

LIGHT AND HEALTH

Infrared Light and Its Effects on Health

Infrared Light and Its Profound Impact on Health

Emerging research underscores the pivotal role of infrared (IR) light in human health, revealing its influence on mitochondrial function, cellular energy production, and overall well-being. Notably, scientists like Professor Glen Jeffrey, Dr. Robert Fosbury, Scott Zimmerman, and Dr. Alistair Nunn have extensively studied the biological effects of IR light.

Mitochondrial Health and Cellular Energy

Professor Glen Jeffrey's research indicates that red and near-infrared light can rejuvenate mitochondrial activity, enhancing energy production within cells. This rejuvenation is particularly beneficial for eye health, as the retina is densely populated with mitochondria, which are crucial for visual function. Additionally, studies suggest that exposure to specific wavelengths of red light can improve colour contrast vision and potentially slow the progression of age-related macular degeneration.

Infrared Light as a Cellular Lubricant

Dr. Robert Fosbury likens infrared light to a lubricant for the mitochondrial electron transport chain, facilitating efficient ATP production and reducing the formation of harmful byproducts like reactive oxygen species. This analogy highlights the importance of IR light in maintaining cellular health and energy balance.

Melatonin Regulation and Circadian Rhythms

Scott Zimmerman's research emphasises the role of near-infrared light in melatonin synthesis, a hormone that regulates sleep-wake cycles. Exposure to appropriate wavelengths of IR light can support circadian rhythms, potentially improving sleep quality and overall health.

Therapeutic Applications and Potential Benefits

Dr. Alistair Nunn's studies explore the therapeutic applications of near-infrared light, including its potential to enhance tissue repair, reduce inflammation, and mitigate side effects associated with cancer treatments. These findings suggest that IR light therapy could be a valuable tool in medical treatments and rehabilitation.

Challenges in Modern Lighting and Building Regulations

Despite the recognised benefits of infrared light, modern lighting solutions often lack the necessary wavelengths to support human health. Building regulations, particularly those focused on energy efficiency, have led to the widespread use of LED lighting that predominantly emits blue light, neglecting the red and infrared spectrum essential for mitochondrial function. This shift has raised concerns among researchers about the potential health implications of inadequate IR exposure.

The Importance of Full-Spectrum Light in Space Exploration

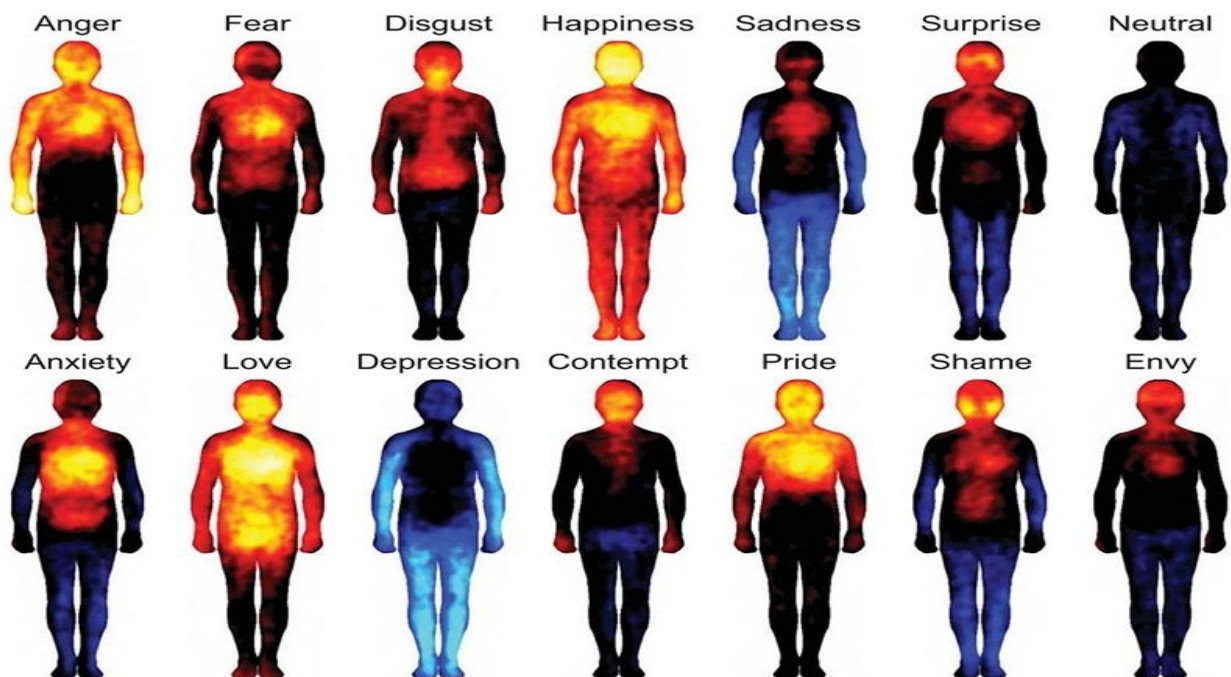
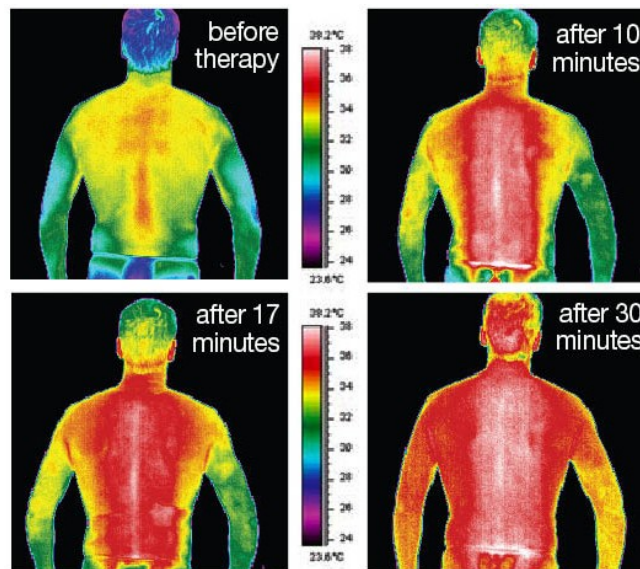
The significance of infrared light extends beyond Earth. In space exploration, the absence of natural sunlight poses challenges for astronauts' health. Studies have shown that exposure to full-spectrum light, including infrared wavelengths, is crucial for maintaining physiological functions and preventing conditions like spaceflight-associated neuro-ocular syndrome. This underscores the necessity of incorporating IR light into artificial lighting systems for long-duration space missions.

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Conclusion

The research conducted by these scientists highlights the indispensable role of infrared light in human health. As we continue to advance in lighting technology and space exploration, it is imperative to consider the full spectrum of light, including infrared wavelengths, to support and enhance human well-being.

For a more in-depth understanding of the impact of infrared light on health, you may find the following video insightful: [Astrophysicist on Infrared Light & Life Interactions | Robert Fosbury](#) OR give us a call on 01908 560110 and we'll enlighten you!



Yellow shows regions of increased sensation while blue areas represent decreased feeling in these composite images. Image courtesy of Lauri Nummenmaa, Enrico Glerean, Riitta Hari, and Jari Hietanen. *This image is irrelevant with infrared heat therapy.