

Light Density & Dosage

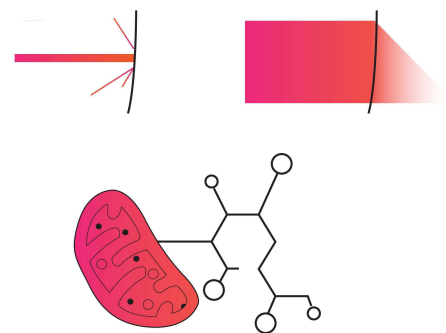
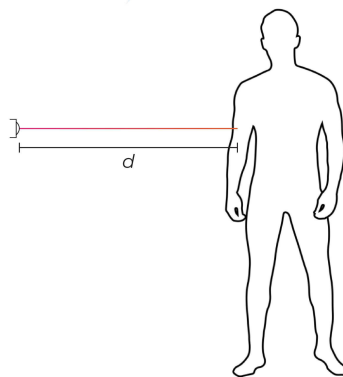
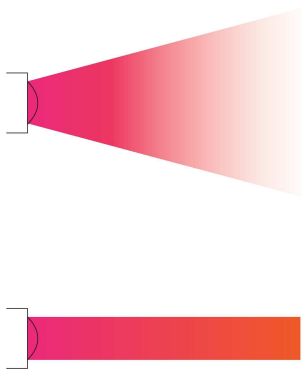
Another principle to determining a successful treatment outcome is a PBM product's light intensity. Measured in Watts per Square Meter (W/m^2), **light density** is a measure of the light's power over a defined area. A solar power meter can be used to take this reading.

$$\text{Dosage} = \text{light density} \times \text{patient's treated surface area} \times \text{duration of treatment}$$

A system offering a higher light density allows for a minimized treatment time while driving energy to the desired depth reliably and consistently.

Low-output, or lower quality products will require longer treatment times per session to receive the same dosage. For a volume of customers that have individual treatment schedules, minimizing treatment times while not sacrificing dosage is key.

Other considerations beyond light density effecting treatment efficacy are:



Light Coherence

Lasers have columnized light allowing the light energy to hit the treatment area in the most efficient manor. LED light emits at a broader angle, increasing wave cancelation and making for less coherent light.

Distance from Emitter

As the patient's distance from the light source doubles, the light energy from an LED decreases by generally four times its energy at the emitter. Laser emitted light reaches and penetrates its target with much less energy falloff due to its coherence.

Skin & Body Factors

Light energy can scatter and reflect from the surface when entering the epidermis, diminishing power further. Application needs differ based on skin and body type to deliver the correct dosage. The primary factor in the mitochondria's ability to photochemically respond to the light is age.