

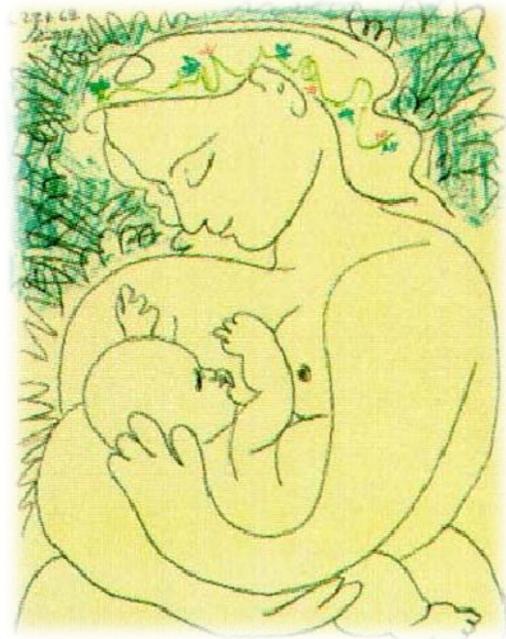


Don Joseph Goewey

*The strength, peace and joy you seek
is closer than the laces of your shoes*

Mother, Child and the Brain

New research has wonderful news for pregnant women but unfortunately it also has news that is not so good. The wonderful news is that pregnancy increases brain power in expectant moms and the gain is sustained postpartum. The not-so-good news is that stress can take her and her child's brain in the opposite direction. Stress hormones can cross over into the fetus and affect the brain of the child. Additionally, chronic stress hormones can shrink neural networks in mom that generate the higher order brain function that make her smart. Happily, there is something that can be done about it to insure that all goes well for mother and child.



Here's The Wonderful News

It was once thought that pregnancy caused a woman to lose brain power. A new research study involving more than 2,500 women over ten years has found that brain power doesn't decline during pregnancy; it appears to actually increase, producing a permanent improvement in brain function. The study found significant increases in mental acuity and memory in women during pregnancy and after childbirth. Even husbands show increased mental performance and empathy, although not to the same degree (Kinsley and Lambert, 2009).

Pregnant women have long been the butt of a demeaning stereotype. It paints a picture of a hormonal mess of a woman, charmingly stupid and erratic, turning every day into an episode of I Love Lucy. "Placenta brain" is the common term used to describe this stereotype; some in medical science call it "maternal amnesia." It's another in that long list of stereotypes that doesn't hold up to examination.

When researchers challenged the stereotype they found evidence of cultural prejudice toward a pregnant woman. Sara Corse at the University of Pennsylvania had MBA students interact with a manager they were told was pregnant. In reality, she was really a research assistant pretending to be pregnant. The students who related to the 'manager' as pregnant gave her more negative ratings than the control group that had no notion of her being pregnant. The deceived students viewed the "pregnant manager" as passive or erratic, not as a leader deserving respect. Ros Crawley at the University of Sunderland found that 13 pregnant women performed just as well as non-pregnant controls on a driving simulator task conducted in a complex, cognitively demanding environment.

It's the Hormones

During pregnancy, large amounts of estrogen, progesterone and oxytocin are produced (Speroff, 1989). These hormones fortify networks that govern learning and memory. They also trigger parts of the prefrontal cortex that are crucial in generating the brain's executive functions. These chemicals literally bathe the brain during pregnancy and function to increase practical and analytical intelligence to produce peak performance. They enable us to think logically, make the right decisions, plan, and detect and correct errors. It's arguable that evolution is rewiring an expectant mother for greater competency, since this will increase the odds of survival for her offspring. Nature seems to want to turn an expectant mom into a CEO, reorganizing, remodeling, and acquiring everything the baby will need to not only survive but flourish.

In men, the enhanced brain power is the result of an increase in estrogen and prolactin that occurs just prior to labor and delivery

The Better Angels of Your Nature

Stimulation of the prefrontal cortex, especially the mid prefrontal cortex, increases practical, analytical and emotional intelligence. The "better angels of our nature" step forward and take charge. Isn't this what every baby wants and needs from mom? Strengthening neural networks in the mid prefrontal cortex does the following:

- It increases the thickness of the region of the brain called the prefrontal cortex, which is associated with attention, planning and decision-making.
- It strengthens the mid prefrontal cortex, producing greater empathy and attuned communication, enabling us to establish interpersonal resonance.
- Fear-related behavior is attenuated through the stimulation of inhibitory GABA fibers.
- Intuition is generated through information from the neural networks surrounding our intestines (gut feelings) and our heart (heartfelt feelings), enabling us to be open to the wisdom of our non-conceptual selves.
- Morality is established, fostering the capacity to transcend a limited self-interest and think for the larger good. (Siegel, *The Mindful Brain*, 2008).



