More than mother's intuition

Researchers say having babies alters brains of moms, both rat and human

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SAN DIEGO — Motherhood doesn't just change your life. It also changes your brain.

New research, reported last month at a neuroscience meeting in San Diego, suggests that having babies permanently alters brain function.

If you're a rat, it makes you better at finding and killing dinner quickly. If you're a human, it helps you distinguish between your baby's cry and that of other children.

In either case, it's something fathers just don't get. Only mothers undergo these changes.

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"Clearly these experiences are changing the female brain, but in a way that's natural," said Craig Kinsley, a neuroscientist at the University of Richmond in Virginia.

For one thing, Dr. Kinsley has discovered that the brain changes after a rat gives birth.

In earlier research, he showed that mother rats are much better at remembering where things are than rats that have never had babies. That makes sense, he said, because mothers have to be able to run away from the nest, forage for dinner quickly and return with food for their babies.

In new studies, he set up a real-life rat race to see whether mother rats really were better at hunting. Virgin females and lactating mothers were put in separate cages and given five minutes to kill and eat crickets.

The virgin rats took nearly the entire five minutes to snag a cricket, Dr. Kinsley found. Mother rats nabbed the food in just 70 seconds.

"It's the difference between night and day," he said.

Interacting with babies apparently alters the brains of mother rats so they are better equipped to look after their young, he reported at the annual meeting of the Society for Neuroscience.

For human mothers, the brain changes also include perking up more at the sound of one's own baby crying than that of other babies crying.

In other research presented at the neuroscience meeting, Dr. Jeffrey Lorberbaum and colleagues at the Medical University of South Carolina took brain scans of 40 mothers and 10 fathers while they listened to infants wailing.

When questioned, all the parents were able to distinguish their own infant's cry. But the mothers and fathers showed very different patterns of brain activity.

Mothers' brains became more active in the limbic and basal forebrain regions, primitive parts of the brain that have been linked to emotional response. In contrast, fathers' brains became more active in areas that are linked to thinking and planning.

So there may be an anatomical reason to think that mothers are more attuned to their children than fathers, Dr. Lorberbaum suggested.

"Maybe mothers are more hardwired to hear it," he said.

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