

# THE SUNDAY TIMES

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DNA mapping exploding in Silicon Valley • IN BUSINESS/G1

## HOLIDAY ARTS

'Nuncrackers' is only the beginning • IN A&E/C1



## MORE MISERY

Bears drop another Pac-10 game  
IN SPORTS/B1



**SURGEONS WRAP** Kacin Rogne's skull in gauze after surgery to correct premature skull fusion at Children's Hospital Oakland.

BOB LARSON/STAFF

## U.N. outlines dire timetable to curb global warming

■ Scientists say a quarter of planet's species are in danger; secretary-general calls for international action

By Doug Struck  
WASHINGTON POST

The world will have to end its growth of carbon emissions within seven years and become mostly free of carbon-emitting technologies in about four decades to avoid killing as many as a quarter of the planet's species from global warming, according to top United Nations scientists.

The stark choices laid out Saturday by the agency's Intergovernmental Panel on Climate Change (IPCC) describe the daunting task if the world is to avoid the consequences of a planet heated up by more than 3.6 degrees Fahrenheit (2 degrees Celsius) since 2000.

The panel, which distilled research from about 2,500 scientists, avoided moral conclusions about how much global warming is too much.

"The scientists now have done their work. I call on political leaders to do theirs," U.N. Secretary-General Ban Ki-moon said upon formally receiving the report Saturday in Valencia, Spain. "Only urgent, global action will do," said Ban, calling on the United States and China — the world's two biggest polluters —



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U.N. Secretary-General Ban Ki-moon wants the U.S. and China, the world's two largest polluters, to help slow global warming.

See WARMING, Page 10

## Plan suggests canal is crucial to Delta revival

■ Government biologists call proposal for dual conveyance system of aqueduct, pumps 'the most attractive option'

By Mike Taucher  
STAFF WRITER

Government biologists have concluded the most promising way to save the Delta is to divert water around it through a canal — an idea often derided as a Southern California water grab that would ensure the destruction of the region.

Wildlife agencies recently told planners that a Peripheral Canal is "the most attractive option" to help quench California's thirst for more drinking and irrigation water while fixing the Delta's dying ecosystem.

Voters rejected the canal in 1982, and opposition was fierce in Contra Costa because of the threat a canal poses to the local

water supply. By siphoning water out of the Sacramento River before it reaches the Delta, the canal would reduce the amount of fresh water near Contra Costa Water District's intakes in the south Delta and increase the concentration of pollution and salt water.

If built, however, a new canal probably would be operated and managed in conjunction with the existing state and federal intakes near Tracy. That would ensure more water stays in the Delta and could help offset the deleterious effects a new canal would have on water quality in the south Delta, the sole water source for 500,000 people.

The call for in-depth study of a Peripheral Canal comes during fast-moving negotiations for a pact to stabilize the state's dwindling and increasingly vulnerable water supplies while also protecting the environment.

If the biologists and the state's

See DELTA, Page 5

## Patients get gentle approach

■ Doctors can correct premature skull fusion with new minimally invasive procedure at a younger age

By Sandy Kleffman  
STAFF WRITER

OAKLAND — A tiny cry pierces the recovery room at Children's Hospital Oakland.

Little Kacin Rogne, his head wrapped in gauze and a light blue pacifier in his mouth, is waking after 2½ hours of skull surgery.

Just 11 weeks old, Kacin looks lost in the big white crib. A nurse gives him pain medication and rushes him into his mother's arms, tubes and all.

"Hey, sweetheart," she says softly.

Kacin has just undergone a

novel, minimally invasive surgery to correct his prematurely fused skull.

The members of the operating team — neurosurgeon Peter Sun and plastic surgeon Bryant Toth — are among a handful of people in Northern California who do the procedure.

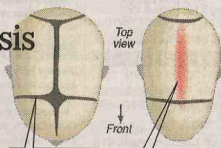
They and other experts say they believe the technique will gain greater acceptance as an option over the standard surgery as more people become familiar with it and obtain the needed expertise.

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### Craniosynostosis

**What it is:** At birth, the skull's seven bones are joined with strong, fibrous tissue, called sutures.

In rare cases, one or more of the sutures close prematurely and the bones fuse, preventing the brain from growing properly and causing a misshapen head.



