



Infrared Therapy

Eleni Persefone Karakosta DACM, L.Ac

Integrative Pain Management

Infrared Spectrum

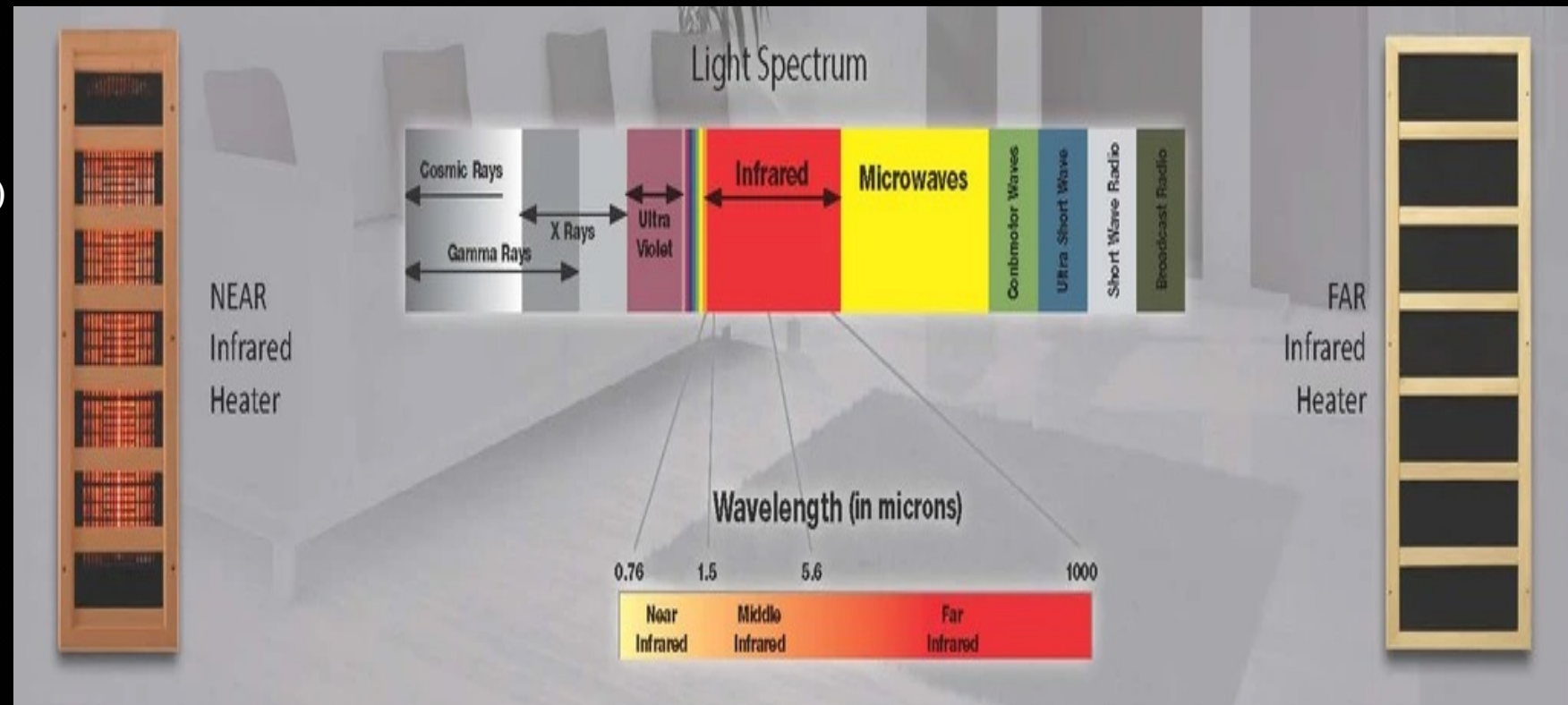
Red light (visible)

IR-A, Near infrared, or NIR(760nm - 1400nm)
wavelength (0.76 - 3 μ m)

IR-B, Mid infrared or MIR(1400nm - 3000nm)
wavelength (3.0 - 50 μ m)

IR-C, Far infrared or FIR(3000nm - 1mm)
wavelength (50 - 1000 μ m)

(A-Z et al., 2021)



