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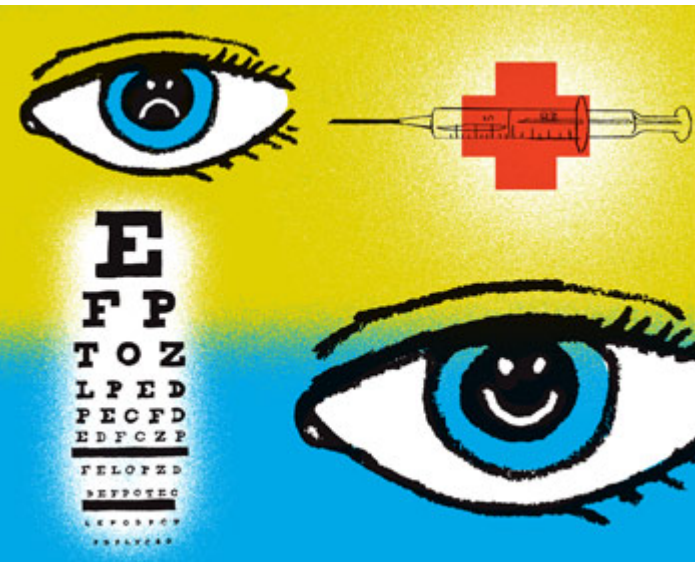
## Amazing Medical Breakthroughs

From suctioning clots out of the brain to injecting the bladder with Botox, here's a roundup of the most cutting-edge-of-the-scalpel medical treatments available now in Westchester.

By: Melissa F. Pheterson Published October 17, 2008 at 09:07 AM

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// Photos by Chris Ware



### Prolong Fertility

An egg-freezing treatment designed for breast-cancer patients is now on the market for all women who want to preserve or prolong fertility. The treatment, called ovarian cryopreservation, enables ovarian tissue to be frozen for later use. When the tissue is transplanted later on, it can reverse menopause and restore fertility.

“This treatment will break many barriers,” says **Dr. Kutluk Oktay**, director of the Division of Reproductive Medicine & Infertility in the Department of Obstetrics & Gynecology at New York Medical College in Valhalla. He developed the treatment in a study called COST-LESS (Controlled Ovarian Stimulation Treatment with Letrozole Supplementation Study). The genius of COST-LESS, says Dr. Oktay, lies in the “simple paradox” of letrozole lowering estrogen levels—especially crucial for breast-cancer patients, as raising estrogen can exacerbate the cancer—even as it acts as a fertility drug, stimulating the ovaries to produce and release eggs.

The acronym proves apt from a financial standpoint: compared with traditional fertility drugs, it halves the price of fertility drugs used for in vitro fertilization (IVF) cycles to about \$1,500, with fewer injections. A woman starts the pills on the second or third day of her period, with booster injections to kick the ovaries into action. Once the eggs have plumped to maturity, they're extracted via a needle, then dipped and incubated in an antifreeze solution (yes, the same Antifreeze used for HVAC) to prevent ice crystals from

encrusting the delicate, watery eggs. Pregnancy rates from thawing and fertilizing eggs are approaching 50 percent, suggesting that cryo-preservation is equally and possibly even more effective than IVF.

“Our joint goal was to induce ovarian stimulation in breast cancer patients and develop ways to freeze eggs and embryos,” says Dr. Oktay. “With COST-LESS, we don’t need to worry about the effects of higher estrogen exposure on any woman.” Westchester Fertility and Reproductive Endocrinology in White Plains also offers cryo-preservation.

### **Visionary**

The leading cause of blindness in older adults, macular degeneration robs vision by destroying the retina. Approximately 1.75 million Americans currently suffer from the disease, with 90 percent of cases classified as “dry,” which means the condition results from a breakdown of cells, and 10 percent classified as “wet,” which results from leaking blood vessels. The latter group just might be convinced to grin and bear a shot...in the eye. New drugs injected directly into the eye’s rear chamber can stanch the leakage, ushering in marked visual improvement. “Over the last couple of years, this is the most exciting development in ophthalmology, helping millions,” says Dr. Gerald Zaidman, director and chief of the Cornea and External Disease Service at Westchester Medical Center/New York Medical College (WMC/NYMC).

