

Newslinks for the week of April 28<sup>th</sup>:



## Anti-Aging Breakthroughs

Hi-Tech Cosmetics Zap Wrinkles With Cutting-Edge Science

By ANNE-MARIE DORNING

May 1, 2008

This is a good time to have some wrinkles on your face. No, really. In the past few years there have been groundbreaking advances in plastic surgery, dermatology and the ever-expanding anti-aging cosmetic industry.



(Getty Images)

Back in the day, your mom probably used a wrinkle cream on her face that promised to "hydrate" her skin and reduce fine lines. These days the buzzwords are anti-oxidants, enzymes, gene therapy and nano molecules.

If you have some fine lines, a few wrinkles but you're not yet ready for the "f" word (facelift), an anti-aging cream might be right for you. But before settling on a product, you'd do well to brush up on your first-year chemistry.

"We are using nano liposome technology with a capsule so small that it gets absorbed through the hair follicles and releases the active ingredient into your skin," said John Kressaty, head chemist at 3Lab, Inc.

"Nano liposome is a very small particle that is able to pass through the skin to deliver vital nutrients. Five years ago, technology was limited where the products only stayed on the surface of the skin and now, with new technology, the molecules are easily absorbed topically," adds Stephanie Scott, public relations director for 3LAB, Inc.

Kressaty was describing the technology behind a recently released 3Lab product called "h" serum, a "bio engineered growth hormone anti-aging serum" that retails for \$200. The product is based on a "replica of human growth hormone" and the company says clinical studies show a 50 percent reduction in the "depth of wrinkles after four weeks of use."

"HGH is a hot news topic and our "h" Serum is totally efficacious. It is not dangerous like injectible HGH; we're not using actual human growth hormone rather a synthetic, bio-engineered topical HGH that comes from plants. So, it's safe to use," states Stephanie Scott, public relations director for 3LAB, Inc.

The new cosmetic product is so popular that it sold out at London's upscale department store Selfridge's, and there's now a waiting list.

## **New Life for Old Skin**

Brand-name companies employ teams of chemists to scour medical research for breakthroughs that can be adapted to the cosmetics industry. The companies then conduct research and clinical studies.

Take Estee Lauder. The cosmetics giant is betting big on a new product called Re-Nutriv Ultimate Youth Crème (\$250). According to Dr. Daniel Maes, senior vice president of research and development for Estee Lauder, Re-Nutriv is based on genetic research involving the longevity gene SIRT-1.

It turns out that a compound called resveratrol might — in high doses — activate the SIRT-1 gene to extend the life of skin cells. But resveratrol is notoriously unstable as a molecule, so Estee Lauder came up with a way to create a cosmetic-friendly compound dubbed "resveratrate." Recently, resveratrol has been reported as a compound often found in red wine that contributes to slowing down the aging process.

Maes is also not shy about trumpeting the anti-aging effects of his product.

"This is the biggest breakthrough in anti-aging science, the fact that somebody has been able to isolate the gene which controls the way cells are aging and this is the first time a cosmetic product will be able to slow down the genetic aging process," said Maes.

"We are economizing the cells instead of letting them divide rapidly. We are slowing down that process." Estee Lauder will be rolling out an eye cream and other products later this year, the company says.

Critics dismiss these over-the-counter anti-aging creams as mere marketing in a jar.

But Dr. Jeffrey Dover, an associate clinical professor of dermatology at Yale School of Medicine, believes that's not necessarily fair.

"Price doesn't determine quality but science has really improved the quality of those products, although people shouldn't expect miracles," said Dover.

Just as the anti-aging products at the cosmetic counter have evolved, so have the anti-aging treatments changed at the doctor's office.

## **Turn Up the Volume**

For years, cosmetic dermatologists could prescribe nothing but Retin-A and advise a little common sense — wear sunscreen. But that all changed in 2002. "The Botox kick started everything. We went from having nothing to having something that works well and is safe and effective 99 percent of the time. And that was the beginning of a whole new generation of fillers," said Dover.

