

CU Boulder study: Narcotic painkillers cause chronic pain

Three-month study of lab rats shows morphine use increases pain signals from the spinal cord

By NATALIE MUNIO | nmunio@denverpost.com

May 30, 2016 | UPDATED: 2 days ago

Although reports of abuse, addiction and overdoses have long been attached to the misuse of prescription pain medication, researchers at the University of Colorado may have discovered a new peril.

Results of a three-month study released Monday by the university show opioids, such as morphine, cause an increase in chronic pain in lab rats, something that could have implications for people, too.

Peter Grace, a CU assistant research professor, and Linda Watkins, a professor, led the study that they say shows lab rats exhibited long-lasting chronic pain after using morphine treatments for five days. Those results, Grace said, using opioid painkillers may be partly to blame for chronic pain.

“Our key finding is that we were able to demonstrate that a brief treatment with a pain killer, like morphine, doubled the duration of chronic pain,” said Grace, who works at CU’s department of psychology and neuroscience.

The study, which was published Monday in the “Proceedings of the National Academy of Sciences,” showed morphine treatment intensified the release of pain signals from specific immune cells in the rats’ spinal cords, leading to prolonged pain.

Researchers discovered that a nerve injury in the rats would send messages from the nerve cells to the spinal cord, which then put the cells in “alert mode.”

Researchers treated the nerve injury with morphine, launching those cells into overdrive and triggering a “cascade of actions,” such as spinal cord inflammation, Grace said.

The team discovered the combination of the initial pain signals combined with morphine increased pain-responsive nerve cell activity in the spinal cord and brain. That in turn led to increased pain that could last for several months.

“The implications for people taking opioids like morphine, oxycodone and methadone are great, since we show the short-term decision to take such opioids can have devastating consequences of making pain worse and longer lasting,” Watkins said in a news release.

“This is a very ugly side to opioids that had not been recognized before.”

The National Institute on Drug Abuse reported the number of Americans who died from prescription opioid overdoses increased from just under 6,000 in 2001 to nearly 20,000 in 2014.