**Normal sutures** allow the skull to expand evenly around the growing brain.

**Sagittal synostosis** The fused center joint causes the front and back of the skull to be pushed out as the brain grows.

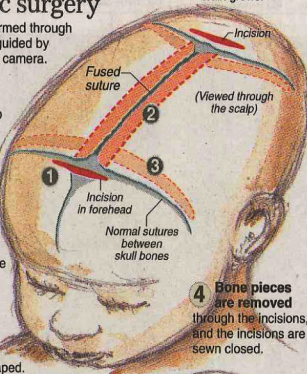
### Endoscopic surgery

The surgery is performed through small incisions and guided by a miniature light and camera.

1 Two small incisions are made in the scalp near the fused joint.

2 Fused bone sections are cut by gaining access through the incisions. A device lifts the bone away from the brain. The section of fused bone is cut with scissors and other tools.

3 Side sections of bone are also cut, to allow the head to be reshaped.



### After the surgery

The separated bones can now spread apart as the child's brain grows. Usually, the child can go home three days after the surgery.

A custom-fitted helmet applies pressure to the misshapen areas, gradually pushing the skull into a more normal shape. The helmet is worn for three to four months.



DAVE JOHNSON/STAFF

Source: Children's Hospital Oakland

ContraCostaTimes.com

Go online for a video that goes into the operating room for a baby skull surgery and meet the doctors and families involved.

**Weather**  
PARTLY CLOUDY  
Highs 60s, Lows 50s  
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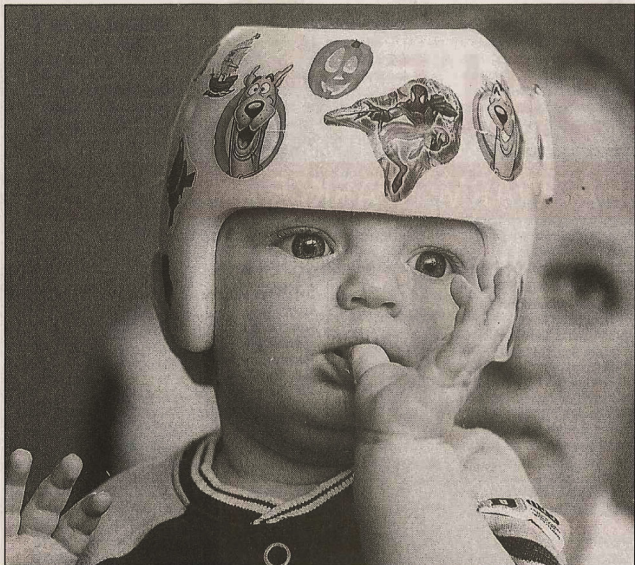
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■ President Bush calls for changes to the alternative minimum tax. Page 13

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**FIVE-MONTH-OLD** Matthew Van Slyke, left, wears a specially fitted helmet to help reshape his skull. At right, he gets a kiss from his mom, Jill. In August, Matthew underwent a minimally invasive surgery to correct his prematurely fused skull. The Van Slykes say they are pleased they went with the newer surgery. "We wanted the surgery to be easier on him," Jill Van Slyke said.

**Surgery**

FROM PAGE 1

"There's less blood loss, less time in the hospital, a shorter recovery time," Toth said.

If left untreated, Kacin's condition, known as craniosynostosis, can permanently misshape his head.

The premature fusion prevents the skull from expanding as it should during a baby's rapid brain growth. That can lead to increased pressure and brain damage. In rare cases, it can be fatal.

Craniosynostosis affects one in 2,000 infants.

The traditional surgery, which has been performed for decades, is a much bigger operation, with a five- to seven-day hospital stay and an increased chance that a blood transfusion will be needed. Parts of the skull are removed, reshaped and placed back on the child's brain.

"We make a big incision," Sun said. "The child is more uncomfortable. There's more swelling. He just needs to be in the hospital a lot longer."

By contrast, the surgeons performed Kacin's entire operation through two 3-centimeter-long incisions in his head.

He will be released from the hospital in two to three days and will wear a custom-made helmet for several months to help reshape his head.

The technique was pioneered eight years ago by a neurosurgeon and plastic surgeon team — David Jimenez and Constance Barone, now at University Hospital in San Antonio.