Those derma fillers, such as Restylane and Radiesse, have revolutionized what plastic surgeons like Dr. Vito Quatela, president of the American Academy of Facial Plastic and Reconstructive Surgeons, can do.

"We are not using these as crack-fillers any more, we are using them to put volumization back in the face," said Quatela.

And instead of lasting 3-6 months, now treatments can last 1-3 years.

"We are combining fillers now. Any given patient might have three different fillers — one for around the eyes, then the lips. I can get creative with fillers, it's something like sculpture and I just never had that ability before," said Quatela.

As for the next new thing, Quatela said watch out for something called neuroablation.

"You can knock out the nerve that causes the frowning. Preliminary results have showed it to be as effective as Botox."

And liquid silicone may be due for a comeback, said Quatela. "It got a very bad rap when breast implants were taken off the market but I know that behind the scenes there are investigations and studies with liquid silicone once again and it could be a permanent filler for the treatment of certain acne scars or lip augmentation."

Breakthroughs may grab the headlines, but dermatologists like Jeffrey Dover still counsel the basics.

"For the most part I try to make it really simple. Wear a moisturizing sun-screen and use a prescription-strength retinoid. We know that reverses the signs of chronological aging," said Dover.

And reversing those signs of chronological aging is a booming billion-dollar business with no signs of slowing down any time soon.

### **Magic in a Bottle**

"I think going forward we are going to see stem cells play a future in this. There's a lot of work being done right now. If people are provided with stem cell therapy, either topical or internal, then the rejuvenation of epidermal cells may be just a few years away. We're not there yet but some exciting things are being done in Belgium and Thailand," according to Dr. Sharon McQuillan, a board-certified physician who is affiliated with the American Academy of Anti-Aging Medicine.

"We are just starting to make inroads into the idea that we can encourage skin health. We learn in medical school that our skin is the largest organ in the body and yet we consider it an envelope, and we don't treat it as we should," said Dr. Sharon McQuillan. Maybe with a little help from science, that's about to change.

# The San Diego Union-Tribune.

## Less nip and tuck As economy slows down, many choosing to put off cosmetic procedures

By Keith Darcé

UNION-TRIBUNE STAFF WRITER – April 27, 2008

With home prices falling, unemployment rates climbing and the economy slipping toward or already in a recession, fewer people are finding they can afford the price of high-end beauty.

Business is down at many plastic surgery practices in San Diego County, according to several surgeons in the area. Appointments at some offices have dropped by more than 50 percent, they said.

The most pain is being felt by practices that depend on advertising rather than referrals to drive business. Many of those businesses tend to cater to a younger, less-affluent clientele that favors breast enlargement surgery and liposuction.

“We're seeing fewer consultations,” said Dr. Robert Singer of La Jolla. “During a time of downturn in the economy, practices see fewer shoppers.”

Consumers are tightening their belts as they worry about job security and try to cope with skyrocketing prices for gasoline and food. One area of discretionary spending that some are cutting is elective medical procedures.

Because most cosmetic surgery isn't covered by insurance, putting off the purchase could save a bundle. One plastic surgery practice in La Jolla lists breast enlargement at \$5,950, liposuction at \$5,600 to \$8,800, and a face-lift at \$9,000 to \$10,000.

The downturn, which took hold early this year, marks a stumble for the multibillion-dollar industry. It's the first slump for the sector since the dot-com bust in 2000, which was short-lived thanks to the surging popularity of nonsurgical treatments such as Botox, wrinkle fillers and laser skin resurfacing.

In the first three months of this year, cosmetic procedures at the Scripps Mercy Surgery Pavilion in Hillcrest dropped 30 percent compared with the same period in 2007, said Steve Green, executive director of the outpatient center.



HOWARD LIPIN / Union-Tribune

Dr. Steven Cohen, assisted by registered nurse Michele McMonagle, used local anesthesia on a patient in his La Jolla practice.

The four cosmetic surgeons who work out of the center mainly perform breast augmentations and liposuction on female patients ages 25 to 40, Green said.

“They're all showing a decrease,” Green said. “When people have choices to make about where they are going to spend their money and they are worried about jobs and house payments, elective surgery goes lower on the list,” he said.

