

Kryptonite superglue improving the quality of life in heart patients recovering from surgery

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New research shows that a surgical procedure using a cutting-edge super glue pioneered a year ago by Calgary researchers can improve the recovery of heart patients recovering from open-chest surgery, Dr. Paul Fedak today told the Canadian Cardiovascular Congress 2010, co-hosted by the Heart and Stroke Foundation and the Canadian Cardiovascular Society.

The glue, called Kryptonite, is being used to enhance the closure of the breastbone after surgery. "It has properties like natural bone and allows for new [bone growth](#)" says Dr. Fedak, a cardiac surgeon at Foothills Hospital Medical Centre. Up to this point, the breastbone has been closed only with steel wire that stays in the chest.

"One of the most common complaints among patients is sternal pain following [heart surgery](#)," he says "With this alternative procedure, significant healing occurs in hours rather than in weeks." By accelerating and improving bone stability, it allows patients to breathe deeply and painlessly without powerful painkillers, meaning fewer side effects. Enhanced bone stability results in fewer complications such as wound infections and bone separation.

Importantly, there were no associated side effects or complications after one year of follow-up.

With the new procedure, pain is cut down because the Kryptonite bonds so quickly and effectively to the breastbone. The breastbone becomes solid within hours, shortening the current recovery time of eight weeks by 50 per cent. "People get back to their regular activities much faster."

This much-anticipated release of the official study results prove that the Kryptonite adhesive is capable of enhancing the stability of the breastbone closure resulting in early benefits on post-operative recovery. Researchers found that benefits of the Kryptonite adhesive include:

- Increased mechanical strength of the breastbone closure by five to 10 times that of wires alone.
- Patients showing significantly less pain, a reduced need for painkillers, and improved breathing for weeks after the surgery.
- Accelerated post-operative recovery time by weeks.
- Patients have improved physical function and an improved health-related quality of life.

First reported on a year ago, when the procedure had been pilot tested on 20 patients, it has now been used on over 500 patients in hospitals across Canada and the United States. Based on the promising findings from the Calgary studies, a larger clinical trial has been established that will include 15 Canadian hospitals and three from the United States.

"It is estimated that 29,000 surgeries requiring sternotomy are performed annually in Canada. World-wide, 1.4 million are performed each year," says Heart and Stroke Foundation spokesperson Dr. Beth Abramson. "This procedure will potentially revolutionize surgical recovery around the world. It increases function, considerably improves quality of life,

and ultimately saves the medical system money."

Improving a patient's function is important because walking in addition to medication is needed to keep patients healthy after surgery.

Physicians can be taught very easily to use Kryptonite. The procedure does not require special equipment and takes only five minutes to perform.

Provided by Heart and Stroke Foundation of Canada

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