

Laser Physics & Energy Concepts



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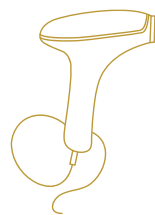
In this module, you'll learn the foundational concepts of how laser works and how energy interacts with the skin.

- Light Amplification by Stimulated Emission of Radiation
- Focused, controlled light energy
- Targets specific structures in the skin
- Delivers energy as heat

What is a Laser?

Laser stands for Light Amplification by Stimulated Emission of Radiation. A laser is a focused, controlled form of light energy used to target specific structures in the skin.

When absorbed, this light converts into heat, creating a controlled treatment effect.



Key Takeaway:

Laser = Light → Heat → Targeted Result

Chromophores & Energy Concepts

Key properties of Laser Light

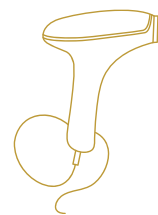
- Monochromatic – One specific wavelength
- Coherent – Light waves move in sync
- Collimated – Travels in a focused, straight beam

Chromophores (Targets in the Skin)

- Melanin – pigment (hair, dark spots)
- Hemoglobin – blood (vascular lesions)
- Water – tissue / collagen

Core Energy Concepts

- Fluence – amount of energy delivered
- Pulse Duration – how long energy is applied
- Spot Size – size of the treatment area



Refer to your Laser Physics Quick Reference guide for formulas and key definitions

Selective Photothermolysis

The principle of using laser energy to selectively heat and destroy a target (chromophore) while minimizing damage to surrounding tissue.

How it works:

- Specific wavelength targets a chromophore
- Energy is absorbed and converted to heat
- Heat damages the target structure
- Surrounding tissue remains protected

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Key Takeaway:

Target the right structure + use the right settings = safe and effective treatment

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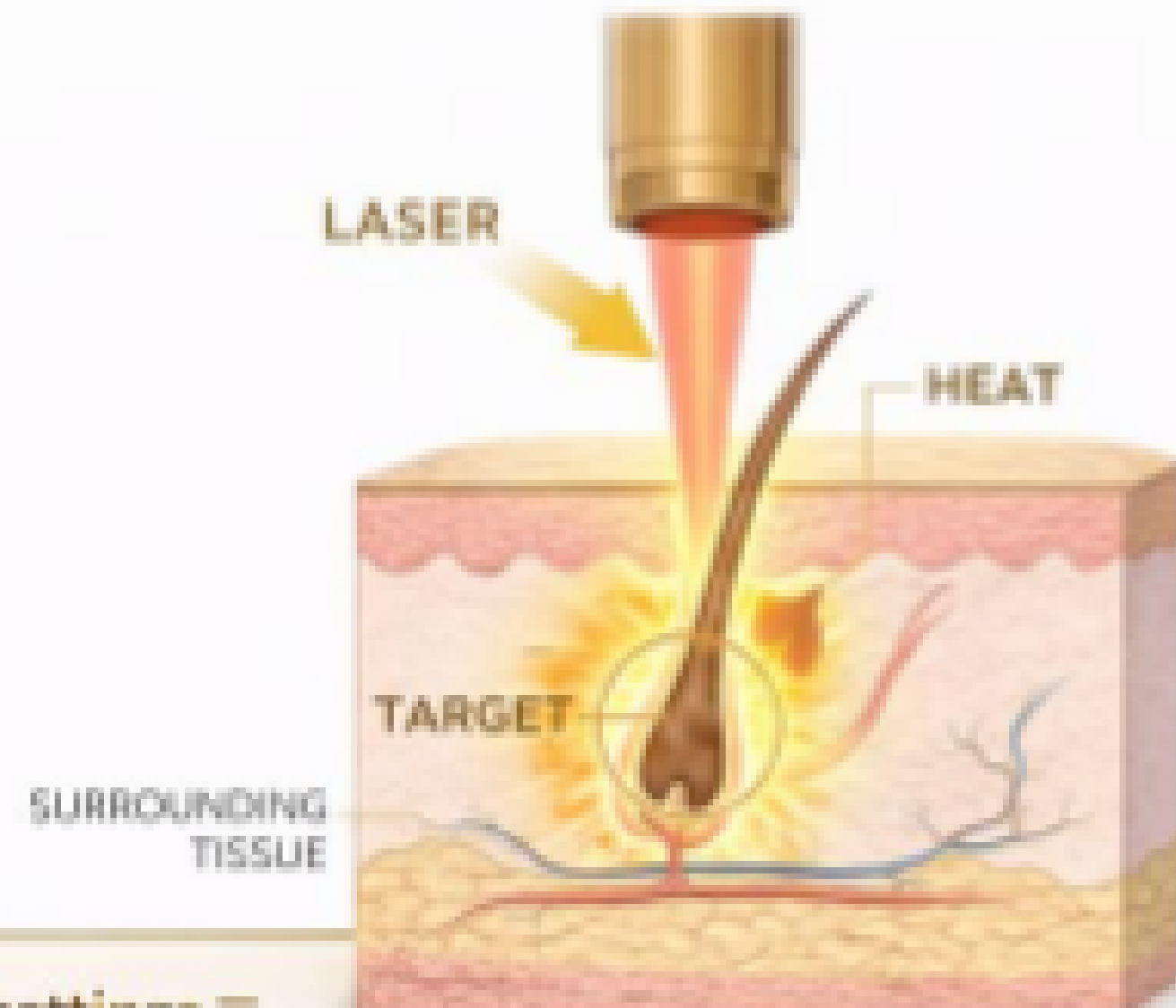
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