Singer said the slump could prompt some surgeons to merge their practices or retire earlier.

Perhaps the doctors best positioned to weather the decline are those whose businesses include a substantial amount of nonsurgical cosmetic services or reconstructive plastic surgery, which aren't as greatly affected by the economy's undulations.

Dr. Steven Cohen said business remains strong at his La Jolla practice. Nonsurgical services generate about 35 percent of his revenue – more than triple what it was five years ago, he said.

“We continue to grow, and I think it's largely because we offer a very diverse product offering,” Cohen said. “We don't completely depend on surgery.”

Medical suppliers also are feeling squeezed.

Mentor Corp. of Santa Barbara reduced the upper range of its sales estimates for 2008 by \$15 million in part because of declining sales of its breast implants in the United States.

“Surgical procedure activity that tends to have a higher degree of price sensitivity in terms of patient perception appears to be slowing down,” Joshua Lavine, president and CEO of Mentor, said during a Jan. 31 conference call with stock analysts. A day earlier, Allergan CEO David Pyott told analysts that while the U.S. market for his Irvine-based company's wrinkle fillers is growing by about 50 percent annually, that figure might have been as high as 60 percent if the economy were stronger.

Doctors say the slowdown didn't show up in the statistics reported in February by the American Society for Aesthetic Plastic Surgery because the downturn didn't emerge until late last year.

The number of cosmetic procedures performed in the United States actually increased 2.4 percent in 2007, according to the society's report. Physician fees, which can account for as little as half of the total fees charged for a procedure, totaled \$13 billion.

The organization reports industry statistics only on an annual basis, so figures from 2008 won't be released until early next year.

Plastic surgeons make up a fraction of the 8,000 doctors in San Diego County. The American Society of Plastic Surgeons lists 68 members in this region, and nearly all of them work from offices in La Jolla or other parts of San Diego.

Some doctors hesitated to talk about how the economy is affecting their practices, but most said they've heard colleagues complain in recent weeks about drops in consultations and scheduled procedures.

Dr. Barry Handler said a fellow plastic surgeon who claimed to be busy with work a couple of months ago admitted several weeks later that he had cut back on his schedule because of a lack of business.

“Anybody who won't admit that they have been affected is lying,” Handler said.

Dr. Ervin Wheeler said business at his cosmetic surgery practice in La Mesa has fallen off to levels reminiscent of the slump that hit the industry after the dot-com bust and the terrorist attacks of Sept. 11, 2001.

Consultations with new patients are down 10 percent and procedures are down as much as 20 percent, Wheeler said. In turn, income has fallen about 20 percent at the practice.

Wheeler hasn't reduced his office hours or cut back on his staff, and he's hoping things will turn around this summer. “My scheduling of patients through May and June is quite good,” he said.

Long-term demographic shifts seem to be magnifying the industry's troubles.

Plastic surgery was once the exclusive realm of wealthy celebrities and social elites. Over the years, many cosmetic services came within reach of the middle class as lower-priced procedures became available and lenders started financing more costly work.

But those same middle-class consumers are the ones most likely to feel the pinch of inflation, job security concerns and tighter borrowing standards.

Several plastic surgeons said business remains strong among older, better-heeled patients.

Beverly Douglas, 55, said she never considered putting off the eyelid-lift surgery she had two weeks ago. The retired school behavioral specialist from La Jolla said she wanted to finish the procedure before the summer, when she and her husband – the vice president of a biotech firm – will move to Arizona.

“I have a family history of those very droopy eyelids that interfere with sight,” Douglas said. “I just decided that rather than waiting till I was 70 or 80, I would do it (when I was) younger. I was also pretty frustrated by people telling me that I looked tired when I actually felt pretty good.”

Douglas paid cash for the operation performed by Cohen in La Jolla. “We are in a very fortunate position, being young and being able to afford that,” she said.

**StarTribune**  
NEWSPAPER OF THE TWIN CITIES

## **Taking a kid's-eye view of cosmetic surgery**

Women and Families official finds surgeon's book "disturbing on so many levels."

