

# New

## (That Really Works!)

By Robbie Durand, MA

**C**ellulite. Nothing can make a woman run out of a department store changing room faster than a glimpse in a full-length mirror at this distressing physical condition. In fact, at least twice a year the *National Enquirer* runs a "Stars with Cellulite" edition. Yet disciplined and dedicated women on the quest for the perfect feminine physique and even those who simply desire to feel confident in a pair of shorts or a swimsuit are fighting what seems an uphill battle with this natural state that modern-day women love to abhor.

Research has suggested that 95 percent of women will experience some level of cellulite at some time in their life.<sup>2</sup> The condition may also affect men; however, this is not as common. The reason can be attributed to estrogen production.<sup>10</sup> Excess estrogen is thought to be a contributing factor to causes of cellulite; weakened connective tissue from excess estrogen production pulls down on the skin and causes the stored fat to push up, resulting in the irregular appearance of cellulite. Even by adhering to a strict diet and exercise program, a focused female who has attained the ideal bodyweight and body fat composition can still have it. Described as skin with an "orange peel" texture, cellulite is typically found on various regions of the female frame including the thigh, arm, belly and pelvic areas. Other descriptive terms include "dimpled," "hail damaged," "cottage cheese skin" and even "the mattress effect." For many women, no matter how thin or fit they may be, cellulite is still apparent. And there are big bucks being shelled out by women across the globe for a wide variety of cellulite solutions.

### What Exactly is Cellulite?

Cellulite is made up of fat cells, however it's their failing support matrix that creates an irregular, crater-like appearance. The best evidence supports cellulite being described as structural variations in the subcutaneous fat architecture.<sup>1</sup> Cellulite is more common in females than males. Males typically have a thicker dermis or skin and less fat deposition as compared to females. Basically, due to the thinner layer of skin females have over time, compartments of fat beneath the dermal layer begin to bulge in an irregular fashion. In the *Journal Plastic and Reconstructive Surgery*, Dr. Michael Rosenbaum reported that **cellulite is more of a connective tissue problem than a fat problem.**<sup>16</sup> He reportedly found that the layer of connective tissue is more irregular and discontinuous in women affected with cellulite, yet the fat cells themselves were no different from other fat cells in the same area of the body. Researchers agree a variety of factors may exacerbate the appearance of the condition. Cellulite has variably been attributed to structural, circulatory, hormonal, and inflammatory factors, but the path of development is unsettled.<sup>2</sup>

#### Possible causes of cellulite:

- Genetic predisposition
- Poor circulation
- Aging
- Hormonal imbalance
- Stress
- Breakdown of connective tissue
- Destruction of skin's vascular system due to above factors →

## Endermologie®: A Clinically Proven, Non-Invasive Method of Cellulite Removal

As mentioned previously, many of the treatment modalities for cellulite have little clinical validity and have not been thoroughly researched. In a recent study in the *European Academy of Dermatology and Venereology*, researchers reported that the product **Endermologie®** was clinically proven to reduce cellulite. The study involved nine healthy women with cellulite on their thighs. The women were on oral contraception to maintain a stable hormonal balance throughout the study and maintained their normal diet and physical activity levels. Each subject received a total of 12 sessions (three times a week) of mechanical massage technique according to a specific practical protocol. The mechanical massage technique (**Endermologie®**) is a non-invasive technique consisting of a deep-tissue massage provided by a medical device composed of a treatment chamber with a suction system and two independent motorized rollers, which roll and unroll a skinfold. Think of this machine as someone giving you a deep-tissue massage; that's what the machine feels like. Each subject received a total of 12 sessions (thrice a week) of mechanical massage technique according to a specific practical protocol. Another interesting aspect of the study is that they performed microdialysis on the thighs of the women before and after **Endermologie®** treatment.

What's microdialysis? Microdialysis is a technique in which tiny little needle probes are used to determine the chemical components of the fluid in the extracellular (between) tissues. In this case, they were looking at fat cell responsiveness that was occurring in the thigh area before and after treatment with **Endermologie®**. *At the end of 12 treatment sessions, the women had about a 13 percent reduction in skinfold thickness of the thighs (they measured this by using skinfold calipers). The waist and thigh reduction was variable for women, yet the women lost anywhere from 1.7 cm to 3.3 cm.* Finally, after 12 sessions of **Endermologie®**, all nine of the study subjects' thighs as measured by microdialysis *were more responsive to fat mobilization* by adrenaline or catecholamines.

