

## The Myth of the Midlife Crisis

**It's time we stopped dismissing middle age as the beginning of the end. Research suggests that at 40, the brain's best years are still ahead.**

By **Gene Cohen, M.D., PH.D.**  
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Jan. 16, 2006 issue - I was taken by surprise several years ago when my colleagues started to worry that I was going through some sort of midlife crisis. I was in my late 40s, and after two decades as a gerontologist I was pursuing a new passion: designing games for older adults. My first game, a joint effort with artist Gretchen Raber, was a finalist in an internationally juried show on games as works of art. Though I still had a day job directing George Washington University's Center on Aging, Health & Humanities, I was now working hard on a second game.

"Are you turning right on us?" one friend, a neuroscientist, kidded me. He wasn't talking about politics. He was asking whether I'd scrapped the logical, analytical tendencies of the brain's left hemisphere to embrace the more creative, less disciplined tendencies of the right brain. But I wasn't scrapping anything. As a researcher, I had spent years documenting the psychological benefits of intergenerational play. Now I was using both sides of my brain to create new opportunities for myself. Instead of just measuring and studying the benefits of mental stimulation, I was finding creative ways to put my findings to work. What my friends perceived as a crisis was, in truth, the start of a thrilling new phase of my life.

In thinking about this experience, I realized that our view of human development in the second half of life was badly outmoded. We tend to think of aging in purely negative terms, and even experts often define "successful" aging as the effective management of decay and decline. Rubbish. No one can deny that aging brings challenges and losses. But recent discoveries in neuroscience show that the aging brain is more flexible and adaptable than we previously thought. Studies suggest that the brain's left and right hemispheres become better integrated during middle age, making way for greater creativity. Age also seems to dampen some negative emotions. And a great deal of scientific work has confirmed the "use it or lose it" adage, showing that the aging brain grows stronger from use and challenge. In short, midlife is a time of new possibility. Growing old can be filled with positive experiences. The challenge is to recognize our potential—and nurture it.

Until recently, scientists paid little attention to psychological development in the second half of life, and those who did pay attention often drew the wrong conclusions. "About the age of 50," Sigmund Freud wrote in 1907, "the elasticity of the mental processes on which treatment depends is, as a rule, lacking. Old people are no longer educable." Freud—who wrote those words at 51 and produced some of his best work after 65—wasn't the only pioneer to misconstrue the aging process. Jean Piaget, the great developmental psychologist, assumed that cognitive development stopped during young adulthood, with the acquisition of abstract thought. Even Erik Erikson, who delineated eight stages of psychosocial development, devoted only two pages of his classic work "Identity and the Life Cycle" to later life.

My own work picks up where these past giants left off. Through studies involving more than 3,000 older adults, I have identified four distinct developmental phases that unfold in overlapping 20-year periods beginning in a person's early 40s: a midlife re-evaluation (typically encountered between 40 and 65) during which we set new goals and priorities; a liberation phase (55 to 75) that involves shedding past inhibitions to express ourselves more freely; a summing-up phase (65 to 85) when we begin to review our lives and concentrate on giving back, and an encore phase (75 and beyond) that involves finding affirmation and fellowship in the face of adversity and loss. I refer to "phases" instead of "stages" because people vary widely during later life. We don't all march through these phases in lock step, but I've seen thousands of older adults pass through them—each person driven by a unique set of inner drives and ideals.

What sparks this series of changes? Why, after finding our places in the world, do so many of us spend our 40s and 50s re-evaluating our lives? The impulse stems partly from a growing awareness of our own mortality. As decades vanish behind us, and we realize how relatively few we have left, we gain new perspective on who we are and what we really care about. This awakening isn't always easy—it often reveals conflicts between the lives we've built and the ones we want to pursue—but only 10 percent of the people I've studied describe the midlife transition as a crisis. Far more say they're filled with a new sense of quest and personal discovery. "I'm looking forward to pursuing the career I always wanted," one 49-year-old woman told me. "I'm tired of just working on other people's visions, rather than my own, even if I have to start on a smaller scale."

While changing our perspective, age also remodels our brains, leaving us better equipped to fulfill our own dreams. The most important difference between older brains and younger brains is also the easiest to overlook: older brains have learned more than young ones. Throughout life, our brains encode thoughts and memories by forming new connections among neurons. The neurons themselves may lose some processing speed with age, but they become ever more richly intertwined. Magnified tremendously, the brain of a mentally active 50-year-old looks like a dense forest of interlocking branches, and this density reflects both deeper knowledge and better judgment. That's why age is such an advantage in fields like editing, law, medicine, coaching and management. There is no substitute for acquired learning.

Knowledge and wisdom aren't the only fruits of age. New research suggests that as our brains become more densely wired, they also become less rigidly bifurcated. As I mentioned earlier, our brains actually consist of two separate structures—a right brain and a left brain—linked by a row of fibers called the corpus callosum. In most people, the left hemisphere specializes in speech, language and logical reasoning, while the right hemisphere handles more intuitive tasks, such as face recognition and the reading of emotional cues. But as scientists have recently discovered through studies with PET scans and magnetic resonance imaging, this pattern changes as we age. Unlike young adults, who handle most tasks on one side of the brain or the other, older ones tend to use both hemispheres. Duke University neuroscientist Robert Cabeza has dubbed this phenomenon Hemispheric Asymmetry Reduction in Older Adults—HAROLD for short—and his research suggests it is no accident.

