



# New Device to Treat Stroke Patients is a “Game-Changer”

A newly approved device to remove blood clots from blocked brain arteries in people experiencing a stroke heralds a new era in the treatment of the fourth-leading cause of death and No. 1 cause of long-term disability in the United States.

“This really is a game-changer,” says Jeffrey L. Saver, M.D., director of the UCLA Stroke Center. “We are going from our first generation of clot-removing procedures,

which were only moderately good in reopening target arteries, to now having a highly effective tool.”

The SOLITAIRE Flow Restoration Device far outperformed the MERCI Retriever, the standard mechanical device, in a UCLA-led multicenter clinical trial. The results of the trial were so dramatic that the study was concluded nearly a year earlier than planned. The U.S. Food and Drug Administration announced in March that SOLITAIRE was approved for use at advanced stroke centers.

The availability of more effective treatment makes early recognition of a stroke more important than ever. “Time lost is brain lost in acute stroke,” Dr. Saver notes. Four out of five strokes are ischemic — caused by blockage in a blood vessel supplying the

brain. The only proven drug treatment for such strokes is tissue plasminogen activator (tPA). If administered in the first four and a half hours after the stroke’s onset, tPA can dissolve the clot and restore blood flow in approximately 5 to 40 percent of patients.

But the only moderate success rate and limited time window have led researchers to develop devices that can mechanically remove the clot during or beyond that window. UCLA has been at the forefront of such efforts. The UCLA Stroke Center team invented the first such device, the MERCI Retriever, approved in 2004. SOLITAIRE represents a new retrieval device developed in stroke models by Reza Jahan, M.D., UCLA associate professor of radiology. A mesh columned cage, it has crossing struts that can expand

## 5 Stroke Warning Signs

Be aware of the warning signs of a stroke and call 9-1-1 if a stroke is suspected. The five “sudden” signs are:

- Sudden weakness on one side of the body
- Sudden trouble speaking
- Sudden change or loss of vision
- Sudden severe dizziness or imbalance
- Sudden severe headache



Image courtesy of Covidien

and engage the clot at multiple grabbing points, pulling it out more effectively than the coil-shaped MERCI retriever.

**SOLITAIRE proved effective at removing the clot and restoring blood flow in 61 percent of patients**, compared with 24 percent for MERCI. SOLITAIRE also has a longer time window than tPA — it can be used for up to eight hours after the stroke's onset. By using SOLITAIRE in combination with tPA, Dr. Saver notes, physicians at advanced stroke centers will be able to reliably open the arteries in 80-90 percent of their patients, an unprecedented success rate.

**SOLITAIRE is approved for use only at comprehensive stroke centers.** UCLA has been working with the Los Angeles Emergency Medical Services Agency to train all 2,200 of the county's paramedics to recognize strokes in the ambulance and route patients directly to stroke centers, as well as giving pre-arrival notification so the stroke team can be mobilized and prepared to treat the patient immediately upon arrival.



To view a video of Dr. Saver and the SOLITAIRE device, go to:

[www.uclahealth.org/solitaire-stroke](http://www.uclahealth.org/solitaire-stroke)

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## Team-Based Approach Improves Outcomes in High-Risk Pregnancies

“More women are waiting until later in life to have children, and their increased age may also increase their risk for complications during pregnancy,” says UCLA maternal and fetal medicine specialist Daniel Kahn, M.D., Ph.D., who adds that a greater number of women are now seeking consultations with high-risk pregnancy experts. “With advanced, collaborative care from many specialists, we are able to take these women successfully through their pregnancies, with excellent outcomes for mother and baby.”

According to Dr. Kahn, that collaboration begins as soon as there is any reason to suspect a problem in the mother or fetus. When the mother has a pre-existing health condition — such as heart disease, high blood pressure, diabetes or an autoimmune disorder — coordination of care with an appropriate subspecialist is required. When a congenital malformation is detected while the fetus is still in the womb, careful monitoring is critical to the survival of the fetus.

“Our magic at UCLA is that we have under one roof a complete team of subspecialists ready to address any issues necessary to protect and promote the health of mother and child,” Dr. Kahn says.

“We definitely get involved in the earlier stages of planning a high-risk delivery,” says Richard Hong, M.D., chief of obstetric anesthesiology at Ronald Reagan UCLA Medical Center. Anesthesia during delivery is generally well tolerated for most young, healthy women. Certain maternal diseases, however, increase the risk for complications and require additional monitoring.

“It’s not cut and dry,” Dr. Hong says. “Sometimes we have to adjust our techniques after discussing the risks and benefits with the patient and the entire health team.” At UCLA, obstetricians

and obstetric anesthesiologists are always available in house.

An early assessment of the risks associated with the delivery may also impact when and where the mother delivers.

“Once a high-risk pregnancy is identified, we begin receiving reports regarding the status of the mother and progression of the pregnancy,” explains Nancy Sanchez, director of Women’s and Children’s Services at UCLA Medical Center, Santa Monica.

UCLA has designated rooms where high-risk mothers stay on strict bed rest until delivery at 32 to 36 weeks, Sanchez says. Mothers receive continuous monitoring by nursing staff and are given medications and other appropriate treatment to prevent or delay preterm birth. Additionally, members of the neonatal intensive care unit (NICU) visit the expecting parents to discuss care for their baby after delivery. The labor and delivery and NICU staff work together to help parents to connect with their babies as soon as possible once the newborn is stabilized.

“Communication is everything,” Sanchez says. “It not only leads to better outcomes, it also helps to alleviate the fears of parents that may be feeling overwhelmed.”

