A few deep breaths calm the troubled brain

Leigh Dayton, Science Writer | September 17, 2008

SCIENCE has a habit of debunking conventional wisdom. But when it comes to controlling anger by taking a deep breath and counting to 10, brain imaging studies prove it works.

What’s more, some widely used tricks of psychotherapy are more than psychobabble, claims social cognitive neuroscientist Matthew Lieberman.

According to Professor Lieberman, functional magnetic resonance imaging studies conducted in his laboratory at the University of California at Los Angeles show some techniques do help people stay cool and reveals why they do.

Take reappraisal, or finding a different way to think about a bad event. Instead of dwelling on how awful it was not to get that job, for instance, consider that now there’s time for a holiday.

“We have fMRI data showing that if someone is shown a picture that’s upsetting, say an amputation, there’s strong activity in the limbic system, the amygdala and the insula,” Professor Lieberman said on a visit to Sydney for last week’s NeuroLeadership Summit.

The limbic system contains parts of the brain like the amygdala and insula, linked to emotion, memory and behaviour. “If they’re told to think of it such that it’s less upsetting - maybe as Hollywood special effects - the limbic response goes way down, but the prefrontal ‘thinking brain’ becomes more active,” Professor Lieberman said. “Reappraisal changes what the ‘emotional’ brain gets as its input.”

The Buddhist practice of "noting" also gets the thumbs-up. The idea is to state an emotion - "here is anger" or "here is fear" - but not to try and change it.

Professor Lieberman calls the technique labelling and said imaging shows it reduces limbic activity, while increasing activity in the right ventrolateral prefrontal cortex, which is involved with putting feelings into words and motor inhibition.

Right now Professor Lieberman and his colleagues are investigating the clinical relevance of reappraisal and labelling for the treatment of social phobias such as racism and other unconscious stereotyping behaviour.

He also hopes to find out if such "emotion regulation" approaches could assist with the debilitating looping of negative emotions, common to post traumatic stress disorder.

“We have to know whether or not post traumatic stress disorder is a breaking or an impairing of the (normal emotional) system. Will labelling, for instance, enhance or worsen the emotional response?” he said.

In the meantime, Professor Lieberman has some tips for staying calm in the stressful situations of daily life: take a deep breath, rethink the situation and detach, seeing it for what it is, a comparatively small event that will lose its emotional punch in time.