

# FACING THE FUTURE

## Craniofacial Reconstruction

By Scott P. Edwards



Mom Sarah Leshure reports that both Cassidy and Killian are now happy and energetic toddlers.

### CASSIDY IS A VIBRANT, ENERGETIC TWO-YEAR-OLD. HOWEVER, HER LIFE DIDN'T START OUT THAT WAY.

Cassidy and her fraternal twin brother, Killian, were born two months premature. While Killian went home soon after delivery, Cassidy spent 28 days in the Neonatal Intensive Care Unit (NICU) at Baystate Children's Hospital due to low birth weight, failure to thrive, reflux, and a bowel infection. At two weeks of age, Cassidy's doctors diagnosed her with a unilateral coronal craniosynostosis.

With craniosynostosis, the fibrous sutures (also referred to as the fontanel or "soft spot" on the top of the baby's head) in the skull close prematurely, forming a solid skull and causing problems with brain and skull growth. Intracranial pressure increases and the skull and facial bones form abnormally and asymmetrically. This condition occurs in about 1 out of 2,200 births.

In Cassidy's case, a portion of the front of her skull was misshapen and her eye sockets were sunken. But using advanced surgical techniques, surgeons at Baystate were able to reshape her skull and advance her orbital bones to give her face and head a near-normal appearance.

Craniofacial reconstruction surgery like Cassidy's is not new, says Dr. Joseph Shin, chief of Plastic Surgery at Baystate, who performed the procedure on Cassidy, along with Baystate neurosurgeon Dr. Robert Schapiro. "However, the idea that we could correct both the head and face simultaneously was quite revolutionary," he says.

Along with pediatricians, geneticists, and pediatric intensivists, Shin and Schapiro developed the craniofacial reconstruction surgery program at Baystate two years ago, in collaboration with Shriners Hospital for Children in Springfield, which specializes in cleft lip and palate repairs.

The care team also includes social workers and mental health specialists to help deal with any psychological issues confronting patients and families.

### THE PROCEDURE

During the procedure, the plastic surgeon reshapes the facial deformities, including restoring the function of the patient's mouth and jaw, and improving facial appearance. The neurosurgeon assesses the patient's brain function, ensures that enough of the skull is preserved to protect the brain as it grows, and safeguards the brain, spinal cord, eyes, and other sensory organs during the procedure. The surgery is challenging, often taking eight to ten hours to complete.

The surgery can also benefit patients with relatively rare developmental anomalies such as Crouzon Syndrome and Apert Syndrome, and can be used following the removal of tumors from the head and face.

Shin, who as the former director of the Yale Craniofacial Surgery Center has been performing such craniofacial surgery for more than a decade, says craniofacial reconstruction is typically performed on young children—ideally before they are four months old—because it is easier to cut and manipulate their softer bones.

By age three, nearly 85 percent of the brain has developed, says Schapiro, but the skull is not well solidified until the teen years and often into the 20s. "Once the deformity solidifies," he says, "it's difficult to correct with surgery."

Cassidy is taller than her brother now, an encouraging sign. "After her surgery," says Cassidy's mom, Sarah Leshure, "she's happier, more interested in things, and gaining weight. There have been no other medical concerns. She's doing well."

For more information, call Baystate Plastic Surgery at 413-794-5363.



Drs. Robert Schapiro and Joseph Shin