

# Cosmetic SURGERY TIMES

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Clearing facial vessels with IPL **32**

Less breasts with lipo **42**

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BRILLIANT

Surgical savvy — combining lasers with more invasive procedures

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*Cosmetic Surgery Times'* annual update on laser and light technologies

Successful tummy tightening with lasers

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# Belly blaster

*Uniform heat induction/fat removal effective for tummy tightening*

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SENIOR STAFF CORRESPONDENT

**P**atients who want a tighter abdomen without the high risk and lengthy recovery associated with abdominoplasty are treated with a combination of circumferential abdominal liposuction and induction of thermal energy by Patrick McMenamin, M.D. The procedure employs a grid to help keep the surgeon focused on applying a uniform amount of energy to the entire treatment area.

"Patient satisfaction is high, and patients are typically back to work or enjoying everyday activities within a week," Dr. McMenamin says. He now reserves traditional abdominoplasty for patients with excessive skin laxity due to weight loss of 100 pounds or more.



Dr. McMenamin

"There's no question that a traditional tummy tuck is quite an invasive operation. The possibility of deep vein thrombosis is real, and complete recovery can take up to a month," Dr. McMenamin says.

"When we perform abdominoplasty, we are creating a very large wound reaching from one side of the abdomen to the other, lifting the flap up, pulling the excess down and then cutting it off. The complication rate is not as high as it was 30 years ago; nevertheless, the patient is left with a very large scar," he says.

#### ACHIEVING SKIN CONTRACTION

Although the original goal of laser lipolysis was to remove fat deposits, Dr. McMenamin says that investigators have since found that contraction of the skin envelope is achievable as well. His abdominal laser lipolysis technique is all about improving skin-texture changes and achieving skin contraction.

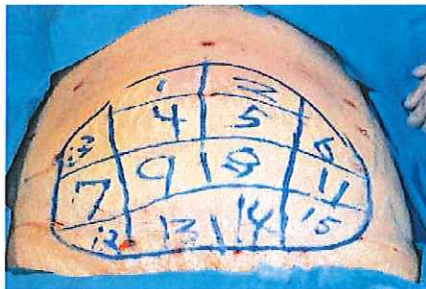
"What we're talking about is putting laser — heat — energy into a wound to make the skin contract, and we use the grid technique that was developed by (Barry) DiBernardo

the subcutaneous space. Each square is then treated individually by laser-assisted liposuction to surface temperature end points of 38 degrees Celsius to 42 degrees Celsius. Each square is treated with the Joule (Sciton) or the Smartlipo (Cynosure), using 1,064/1,319 nm or 1,064/1,320 nm Nd:YAG laser energy, respectively, delivered by an optical fiber (300, 600, or 1,000 mm diameter) enclosed in a stainless steel liposuction cannula and extending 2 mm to 3 mm beyond the distal end.

Each square receives between 1,600 J and 2,500 J to achieve an endpoint skin temperature of 40 degrees Celsius to achieve skin tightening.

Surface-skin temperatures are monitored with a handheld infrared thermometer (MiniTemp MT6, Raytek).

To avoid epidermolysis, an optimal internal temperature of 45 degrees Celsius to



A patient's abdomen sectioned off into approximately equal squares to allow uniform application of energy in the subcutaneous space. (Photos credit: Patrick McMenamin, M.D.)



A 37-year-old female patient before (left) and six months after abdominal laser lipolysis. The patient was treated with 16 watts; 8 watts were 1,064 nm and 8 watts were 1,320 nm using a Cynosure MPX, then approximately 1,600 J to 2,500 J per square was applied.

to ensure that we are relying on a scientific method to create a uniform wound," he says.

The treatment target area is divided into a series of approximately equal squares to allow uniform application of energy in

47 degrees Celsius is monitored with a TempAssure (Sciton) or ThermoGuide (Cynosure) internal sensor.

**CASE STUDY** An example of a female patient who underwent successful abdominal

laser lipolysis using the previously described technique in conjunction with DiBernardo's grid follows:

"We treated the patient with 16 watts; 8 watts were 1,064 nm and 8 were 1,320 nm using a Cynosure MPX. Then we applied approximately 1,600 J to 2,500 J per square," Dr. McMenamin says. "We apply the laser fiber just under the skin to heat that area so that we can make the skin contract.

"Removing the fat and creating the trauma makes the skin contract and can make the entire abdominal wall contract," he says. "If we performed liposuction only, the skin would contract some, but it would not be as significant of an outcome as we get with thermal trauma.

"We have learned that we need more than just removal of fat and more than just induction of trauma, so we use thermal trauma, and the outcomes are excellent," Dr. McMenamin says. The procedure was performed on a Tuesday and the patient was back to work on Thursday, he says.

Dr. McMenamin says he has been using this technique — and modifying it slightly as time goes on — for three years on more than 100 patients, on various body parts including abdomen, triceps and face.

"Different types of people are willing to accept different types of outcomes and different degrees of risk and recovery," he says. "When we take out the fat and induce thermal trauma we get results that are as close as possible to abdominoplasty, without the huge scar, long recovery and high risk.

"The ability of skin to contract well is related to the thickness or thinness of the dermis," Dr. McMenamin says. "So, in particular, when we do liposuction on the triceps and the inner thighs and perhaps on the abdomen, those are areas that may not have as thick a dermis and may not contract as well. So those are areas that we get immeasurably better results when we add thermal energy to the procedure rather than doing liposuction alone.

"The results can be better than a conventional, moderately aggressive abdominoplasty, depending on the amount of skin laxity," he says. ◀

#### Disclosures:

Dr. McMenamin was previously a consultant to Cynosure and is currently a consultant to Sciton.