Solved - Why Scratching Makes You Feel Even Itchier

Scratching an itch usually makes you feel better, but sometimes it only makes the itch worse. American scientists have just discovered why.

The director of the Center for the Study of Itch, and his colleagues found that scratching an itch causes our brain to discharge serotonin. Serotonin causes the itch sensation to increase.

The team has only conducted their research on mice and it hasn't been tested on humans yet. However, their findings indicate that blocking serotonin receptors in the spine could decrease itching. Dermatologists believe that this could lead to a method to effectively control itches.

For a long time, scientists have known that when we scratch our skin, we feel a small amount of pain. That pain usually stops the itching for a short while by causing nerve cells in the spinal cord to carry pain signals to the brain instead of itch signals.

Here's problem though. Pain also causes the brain to release serotonin which is used - in the brain - to control pain. So as more serotonin is released into the body, the itchier you feel and the harder the itch cycles are to break.

"We always have wondered why this vicious itch-pain cycle occurs," the director said. "Our findings suggest that the events happen in this order. First, you scratch, and that causes a sensation of pain. Then you make more serotonin to control the pain. But serotonin does more than only inhibit pain. As serotonin spreads from the brain into the spinal cord, our new finding shows that it also makes itch worse."

To arrive at their findings, the research team used genetically engineered mice. The mice were genetically engineered so that they didn't have genes necessary to create serotonin.

These mice were given a substance that causes the skin to become itchy. It was found that the 'modified' mice with no serotonin did not scratch as much as the 'unmodified' mice. Then when the genetically altered mice were given serotonin, they scratched as much as the regular mice did.

"So this fits very well with the idea that itch and pain signals are transmitted through different but related pathways. Scratching can relieve itch by creating minor pain. But when the body responds to pain signals, that response actually can make itching worse."

The researchers did note that this research doesn't mean an end to our itches. In view of the fact that serotonin is a key factor in growth, aging, bone well-being and mood, it simply isn't realistic to completely block serotonin release in humans.

More research needs to be done, but everything indicates that disrupting the signals between serotonin and the itch receptors is one of the most promising ways of controlling itching.