

LOW LEVEL LASER AND LIGHT THERAPY

Learning Objectives

1. Define low level laser therapy (LLLT).
2. Describe the difference between LED, SLD, and LLT devices.
3. Describe the physical properties of the electromagnetic spectrum.
4. Discuss the different types of electromagnetic radiation used clinically.
5. Discuss the physiological effect of electromagnetic radiation.
6. Identify the precautions and contraindications for electromagnetic radiation.
7. Describe the clinical indications for the use of diathermy.

Terminology

Collimation	Monochromatic
Electromagnetic radiation	Nonometers
Light emitting diode (LED)	Photobiomodulation
Low-level laser therapy (LLLT)	Wavelength

Laser Theory

There has been a great deal of research, interest, and use in laser and light therapy in rehabilitation, with a plethora of manufacturers developing new equipment for a variety of clinical applications. Lasers have been used in Europe for many years and are gaining more widespread acceptance in the United States with the advent of a number of US Food and Drug Administration (FDA) approved devices. Because of science fiction movies, the general public and many therapists may have misconceptions of how lasers work in rehabilitation and what they can do. A common misconception is that the laser is “hot.” The common image of a laser is from a science fiction movie of somebody getting “vaporized” by a laser beam, so there is a natural hesitancy to explore low-level laser therapy as an additional tool in the occupational therapy toolbox. There are some lasers used in medicine and surgery which have a thermal effect and which are used to cauterize or ablate tissue or for other purposes.