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### Maintaining Normal Day/Night Cycles in the ICU Could Benefit Heart Attack Patients

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Normal day and night cycles could improve recovery from heart attack for hospitalised patients, according to researchers from the University of Guelph in Canada.

Their study shows for the first time that interrupting diurnal rhythms impairs healing immediately after a heart attack. Researchers already knew that circadian rhythms can affect timing of a heart attack. This study shows the importance of circadian rhythms during the few days after an attack.

"We have devised a simple way to better practise medicine to improve the outcome from heart attacks by considering normal circadian rhythms," said Prof. Tami Martino of the Department of Biomedical Sciences. She and PhD student Faisal Alibhai conducted the study with Dr. Michael Sole and clinician collaborators from the Peter Munk Cardiac Centre in Toronto, who are already looking at ways to use the results to change practices in intensive care units. "It has an immediate life application," said Martino.

The team induced heart attacks in mice, and then compared rodents held under normal light and dark cycles with others whose diurnal cycles were disrupted for five days after the attacks. Early heart repair and remodelling were impaired in the disrupted mice. Diurnal disruptions interfered with their normal inflammatory and immune responses crucial for scar formation and healing.

"These mice were likely to go more quickly to heart failure," said Martino. "Disrupting circadian rhythms for the first few days after a heart attack worsens the disease outcome."

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