# Marijuanalike pain blockers found in brain

*Thursday, June 23, 2005*

**SEATTLE POST-INTELLIGENCER NEWS SERVICES**

Researchers have found that marijuana like chemicals in the brain help animals and people under extreme stress suppress pain and keep going despite a severe injury.

"This shows for the first time that natural marijuana like chemicals in the brain have a link to pain suppression," said Daniele Piomelli, a professor of pharmacology at the University of California-Irvine and senior author of a study published today in the journal Nature.

"Aside from identifying an important function of these compounds, it provides a template for a new class of pain medications that can possibly replace others shown to have acute side effects," said Piomelli, who also directs the Center for Drug Discovery at the university.

In theory, the research done on rats suggests it is possible to design a pill that would have the same pain-relieving effects as smoked marijuana, but through an indirect mechanism that wouldn't carry the psychoactive side effects or legal perils of medical pot, the authors said.

The study has its roots in a phenomenon known as stress-induced analgesia. This is part of the body's primitive "fight or flight" survival kit that also makes our hearts race, our breathing quicken, reduces blood flow to some parts of the body and tightens our muscles as the parts of our brain that are key to sensing threats fire up to heightened awareness.

Scientists have long known that a surge of stress hormones gives wounded soldiers, accident victims, injured athletes and others a short period of time in which the body's pain reaction is delayed and they can keep going to complete a task or reach safety.

Over time, researchers have determined that there are two types of stress-induced pain blockers, opioid and non-opioid, that work in both humans and most animals. The new study provides the first evidence that the non-opioid form is produced by marijuana like (cannabinoid) compounds, although other research has shown they play a role in blocking pain.

Lead author Andrea Hohmann, a neuroscientist at the University of Georgia, said a new drug that increased the body's own natural marijuana like compounds might work something like the anti-depressant Prozac, which blocks the reuptake of the brain-signaling compound serotonin, causing it to remain active longer.

She added that any new drug based on the research would probably be more effective and specific than smoked marijuana in providing pain relief.

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*This report includes information from Scripps Howard News Service and The Associated Press.*