

“Boomer” June 28, 2009

MIND/BODY

AGE OF ORIGINALITY

Middle-age brain may offer unexpected opportunities for creativity

By Donna Olmstead

For the Journal

Baby boomers who have always imagined playing lead guitar in a rock 'n' roll band may finally be old enough to fulfill their dreams.

Same goes if you have stray lines of poetry, images to paint or new recipes floating around in your head. You just may have the right kind of mind to corral them now.

Try any creative endeavor you find attractive and you might be surprised by your success, says Rex Jung, a practicing neuropsychologist and research scientist at the Mind Research Network, an Albuquerque-based neuroimaging institute that partners with research centers across the nation.

Jung says preliminary research supports his theory that normal aging in the brain at middle age and beyond may offer more opportunities for creative expression than were previously possible.

Less traveled paths

“As we age, the frontal lobe demyelinates from front to back,” says Jung, 45. “My hypothesis is that this creates an opportunity for creative capacity.”

Myelin acts as insulation for neurons and helps the conduction of impulses in the brain. In a brain at its prime, thoughts and impulses flow along through the myelin like a super highway, but as we age thoughts and impulses must find less traveled paths, according to Jung's theory, much like the difference between I-40 and Route 66.

Jung studies what an average brain does well, or positive neuroscience, to help understand, diagnose and treat mental illness and brain disease.

“Differences in the creative process of a ‘normal’ human brain could ultimately show us how these functional differences affect brain disease, treatment and delivery,” Jung says.

In his latest research, funded with a grant from the John Templeton Foundation, Jung and his associates were able to predict aspects of creativity by measuring quantities of certain molecules in the brain.

Results of the research, published in the April 22 edition of the Journal of Neuroscience, showed that the molecule N-acetylaspartate, NAA, which is found in neurons and associated with intelligence, also influences creativity.

Jung's team tracked participants' NAA in various regions of their brains with a brain imaging technique called magnetic resonance spectroscopy. The volunteers participated in tasks associated with divergent thinking, a factor in creativity, that require finding novel uses for ordinary objects like a paper clip.

The next phase of his research could be to look at brain chemistry to discover if creativity in participants of middle age and older could have a protective effect against normal mental decline and disease processes like dementia, he says.

“The key to unlocking brain disease is directed by understanding normal brain function,” he says. “We feel fluctuating chemistry could lead to earlier diagnosis and treatment of dementia and other neurological and psychiatric disorders.”

To appreciate the creative opportunities that may be available as we age, Jung says most of us will have to give up the idea that our brains will rapid fire in our 60s and 70s as they did in our 40s.

According to his theory, “it may be easier for the brain to achieve some level of creative output without the constraint you find in middle life.”

Creativity may rise

The mid-life brain focuses on career, family and staying out of trouble as part of its imperative, he says. “But the brain has spare capacity, and given time you can do other interesting things.”

“Rather than trying to maintain some optimum level of cognitive function, it's important to understand the brain's capacity at each stage of the lifespan. It's a bell-shaped curve across the lifespan,” he explains.

So as the curve rounds down, creativity likely increases as it did in the childhood slope of the curve, he says. The enhanced creativity in older middle age benefits from the experiences throughout our lifetimes, being both novel and useful, while childish creativity is mostly novel, he adds.

A good example is his mother, who after retiring as a technical writer from IBM, picked up quilting in her 60s. "It was out of the blue," he says.

Now in her late 70s, "she's winning quilting awards. She's not doing the standard quilt your grandmother did, she's creating threedimensional quilts. She's creating a new form of quilting."

The quilting and social interaction his mother does at competitions, classes and quilting camps help sustain her mental acuity. "Her brain is incredibly active and it's keeping her sharp." Quilting uses the parietal lobe of the brain where many disease processes like dementia begin, Jung says. "It keeps the part of her brain active that is susceptible to the ravages of dementia."

So for boomers who may still find their inner quilter, rock star, painter or chef, Jung recommends exploiting the creative process.

He suggests letting many creative ideas percolate until the mind distills a direction to pursue. Jung says that for him, a flash of insight usually strikes while he's mowing the lawn.

Beethoven, he says, would go for long walks "and the symphonies would cascade in his brain. Let your brain wander freely and then the ideas will congeal."

Test the idea, putting together a plan of action to get your projects before a larger audience, he says. To succeed even at this stage of the game requires a willingness to try and try again.

"If you go to art museums you don't see one Picasso or one Monet, you see dozens," he says. "There's only one Guernica, but there's a Picasso in almost every museum."



JOURNAL FILE

Neuropsychologist Rex Jung's work at the Mind Research Network has shown the link between aging and creative expression.