

Genetics may play role in chronic pain after surgery

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Genetics may play a role in determining whether patients experience chronic pain after surgery, suggests a study published today in the Online First edition of *Anesthesiology*, the peer-reviewed medical journal of the American Society of Anesthesiologists (ASA). Aside from genetic factors, the study also found patients younger than 65 years old, males and those with a prior history of chronic pain were at increased risk.

"Our study not only shows there are common genetic variations among people that may help to identify whether they are at high-risk for developing [chronic pain](#) after surgery, but it also helps explain why only a fraction of [patients](#) ever even experience persistent [pain](#)," said lead researcher Matthew T.V. Chan, M.D., at the Chinese University of Hong Kong in China. "Until now, the genetic variations associated with chronic postsurgical pain have not been well identified."

Chronic postsurgical pain is one of the most common and serious complications after surgery. While estimates of those affected by chronic postsurgical pain vary widely - from 9 percent to 80 percent - the authors say it is likely that millions of patients worldwide suffer from pain around the surgical wound area months, or even years, after surgery. Previous research shows chronic postsurgical pain negatively affects quality of life, including social functioning, physical activities and mental health.

The researchers collected blood samples from 1,152 surgical patients to look for genetic variations in 54 "pain-related" genes, which have been shown to be associated with [pain sensation](#). Patients were contacted a year after surgery to see if they had chronic postsurgical pain. Patients reported the amount of pain they experienced around their surgical wound using a rating scale from 0 (no pain) to 10 (worst pain imaginable). They were also asked how much pain interfered with their daily activities.

One year after [surgery](#), 21 percent of patients reported chronic postsurgical pain. Among these patients, 33 percent rated their pain as severe. During the follow-up period, patients with pain reported difficulties with general activity, mood, walking, relations with others, sleep, and enjoyment of life. General health status was also adversely affected by pain.

One [genetic variation](#) in particular - a gene found in the nervous-system called brain-derived neurotrophic factor (BDNF) - was found to be most associated with increased chronic postsurgical pain. Researchers also confirmed the finding in a mouse model.

The authors concluded that genetic variations accounted for a higher percentage of chronic postsurgical pain (between 7 percent and 12 percent) compared to clinical risk factors such as age, sex, smoking history or anesthesia technique (between 3 percent and 6 percent).

Provided by American Society of Anesthesiologists

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