

years of life, says Allan Schore, a UCLA neuropsychologist, "the brain more than doubles in size, growing more rapidly than at any other time." Millions of cells fire and wire together, forming pathways and connections. But these connections may not form in an optimal way if a baby's emotional needs aren't being met by his or her primary caregiver.

At two months of age, Schore says, there's an explosion of synaptic connections in the brain's right hemisphere, at the same time the baby begins to visually process the mother's face. The experience of visualizing Mom allows those synapses to connect, he says. "Through the attachment relationship, touch-to-touch, smell-to-smell, then face-to-face, the mother is providing the kinds of stimuli needed for circuits to wire up."

In two recent studies, researchers using PET scans and fMRIs looked at the brains of 2-month-old babies as they gazed at a woman's picture, and at the brains of women as they looked at videos of their babies. The same regions of the brain's right hemisphere were activated in both. "We have, in essence, communication between the right hemispheres," says Schore. "The mother is basically downloading programs about processing faces to her baby."

This process can be disrupted, however. If the mother is depressed and has a flat expression, it can impede the wiring of those circuits. Or say that instead of calming and soothing a baby, a caregiver allows the child to remain agitated. Or, even worse, the caregiver neglects or abuses the child, sending him or her into states of very high stress for long periods of time. "Now you've got an immature brain with large numbers of synapses being bathed in high intensities of cortisol [a stress hormone] and glutamate [a neurotransmitter]," Schore says. "That combination can literally burn out synapses. Now the connections within the right hemisphere become thinned down."

A thinned-down right hemisphere disrupts a person's capacity to feel empathy. High levels of fear and stress lead the brain to release opiate-like endorphins, perhaps cueing a later need for recreational drugs or for the rush of extreme experiences. It may also train the brain to dissociate from what's happening outside. All of these events can be a recipe for producing an aggressive or self-destructive child and adult.

Now buttressed by neuroscience, infant mental health workers help families access needed services, build relationships with parents, and interpret for them the meaning of a baby's cues and actions. "We speak for the baby when no one else does," says Grunstein. Beth Hoch, a social worker who directs an Alameda, California, program called Smart Healthy Babies, recalls a visit she made to the parents of an 8-month-old baby. The mother was depressed, the father unemployed, and the baby, who the parents had hoped would bring them closer, was getting lost in their tension and squabbling.

"These parents were bickering, and the baby rolled over, put his face on the father's shoe and lay there motionless for nearly a minute, almost dissociative," Hoch remembers. "I said 'What do you think your baby's telling us?' We sat there in silence and then the mother said, 'Wow, he must really be upset.' In this moment, they saw their baby, and realized for the first time the impact they were having."

Hoch worked with the family for a year, helping the mother get help with her depression and anger, and providing support as both parents got new jobs. Agencies across the country have embraced the field of infant mental health. "We get calls and e-mails all the time asking 'Where can I find early childhood mental health specialists?'" says Cindy Oser, West Coast director of Zero to Three, a national group that advocates for early intervention programs. Twenty agencies and schools across the country now offer post-graduate training in infant mental health.

Amazingly, some early efforts focused so much on child development they essentially ignored the family environment. "People would go in with a bag of educational toys, but ignore the parent-child relationship or the mental health of the mom," Oser says. Learning from these lessons, a pilot program in New Orleans recently hired infant mental health specialists and trained public health nurses to assess and work with families. The payoffs extended well beyond the kids. According to a program evaluation, domestic violence, substance abuse, and the rate of premature births all dropped dramatically.

"This is the ultimate early-intervention program, a critical missing piece that makes everything else work," says Oser. "It may seem expensive in the short run, but in the long run, it helps children learn the skill that's the basis for all others in life: the ability to connect and have empathy for others." ■

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