## The Science Behind Endermologie®

So the question is: How does **Endermologie®** work? It's more than the water redistribution that occurs with many topical treatments that claim to be cellulite cures. The researchers suspected that, although the mechanism of action of **Endermologie®** is still unclear. Remember, cellulite is based on the composition and behavior of women's fat cells and the connective tissue that holds them in place. Very simply, a woman's connective tissue is very inflexible, so as females gain weight, their fat cells expand and the connective tissue tend to bulge upward toward the surface of the skin, giving the classic "orange-peel" appearance of cellulite. It is suspected that the **Endermologie®** works because of the positive pressure from rollers, combined with the negative pressure from suction; this is believed to cause micro-damage to the subcutaneous fat cells. As these damaged fat cells heal, they rebuild in such a way that result in an improved contour of the skin and better distribution of subcutaneous fat. As mentioned previously, **Endermologie®** has been shown to increase collagen formation in the skin. Though the fat layer is altered, this mechanical force does not affect the overlying skin, bones, or muscles. Massage has recently been shown to enhance muscle recovery from exercise, so its effects are not limited to muscle, but adipose tissue as well."

## Endermologie® Kick-Starts Fat Cells into Working Again

The deep-tissue massaging-action technology disrupts the fibrous bands that



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## Cellulite Formation

There are three stages associated with the development of cellulite.

**1. Normal vascular system:** When normal fatty tissue is stored, it is held in place by a network of collagen and elastin fibers and is supplied by a network of vascular and lymph vessels. When the system works well, the vascular system takes energy from the fat stores when required, and toxins are flushed away via the lymphatic system.

**2. Failing Adipocytes:** When the circulatory system starts to fail near adipocytes, waste products start building up and the connective tissue becomes saturated with fluid, and is often inflamed and swollen. Growing fat cells (adipocytes) destroy the network of collagen and elastin fibers, which then thicken around these cells forming hard pockets of fat, encroaching on vascular and lymphatic vessels.

**3. Cellulite Formation:** The hardened pockets of fat are the cause of the "orange peel" or "cottage cheese" appearance known as cellulite.

Now that you are completely aghast as to exactly how those dimpled, orange peel-like fatty areas are formed, let's take a look at how you can make it go away once and for all. Billions of dollars are spent each year on cellulite solutions, even though many of the treatments lack reliable clinical evidence of their efficacy. Topical creams, noninvasive devices, surgery, injectables and yes, even caffeine-laced pantyhose are among the most popular cellulite reduction options available today.

## Liposuction Not "The" Solution for Cellulite

It is believed that a good eating plan, increased activity, and low stress levels can reduce water retention and fat buildup. Nevertheless, these aspects have limited effectiveness in treating cellulite. Various treatments have also been developed to treat cellulite or adipose tissue including creams, laser technologies, liposuction and mesotherapy. All treatments have had limited success in the removal of cellulite. Out of frustration, many women turn to surgery for the reduction of excess fat deposits and cellulite. Liposuction is a surgical treatment where a medical doctor utilizes a small tube called a canula to actually remove fat from under the skin. Superficial liposuction has been used to treat cellulite by removing fat deposits from deep within the subcutaneous areas, however results have been less than optimal.<sup>3, 4, 5</sup>

The use of ultrasound with liposuction is also used to break up the fat and liquefy it into an emulsion; however this has not been found to improve results either, despite the marketing hype behind this procedure.<sup>6, 7</sup> Many doctors even warn that liposuction is not an effective treatment for cellulite because liposuction is designed to remove deep fat instead of cellulite, which is close to the skin surface. Besides being ineffective, major surgery is expensive, general anesthesia is involved and the post-surgical recovery time can be much longer than other less-invasive procedures. It is interesting to note that some highly reputable board-certified plastic surgeons prescribe **Endermologie**® as a follow-up treatment to liposuction procedures.

## Birth of Endermologie®

In the late 1980s, Louis Paul Guitay, a young engineer in southern France, was badly burned in a car accident. He suffered muscle and skin damage as a result of the car accident. The scarring of his skin was treated by therapeutic massage to soften this tissue and to restore muscle function. These massage sessions, which lasted three to four hours a day, consisted of rigorous routines of manually rolling the skin in order to regain elasticity. Guitay was unsatisfied with these massages because the therapy was time consuming, labor intensive, and the outcome varied widely based on the skill of the individual therapist. He noticed that massage therapists with weaker hands resulted in less tissue elasticity and poor tissue therapy than the massage therapists with stronger hands who really squeezed hard, which resulted in greater tissue elasticity and overall appearance. As a result, Guitay designed the **Endermologie**® system, which used a mechanical method to produce the same effect as the manual massages. This mechanical system allowed the therapy to be performed quicker and in a more consistent fashion.

