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April 17, 2001, Tuesday

HEALTH & FITNESS

### VITAL SIGNS: PATTERNS; Surprise! Brain Likes Thrill of Unknown

By ERIC NAGOURNEY (NYT) 272 words

As any good movie director or roller coaster designer knows, people love surprises. Now, it seems, at the most basic level, the brain does too.

Researchers, writing in a recent issue of *The Journal of Neuroscience*, say it appears that the brain responds much more strongly to the unexpected than to the merely pleasurable.

The scientists, from the Baylor College of Medicine and Emory University, took a look at the neural pathways that lead to the so-called pleasure centers of the brain.

While experts have widely assumed that the pleasure centers are stimulated essentially by things people like, the study, led by Dr. P. Read Montague and Dr. Gregory S. Berns, found that the situation was more complicated and that unpredictability also played a big role.

Using functional magnetic resonance imaging, a brain-scanning technology, the researchers asked volunteers to lie down, telling them nothing about what would happen next. Then they began squirting fruit juice or water into their mouths, using patterns that were predictable and unpredictable.

They were surprised, they said, to find that the M.R.I. detected a much stronger response in the nucleus accumbens, a part of the brain associated with pleasure, when the squirts were unpredictable. The suggestion, they said, is that the brain may prefer unexpected pleasures to expected ones. The study, they added, may lend some insight into addictions like gambling.

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