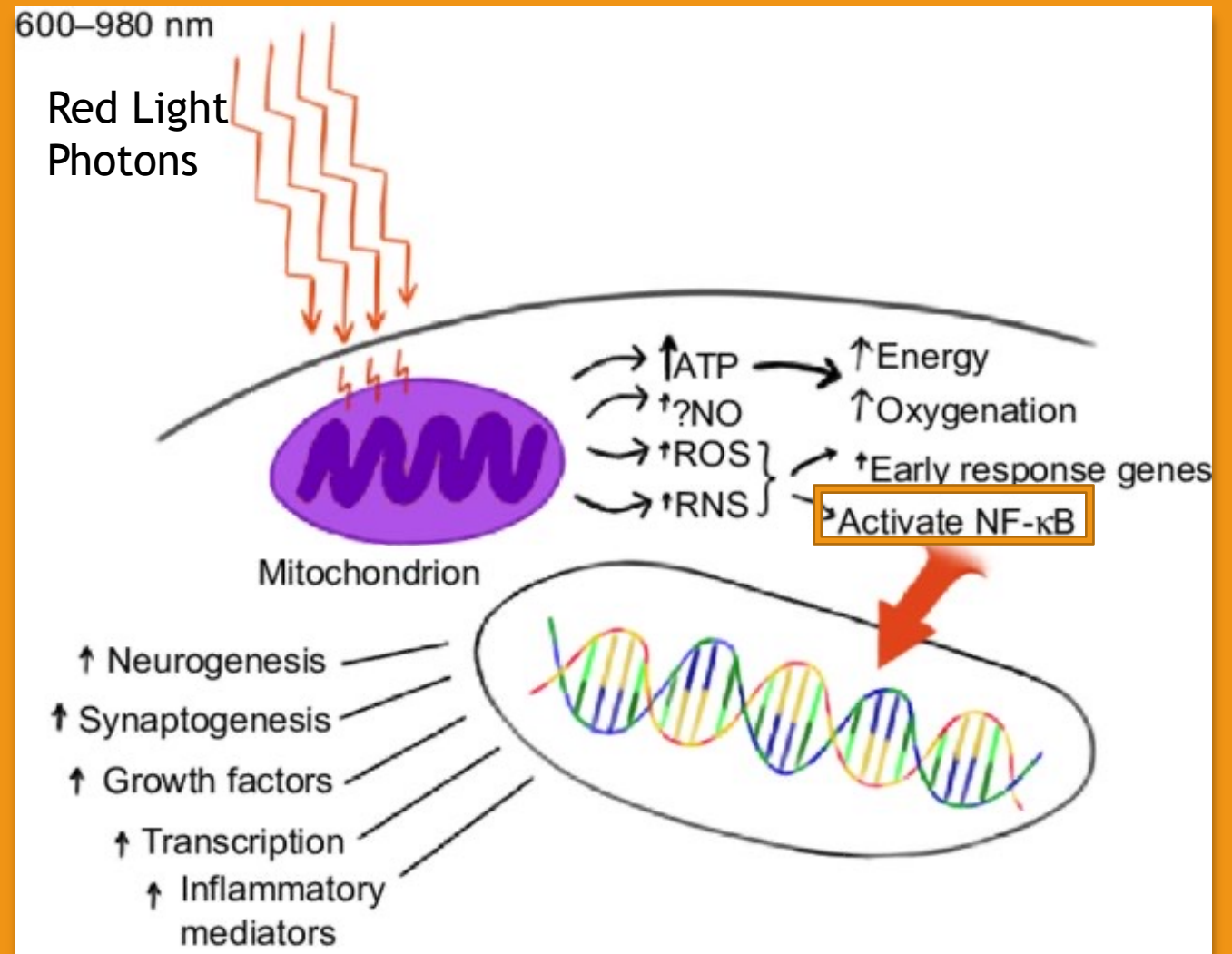
Cellular & Molecular Mechanism

ATP - Cell fuel

Nitric Oxide - Vascular health

ROS - Cell life, Immune response

NF- κ B - immunity, inflammation, cancer, nervous system function



Red Light Therapy

- Low-level laser therapy (LLLT)
- Photobiomodulation



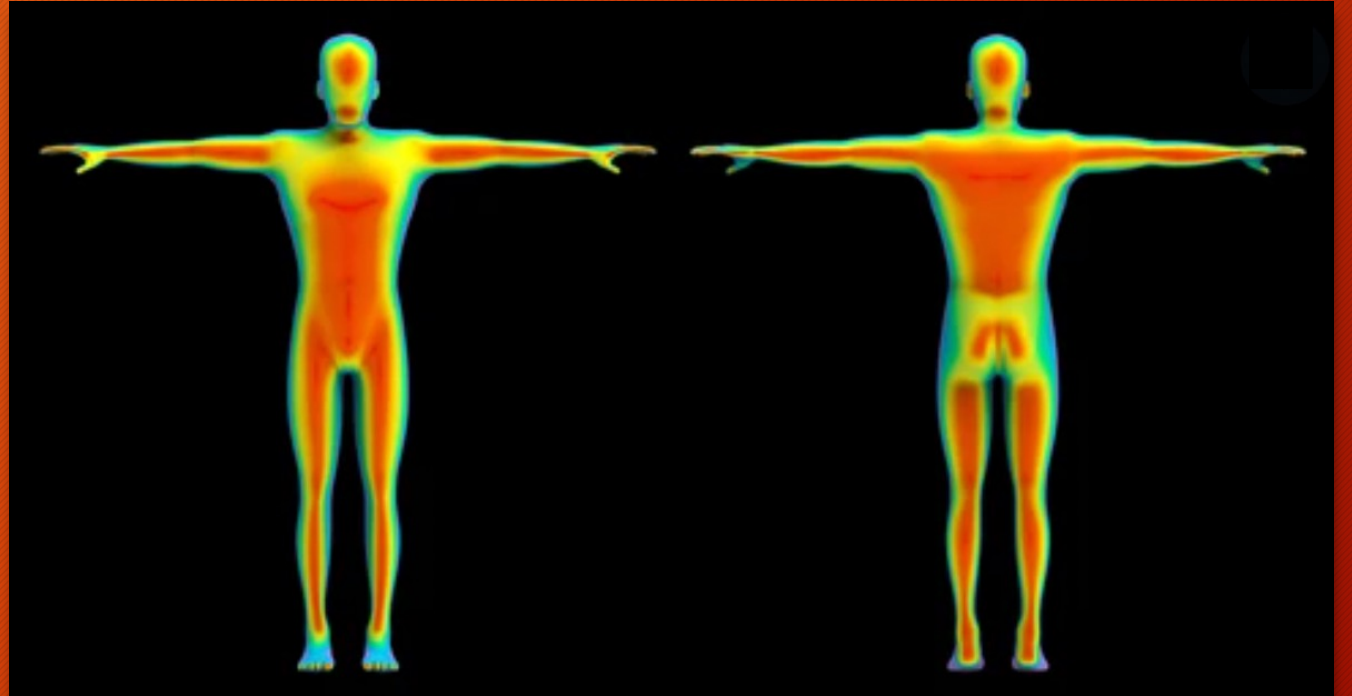
Near Infrared

- Stimulate collagen production and circulation
- Wound healing
- Helping to rebuild damaged joints and cartilage



Body Heat

The body absorbs infrared light at 9.4 microns exactly, because the human body produces far-infrared light at exactly 9.4 microns in the form of body heat.



Far-Infrared Sauna & Benefits

- Ceramic panels
 - Emissivity
 - Low EMF
-
- Cardiovascular
 - Rheumatoid arthritis
 - Ankylosing spondylitis
 - Osteoarthritis
 - Fibromyalgia
 - Wound Healing
 - Detoxification



