

Up-Close

A Look at Dermatologic Diagnoses

by Catherine McCuaig, MD, FRCPC



Figure 1. Resistant wart on the hand to be treated with the pulsed dye or CO2 laser.



Figure 2. The CO2 laser being used to treat a large superficial on a lymphangioma.



Dr. McCuaig is associate professor, Université de Montréal, and dermatologist, department of pediatrics, Hôpital Ste. Justine, Montreal, Quebec.

The Uses & Abuses of LASER Surgery in Dermatology

LASER is an acronym for Light Amplified Stimulated Emission of Radiation. Each laser has a medium which is gas, liquid or solid that becomes activated by energy (usually electricity). Photons of light located on either end are released and bounce off each other and mirrors, including one with a hole emitting a single wavelength of light.

The laser is a surgical tool, which uses light that is absorbed by a specific target in the tissue called a chromophore, leading to the target's destruction. The surrounding damage is limited by the amount of energy delivered, as well as the application time, referred to as continuous, Q-switched or pulsed.

There are a multitude of lasers, each having different uses. For instance, photoaging is treated with resurfacing lasers, either the CO2 ultrapulse, the silktouch, or the Erbium-YAG laser (Figures 1 and 2). Vascular lesions are best treated with the tunable pulsed dye laser, however, post-operative purpura is a limiting factor for some patients. The Neodymium-YAG, alexandrite, intense pulsed light (flashlamp), diode and KTP lasers may also be used. These same lasers, along with the Ruby, can also be used for pigmented lesions and hair removal.

With laser treatment, there is the risk of permanent scars, hypopigmentation or hyperpigmentation. One should seek an experienced operator. It is not only important to have the right laser for the right lesion, but to know the limitations of each laser, as well. [CME](#)