By **SANDRA G. BOODMAN**, Washington Post

Last update: April 25, 2008 - 7:40 PM

The hardcover book by plastic surgeon Dr. Michael Salzhauer, published by Big Tent Books and available for purchase online, seeks to answer insistent questions posed by some young children: Why is Mommy's nose smaller? Where did her tummy go? And what's with all those bandages?

"I don't know whether to laugh or cry," said Diana Zuckerman, president of the Washington, D.C.,-based nonprofit National Research Center for Women and Families, after reading "My Beautiful Mommy."

"This is disturbing on so many levels," she added. "For one thing, it perpetuates a completely unrealistic ideal" of female beauty: the large-breasted, wasp-waisted, midriff-baring Barbie-doll look. Zuckerman, who says she is not opposed to all plastic surgery, notes that the book's portrayal of postoperative recovery seems remarkably short: The mother is up and around soon after her tummy tuck, which in real life can require a much longer recuperation.

"And I'm sure there's a good reason the mother had to wear skin-tight pants and a crop top," Zuckerman added, "but I don't know what it is."

Salzhauer does. "Mothers, at least those in South Florida, do look and dress like that," said the 36-year-old physician, who hosts a Sunday morning radio call-in show called "Nip Talk Radio."

"Being a doctor, I can't deal with the political or philosophical arguments" surrounding cosmetic surgery, Salzhauer said. "I have to deal with reality." The book, he said, gives parents "a vehicle to explain the plastic surgery process to their kids," who may be too young to understand why a parent is choosing to undergo an appearance-altering operation.

The bulk of his practice, Salzhauer said, consists of women between 20 and 40 undergoing what he calls "mommy makeovers": breast implants, breast lifts and tummy tucks.

Salzhauer said his interest in children's reactions to cosmetic surgery was sparked by questions his daughter, who was then 4, asked when he had a nose job several years ago. The father of four young children, Salzhauer said, "I read a lot of children's books" and realized there was no book for 4- to 7-year-olds that could explain why a parent who wasn't sick was having an operation.

Many of his patients, he added, bring their children to plastic surgery consultations and even postoperative appointments.

Zuckerman questioned why the mother in the book has just a small bandage on her perky new nose, not the black eyes that typically follow rhinoplasty, and why she's up and around a few days after her tummy tuck, not lying in bed waiting for her next painkiller.

Then there's the appearance of plastic surgeon "Dr. Michael," who looks like Superman. "It wasn't my idea," said Salzhauer, who said it was the illustrator's concept. "Of course, that's how I see myself when I look in the mirror."

Ten percent of the proceeds from the book, he said, will be earmarked for children's plastic surgery charities. A Spanish-language version is also available; Salzhauer hopes it will appeal to patients in Latin America, where cosmetic medicine is also popular.



## Gecko-Inspired Bandage May Heal Surgical Incisions

Friday, April 25, 2008 - Einat Rotman

**MIT researchers and colleagues have developed an elastic sticky tape inspired by the adhesion mechanism found in geckos' toes. This adhesive is biocompatible and could replace surgical sutures and staples. Made from a biodegradable polymer and sugar-based glue, the adhesive slowly breaks down inside the body without causing any irritation and could also be used for delivery of drugs to tissues to which it is attached.**