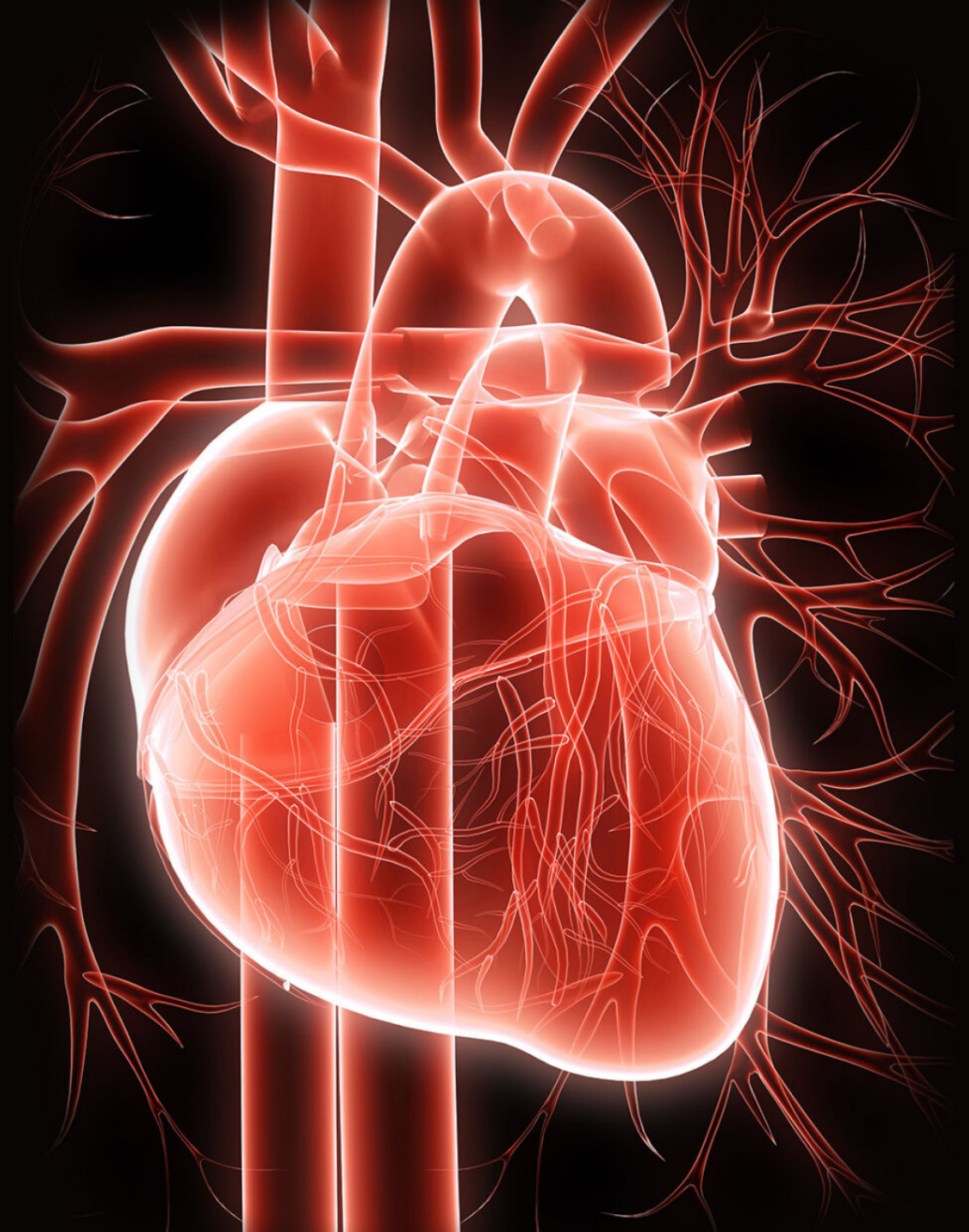
Cardiovascular Benefits

- Improves impaired vascular endothelial function in patients with coronary risk factors, and risk factors for atherosclerosis

(Imamura et al., 2002)

- Preventing the formation of blood clots and keeping the arteries free of plaque, specifically against the occurrence of stroke.
- Significant reductions in systolic hypertension
- May promote insulin sensitivity

Beever R. (2009)



Chronic Pain

A Japanese study suggest that a combination of multidisciplinary treatment and repeated far infrared therapy may be a promising method for treatment of chronic pain.

