Our news seems so full of hate these days that I began to wonder about the phenomenology of hate as well as its neurobiology. Hate represents a strong word for a spectrum of emotions depending on its object. I may hate the taste of beets as well as hate people who manipulate others for selfish means, but obviously these are two different flavors of hate. Also, many of my patients struggle with self-hate and seem startled if I suggest that they use mindfulness to cultivate self-compassion instead. My curiosity provoked me to search the literature (using, of course, PubMed and Google Scholar) to find out if particular brain networks are associated with hate and how neurobiology could inform methods to mitigate hate and its associated suffering. Searching for “hate,” “neurobiology,” “brain,” “brain networks,” and “self-hate” yielded surprisingly few results relevant to my questions.

So, let’s go back to see if we can define hate. In the American Medical Association’s Journal of Ethics, Richard and Peter Gunderman write, “To say that we hate something is to express extreme ill will or aversion toward it. A hateful thing can also be described as horrid, insufferable, odious, loathsome, abhorrent, repellant, and vile.” 1 (By the way, they were revisiting the classic 1978 paper, “Taking Care of the Hateful Patient,” by Groves 2 and made useful suggestions to reframe how to approach difficult patients through compassion.)

What, then, are the informative neurobiological correlates of the emotion of hate? In 2008, Zeki and Romaya reported that in a functional magnetic resonance imaging study of 17 healthy controls, “viewing a hated face resulted in increased activity in the medial frontal gyrus, right putamen, bilaterally in premotor cortex, in the frontal pole and bilaterally in the medial insula.” 3 This occurred with deactivation of the superior frontal gyrus. 3 Furthermore, depression was found to be a state of uncoupling the superior frontal gyrus, insula, and putamen and this uncoupling could be related to the self-loathing that occurs during depressed states. 4

It is possible, then, when experiencing the emotion of hate, one would want to “harm, injure, or otherwise extract revenge” and have trouble exercising judgment in refraining from doing so because of one’s diminished ability to use the frontal gyri. How to compensate? Perhaps the antidote is cultivating mindfulness, compassion, and gratitude.

REFERENCES