The neural integration of all these functions creates a more loving, more intelligent mother, which is what evolution intended. It's all about increasing the odds for survival.

Dots Connect Themselves

Researchers report a doubling of the number of dendrites (Keyser-Marcus & Kinsley, 2001) and glial cells (Gomez-Arrati, 2010) in pregnant animals. Dendrites and glial cells allow neurons to communicate with one another. The more of these cells in a brain the better the brain functions. The brain's system of communication expands and integrates, making you more coherent and resonant and less reactive. It's as if the dots are connecting themselves.

A Dot That Disconnects

Even though generally memory improves, a specific form of memory called “prospective memory” appears to suffer during pregnancy (Rendell and Hendry, 2008). Prospective memory is basically *remembering to remember* something you need to do at a certain point in the near future. It’s retrieving the document you need for a meeting. It’s pulling the roast chicken from the oven in 45 minutes. It’s paying the utility bill on the 15th of the month. It’s remembering to take your prenatal vitamins in the morning. This type of memory seems to falter during pregnancy. The cure is simple. Buy a tablet for making check lists and form the habit of taking it with you everywhere, as you would your purse. For time-driven tasks, set a timer and put a note under the timer to remind what the task is. In short, don’t judge, worry or despair about it. Understand it as a deficit that comes with the asset of bringing life into the world. Simply manage around it. It will go away eventually.

Survival Of The Fittest

It’s logical that evolution would build into our biology a mechanism that would rewire a women’s brain during pregnancy. Evolution is focused on survival. The brain changes in expectant moms that research has documented clearly support the survival of our species. The more the networks describe above wire together and coherently communicate with one another, the better the mother will mother. The better our species mothers the greater the odds for the survival of our species.

Here’s The Bad News

Stress is the bad news. New research (Weinstock-Rosin, 2008; Monk, 2010) reveal that the offspring of stressed mothers during pregnancy were later shown to have impaired learning and memory abilities, attention-deficit, less capacity to cope with adverse situations and symptoms of anxiety and depressive-like behavior, as compared to unstressed mothers. There is evidence that severe stress (such as war, poverty, starvation or abuse) during pregnancy may even be a factor in autism and schizophrenia.



It’s Stress

Under conditions of excessive stress, large amounts of the stress hormone *cortisol* reach the fetal brain and can cause structural and functional changes. Cortisol can also stimulate the release of another hormone from the placenta that will cause premature birth, another factor that can affect normal development.

Here’s What You Can Do About It

It turns out that, biologically, a peaceful attitude is the path to the best outcome. The more peaceful you are during pregnancy, the more your child’s brain will grow in the positive ways that assure the good life you envision for him or her. As a number of studies have shown over the last decade (Davidson, 2001) a dynamically peaceful attitude is a prescription for an amazing brain – for mother as well as child. Better still, change in brain structure can happen quickly – in a matter of six to eight weeks with a simple practice (Schwartz, 1995; Segal, Mayberg, 2002; Davidson, Kabat-Zinn, 2003). If an expectant mother has been under stress she can turn things around and greatly improve outcomes.

There are a few simple things an expectant mom can do to eliminate stress and cultivate peaceful attitude that will foster healthy development for the child and a great brain for her, even if her plate is full. . Here are four easy steps you can implement right away.

1. The Clear Button: Transcending Thought Attacks

The first thing is to become adept at transcending stressful thinking. We human beings are capable of generating all sorts of stressful events purely in our heads, exciting negative emotions and producing a chronic sense of threat that floods the brain with stress hormones. Most of these reactions are tied to mere thought. Thus, transcending stress begins with quieting anxious, stressful thinking. Below are four simple tools that can help you do this.

