

# Reading a novel exercises 'muscles' in the brain, researchers find

By Hector Tobar



We all know that reading a novel can transport you, delight you and intrigue you while you're reading it. Now, thanks research by scientists at Emory University, we know that immersing yourself in a novel causes measurable physical changes in the brain that can be detected up to five days after the reader closes the book.

The Emory researchers, in a paper for the journal *Brain Connectivity*, compared the effect to “muscle memory.”

"The neural changes that we found associated with physical sensation and movement systems suggest that reading a novel can transport you into the body of the protagonist," neuroscientist Gregory Berns said, according to a report in [the journal Science Codex](#). "We already knew that good stories can put you in someone else's shoes in a figurative sense. Now we're seeing that something may also be happening biologically."

Twenty-one undergraduate students took part in the study. All read the same book, the 2003 thriller “Pompeii” by Robert Harris. The scientists said they deliberately chose a plot-driven book. “The story follows a protagonist who is outside the city of Pompeii and notices steam and strange things happening around the volcano,” Berns said. He tries to return the doomed city to save the woman he loves. “It depicts true events in a fictional and dramatic way. It was important to us that the book had a strong narrative line.”

For two and a half weeks, the students read 30-page sections of the novel at night and had their brains scanned the following morning -- after taking a test to make sure they had done the reading. The scans continued for several days after they'd finished the novel.

The results showed “heightened connectivity” in the left temporal cortex, an area of the brain associated with receptivity for language, and also in the central sulcus, the brain's primary sensory motor region.

<http://www.latimes.com/books/jacketcopy/la-et-jc-reading-a-novel-makes-muscles-in-the-brain-researchers-find-20140103,0,6975108.story#ixzz2r2QQLOG8>