

Common Medications Can Prolong Back Pain, Study Says

A clinical trial will be needed to verify the research, which offered a warning about taking steroids or nonprescription drugs to soothe aches that many experience.



By Gina Kolata

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The very treatments often used to soothe pain in the lower back, which the Centers for Disease Control and Prevention says is the most common type of pain, might cause it to last longer, according to a new study.

Managing pain with steroids and nonsteroidal anti-inflammatory drugs, like ibuprofen, can actually turn a wrenched back into a chronic condition, the study found.

Some medical experts urged caution in interpreting the results too broadly. The study did not use the gold standard for medical research, which would be a clinical trial in which people with back pain would be randomly assigned to take a nonsteroidal anti-inflammatory drug or a placebo and followed to see who developed chronic pain. Instead, it involved observations of patients, an animal study and an analysis of patients in a large database.

“It’s intriguing but requires further study,” said Dr. Steven J. Atlas, director of primary care practice-based research and quality improvement at Massachusetts General Hospital.

Dr. Bruce M. Vrooman, a pain specialist at Dartmouth Hitchcock Medical Center in New Hampshire, agreed, but also called the study “impressive in its scope” and said that if the results hold up in a clinical trial, it could “force reconsideration of how we treat acute pain.”

Dr. Thomas Buchheit, director of the regenerative pain therapies program at Duke, had a different view.

“People overuse the term ‘paradigm shift’, but this is absolutely a paradigm shift,” Dr. Buchheit said. “There is this unspoken rule: If it hurts, take an anti-inflammatory, and if it still hurts, put a steroid on it,” he added. “But,” he said, the study shows that “we have to

think of healing and not suppression of inflammation.”

Guidelines from professional medical societies already say that people with back pain should start with nondrug treatments like exercise, physical therapy, heat or massage. Those measures turn out to be as effective as pain-suppressing drugs, without the same side effects.

If the pain persists, the guidelines say, people can try nonsteroidal anti-inflammatory drugs like ibuprofen. (Acetaminophen is not an anti-inflammatory because it does not block inflammation.)

But the study, published Wednesday in the journal *Science Translational Medicine*, included a warning that such drug treatment advice could contribute to chronic pain that would lower a person’s quality of life.

The study began when researchers at McGill University started searching for molecular markers in the blood that would predict which patients would have pain that quickly diminished and which would have pain that persisted.

The group had blood samples from 98 people taken when they first reported developing back pain and again three months after their pain began.

“What we saw wasn’t exactly what we expected,” said Dr. Luda Diatchenko, the study’s principal investigator and a professor at McGill who specializes in human pain genetics.

Those who said their pain went away had rapid and intense inflammation when the pain was acute. The markers of inflammation then diminished over the next three months. Those whose pain persisted did not have such an inflammatory reaction.

“Absolutely nothing was happening” in those with chronic pain, Dr. Diatchenko said.

“It was a huge difference,” she added.

The researchers continued to investigate. They studied people with a different type of pain, TMJ, or temporomandibular joint disorders, which result in jaw pain. Once again, those who recovered had rapid and intense inflammatory responses.

The researchers also replicated the findings in mice, compressing the animals’ sciatic nerves to produce back and leg pain or injecting the sciatic nerves with an irritant. When they blocked the animals’ immune response with dexamethasone, a steroid commonly used to treat back pain, the pain became chronic.

Then, the group questioned whether chronic pain resulted from pain suppression or from suppression of inflammation. So they gave some mice a prescription anti-inflammatory,

diclofenac. Other mice got one of three other analgesic, or pain-relieving, drugs — gabapentin, morphine and lidocaine.

Only with diclofenac did the pain persist, becoming chronic.

Those results led them to ask: Were patients who took nonsteroidal anti-inflammatories like ibuprofen or steroids like dexamethasone to relieve their back pain also more likely to develop chronic pain?

The researchers turned to data from the UK Biobank, a repository with information about half a million patients' medical conditions and drug use. They studied 2,163 people with acute back pain, 461 of whom went on to have chronic pain. Those taking a nonsteroidal anti-inflammatory had nearly double the chance of developing chronic back pain as those taking other drugs or no drugs, the researchers found.

Dr. Diatchenko said she does not think her findings bear on the issue of opioid addiction. In fact, she said, “to avoid opioids, clinicians started to prescribe more nonsteroidal anti-inflammatory drugs.”

“We need to think further about how to treat our patients,” she said.

The tendency to use nonsteroidal anti-inflammatories persists despite their unimpressive performance. An analysis of randomized clinical trials found that these drugs had almost no benefit over placebos in reducing low back pain.

Dr. Atlas says that short term use of nonsteroidal anti-inflammatories probably is not harmful, but the new study, he adds, while not proving long term use is harmful, “at least gives a biological mechanism that says short term use is not the same as long term.”

Dr. James N. Weinstein, senior vice president for health at Microsoft, wishes people would rethink their instinct to reach for the ibuprofen pills and — counterintuitive as it sounds — exercise instead.

Dr. Weinstein, who for 28 years was editor in chief of the medical journal *Spine* and not involved in the new study, says he goes out for a run when his back hurts. That actually makes it better.

“I love it,” he said of the study, “and I know it to be true.”

Gina Kolata writes about science and medicine. She has twice been a Pulitzer Prize finalist and is the author of six books, including “Mercies in Disguise: A Story of Hope, a Family's Genetic Destiny, and The Science That Saved Them.” @ginakolata • Facebook

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That Aching Back