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Listening to music may speed up recovery from surgery

Review of studies shows powerful effects of music in reducing perceived pain and heart rate immediately after surgery

Reports and Proceedings

AMERICAN COLLEGE OF SURGEONS

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Key Takeaways

- Music may have a calming effect on patients recovering from surgery– reducing anxiety, perceived pain, and heart rate.
- A reduction in cortisol levels when listening to music may play a role in easing patients' recovery.

Looking for a creative way to quicken your recovery from surgery? The key may be found in listening to music, according to research presented at the American College of Surgeons (ACS) Clinical Congress 2024 in San Fransisco, California.

Researchers, at California Northstate University College of Medicine in Elk Grove, California, analyzed existing studies on music and its role in helping people recover from surgery, narrowing a list of 3,736 studies to 35 research papers. All of the studies included data on patient outcomes, such as pain and anxiety, as well as measures of heart rate and opioid use. In their analysis, the researchers found that the simple act of listening to music after surgery, whether with headphones or through a speaker, had noticeable effects on patients during their recovery period:

- **Lower pain levels:** Patients who listened to music had a statistically significant reduction in pain the day after surgery. Pain was measured using two validated measures that asked patients to self-report their pain levels: the Numeric Rating Scale (around 19% reduction) and the Visual Analogue Scale (around 7% reduction).

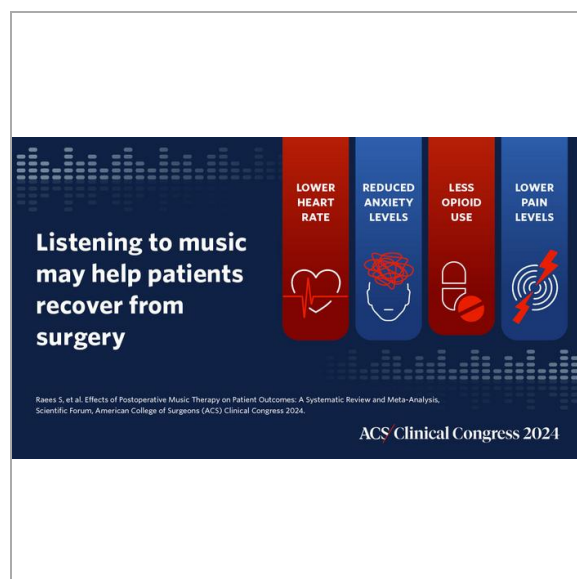


IMAGE:

LISTENING TO MUSIC MAY HELP PATIENTS RECOVER FROM SURGERY THROUGH A LOWER HEART RATE, REDUCED ANXIETY LEVELS, LESS OPIOID USE, AND LOWER PAIN LEVELS.

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- **Reduced anxiety levels:** Across all the analyzed studies, patient self-reported anxiety levels were reduced by about 2.5 points, or 3%, as assessed by the State-Trait Anxiety Inventory, a patient-answered survey that assesses anxiety on a scale of 80.
- **Less opioid use:** Patients who listened to music used less than half of the amount of morphine compared to those who did not listen to music on the first day after surgery (an average of 0.758 mg compared to 1.654 mg for those who did not listen to music).
- **Lower heart rate:** Patients who listened to music experienced a reduced heart rate (around 4.5 fewer beats per minute) compared with patients who did not listen to music, which the authors noted is significant because keeping a patient's heart rate within a healthy range helps improve recovery by allowing effective circulation of oxygen and nutrients throughout the body, especially to areas that were operated on. In addition, tachycardia, or a heart rate greater than 100, can lead to abnormal heart rhythms such as atrial fibrillation, which can be life-threatening.

"When patients wake up after surgery, sometimes they feel really scared and don't know where they are," said Eldo Frezza, MD, MBA, FACS, senior author of the study and a professor of surgery at California Northstate University College of Medicine. "Music can help ease the transition from the waking up stage to a return to normalcy and may help reduce stress around that transition."

Dr. Frezza and co-authors noted that unlike some more active therapies such as meditation or Pilates which require considerable concentration or movement, listening to music is a more passive experience and can be incorporated by patients without much cost or effort almost immediately after surgery.

"Although we can't specifically say they're in less pain, the studies revealed that patients perceive they are in less pain, and we think that is just as important," said Shehzaib Raees, first author of the study and a third-year medical student at the California Northstate University College of Medicine. "When listening to music, you can disassociate and relax. In that way, there's not much you have to do or focus on, and you can calm yourself down."

The study authors noted that a reduction in cortisol levels when listening to music may play a role in easing patients' recovery from surgery. Some variables, such as how long the patients listened to music, could not be controlled for in the analysis. Future research will look at a pilot program to evaluate the use of music in the surgical setting as well as in the intensive care unit.

Dr. Frezza's advice? If you feel up for it after surgery, listen to whatever music you enjoy.

"We're not trying to say that one type of music is better than another," he said. "We think music can help people in different ways after surgery because music can be comforting and make you feel like you're in a familiar place."

Study co-authors are Hannah Chang, BS; Kimberly Ku, BS; Niloufar S. Tehrani, MTM; Julia C. Howard, BS; and Muzammil Akhtar, BS.

The authors report no disclosures.

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METHOD OF RESEARCH

Meta-analysis

SUBJECT OF RESEARCH

People

ARTICLE TITLE

Effects of Postoperative Music Therapy on Patient Outcomes: A Systematic Review and Meta-Analysis

COI STATEMENT

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Media Contacts

Sheila Lai
American College of Surgeons
slai@facs.org

10/16/24, 9:45 AM

Listening to music may speed up recovery from | EurekAlert!

Office: 312-202-5403

Dan Hamilton

American College of Surgeons

dhamilton@facs.org

Office: 312-202-5328
