

## Genes may be responsible for chronic pain

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Scientists have long thought that an overly sensitive nervous system is the culprit behind chronic pain. But how and why does it stay so sensitive over time? In a [recent study published in Cell Reports](#), researchers at King's College London think they might have found an answer, or at least the beginning of one: Some of the long-term changes that occur with a painful insult appear to be recorded at the molecular level and preserved in some immune-cell genes.

Normally, the majority of proteins in the brain have a half-life of less than 14 days. Yet in a mouse model of chronic neuropathic pain, lead author Franziska Denk and her colleagues found that certain crucial proteins were "being replaced by malfunctioning versions of themselves," according to the researchers.

The scientists hypothesize that the problem is not with the genome but rather the epigenome, the molecular signals that essentially turn certain genes on or off. Denk's team thinks the key is a certain kind of genetic material called an enhancer, specifically a kind of enhancer associated with cells called microglia, which are the central nervous system's main immune defense. In the case of chronic pain, those microglia undergo changes that persist over time

**Read full, original post:** [Do our genes 'remember' pain? Scientists suspect they might.](#)