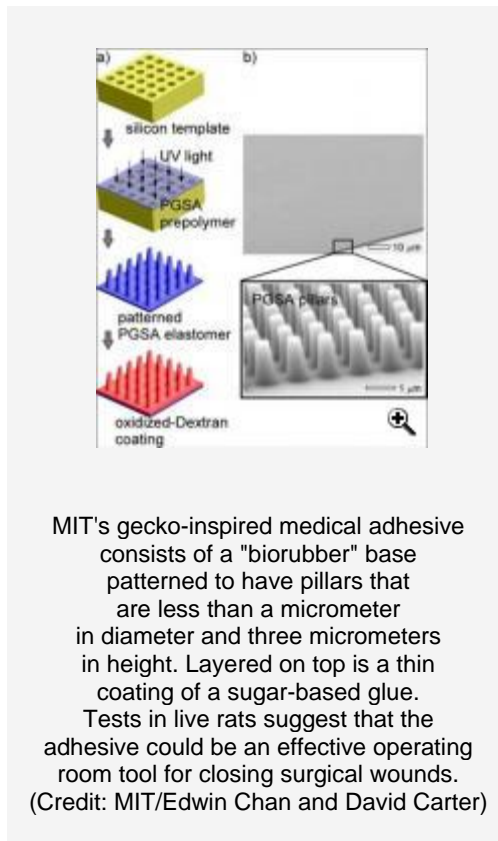
The toes of gecko lizards adhere to a wide variety of surfaces, enabling geckos to climb smooth and vertical surfaces, as well as cross indoor ceilings. As this adhesion doesn't utilize liquids or surface tension and it varies with humidity, it is thought to involve [capillarity](#). MIT researchers in collaboration with researchers at two Boston hospitals relied on some of the principles that create geckos' feet adhesiveness, while developing a waterproof adhesive bandage that may soon be used for patching up surgical wounds or internal injuries.

Led by the Harvard-MIT Division of Health Sciences and Technology (HST) faculty members, MIT Institute Professor Robert Langer and Jeffrey Karp, who is a bioengineer, the team utilized the micropatterning technology that is also used to create computer chips. By pouring a biodegradable polymer into microfabricated silicon molds with 200-to-500-nanometer-wide indentations, the researchers have created a "biorubber" tape with nanoscale hills and valleys on its surface, similar to the flexible nanopillars covering geckos' sticky toes. "We are inspired by the gecko to create a patterned interface to enhance the surface area of contact and thus the overall strength of adhesion." said Karp.

The surface area of this "biorubber" was then coated with a very thin layer of biocompatible sugar-based glue enabling a strong bond even to wet surfaces such as to heart, bladder or lung tissue. When the tape is applied, capillary forces pull tissue into the spaces between the pillars,

and the glue adheres to tissue proteins. This biodegradable bandage dissolves over time and does not have to be removed.

Adapting the previously known gecko-like dry adhesive technology for medical applications has been challenging, as a medical adhesive has to be able to stick once and strongly in a wet environment, and to be biocompatible (that does not cause inflammation), biodegradable (that dissolve over time without producing toxins) and elastic (in order to suit the bonded tissues and stretch with them).



The resulting "gecko tape" is the first such tape to show good adhesive strength and safety in animals. The tape's nanopatterned adhesive bonds were twice as strong as unpatterned adhesives when tested against intestinal tissue samples from pigs, and adhesion of the tape's glue-coated form was twice as strong as the same material without the glue when tested in living rats. Moreover, these rats showed only a minor inflammatory response to the adhesive that does not need to be overcome for clinical use.

The elasticity, degradation rate and pillared landscape of the biorubber are tunable hence the new adhesives can be customized for different medical applications. They can also be infused with drugs designed to be released as the biorubber degrades.

A tape-based medical adhesive may have many applications, as it is noninvasive and easy to place.

Unlike sutures and staples traditionally used to close

wounds, the new tape doesn't puncture the tissue and could be placed in one motion. The medical tape can also be used during minimally invasive surgeries, which are performed through a very small incision; "It's difficult to tie knots in small places. You could have the tape unfold and apply it through the [laparoscopic] needle." says Karp.

Possible applications of the new surgical adhesive tape also include resealing of the intestine after the removal of a diseased segment or after a gastric bypass procedure, as well as patching a hole caused by an ulcer. Moreover, the tape could release drugs that promote healing, even in tissues that stretch and contract, like the heart. "It's elastic, so it should withstand the mechanical forces of the heart," says Karp. This ability of the bioadhesive patch may be utilized to deliver stem-cell-attracting factor that encourages tissue regeneration into damaged areas of the heart after a heart attack.

Another [gecko-inspired synthetic adhesive](#) tape has recently been developed in Berkeley University. Other related issues covered by TFOT include the discovery of a non-toxic, [natural glue](#) that has the strongest adhesion force of any known natural material, and the development of a painless [microneedles skin patch](#) that can replace conventional injections and enable drug delivery.