

Dr. Greenway

Dr. Frank Greenway describes in the following statement to the Canadian organisation unity of the laser manufacturer his experiences with the Lapex BCS. He explains in clear manner which processes run off for the fat reduction on account of the laser treatment in the body.

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LOUISIANA STATE UNIVERSITY SYSTEM

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Ms. Anna Brazier, President
Meridian Medical
Director of Business Operations
#314 - 2150 West Broadway
Vancouver, BC V6K 4L9

Re: Mechanism and Safety of the Lipolaser

Dear Ms. Brazier:

At your request, I have tried to summarize my understanding of the mechanism by which the Lipolaser accomplishes local fat reduction and my reasons for believing that the mechanism by which it works is safe.

Low-level, laser energy disrupts the fat cell membrane. This releases intracellular fat and causes the cell to lose its round shape by changing the permeability of the fat cell membrane (Neira, 2002). The disruption of the fat cell membrane does not affect neighboring structures such as the skin, blood vessels, or peripheral nerves (Neira, 2002).

This suggests that the fat is being deposited in the interstitial space between the fat cells. There would appear to be only two potential mechanisms to remove the fat from this interstitial space. One would be by phagocytosis through the inflammatory system. Inflammation is accompanied by pain, redness and swelling. The clinical study was not associated with any of these characteristics of inflammation, making this mechanism highly unlikely. The other potential mechanism would be through the lymphatics which drain the interstitial space into the venous system. Triglycerides released through the broken fat cell membranes are presumably deposited into the interstitial cellular space and carried away by the lymphatic system. The lymphatic system drains into the venous system where the released triglycerides are broken down into free fatty acids and glycerol by lipoprotein lipase. These fatty acids and glycerol are taken up and re-esterified by other fat cells in the body unless they are burned for fuel. Fat eaten as food is processed into chylomicrons in the gut and absorbed through the gastrointestinal tract into the lymph system which drains into the venous system. Therefore, the fat released by the lipolaser and the fat eaten in the diet both enter the venous system in a similar manner from two different sites and are processed from that point in a similar manner.

Since the waist decreases by 0.5 cm with a single Lipolaser treatment, 52 grams of fat are mobilized during a treatment session, if one assumes a waist size of 80 cm and a cylindrical torso. This is the equivalent of 468 kcal of fat. This amount of fat is easily processed by the body from a standard meal. Thus, the body has the ability to process the amount of fat mobilized by a Lipolaser treatment with a great margin of safety giving reassurance that treatment with the Lipolaser is safe. The safety of the mechanism of action by which the Lipolaser gives local fat reduction is consistent with the safety observed using the low level lasers in clinical practice for more than a decade.