

# Physician

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Thanks to TV shows like “Biggest Loser,” more overweight Americans, especially those who are severely overweight, are getting off the couch and starting to walk, run and bike, resulting in significant weight loss. Inspired and motivated by their dramatic weight loss, they’re turning to plastic and reconstructive surgeons to help them complete their journey to life after weight loss.

This is just one of the trends I’ve observed over the past several years in my practice. And it is one of the most inspiring aspects of my practice. These patients truly experience a transformation before your eyes, both internally and externally.

On the other side of the coin, a more troubling trend is the increasing number of melanoma cases I see in both adult and young patients. This is one trend that I believe will continue as baby boomers age. Multiple factors are at play in the increasing incidence of melanoma, including unprotected sun exposure, ozone layer changes, and use of tanning beds.

Another trend is for more and more patients to opt for breast reconstruction following mastectomy in treatment of breast cancer. This has been influenced by

## Plastic surgery update

*New technology, extreme weight loss, and melanoma fuel trends*

By Sam Economou, MD

refinement of techniques and resultant outcomes and resolution of issues surrounding breast implants.

Each of these trends is discussed below.

### Body contour surgery

As the number of patients pursuing bariatric procedures has increased, so has the number of body contour procedures done nationwide. The areas most frequently addressed are the abdomen, breasts, arms, thighs, and buttocks—areas of the body that we most associate with extreme weight gain.

The vast majority of these procedures are done on an outpatient basis. Over time, we have improved techniques to conduct multiple, simultaneous procedures in an outpatient setting. In addition, abdominoplasties have evolved to better address the needs of the massive weight-loss patient.

In my practice, I perform five different varieties of abdominoplasty: a mini, full, fleur-de-lis, corset, and beltline abdominoplasty. They are not necessarily interchangeable, but rather are offered based on physical findings and patient goals. Incorporation of Harmonic Scalpel technology (see section below) into these procedures has resulted in shorter drain duration and less narcotic use in patients following a surgical procedure. The goal is to return these patients to their normal lives as quickly as possible with minimal risk of complication.

### Fat transfer

As interest in stem cells has increased, more and more attention is being paid to the viable stem cells present in the aspirate fat obtained during liposuction procedures. In the past, this tissue was discarded, but now it is being used for a wide variety of purposes. As our abil-

ity to harvest fat cells and the stem cells present with them in an atraumatic fashion has evolved, fat graft survival has increased and outcomes have improved.

We now improve and supplement contour after breast reconstruction following a mastectomy using fat transfer. Most often the area treated is in the upper pole of the breast, improving the contour and transition into the reconstructed breast. This improves the overall result from the reconstructive effort and enhances patient satisfaction and confidence. In addition, fat transfer is being studied intensively as a possible substitute for breast implants in both cosmetic augmentation and breast reconstruction following mastectomy. So far, the results have been very promising in both applications, but particularly in augmentation. More long-term study is needed, however.

In the past, *facial rejuvenation* consisted of tightening the skin, fascia, and periosteum (layers of tissue that lie over the cheek bones) of the face. This practice created what many have recognize as the “wind tunnel” look, making it quite easy to spot someone who has had a facelift. Today, plastic surgeons realize it is

as important to restore lost volume to the cheeks and periorbital region as it is to tighten the skin—to create a youthful but much more natural look. Fat transfer is the essential component of this advance. It isn't known whether it is the fat cells alone or in concert with the viable stem cells that give these results, but there is no doubt that it works.

As we age, the face loses significant volume in the cheeks and periorbital region. (Take a look at an old high school graduation photo; I would predict that your face was much more full at that time.) Unless this loss of volume is replaced, you are not turning back the clock. Fat transfer accomplishes this. This is not only an advance in technology, but also a change in philosophy. What we did in the past was just not adequate. Fat transfer can be used in the face as a stand-alone procedure without a facelift with equally good results if the patient does not have significant skin laxity. Fat transfer can also be used to supplement the contour of virtually any area of the body, whether related to a cosmetic or reconstructive issue.