In a 2002 study, Cabeza assigned a set of memory tasks to three groups of people: one composed of young adults, one of low-performing older adults and one of high-performing older adults. Like the young people, the low-performing elders drew mainly on one side of the prefrontal cortex to perform the assigned tasks. It was the high-scoring elders who used both hemispheres. No one knows exactly what this all means, but the finding suggests that healthy brains compensate for the depredations of age by expanding their neural networks across the bilateral divide. My own work suggests that, besides keeping us sharp, this neural integration makes it easier to reconcile our thoughts with our feelings. When you hear someone saying, "My head tells me to do this, but my heart says do that," the person is more likely a 20-year-old than a 50-year-old. One of my patients, a 51-year-old man, remembers how he agonized over decisions during his 20s, searching in vain for the most logical choice. As he moved through his 40s and into his 50s, he found himself trusting his gut. "My decisions are more subjective," he said during one session, "but I'm more comfortable with many of the choices that follow."

As our aging brains grow wiser and more flexible, they also tend toward greater equanimity. Our emotions are all rooted in a set of neural structures known collectively as the limbic system. Some of our strongest negative emotions originate in the amygdalae, a pair of almond-shaped limbic structures that sit near the center of the brain, screening sensory data for signs of trouble. At the first hint of a threat, the amygdalae fire off impulses that can change our behavior before our conscious, thinking brains have a chance to weigh in. That's why our hearts pound when strangers approach us on dark sidewalks—and why we often overreact to slights and annoyances. But the amygdalae seem to mellow with age. In brain-imaging studies, older adults show less evidence of fear, anger and hatred than young adults. Psychological studies confirm that impression, showing that older adults are less impulsive and less likely to dwell on their negative feelings.

An editor I know at a New York publishing company provides a case in point. He was in his 60s, and contemplating retirement, when he realized that he had finally matured into his job. Despite a sharp intellect and a passion for excellence, this man had spent much of his career alienating people with brusque, critical comments and a lack of sensitivity. Now, he told me over lunch, he was finally beginning

to master interpersonal communication. As his emotional development caught up to his intellectual development, he morphed from a brilliant but brittle loner into a mentor and a mediator of conflicts. "I feel like a changed man," he said with a bemused smile. His best work was still ahead of him.

Clearly, the aging brain is more resilient, adaptable and capable than we thought. But that doesn't mean we can sit back and expect good things to happen. Research has identified several types of activity that can, if practiced regularly, help boost the power, clarity and subtlety of the aging brain.

**Exercise physically.** Numerous studies have linked physical exercise to increased brainpower. This is particularly true when the exercise is aerobic—meaning continuous, rhythmic exercise that uses large muscle groups. The positive effects may stem from increased blood flow to the brain, the production of endorphins, better filtration of waste products from the brain and increased brain-oxygen levels.

**Exercise mentally.** The brain is like a muscle. Use it and it grows stronger. Let it idle and it will grow flabby. So choose something appealing and challenging—and don't be surprised if, once you start, you want to do more. One of the programs I co-chair, the Creativity Discovery Corps, strives to identify unrecognized, talented older adults in the community. A 93-year-old woman we recently interviewed advised us that she might find scheduling the next interview difficult because she was very busy applying for a Ph.D. program.

**Pick challenging leisure activities.** Getting a graduate degree isn't the only way to keep your brain fit. An important 2003 study identified five leisure activities that were associated with a lower risk of dementia and cognitive decline. In order of impact (from highest to lowest), the winners were dancing, playing board games, playing musical instruments, doing crossword puzzles and reading. Risk reduction was related to the frequency of participation. For example, older persons who did crossword puzzles four days a week had a risk of dementia 47 percent lower than subjects who did puzzles only once a week.

**Achieve mastery.** Research on aging has uncovered a key variable in mental health called "sense of control." From middle age onward, people who enjoy a sense of control and mastery stay healthier than those who don't. The possibilities for mastery are unlimited, ranging from playing a musical instrument to learning a new language to taking up painting or embroidery. Besides improving your outlook, the sense of accomplishment may also strengthen the immune system.

**Establish strong social networks.** Countless studies have linked active social engagement to better mental and physical health and lower death rates. People who maintain social relationships during the second half of life enjoy significantly lower blood pressure, which in turn reduces the risk of stroke and its resulting brain damage. Social relationships also reduce stress and its corrosive effects, including anxiety and depression.

The brain is like the foundation of a building—it provides the physical substrate of our minds, our personalities and our sense of self. As we've seen, our brain hardware is capable of adapting, growing and becoming more complex and integrated with age. As our brains mature and evolve, so do our knowledge, our emotions and our expressive abilities. In turn, what we do with those abilities affects the brain itself, forging the new connections and constellations needed for further psychological growth. This realization should embolden anyone entering the later phases of life. If we can move beyond our stubborn myths about the aging brain, great things are possible. Successful aging is not about managing decline. It's about harnessing the enormous potential that each of us has for growth, love and happiness.

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