

Child Laughter and Brain Development

It is said that a baby's giggles can melt the heart of a parent. That almost magical sound of a deep belly laugh from a baby can induce a surge of joy unlike any other. Frankly, it is next to impossible for most of us to keep from smiling in the presence of a laughing baby. Is it any wonder that there are over a million videos of laughing babies on YouTube? Just try to watch them without a smile!

Have you ever wondered why this sound is so irresistible? It turns out that it is not your heart that is melting; it is your brain that is firing. Scientists now know that the sound of babies' laughter actually prompts the release of certain hormones that activate the reward center of the brain and fire off bursts of pleasure hormones. Why else would an otherwise normal adult do almost anything to get that powerful hit of pleasure that comes with baby laughter? The feeling is so fantastic that they will repeat the same silly movement or ridiculous sound over and over again, just to get that brain burst of intense pleasure. More importantly however, when the parent smiles in response to a baby's laugh, the baby's brain generates very high levels of positive emotion and excitement.

Because the baby brain is all about connecting billions of brain cells to produce the "architecture" of the brain, when pleasure hormones are released in reaction to a smiling, responsive adult, the baby is building brain "pathways" that connect human faces to feelings of joy. Since neurons that "fire together wire together," the simultaneous activation of brain networks that are activated when viewing a human face and networks that experience joy, fosters human connection. This is the first step in developing a child's capacity to love. It turns out that when parents and babies are sharing those moments of mutual joy they are building essential brain structures that allow that baby to become a child and eventually an adult capable of empathy, sympathy and love.

Scientists believe this may be the work of a recently discovered type of brain cells called "mirror neurons." Mirror neurons fire both when we do an action ourselves *and* when we watch others do a similar action. Mirror neurons internally imitate what we see -- to experience an emotion simply by observing someone engage in an activity. This is why we wince when we watch someone else experience intense pain. Our mirror neurons enable us to instinctively understand what other people are experiencing.

Mirror neurons have been observed to be active in babies as young as 41 minutes-old. They become organized when activated during the baby's first years. What we know about mirror neurons tells us that simply by demonstrating pleasure, compassion and the ability to manage strong emotions, parents are helping their children develop brain structures that will be drawn on throughout life. Mirror neurons explain why modeling these behaviors in daily life is such a powerful way to help children develop skills.

The bottom line? Brain science is confirming what we've always known. Giggling is good for babies – and for the grownups that love them.