Sun and Toth perform six to 10 of the minimally invasive surgeries a year and about 40 of the traditional operations. UC San Francisco Children's Hospital also offers both procedures.

Lucile Packard Children's Hospital at Stanford performs only the traditional operation. It remains unclear whether the minimally invasive procedure is better, said Dr. David Kahn, a craniofacial plastic surgeon at Stanford.

Sun and Toth are convinced of its benefits, but they note that it is not for everyone. For one thing, it must be done at an earlier age. They use the technique only on children who are 3 months or younger because the skull bones are thin enough to cut easily.

That means pediatricians and parents must catch the abnormal head shape early, get a confirming X-ray or CT scan and schedule the surgery, all within the required time frame.

"Three months goes by pretty fast," Sun said.

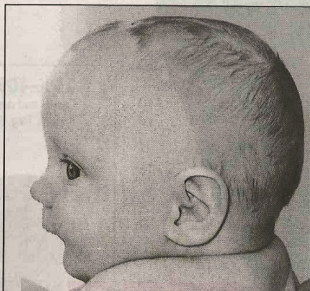
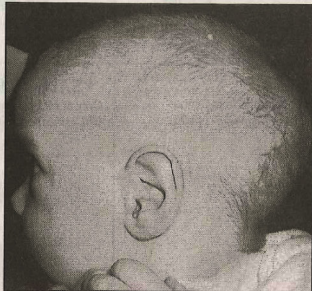
The more extensive surgery typically is not performed until a child reaches 6 months of age or older.

Most babies are born with six suture lines in their skulls to give the brain room to grow. Several of the sutures intersect in the large soft spot on the top of the head. The bones typically do not fuse until the child reaches age 2.

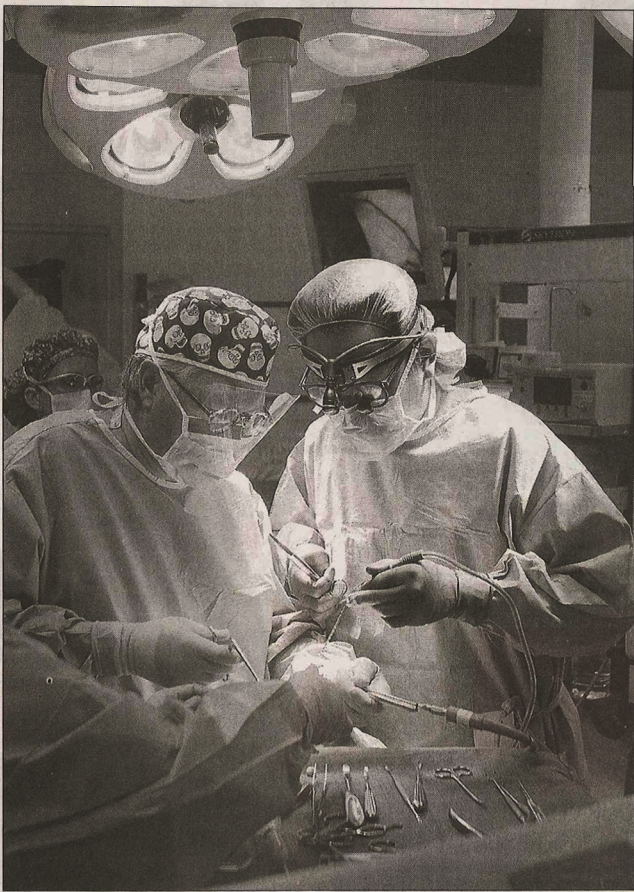
Pleasanton resident Jill Van Slyke's pediatrician first noticed an abnormal head shape in her son Matthew when he was 2 to 3 weeks old. She suggested his parents position him differently as he slept.

But when they brought him back a week later, his head was becoming too long and skinny.

X-rays revealed that Matthew had a fusion of the sagittal suture, which runs from the front to the back of the head. It is the most common type of skull fusion, preventing a baby's head from growing sideways. So it



**WHEN MATTHEW VAN SLYKE** was 2 to 3 weeks old, X-rays revealed he had a type of skull fusion that prevented his head from growing sideways and pushed it in the other direction, becoming long and narrow, above left. After surgery, Matthew's head has grown more rounded, above, right.



