

Depressed heart function from stress improved by a simple sugar

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Enhancing the production of ATP (adenosine triphosphate), an energy carrying molecule in heart cells, may shorten the heart's recovery time after a heart attack or heart surgery.

When blood flow to the [heart](#) is stopped (during heart surgery) or slowed by a [heart attack](#), the heart is stressed and may begin to function poorly, progressively worsen and end up in heart failure.

In a model of open heart surgery, researchers found that stopping blood flow to the heart for 20 minutes significantly depressed both the levels of the energy carrying molecule, and the function of the heart, which required days for recovery.

Synthesizing more ATP is limited by the production of ribose, a simple sugar the cells make very slowly. The researchers provided ribose intravenously, which passed into the [heart cells](#) and speeded the recovery of both heart function and energy levels from ten days to just over two days. Moreover, in a second model giving intravenous ribose for two weeks after a heart attack in rats prevented in large part the deterioration of the rest of the heart and preserved its function. These studies show that the stresses which produce lower energy levels and lead to failure can be greatly improved by enhancing the production of the ATP energy molecule by giving the simple sugar, ribose.

Provided by American Heart Association

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