue. This indicates that tumour growth disturbs the photon-based communication of the cells."

Biophoton research has already proved useful to determine which medication works best for a patient—without the need to swallow a battery of pills and suffer the side effects. Subjecting the diseased cells of some 50 cancer patients who had undergone biopsies to one drug after another, Popp measured whether the tissues' irregular patterns of light and intensity changed. The substance that caused the strongest normalizing effect could then be chosen as the best medicine for that particular job. "Every tumour growth is different and requires a different drug," Popp says. Such methods of analysis could allow doctors to find out which drug works best for an individual patient quickly, cheaply and painlessly.

Popp hopes this will one day enable doctors to diagnose a patient in minutes and establish how far an illness has spread. He warns that it will be a while before your family doctor is using diagnostic techniques like these. He believes that as biophotonic research progresses, the result will be a non-invasive medicine that won't replace

conventional medicine, but accompany it and help to prevent disease. A truly bright perspective.