NSAIDs: Take 'em early and often when competing? Think again

December 16 2009

Athletes' superstitions and rituals can help them get psyched up for contests, but when these rituals involve non-steroidal anti-inflammatory drugs (NSAIDs), which many athletes gobble down before and during events, they could be causing more harm than good.

"These agents are treatments for the symptoms of an injury, not the injury itself," says Stuart Warden, whose research at Indiana University focuses on musculoskeletal health and sports medicine. "They may allow an athlete to exercise or train at a certain level, but pain occurs for a reason. It is basically the body's mechanism of saying, 'Hang on, you've got some sort of injury that should not be ignored.'"

NSAIDs are recommended for use after an injury to reduce swelling or pain. Studies have found that many elite athletes, however, take these over-the-counter drugs -- and often several different kinds -- before contests and challenging workouts because they think they will reduce anticipated inflammation and soreness that could occur after the event.

Warden says there is no scientific evidence for this prophylactic use of NSAIDs. Such misuse, however, can cause a range of problems, from interfering with healing and inhibiting the body's ability to adapt to challenging workouts, to the development of stomach ulcers and possibly an increased risk for cardiovascular problems, says Warden, assistant professor in the Department of Physical Therapy at Indiana University-Purdue University Indianapolis.

The larger the dose and the longer duration of NSAID use, the greater potential for these risks. Warden warned against the misuse of NSAIDs in an editorial published earlier this year in the "British Journal of Sports Medicine."

"I want people, including recreational athletes, to think about the perceived benefits versus potential risks of taking NSAIDs, and to ask themselves why they are taking these agents," said Warden. "They need to ask, 'Do the benefits outweigh the risks?"

NSAIDs interact with the body's chemistry at a cellular level by inhibiting the cyclooxygenase (COX) isozymes. The COX isozymes are critical for the synthesis of prostaglandins, which have important functions in the gut and cardiovascular system, as well as during inflammation and the adaptive response of the musculoskeletal system to stress. NSAIDs may reduce pain and inflammation following injury by inhibiting COX isozyme-induced prostaglandin synthesis; however, as they circulate within the body indiscriminately, rather than localizing to the source of an athlete's specific aches and pains, they may produce undesirable side effects. With regular misuse, athletes face extreme and severe risks, such as the development of ulcers, potentially fatal problems with renal blood flow, and increased risks for cardiovascular problems. On a lesser scale, they could actually increase their risk for injuries because their bodies are less able to adapt to rigorous workouts -- and healing could take longer.

Warden said NSAIDs should be taken as directed -- in the recommended dosages and for no more than a week after an acute injury that involves swelling and pain.

"But to take the drugs before every run and throughout the year is a concern. You need to think of pain not as a hindrance, but as a signal that something is not quite right," he says, adding that, "NSAIDs should

not be used at the expense of a thorough assessment of an injury by a trained professional, such as a physical therapist or physician."

More information: "Prophylactic misuse and recommended use of non-steroidal anti-inflammatory drugs by athletes," British Journal of Sports Medicine, August 2009. Vol. 43. No. 8.

Provided by Indiana University