

# Beating heart surgery may increase risk to patients

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Coronary artery bypass surgery performed whilst the heart is still beating may carry an increased likelihood of death, according to a systematic review by Cochrane researchers. The researchers suggest beating heart surgery should not be recommended except in specific cases where stopping the heart might be risky.

Heart surgery in patients with [heart disease](#) caused by narrowed [arteries](#) has for many years been performed "on-pump", by stopping the heart and introducing a bypass to artificially pump the patient's blood. It is now possible to perform surgery without stopping the heart, using stabilisation devices. This "off-pump" approach is intended to reduce complications. However, previous systematic reviews found high quality evidence was lacking.

The new review included 86 trials, involving a total of 10,716 patients. According to the results, rather than improving outcomes for patients, off-pump approaches actually increased the risk of death slightly when compared with on pump bypass. Overall, the risk increased from 3.1% on-pump to 3.7% off-pump. Patients enrolled in many of the trials were on average younger and with a lower risk of complications than patients typically undergoing [coronary artery bypass](#) surgery. The majority of trials had a high risk of bias and short follow-up. But, when the researchers carried out an analysis of ten trials that had low risk of bias and long follow-up, the gap between on-pump and off-pump became wider, with the risk of death increasing from 4.6% on-pump to 6.2% off-pump.



"Our data raise a warning regarding [coronary artery bypass surgery](#) performed while the heart is beating," said lead [researcher](#) Christian Møller of the Department of Cardiothoracic Surgery and The Copenhagen Trial Unit at The Copenhagen University Hospital in Copenhagen, Denmark. "By comparison, the traditional on-pump method seems less risky and, based on this evidence, should remain the standard surgical treatment."

However, beating heart surgery may be a better option in certain patients for whom stopping the heart poses a particular risk. The researchers say more high quality trials are required to improve the evidence base. "We need more trials assessing the potential benefit of beating [heart](#) approaches in patients with contraindications to on-pump surgery," said Møller. "In these patients, off-pump could still be considered."

Provided by Wiley

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