Isolated stem cell transfer to the face remains under study. Just recently, the FDA approved a patient-derived filler for use in combating wrinkles. The LaViv fibrocell is created from the patient's own fibroblasts, then cultured in a lab to create a collagen replacement for reinsertion into the patient. This cutting-edge technology will result in significant changes in the way we approach both cosmetic and reconstructive procedures.

### **Melanoma surgery**

Performing a sentinel node biopsy for the purpose of staging is a common, appro-

priate, and aggressive part of treatment in melanoma patients. The sentinel node is the first node in the drainage chain of the area in which the tumor arises. It is identified through lymphoscintigraphy in the nuclear medicine department. The node is removed at the same time as the wide excision and examined carefully. Current immunohistochemistry techniques allow for the identification of a single cell in the node. Early intervention affects survival directly, and the results of the sentinel node biopsy guide choices for additional therapy. Early results for drugs modulating the immune response against the melanoma have been promising in stage 4 patients. At present, early, aggressive surgical intervention remains the keystone to treatment of this deadly and increasingly common disease.

I am often asked why a plastic surgeon is involved in the treatment of melanoma. In the past, plastic surgeons were asked to reconstruct a patient's face after the wide excision of tumors. This required the coordination of two surgeons and sometimes delayed surgery. Since sentinel node biopsy became the standard of care years ago in the staging of melanoma, we plastic surgeons have been able to provide our referring physicians a "one-stop shop" for the wide excision of the primary tumor and sentinel node biopsy. In my practice, I operate on any region of the body and perform the reconstructive procedure as needed. To provide the patient the appropriate next step in their treatment as needed, I have close working relationships with oncologists, radiation therapists,

and head/neck surgeons and general surgeons interested in melanoma care.

The use of Harmonic Scalpel technology (described below) in sentinel node biopsy has reduced the incidence of lymphoceles significantly. Patients also have less pain at the node biopsy site and reduced reliance on narcotics following an operation.

### **Harmonic Scalpel technology**

In conjunction with these trends, plastic surgery is being dramatically affected by advances in surgical equipment and techniques. While the procedures we routinely perform have not changed dramatically over time, the tools have, creating the opportunity to reduce the invasiveness of our surgical procedures, decrease healing time, and produce more dramatic results.

The Harmonic Scalpel, manufactured by the Ethicon Endo-Surgery subsidiary of Johnson & Johnson, is slowly being incorporated into a variety of plastic surgery procedures by plastic surgeons nationwide. It's a proven alternative to monopolar cautery and delivers mechanical rather than electrical energy. The tip of the blade vibrates at 55,500 cycles per second, dissecting through cavitation. It operates at a much lower temperature than cautery, resulting in less unintended collateral thermal spread and tissue injury. It also seals blood and lymphatic vessels effectively. Patients feel less pain and experience less bruising and, as a result, recover more quickly. In addition, it reduces the time that drains are left in place after a surgical procedure.

Use of the Harmonic Scalpel in body contour surgery, breast surgery, facelifts and blepharoplasties (eye lift), can be very beneficial in facelifts, reducing bruising and swelling and providing a quicker return to normal activities. Harmonic Scalpel technology has also reduced the incidence of lymphoceles following sentinel node biopsy for melanoma.

### **Looking to the future**

These are just some of the many factors that are influencing plastic and reconstructive surgery today. Unfortunately, unless we see dramatic changes in the behavior of American consumers—maintaining healthy weight, reducing exposure to ultraviolet light, stopping the use of tobacco products—we will continue to see a steady rise in the number of patients seeking plastic surgery for the foreseeable future. On the bright side, the plastic surgery industry is stepping up to meet the challenges of the future with new technologies and new techniques to increase the effectiveness of our work and to improve the lives of our patients.

In the future, it is likely that less invasive procedures will be perfected, resulting in quicker recovery times and lower risks to patients for complications. In addition, as basic science in stem cells advances, our ability to reverse age-associated changes of the skin and body will improve. The application of this technology to tissue regeneration is limitless and may allow us at some point to replace a variety of surgical procedures with noninvasive, office-based procedures. 

**Sam Economou, MD**, is the founder and principal of Plastic Surgery Consultants in Edina.