(Masuda et al., 2005)



Arthritis

A study of patients with Rheumatoid arthritis and Ankylosing spondylitis, showed a reduction in pain, stiffness, and fatigue during far infrared sauna therapy.

(Oosterveld, et al., 2009)



TDP Heat Lamp

TDP “Teding Diancibo Pu” “special electromagnetic spectrum”

Mineral plate, composed of 33 trace elements.

They include:

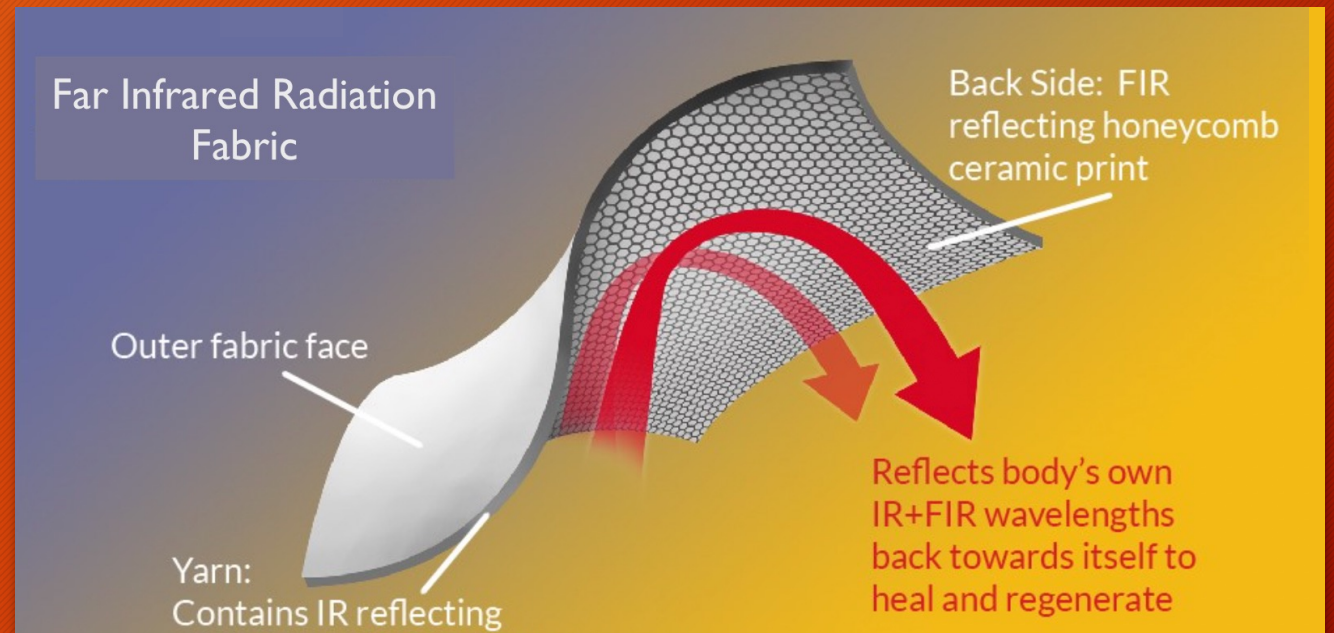
aluminum, antimony, arsenic, barium, boron, cadmium, carbon, chromium, cobalt, copper, iodine, magnesium, manganese, molybdenum, nickel, phosphorus, selenium, silicon, sodium, sulfur, tin, titanium, zinc, zirconium.

