

# Immature cells strengthen damaged heart (NEJM)

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[http://news.yahoo.com/s/nm/20060920/hl\\_nm/heart\\_study\\_dc\\_3](http://news.yahoo.com/s/nm/20060920/hl_nm/heart_study_dc_3)

Injecting immature cells into hearts damaged months or years earlier by a heart attack can help that heart beat more efficiently, a study showed on Wednesday.

The treatment, using cells culled from a patient's bone marrow, marks the latest attempt to try to coax cells to grow into replacement heart cells and repair damage inflicted by a heart attack, a quest that could forestall heart failure.

The research team, led by Birgit Assmus of Johann Wolfgang Goethe University in Frankfurt, found that the 28 volunteers who received bone marrow cells developed hearts that pumped with nearly 5 percent more force.

For the 24 patients who received immature cells extracted from blood instead of bone marrow, there was no significant improvement. The 23 people in the control group who did not receive an injection seem to lose, on average, nearly 3 percent of their pumping power after three months.

When some of the patients in the control group were given bone marrow transplants, their hearts also strengthened.

The gains from bone marrow injections were "modest," said Anthony Rosenzweig of the Harvard Stem Cell Institute, who was not involved in the study. "It was remarkable that any benefit was seen in these patients" because the typical volunteer received the injection more than six years after their heart attack and were receiving the best available care.

The Assmus team said bone marrow injections may have worked better because they included 10 times more immature cells than the technique used to extract those cells from the blood.

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### 'CAUTIOUS OPTIMISM'

The study, published in this week's New England Journal of Medicine, was accompanied by two other studies that tried a similar technique under different conditions. Those results, first reported at a heart conference in November, were mixed.

One study, known as REPAIR-AMI, involving 204 volunteers at 17 European medical centers, found that bone marrow cell injections nearly doubled the heart's pumping ability if the treatment was given within a week of the heart attack.

But a smaller study, known as ASTAMI, found no improvement in patients who received the bone marrow cells.

Those findings "provide a realistic perspective on this approach while leaving room for cautious optimism" about a technique that clearly requires further study before it can be recommended, said Rosenzweig in a Journal editorial.

It is not known if the benefits seen in the Assmus study will persist long enough to help patients live longer.

One thing that needs to be done, Rosenzweig said, is to figure out which bone marrow cells offer the biggest benefit to the heart.

"Even aspirin might not be as effective," he said, "if it were still being delivered as willow bark."

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