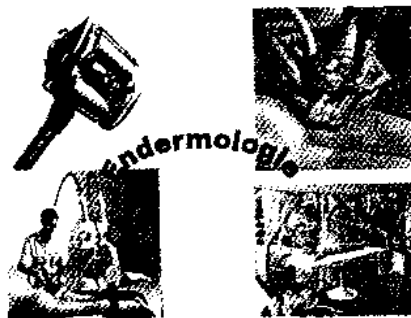
## Endermologie® Clinical Studies

Unlike many companies which promise results,

**Endermologie**® has an extensive list of clinical studies to validate its validity. In 2001, researchers examined the effects on **Endermologie**® on tissue responses.

The most striking change that was induced by the application of deep mechanical massage is the accumulation of collagen in the subcutaneous tissue, which increases with a greater number of treatment sessions. The researchers believed that the smoothing effect and appearance of decreased cellulite that have been reported in human subjects is the result of tissue architecture changes (increased collagen) and a redirection of subcutaneous fat tissue.<sup>17</sup>

The long-term effect of **Endermologie**® was evaluated in women over a one-year period. Seven sessions of treatment with **Endermologie**® showed a mean index reduction in body circumference of 1.34 cm, or a little more than .5 inches, while those who completed 14 sessions of treatments showed a mean index reduction in body circumference of 1.83 cm<sup>18</sup> or almost .75 inches. The study provided encouraging evidence of actual physical or structural changes in the architecture of the tissues in the stomach and thighs. And new research was recently released showing that **Endermologie**® treatment does more than increase collagen: it actually kick starts fat cells into burning more body fat.



# Cellulite Fun Facts

surround fat tissue. The deep massaging action restarts a person's fat cells to become more responsive to fat burning. It may initiate local changes (i.e., adipose tissue remodeling events) that have an incidence on the fat-burning responsiveness of adipose tissue. **It's interesting that in the Endermologie® research study, the women's thighs became more responsive to the fat-burning effects of catecholamines.** It's almost as if the deep massaging action is mimicking exercise; when you exercise, the tissues become more responsive to fat burning. For example, a four-month endurance-training program improves lipid mobilization and adipose tissue blood flow in the abdominal subcutaneous adipose tissue of overweight subjects.<sup>9</sup> Increases in blood flow to adipose tissue may also enhance the fat utilization process. Interestingly, obese people have **reduced blood supply** to adipose tissue compared to leaner individuals.<sup>12, 13, 14</sup> James Watson, MD, and associates at UCLA studied the physiological effects of **Endermologie®**. They examined blood and lymphatic flow recorded before and after **Endermologie®**. After treatment, there was a threefold increase in lymphatic flow lasting 3 hours after treatment, and fourfold increase in cutaneous blood flow, lasting 6 hours after the **Endermologie®** treatment<sup>15</sup>.

## Price

In order to see results from **Endermologie®** one usually needs about 14 to 28 sessions with each treatment visit lasting 45 minutes. Once optimal results are obtained, monthly treatments are essential to maintain the smooth-skin look. Liposuction of a small area tends to cost about \$2,000 or more. An **Endermologie®** session costs about \$90-\$150. Since its introduction to the USA, **Endermologie®** was the **first to be FDA-approved** for temporarily reducing the appearance of cellulite. The minimum 14 visits and monthly follow-ups tend to be slightly under \$2,000 US dollars. However, those needing more treatments may ultimately pay more than a single liposuction session. Proponents of **Endermologie®** feel the procedure is still economically sound, and since it addresses an area which liposuction tends not to resolve, it is an excellent treatment. For more information about **Endermologie®** visit: [www.endermologie.com](http://www.endermologie.com).

## REDUCE CELLULITE WITH CAFFEINATED STOCKINGS?

No need to drink your morning cup of coffee; why drink it when you can wear it? Palmers "Slim Fit 20" Caffeine Tights party hose have embedded caffeine microcapsules that are released by body heat; the company claims that java can be infused from the party hose right into your bloodstream (boosting your metabolism) and can reduce cellulite. The theory is that the chemicals help to reduce fluid retention, thereby temporarily smoothing out the skin's surface. This is especially important for ladies' thigh areas, where skin can become extremely thin and fat deposits may be pronounced. Said to last four to six uses, those who have used the product seem to like the results. Each pack contains three pairs of tights. The manufacturer states each pair can be worn for 2-3 days before the caffeine effect wears off and to give the product time to show results. Learn more at <http://www.caffeinestocks.com>

**Did You Know? Historically the word "cellulite" didn't exist until the late 1800's. Prior to that time, women gladly exhibited their dimply behinds in Victorian works of art, most famously represented in Renaissance Master and Flemish artist Peter Paul Rubens' paintings with his beautifully ample female subjects becoming known as "rubesque" was a sign of those of wealth and fine living. Ironically, now we spend billions of dollars each year trying to get rid of it.**



Venus at the Mirror by Rubens

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