- TDP mineral lamp emits far-infrared radiation in the 2-50 micrometer range.
- The heating part operates at about 870 F.



Other Far Infrared Applications

- Chronic lower back pain
- Chronic neck pain
- Menstrual pain
- Chronic foot pain
- Arthritis - Raynaud's syndrome



Potential benefits

- Studies on Dementia and Alzheimer's disease in middle-aged Finnish men

(Laukkanen et al., 2016)

- Potential Cancer Cure

("Targeted Photoimmunotherapy for Cancer", 2021)

Conclusion

Overall, infrared therapy appears to be safe and offers multiple health benefits to regular users. While it is not a magic bullet, adding it to the treatment plan is a critical part of health.

References

- A-Z, L., LBL, S., Services, E., Services, H., Hygiene, I., & Safety, O. et al. (2021). *Light and Infrared Radiation*. Ehs.lbl.gov. Retrieved 16 July 2021, from <https://ehs.lbl.gov/resource/documents/radiation-protection/non-ionizing-radiation/light-and-infrared-radiation/>.
- Beever R. (2009). Far-infrared saunas for treatment of cardiovascular risk factors: summary of published evidence. *Canadian family physician Medecin de famille canadien*, 55(7), 691-696.
- Imamura, M., Biro, S., & Kihara, T. (2002). Repeated thermal therapy improves impaired vascular endothelial function in patients with coronary risk factors. *ACC Current Journal Review*, 11(2), 32. [https://doi.org/10.1016/s1062-1458\(02\)00539-1](https://doi.org/10.1016/s1062-1458(02)00539-1)
- Laukkanen, T., Kunutsor, S., Kauhanen, J., & Laukkanen, J. A. (2017). Sauna bathing is inversely associated with dementia and Alzheimer's disease in middle-aged Finnish men. *Age and ageing*, 46(2), 245-249. <https://doi.org/10.1093/ageing/afw212>
- Matsushita, K., Masuda, A., & Tei, C. (2008). Efficacy of Waon Therapy for Fibromyalgia. *Internal Medicine*, 47(16), 1473-1476. <https://doi.org/10.2169/internalmedicine.47.1054>
- Masuda, A., Koga, Y., Hattanmaru, M., Minagoe, S., & Tei, C. (2005). The Effects of Repeated Thermal Therapy for Patients with Chronic Pain. *Psychotherapy And Psychosomatics*, 74(5), 288-294. <https://doi.org/10.1159/000086319>
- Oosterveld, F. G., Rasker, J. J., Floors, M., Landkroon, R., van Rennes, B., Zwijnenberg, J., van de Laar, M. A., & Koel, G. J. (2009). Infrared sauna in patients with rheumatoid arthritis and ankylosing spondylitis. A pilot study showing good tolerance, short-term improvement of pain and stiffness, and a trend towards long-term beneficial effects. *Clinical rheumatology*, 28(1), 29-34. <https://doi.org/10.1007/s10067-008-0977-y>
- *Targeted Photoimmunotherapy for Cancer*. National Cancer Institute. (2021). Retrieved 17 July 2021, from <https://www.cancer.gov/news-events/cancer-currents-blog/2016/photoimmunotherapy-cancer>.