### **Lighting Up Your Face**

A new treatment called the Aesthera Isolaz uses vacuum technology and broadband light to unclog oil glands and destroy bacteria lurking in the skin. Dr. Peter Bogdan, medical director of New Horizons Medical Spa in Yorktown Heights, has offered the treatment for six months. “Most laser treatments are painful—like having a knife-blade against your face,” says Dr. Bogdan. The Isolaz’s gentler technique sucks the skin closer to the light source to reduce the intensity and length of beam needed for results. Once suction opens the pore, a beam of blue light kills bacteria. “After four treatments, you notice the difference,” Dr. Bogdan says. “It’s really a breakthrough for acne.” The Isolaz can also treat rosacea and sun-damaged skin. Treatment sessions run around \$250.

### **Uncorking the Clot to Save The Brain**

Eighty-five percent of strokes are ischemic, involving blockage to a blood vessel leading to the brain. Choked off from oxygen, the fragile core brain tissue lives for only four minutes. The surrounding tissue—down but not out—remains salvageable for several hours. For the past decade, doctors have flooded victims’ veins with tPA, a naturally produced “clot-buster” with a 30-percent success rate of opening up the vessel. But to improve the odds of restoring blood flow, the Department of Neurology at WMC/NYMC has a suite of strategies. (Some patients are admitted too late or have conditions hostile to tPA.)

“We now have multiple treatments to save that part of the brain,” says Dr. Brij M. Singh Ahluwalia, chairman of the Department of Neurology at WMC/NYMC. By snaking a catheter from the groin to the brain, doctors can inject tPA directly into the cerebral artery to dissolve the clot. Next, they try to forcibly remove it through more invasive procedures. The Merci Retriever is a corkscrew snare that extracts the clot—much like unscrewing the cork on a wine bottle—and has a 48-percent success rate. The Penumbra vacuum—far more invasive, but with the highest success rate, 82 percent—literally suctions out the clot from the artery. Dr. Kuo Chao, director of interventional neuroradiology at WMC/NYMC, has performed close to 20 procedures with the Retriever and vacuum—wielding one or both, depending on the clot’s consistency. “The Retriever works best on hard, cork-like clots,” he says. “But if the clots are mushy and diffuse, it’s best to suction them out. Either way, we’re trying to avoid brain hemorrhage while opening up the vessels more effectively, with the advantage of a bigger time window after stroke onset.”



Dr. Kuo Chao can unlog blocked blood vessels using a corkscrew snare.

### **Not Your Grandma’s Hip Replacement**

Increasingly, people years away from retirement with severe hip pain are opting for hip-replacement surgery. But they don’t have the time—or patience—to convalesce for months. Dr. Corey Burak, orthopedic surgeon at Phelps Memorial Hospital Center in Sleepy Hollow, is the only doctor in Westchester to operate via an “anterior approach”—a direct front entry—that results in a smaller scar, less pain, and quicker recovery than traditional hip-replacement surgery.

“My patients choose this technique because they’re eager to resume their active lives,” he says. Key to the procedure is a special table, the HANA (Hip & Knee Arthroplasty Table): a shortened base with two ski-pole-like extensions, which allow the patient to rotate and flex the leg and hip in ways not possible with conventional tables. Under

fluoroscopic image guidance, Dr. Burak cuts a path between the hip muscles, without hacking through the thigh muscles or detaching their tendons as in a side entry. “You’re looking right at the hip joint,” he says.

The incision is three inches, rather than a foot, deep; patients can spring back into action in two to four weeks, with less post-operative pain. “There’s a dramatic difference in recovery time,” he says. And because the muscles are not cut, the hip is less likely to pop out of the joint with rigorous exercise or sudden movements. “I’ve operated on patients from thirty-two to ninety-eight years old and from one-hundred to four-hundred pounds,” says Dr. Burak. “The beauty of this operation is that you don’t have to be selective; almost all patients are candidates.”



Thanks to his new surgical technique, Dr. Corey Burak is quite the orthopedic "hip" ster.

### **Who Knees That?**

“Blowing out a knee” really means tearing an ACL, the ligament bridging the thigh and shinbones at the knee joint. An intact ACL has two distinct bundles of tissues. Traditional reconstruction involved grafting tendons to reconstruct only one—the anteromedial bundle, which lies vertically within the joint. Because 13 to 20 percent of patients still complain of instability, a new “double-bundle” procedure also reconstructs the posterolateral bundle, which crosses underneath to control rotation and stability.