**DR. BRYANT TOTH**, left, and Dr. Peter Sun operate, above, on 11-week-old Kacin Rogne last month at Children's Hospital Oakland. Toth and Sun perform six to 10 of the minimally invasive surgeries a year.

pushes in the other direction, becoming long and narrow, often with a bulging forehead.

The Van Slykes' pediatrician suggested they talk to Sun. They opted for the minimally invasive surgery and have been happy with the outcome.

"We wanted the surgery to be easier on him," Van Slyke said. "Also, being able to fix the problem sooner seemed better."

The minimally invasive technique is particularly well-suited for babies in which the sagittal suture is fused, Sun and Toth say.

They prefer to use the bigger, traditional surgery for infants with other types of skull fusions.

Chris and Nicole Rogne noticed shortly after Kacin was born that he had a bump on the back of his head, but they assumed it was because he had to be suctioned out at birth.

At his two-month checkup, Kacin's pediatrician ordered a CT scan, which revealed the prob-

lem — fusion of the sagittal suture.

Because their pediatrician was familiar with Sun, the Nevada couple decided to bring Kacin to Children's Hospital Oakland for the operation.

On the morning of the surgery, they waited nervously in the hospital cafeteria with other relatives. Both the minimally invasive and more extensive procedure are considered relatively safe, but that does not make it easier on parents.

"This is our little guy," Nicole Rogne said.

The surgery was delayed as the anesthesiologist struggled to find a vein in Kacin's tiny body.

Once the anesthesia took effect, the operating team placed the infant sphinxlike on a beanbag to hold him in place.

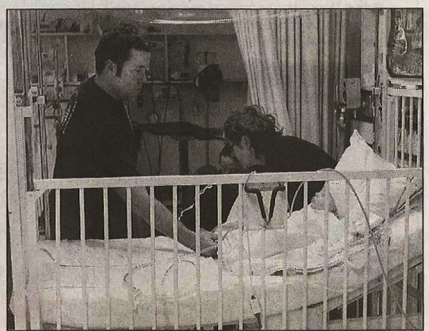
When Toth shaved his head in what amounted to his first haircut — a milestone in a baby's life — pediatric nurse practitioner

Sue Dittmer collected the black tufts in a bag for the parents. That has become a tradition at the hospital.

Sun and Toth began the operation by making two small incisions in Kacin's head. With the aid of a lighted tube known as an endoscope, they separated the dura mater, a brain-covering membrane, from the skull to avoid damaging it.

Then they cut the prematurely fused skull with curved scissors and removed portions of it, enabling it to "open like a clam shell," as Sun described it. Everything was done through the two small incisions.

After about 2½ hours, Sun and Toth sewed up the cuts and wrapped Kacin's head in gauze. Members of the operating team rolled him into the recovery room, where his mother took him into her arms.



**NICOLE ROGNE**, top, holds Kacin after surgery to repair his misshapen skull. Above, Kacin's dad, Chris, visits the infant as he rests in his crib. The baby received what in essence was his first haircut before surgery; his surgeons saved the hair for his family.

Hospital offers both surgeries but tends to favor the more traditional procedure, in part because its long-term results are well-known, said Dr. Nalin Gupta, chief of the division of pediatric neurosurgery.

"We're conservative in that we have very good results with it," he said. "We've done several hundred patients over the last several years and we have long-term follow-up. The complication rate is very low, and the outcome is very good."

Among the 40 to 50 surgeries UC San Francisco does each year for prematurely fused skulls, about five are the minimally invasive type.

Gupta said physicians there are monitoring the results of the newer procedure.

"I think in the future there's going to be more and more of those done because there are some very compelling advantages to it," he said. "But the one disadvantage is that the long-term results aren't really well understood."

"You gain a sense of the long-term outcomes over time. That's the one caveat that I always tell families. It's a new thing."

Sun and Toth are convinced of the benefits and hope to get the word out to pediatricians and parents to catch the problem as soon as possible to preserve the minimally invasive option.

"If it's a little bit earlier," Sun said, "a smaller operation can be done to get it resolved."

Reach Sandy Kleffman at 925-943-8249 or skleffman@bayareanewsgroup.com.

Bob Larson/Staff

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