The Clear Button is a tool that can stop stressful thinking. Here is how it works. Starting today, practice monitoring your mind for every negative, stress producing thought it churns out. Initially, you may be bewildered by how many negative thoughts your brain is producing. You can't stop the brain from generating the negative thoughts, but you can stop indulging them. 99.9% of these are not true. Simply eliminate them by doing the following:

Step 1 — Push the Clear Button: When anxious, stress provoking thoughts arise, imagine a Clear Button at the center of your palm that, when pressed, sends a signal to calm the part of the primitive brain that generates anxiety and stress. Keep pressing the button as you follow through with Step 2.

Step 2 — Count to “3:” The part of your brain that launches stress reactions has the intelligence of a two-year-old, and like a two-year-old, it needs to be distracted. Counting to three will do the trick. To further distract your primitive two-year-old from acting out, imagine each number as a color. See 1 as red, 2 as yellow, and 3 as green, taking a slow, easy breath with each number you count.

Step 3 — Let Go: On the final breath, let go. Feel your brain relax. Bring your attention to the present moment. Smile from the inside and then go about your business.

2. Take Spiritual Breaks

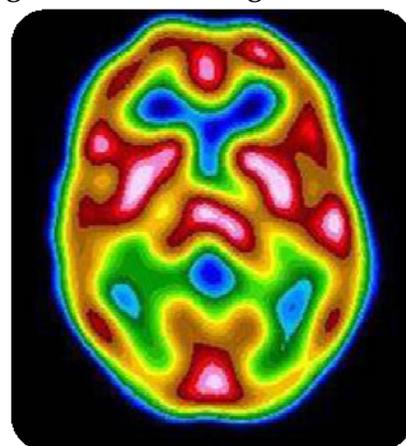
Start the day in quiet. Feel appreciation for the gift of another day of life. Set your intention to have a great day, filled with achievement and sustained through an attitude of peace.

During the day, every two hours, take a “spiritual” break. Step outside or look out the window for a few minute. Let your mind go completely. Watch the sun shine, the sky change or the wind blow. Connect with life.

Once a week, before going to sleep, count your blessings. Name three things that happened in the previous week for which you are grateful. Then name three things in your life generally that you regard as blessings.

3. Step Out Of The Box

Studies at Duke University found that novelty helps the brain stay young. Break the mold of old routines and the brain grows. Travel more. Get out and see the countryside. It'll slow age-related mental decline. So will learning a new skill, like gardening, cooking, square dancing or



**Rewire Your Brain
For Peace**

yoga. These simple changes excite brain cells to make new connections with one another. Your brain wakes up and you feel young at heart.

4. Take Your Brain For A Walk In Nature

Walking 30-minutes a day, five days a week flushes stress hormones and oxygenates your brain. Since it's not strenuous, leg muscles don't take up extra oxygen and glucose as it does during aerobic exercise. Studies of people who walk regularly show significant improvement in memory skills. If it feels daunting to consider walking five days a week, then begin with 20-minute walks once or twice a week.

Take your walk in a "green" setting like a park. The psychological benefits of physical activity in green environments are significant. In one study, 71 per cent of the subjects who took a walk in the country or a park reported decreased levels of depression. They reported feeling less stress afterwards. Ninety per cent reported increased self-esteem. Nature is rejuvenating. It can lift your attitude and an elevated attitude will light up your brain.

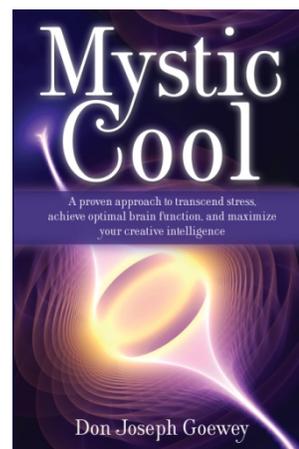
Here's the way to take your walk: Leave all your troubles behind you. Quiet your mind as you walk, letting go of thoughts that pull you back into problems. At the beginning of the walk, imagine each in-breath softens and opens your heart and each exhale expands your mind. Be present in the moment. Notice simple things like colors, sounds and smells and feel sensations, such as the wind caressing your cheek. At the end of the walk, let your mind go completely.

About Don Joseph Goewey

Don has worked in some of the most stressful places on Earth - from cancer wards to refugee camps to corporate offices – helping people transcend stress and fear to reach a higher potential. He co-founded a human performance firm, ProAttitude, to end stress in the workplace. His new book, Mystic Cool defines a proven approach that literally rewires the brain to switch off stress and turn brain power way up.

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