“We’ve gone to a much more anatomic reconstruction,” says Dr. Howard Luks, chief of sports medicine at Westchester Medical Center and New York Medical College. Performing two grafts, not one, allows the fibers to behave like a more “normal” knee.

### **Blast Out Wrinkles**

Play with lasers, and you might get burned. At least, that was the case with the older epidermal zapper treatments, which essentially torched the skin’s entire surface. For a less severe assault, the Fraxel (named for its “fractional” quality) delivers pulses via a tic-tac-toe grid of infrared light, in a drilling mechanism that rouses the skin to repair itself.

“The laser pulses at a wavelength that stimulates the dermis to create collagen,” says Dr. David Minozzi, chiropractor and clinical director at Dermacare Laser & Skincare Clinic of White Plains, who recommends the treatment for fine lines, wrinkles, acne, scars, sun damage, and stretch marks. He describes the laser as “strong, but bearable” with topical



anesthetic. A package of five treatments, spaced nine months apart, runs \$4,000, but the result is long-lasting, he says.

### **(L)amped Up Acne Treatment**

The Omnilux lamp by Photo Therapeutics, Ltd., features three heads of LEDs to treat acne and build up collagen for facial rejuvenation. Will it hurt? “It’s so tolerable, many patients fall asleep,” says Dr. Peter Bogdan, medical director of New

Horizons Medical Spa in Yorktown Heights. Patients lie under the machine for 20 minutes, with the lamp two to five centimeters from their faces, eyes double-covered with a patch and goggles. Instead of the UV beamed in tanning booths, red and blue light shines through a matrix of LEDs. Patients see improvement in two months.

### **Botox for The Bladder**

It already helps you “save face” by smoothing out wrinkles; now it can spare you the ordeal of bolting to the bathroom incessantly. Urogynecologists are now injecting Botox into the bladder to relax the spastic muscles endemic to over-active bladder syndrome (OAB), whose treatment medications are poorly tolerated and heavy on the side effects. In a same-day procedure with sedation (general or regional), the urogynecologist delivers the Botox through a scope. Eighty percent effective, the procedure lasts up to one year.

A pacemaker implant called InterStim performs a similar function, delivering an electrical pulse to numb the nerve root and suppress the urge to urinate. “It makes a huge difference in quality of life,” says Dr. Huan Sue Zhou, a urogynecologist at WMC/NYMC.

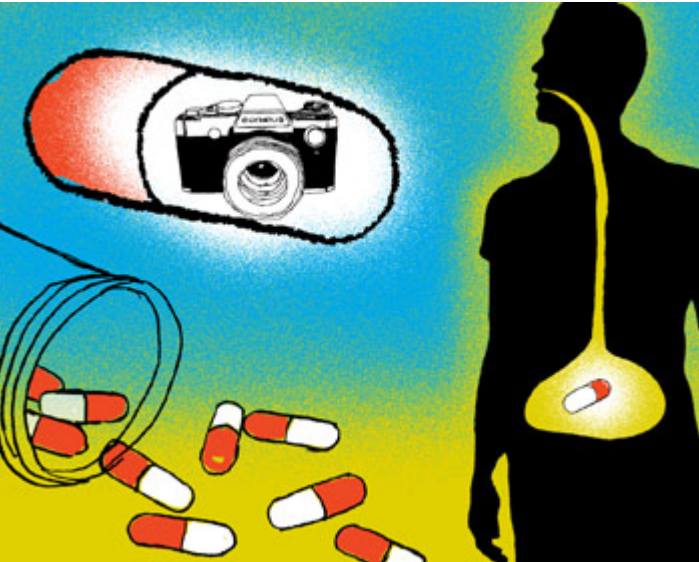
To treat urinary incontinence, Dr. Zhou’s team inserts synthetic mesh slings via incisions into the vaginal mucosa; the resulting scar tissue subsumes the mesh into the urethra, locking the sling in place naturally—all this with minimal bleeding and pain. Because it’s difficult to initially fit a sling just right (“If it’s too tight they can’t urinate, and if it’s too loose they leak,” says Dr. Zhou), she works with adjustable slings attached to a dial buried just underneath the pubic bone, which makes it easy to loosen or tighten with a screwdriver.

### **Sneak a Good Peek at Baby**

Can’t wait to screen a movie starring your own yet-to-be-born baby? A 4-D ultrasound goes beyond 3-D to deliver a real-time, hi-resolution movie. Greater spatial resolution translates to enhanced depth and clarity, says Dr. Keith Lescale, medical director of Hudson Valley Perinatal Consulting, a referral practice in Poughkeepsie, New York. While units cost OBs around \$200,000, patients’ insurance often pays for the additional imaging.

## Cold Hearted

The hottest buzzword in cardiology—cryoablation—feels surprisingly cold. It describes a paradigm shift in treating irregular heartbeat, or arrhythmia, in which the heart’s twitchy upper chambers fire electric signals haphazardly to the ventricles. (In the United States, more than 850,000 people are hospitalized for arrhythmia each year.) The corrective procedure, called ablation, seals off the circuits around the pulmonary veins that flow into the left atrium, to re-route the haywire electric impulses. The traditional means of ablation—by inflicting burns on the atria—often brought complications related to structural damage. But freezing rather than scalding the tissue achieves the same result more safely.



“You create the same ablation lines, with less potential for collateral damage, without altering the tissue’s structure or disrupting its collagen,” says Dr. David Spielvogel, associate professor and director of the Heart Transplant Program at WMC/NYMC. In a further refinement, a new cryoablation balloon called the “Arctic Front” is slipped into the pulmonary veins, then inflated to place them in a circular vise, allowing for a less invasive series of ablations, says Spielvogel.

### The “Inside” Story

Assigning a whole new meaning to “YouTube,” the latest ingestible capsules snap photos of your small bowel and bile ducts on their journey through your digestive tract. Patients pop the vitamin-sized pill (encasing a camera) in the morning, “go to Bloomingdale’s, and come back eight hours later,” says Dr. Edward Lebovics, chief of gastroenterology at Westchester Medical Center. The images, received via wireless signal, are downloaded to the doctor’s computer from a small receiver worn around the patient’s waist, providing a video of the entire small intestine, a tangle of coils previously hidden from most endoscopes. The pill is eliminated naturally. This non-invasive way to broadcast the small bowel is helpful in diagnosing sources of bleeding, Crohn’s disease, and tumors.

Other scopes are transmitting new views from the inside, letting doctors peer beyond organs and into the depths of the digestive system. A prototype capsule for examining the colon portends future interest in “virtual colonoscopies.” A scope called the Spyglass picks out the opening of the pancreatic duct, guides doctors in placing stents to bypass obstructions, and fires lasers to smash gallstones. Finally, an ultrasonic probe at the end of a swallowed endoscope lets the doctor peek beyond the wall of the stomach to the pancreas.

“We’re seeing where we haven’t seen before,” says Dr. Lebovics, who predicts the new generation of capsules will broadcast the innermost convolutions of the body, collect samples for biopsy, and deliver therapy via remote control.

### **Small Intestine, Big News**

Curing diabetes for good is such a juicy prospect, it may send you into sugar shock. But in a major breakthrough, doctors at Sound Shore Medical Center are offering diabetes patients, regardless of their weight, a procedure called duodenal bypass, previously used solely to treat obesity, to eliminate the diabetes menacing their health.

Unlike a gastric bypass, in which the stomach is shrunk to the size of an egg, this surgery excludes from the digestive tract the first two feet of the small intestine, called the duodenum, which secretes hormones associated with the disease. Patients return home in two to three days after the minimally invasive procedure, says Dr. Madhu Rangraj, chief of laparoscopic surgery at Sound Shore, which wrapped up a patient study in July. Dr. Rangraj’s team restricts surgery to patients with hard-to-control diabetes (as determined by testing blood glucose levels). “For patients unable to control their diabetes through diet and lifestyle modifications, this bypass surgery offers new hope for remission,” Dr. Rangraj says. Follow-ups with patients show promising results, with diabetes virtually disappearing within six to nine months after the surgery.

### **Limber Limbs**

Among the new leaps in prosthetic limbs are computerized legs (“C-legs”), which calibrate resistance according to the user’s activity or position, allowing patients to climb stairs, as well as perform other previously unthinkable functions. Microprocessors embedded in the leg measure the joint’s position and velocity within one-fiftieth of a second, then direct cylinder valves to release the amount of hydraulic fluid needed for optimal stability and motion, says Dr. Karen Pechman, director of physical medicine and rehabilitation at Burke Rehabilitation Hospital/White Plains Hospital.

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